

# Measuring the Partisan Behavior of U.S. Newspapers, 1880 to 1980\*

Shigeo Hirano  
Columbia University

James M. Snyder, Jr.  
Harvard University and NBER

April 5, 2021

## Abstract

In this paper we study two measures of newspaper partisan behavior and content. The first uses explicit expressions of partisan support in the editorial section. The second is based on coverage and commentary of partisan activities, institutions and actors. We use these measures to describe the levels of relative partisan behavior during the period 1880 to 1900, and to describe changes over the period 1880 to 1980. We find that on average newspapers were initially highly partisan, but became gradually less partisan over time. Importantly, we find as much change after the 1910s as before, which differs from several prominent claims in the literature. We investigate whether some of the common hypotheses offered in the literature can explain the changes. The initial findings suggest that these explanations can only account for part of the decline.

---

\*We thank Michael Auslen, Sabrina Goldfischer, Matthew Kind and Sam Throm for their excellent research assistance. We thank Eric Schickler for suggesting that we look at the Election Bill in the 1890s and David Mayhew for suggesting that we look at the Court Reform Plan in 1937. We thank Paul Rohde for generously sharing the county-level wealth data. We thank seminar and conference participants at the European University Institute, Princeton University, NYC Media Seminar, Wake Forest University Political Economy Conference, and Harvard University for their helpful comments. We also thank Julia Cagé, Matthew Gentzkow, James Hamilton, Maria Petrova, Ricardo Puglisi, Eric Schickler, Jesse Shapiro, Kenneth Shepsle, Paul Starr, Marco Tabellini, Lynn Vavreck, and Hye Young You, for helpful comments.

# 1 Introduction

The press in the United States changed dramatically over the course of the 19th and 20th centuries. One dimension on which they changed was partisanship. Initially, most newspapers were tied to a political party and their content on political matters heavily favored that party.<sup>1</sup> By the late 20th century, or much earlier according to some scholars, they had become significantly less partisan. There is less agreement about how large the changes were, exactly when they occurred, and why. One reason for the lack of consensus is the lack of satisfactory measures of newspaper partisanship that cover a sufficiently long period of time.<sup>2</sup>

In this paper we develop two such measures based on newspaper content. The first uses explicit expressions of partisan support in the editorial section. The second is based on coverage and commentary of partisan activities, institutions and actors. We use these measures to describe the levels of relative partisan behavior during the period 1880 to 1900, and to describe changes in partisan coverage over the period 1880 to 1980. We also investigate specific measures that attempt to capture tone rather than only relative amounts of coverage. While the paper is largely descriptive, the most salient patterns we identify also help assess some arguments and claims made in the literature on the history of political news. We also conduct some preliminary analyses of three specific hypotheses.

Most accounts of the rise of a politically independent press focus on the decades prior to the turn of the century, typically ending by 1930 or even earlier.<sup>3</sup> For example, Hamilton (2004, 45) writes, “The most remarked upon change in daily newspapers in the period 1870-1900 was the emergence of the independent press.” Similarly, Baldasty (1992, 139) writes that in 1900, “Newspaper owners and editors were no longer primarily political activists obsessed with winning elections and filling their newspapers with political argument.” Gentzkow, Glaeser and Goldin (2006, 190) write, “Sometime between 1870 and the early

---

<sup>1</sup>According to McGerr (1986, 14), “In 1850, 95 percent of the daily and weekly papers in America claimed loyalty to some party. The few independent papers included the cheap “penny press” whose sensational style was significant for the future but whose political stance had little influence.”

<sup>2</sup>Researchers have developed a number of different measures of partisan and ideological bias that have been used to study particular years or decades. However, none of these seem adequate for our purposes. See Puglisi and Snyder (2015), Groeling (2013) and Hamborg, Donnay and Glpp (2019) for surveys of this literature.

<sup>3</sup>Schudson (1978) and Baldasty (1992) trace the origins of a politically independent press back to the “penny papers” in the 1830s. Schudson (1978, 21) writes, “Most of the penny papers, including all of the pioneers in the field, claimed political independence, something that earlier papers rarely pretended to.” Baldasty (1992, 37) writes, “The rise of the penny press, as limited geographically as those cheap and lively papers were, provided the basis for the press as a servant of business rather than of politics.”

1900s newspapers became demonstrably less connected to political parties” and focus their attention on the period 1870 to 1920. Some historians point to more specific time periods. For example, McGerr (1986, 118) argues that by the mid-1880s “independent journalism was well established.” In contrast, Kaplan (2002, 16) argues that it was not until 1896 that “newspapers broke from parties and established their independence.”

Scholars have offered a number of specific mechanisms for the decline of partisan newspapers, which can be grouped in three broad classes. The first focuses on commercial forces, particularly the increasingly attractive market for advertising revenue, as well as technological changes that increased the profitability of higher circulation (Baldasty, 1992; Hamilton, 2004; Gentzkow, Glaeser and Goldin, 2006; Petrova, 2011). The second emphasizes the role of political forces, in particular the amount of resources available to party elites. For example, Kaplan (2002, 16) writes that prior to 1896 political parties enjoyed “overwhelming power” and a truly independent press could not arise until “the Democrats and Republicans suffered a long-term decline in their legitimacy and control of political resources.” The third argues that journalism became increasingly professionalized, leading publishers, editors and reporters to increasingly value objectivity over time (Schudson, 1978).

Our main finding is that newspaper coverage became less partisan over the period 1880 to 1980. Consistent with much of the previous literature, we find noticeable changes in partisan behavior through the 1910s. However, we find that overall the decline was gradual with no clear discontinuities. This suggests that some of the technological innovations, such as linotype, and national political events, such as the election of 1896, may have mattered less than some previous researchers have asserted – or that their effects diffused relatively slowly. We also find that the slow decline in the partisanship of coverage continued after the 1910s all the way until 1980. To our knowledge, this pattern has not been examined – or even widely recognized – in previous studies of newspaper partisanship. In fact, based on our measure the decline between 1920 and 1980 was about as large as the decline between 1880 and 1920. In a supplementary analysis, we find no evidence that partisanship in newspaper coverage increased after 1980.

Another finding is that there is a very strong correlation between our two measures of partisan behavior in early years of the sample, 1880 to 1900. This provides some reassurance that the measures are capturing a similar dimension of newspaper partisanship. We also find high correlations between our measures and newspapers’ self-reported partisanship, as published in *N. W. Ayer & Son’s American Newspaper Annual*, which have been used by previous studies. This demonstrates that self-identifications reflect significant variation in

content. Since the self-identifications are much easier to collect than content – and also available for a much larger set of newspapers – our findings support the continued and expanded use of this measure, at least for the papers that identify with a party.<sup>4</sup>

The ability to measure partisan media bias – as well as other types of bias – is important because it may be consequential for democratic selection and accountability. In many formal models, biased reporting reduces voter information. Partisan media might affect election outcomes – e.g., voters might choose lower-quality politicians if they are not given enough accurate information – or lead to increased polarization among citizens. Partisan news might also reduce electoral accountability, leading to more partisan behavior by politicians, or more shirking, or increased catering to narrow, organized interest groups. A number of theoretical papers have explored these arguments (as well as others), and recent empirical studies find evidence that biased news has persuasive and polarizing effects.<sup>5</sup>

## 2 Data and Measures

As noted above, we develop two measures. We also analyze two time periods. The first covers the years 1880 to 1900, which as we show below was a period of highly partisan behavior. The second covers the years 1880 to 1980. We also extend some of our analyses to 2018.

The primary unit of observation in the paper is a newspaper-year. We also analyze two different samples of newspapers. In order for a newspaper-year to be included in either of these samples, we had to be able to code both the partisanship of the newspaper’s editorial stance and also the partisan slant of its content in that year. For the 1880 to 1900 sample we use all available newspaper-years during the period. For the 1880 to 1980 period we restrict attention to newspapers for which we can measure the relative partisan slant of their coverage for a sufficient number of years. We refer to this as the multi-decade sample.

We use the on-line archive *Newspapers.com* to code content therefore all of the newspapers

---

<sup>4</sup>It is less clear what to think about the papers that self identify as “independent.” Groeling and Baum (2013, 4) cite Lawrence (1928, 894) who writes, “Every time you send a questionnaire to newspapers listed in the newspaper directory, and ask them for their political affiliations, they invariably reply ‘independent’; and there is no way to get away from that classification.” Groeling and Baum (2013) conclude, “This logic would tend to lead one to distrust news outlets proclaiming ideological independence in their coverage, but presumably outlets that did identify as partisan would be more credible in their claims.” By the 1930s more than half of newspapers self-identified as some type of “independent,” so this measure is of questionable use for most of the 20th century.

<sup>5</sup>See, e.g., Gentzkow and Shapiro (2006); Bernhardt, Krasa and Polborn (2008); Chan and Suen (2008, 2009); Duggan and Martinelli (2011); Anderson and McLaren (2012) for theoretical work. See DellaVigna and Gentzkow (2010) for a review of the empirical literature prior to 2010 and Martin and Yurukoglu (2017) for a more recent example.

in the sample appear in that archive. For the summary measure of partisan coverage we define below, the samples contain 1985 and 414 newspapers, respectively.

The number of newspapers in the U.S. increased dramatically between the Civil War and the 1910s. Similarly the number of newspapers available in the *Newspapers.com* archive increases sharply over the same time period. We begin in 1880 as a compromise, trading off between the desire to cover a period as long as possible and to have a roughly comparable sample over time.<sup>6</sup>

We end our main analyses in 1980 primarily due to data limitations. The sample of newspapers available in our data source shrinks noticeably just before 1980 and continues to decline almost every year afterwards.<sup>7</sup> The sample is further reduced because we need to define “Democratic” and “Republican” newspapers based on their historical editorial behavior or self-identification as described below.

## 2.1 Classifying Newspaper Partisanship

Our first measure of newspaper partisanship, which we call *Newspaper Party ID*, is based on newspapers’ explicit editorial behavior. We code each newspaper’s initial *Newspaper Party ID* as Democratic or Republican, using only information from the period 1880 to 1920. This information comes from two sources.

The first source is the newspapers themselves. In the late 19th and early 20th century, it was very common for partisan newspapers to print the ticket of the party they supported directly under their banner/masthead.<sup>8</sup> They did this almost every issue in the weeks leading up to the election and stopped immediately after the election. We coded these for 2385 newspapers found in the *Newspapers.com* archive.<sup>9</sup>

The second source is newspapers’ partisan self-identification, as published in *N. W. Ayer & Son’s American Newspaper Annual*. For most daily papers we found this in *ICPSR 30261*

---

<sup>6</sup>For example, fewer than 25% of the newspapers in the multi-decade sample have enough pages in the *Newspapers.com* archive in 1870 to be useful.

<sup>7</sup>One reason for this decline is a change in copyright law that affects newspaper content published in or after 1978.

<sup>8</sup>This was both a statement about their editorial stance, but also information to readers to help them identify valid party ballots before the introduction of the Australian ballot. In discussing this period, McGerr (1986, 17) writes, “During elections, papers demonstrated their loyalty to their party by running the names of its candidates each day on the masthead. A paper failing to do so risked immediate censure from party members.”

<sup>9</sup>In some cases, the ticket did not appear on the editorial page. We included these when it was obvious that it was not an advertisement – e.g., in one year the paper put the ticket consistently on another page and not in a section with other advertisements. In many cases they appeared at the top of page one.

*United States Newspaper Panel, 1869-2004*, and for non-dailies we coded them ourselves.<sup>10</sup> This measure has been used previously by a number of scholars.<sup>11</sup> Newspapers are coded as Democratic, Independent Democratic, Independent, Independent Republican, and Republican.<sup>12</sup> For 3055 newspaper-years between 1880 and 1920, we have measures of both explicit editorial behavior and self-identification, and the coding of both variables is either Democratic or Republican. In these cases the two virtually always coincide. There are 1125 cases where both are Democratic, 1920 cases where both are Republican, and only 10 cases where the partisanship does not match.<sup>13,14</sup>

Since the two measures are so highly correlated for the period 1880 to 1920, we code *Newspaper Party ID* using newspapers' partisan self-identifications for the cases where we are unable to classify a newspaper based on its explicit editorial behavior. We do this only when the newspaper is listed in the directory as Democrat or Republican – i.e., not Independent Democrat, Independent Republican or something else. We code the partisanship of 730 newspapers based on this second source.

On rare occasions, newspapers changed their partisan affiliations from Democratic to Republican or Republican to Democratic. In these cases, we treat the newspaper as if it is two different newspapers – one before the switch and one after. Since we are only using information from 1880 to 1920 to code *Newspaper Party ID*, if a newspaper changed partisanship from Democratic to Republican or vice versa after 1920, then we drop all observations for that newspaper after the change.

Sometimes newspapers consolidated, or one newspaper bought another. In the latter case, the paper that was purchased disappears from our sample in subsequent years and the paper that made the purchase continues. In some consolidations, one paper was the “senior”

---

<sup>10</sup>For the non-dailies we mainly used *Ayer's* directories of 1880, 1885, 1890, 1897, 1911, 1917 and 1921. For the dailies, we rely on *ICPSR 30261*, which includes the self-reported party identifications from *G. Rowell & Co's American Newspaper Directory* for the period 1869 through 1876, *N. W. Ayer & Son's American Newspaper Annual* for the period 1880 through 1928, and *Editor & Publisher Yearbook* for the period 1932 through 2004.

<sup>11</sup>See for example, Rutenbeck (1995), Hamilton (2004), Gentzkow, Glaeser and Goldin (2006), Gentzkow, Shapiro and Sinkinson (2011), and Gentzkow, Shapiro and Sinkinson (2014).

<sup>12</sup>There are many other types of newspapers listed in these directories including those affiliated with third parties, “local” papers, trade papers, religious papers, school papers, and others.

<sup>13</sup>In the cases where the variables disagree, it is because a newspaper evidently changed its partisan affiliation. The self-identification reported in *Ayer's* or *Rowell's* appears to refer to the previous year and not to the year of publication.

<sup>14</sup>In our sample there are 287 newspaper-years in which a newspaper self-identified as Independent Republican and 235 newspaper-years in which the newspaper self-identified as Independent Democratic. We do not count these cases as partisan when constructing *Newspaper Party ID*.

partner and the other the “junior” partner.<sup>15</sup> We treat these as if the senior partner bought the junior partner. When a consolidation was more equal, we treat the newly consolidated paper as a new newspaper and both of the previous papers disappear from the sample in years after the consolidation. Again, since we are only using information from 1880 to 1920 to code *Newspaper Party ID*, a new newspaper formed from a consolidation that occurred after 1920 never appears in our analyses.

Overall we have 767 Democratic papers and 1013 Republican papers. Note that many papers classified as Democratic or Republican in the early period switched their self-identification to Independent or Independent-Republican or Independent-Democrat in later years. In these cases we leave *Newspaper Party ID* unchanged. We focus on newspapers’ “initial” partisanship because we are investigating whether and when partisan papers changed the slant of their coverage, irrespective of when they started to self-identify as “Independent.”<sup>16</sup>

## 2.2 Measuring Partisanship in Newspaper Coverage

We measure newspaper behavior by looking at the amount of coverage of people, institutions, or events associated with each party. We examine coverage on several dimensions of party activity, some of which have a negative or positive tone towards one of the parties, and others that do not. In their survey on the measurement of media bias, Puglisi and Snyder (2015) distinguish between the “issue intensity” approach and approaches that attempt to capture “tone.”

One group of measures we use reflects the issue intensity approach. More specifically, for each of the search terms below, we count the number of pages in each newspaper in each year in which the search term appeared one or more times (we refer to these as “hits” below). For Republican terms, the search strings are: [Republican convention], [Republican primary], [Republican committee], and [Republican meeting OR Republican rally OR meeting of Republican].<sup>17</sup> For Democratic terms we use the natural analogs. The phrases chosen were based on reading a large number of articles in many newspapers over many years. The phrases are common enough that we can detect meaningful differences across newspapers

---

<sup>15</sup>A paper is the “senior” partner when all of the management and editorial staff listed on the masthead come from that paper after the merger.

<sup>16</sup>As noted above, scholars have raised doubts about what it meant for newspapers to self-identify as Independent, especially in more recent decades.

<sup>17</sup>We also searched the plurals of all of these terms. We considered a number of other terms but found that many of the hits were for advertisements rather than newspaper coverage. [Republican primary] and [Republican rally] also have this issue, but not to the same extent as candidate names or phrases such as [Republican candidate] or [Republican nominee].

and years, rather than just small random fluctuations in the use of the terms. These terms also appear regularly throughout our period of study.<sup>18</sup>

The underlying idea is that Democratic newspapers should devote more space to Democratic people, institutions, or events, because their readers are more interested in these topics. Republican newspapers should do the opposite. In some cases, the coverage has clear informational value. Republican readers will normally vote in Republican primaries, so it is natural for Republican papers to devote more space to Republican primaries and to provide information about the competing candidates' names, issue positions, and background characteristics. In other cases, the coverage may be more for entertainment. Republican readers might simply want to read about the Republican Party's activities and details about the lives of its candidates and leaders. Variation in coverage might also reflect the views of different publishers or editors. This idea is not new of course. It is discussed in Kaplan (2002) and is applied in Gentzkow, Shapiro and Sinkinson (2011).<sup>19</sup> Our contribution is to employ the idea in a more intensive and extensive manner.

We also examined the horse-race and post-election coverage. Partisan papers may emphasize their party's success and the other party's difficulties, just as candidates and parties do. The search string used for positive Republican coverage is [Republicans ahead OR Republicans lead OR Democrats behind OR Republican victory OR Republican landslide OR Republican triumph OR Republicans win OR Republicans won OR Republicans gain OR Democrat lost OR Democrats lose OR Democratic loss].<sup>20</sup> These search strings could be viewed a hybrid that mixes the amount of coverage as well as tone, since success, even electoral success, is better than failure.

---

<sup>18</sup>The following back-of-the-envelope calculation gives a sense of total number of pages that must contain a given search string in order for that string to be useful over a long period of time and across a large number of newspapers: if we want the string to appear at least 20 times per two-year election cycle for at least 50 years and for at least 200 newspapers, then we would need to observe the string at least  $20 \times 25 \times 200 = 100,000$  times in total. In practice, due to variation in newspaper size and coverage of politics, the total number of hits generally has to be much larger.

<sup>19</sup>Kaplan (2002, 78) notes that even in newspapers claiming to present "their selections as neutral, technical choices," their partisan behavior would be evident in the relative coverage of the party activities. He writes, "At a certain point the ruses of covert partisanship – the immensely unequal distribution of news space between parties and the vastly disproportionate number of quoted remarks in favor of one's party – become obvious." He then lists various ways in which the coverage favored one party, including: "notices of party meetings and calls for rallies, effectively turning the paper into a party bulletin board," "grossly unequal amounts of news coverage devoted to the activities and speeches of the two parties' notables," "woodcuts celebrating the performance of the party in the latest election," and "diverse articles predicting the imminent electoral success."

<sup>20</sup>One string we would have liked to have used, however, was used in a both a negative and a positive way – e.g., [Democrat defeated] and [Democrats defeated Republicans].



Finally we examine a measure that even more clearly reflects (negative) tone in addition to relative amounts of partisan coverage. The string used for positive Republican coverage is [Democratic boss OR Democratic machine OR machine Democrat]. Throughout the period of study, both “boss” and “machine” had clearly negative connotations. For both the horse-race/post-election coverage and the boss/machine measure, the Democratic strings are the natural analogs of the Republican strings.

We also aggregated the six individual items – Committees, Meetings/Rallies, Conventions, Primaries, Forecasts/Wrap-ups, and Boss/Machine – into an overall measure of newspaper partisan behavior, which we call the *Combined Index*. This is simply an average of the partisan scores for the six underlying items.

Let  $R_{ijt}$  be the number of pages in newspaper  $i$  of state  $j$  in year  $t$  on which there was at least one Republican hit.<sup>21</sup> Analogously, let  $D_{ijt}$  be the number of pages on which there was at least one Democratic hit. Then define *Republican Coverage Share*, or *RCS*, as  $RCS_{ijt} = R_{ijt}/(R_{ijt} + D_{ijt})$ . We study various statistics based on *RCS*. Let  $RCS_{Rt}$  be the average of *RCS* taken over papers with Republican *Newspaper Party ID* in year  $t$ . Analogously let  $RCS_{Dt}$  be the average over papers with Democratic *Newspaper Party ID* in year  $t$ . We calculate *RCS* for each of our six items. The *Combined Index* is the average *RCS* of the items.<sup>22</sup>

The simplest measure we study is the difference between the average *RCS* for the two types of papers, which we refer to as the *Partisan Gap*:

$$G_t = RCS_{Rt} - RCS_{Dt} \quad (1)$$

The second measure focuses on the gaps within states and is calculated as follows. Let  $RCS_{Rjt}$  be the average *RCS* among Republican newspapers in state  $j$  in year  $t$ , let  $RCS_{Djt}$  be the average among Democratic newspapers, and let  $G_{jt} = RCS_{Rjt} - RCS_{Djt}$  be the difference between the two within-state averages. The second measure is the average of  $G_{jt}$  across all states in sample, which we call the *Within-State Partisan Gap*:

$$WSG_t = \sum_j G_{jt}/J \quad (2)$$

where  $J$  is the number of states for which we are able to compute  $G_{jt}$  – i.e., those with at least one Republican newspaper and at least one Democratic newspaper. We present

---

<sup>21</sup>Note we use superscript  $R$  and  $D$  to refer to coverage of Republican and Democratic people, institutions, or events, and subscript  $R$ ,  $D$  and  $I$  to refer to *Newspaper Party ID*.

<sup>22</sup>We compute this average for a given newspaper-year as long as *RCS* is non-missing for at least four of the six items.

this second measure because it helps separate partisan slant from coverage that may appear partisan but is actually based on relevance. Consider states where Republicans have a large electoral advantage, because of underlying partisan preferences among voters. In these states, Republican party activities are more deserving of attention and monitoring than Democratic activities, because Republican candidates are more likely to win elections and hold office. The *Within-State Partisan Gap* subtracts out “bias” that is due to differences in state-specific party relevance, while the overall measure does not.<sup>23</sup>

Misclassifying *Newspaper Party ID* could make it appear that the newspapers are becoming less extreme even when they are not. To take an extreme example, suppose half of the Republican papers switched to being Democrat and half of the Democratic papers switched to being Republican. Suppose also that Republican papers have a *Republican Coverage Share* of 1 in all years and Democratic papers have a *Republican Coverage Share* of 0 in all years. Then the *Partisan Gap* before the switch would be 1 and the gap after the switch would be 0 (since  $RCS_R = RCS_D = 0.5$ ).

We address this issue in two ways. First, as discussed above, we attempt to find all cases where a newspaper clearly changed its partisan self-identification, using *Ayers* and *Editor & Publisher*. We also checked whether newspapers changed their general election endorsement patterns, switching from one party to the other.<sup>24</sup> When we find cases after 1920 in which a newspaper with a Republican *Newspaper Party ID* switched to Democratic/Independent Democratic or a newspaper with a Democratic *Newspaper Party ID* switched to Republican/Independent Republican, we drop all observations for that newspaper after the switch.

Second, we examine the standard deviation of the *Republican Coverage Share* by year. Let  $SD_{jt}$  be the standard deviation of  $RCS_{ijt}$  across all newspapers in state  $j$  in year  $t$ . We average  $SD_{jt}$  across all states in year  $t$  to create the average standard deviation, *Within-State Standard Deviation<sub>t</sub>*. A decline in the standard deviation over time indicates that newspapers are becoming more similar to one another. Since *Within-State Standard Deviation* does not use *Newspaper Party ID*, any miscoding of the *Newspaper Party ID* classifications does not affect it.<sup>25</sup>

---

<sup>23</sup>Ideally we would construct an analogous within-city measure. We do show within-city results for the 1880 to 1900 sample. However, there are not enough cities with two or more newspapers with at least one from each party to analyze in the multi-decade sample.

<sup>24</sup>*Editor & Publisher* has compiled presidential endorsements for all daily newspapers since 1932, which are included in *ICPSR 30261*. We have checked the non-dailies ourselves, but it possible that we may have missed some endorsements.

<sup>25</sup>For reliability reasons, we impose an additional requirement that a state have at least five newspapers in order to be included in this measure.

There are several details regarding the data and variables which deserve mention. First, we combine odd-numbered years with the previous even year. Hereafter, when we refer to a year this includes the next odd-numbered year. Second, we only keep a newspaper-year for a search term if it has 20 or more hits. We use a lower threshold of 4 hits for the Boss/Machine terms, because they are highly discriminating but used less frequently than the other terms. For the *Combined Index* we only require 10 or more hits for each item, which seems justified since the index is already an average of several items. Third, we only compute *Within-State Partisan Gap* for years in which we can compute the gap between Democratic and Republican papers in at least 10 states.

Finally, we can now define the multi-decade samples. Roughly speaking these are papers that have existed for at least 50 years. More precisely, for each separate item and the *Combined Index*, let  $Y_{ij}^{min}$  be the first year for which we can compute  $RCS_{ijt}$  for newspaper  $i$  in state  $j$ , and let  $Y_{ij}^{max}$  be the last year for which we can compute  $RCS_{ijt}$  for that newspaper. Newspaper  $i$  is in the multi-decade sample if and only if  $Y_{ij}^{max} - Y_{ij}^{min}$  is at least 50, and  $RCS_{ijt}$  is non-missing for at least half of the years between  $Y_{ij}^{min}$  and  $Y_{ij}^{max}$ . We allow newspapers to have “gaps” in their coverages because there are gaps or unreadable pages in the *Newspapers.com* archive.<sup>26</sup>

### 3 Era of the Partisan Press, 1880 to 1900

As noted above, historians and scholars of journalism describe U.S. newspapers as being highly partisan during the nineteenth century. We investigate this using our measures for the first two decades of our sample, 1880 to 1900. This also provides a benchmark from which we measure changes over the course of the 20th century in the next section.

Table 1 presents the average *Republican Coverage Share* for Republican and Democratic newspapers, as well as the *Partisan Gap* between them. The table shows this for each of the six items as well as the *Combined Index*. The top panel of Table 1 includes all available newspapers, while the bottom panel includes only those papers in the multi-decade sample.<sup>27</sup>

For all items in both samples, Republican newspapers appear to favor the Republican

---

<sup>26</sup>Also some events – e.g., World War I and World War II – appear to have crowded out much of the usual coverage of domestic politics. In these cases,  $RCS$  might be missing simply because the number of hits falls below the minimum threshold.

<sup>27</sup>In the top panel, the number of observations and number of papers are noticeably smaller for the Primaries item because few states used the direct primary during this time period. Some states used indirect primaries – i.e., elections to choose convention delegates – but coverage of these primaries was highly variable and not very high overall.

party, at least when compared to Democratic newspapers. The overall *Partisan Gap* is always positive, meaning that Republican newspapers have higher *Republican Coverage Shares* for these items compared to Democratic newspapers.<sup>28,29</sup>

Table 1: **Newspaper Partisan Content, 1880 to 1900**

Item	<i>RCS</i> in R Papers	<i>RCS</i> in D Papers	Partisan Gap	Number of Obs.	Number of Papers
<i>All Available Newspapers</i>					
Committees	0.60	0.40	0.20	8549	1901
Meetings/Rallies	0.76	0.35	0.41	4930	1267
Conventions	0.63	0.40	0.23	10835	2136
Primaries	0.74	0.25	0.49	2456	725
Forecasts/Wrap-ups	0.60	0.40	0.19	4941	1216
Boss/Machine	0.64	0.20	0.44	4288	1216
Combined Index	0.66	0.35	0.30	7697	1780
<i>Multi-Decade Sample</i>					
Committees	0.59	0.39	0.20	1932	284
Meetings/Rallies	0.73	0.35	0.38	1535	255
Conventions	0.59	0.38	0.21	2089	287
Primaries	0.70	0.30	0.41	930	206
Forecasts/Wrap-ups	0.59	0.40	0.19	1539	251
Boss/Machine	0.65	0.23	0.42	1329	250
Combined Index	0.64	0.34	0.29	1889	276

The Number of Observations is the number of newspaper-years used in calculating  $i$  the *RCS* for either Democratic or Republican newspapers. The Number of Papers is the number of newspapers that are used at least once.

Table 2 shows the *Within-State Partisan Gaps*. For almost all items, these gaps are smaller than those in Table 1. This is consistent with the argument above that the overall

<sup>28</sup>Recall that the Boss/Machine item is coded so that a higher *RCS* value means that a newspaper is more likely to use the terms “boss” or “machine” when describing Democrats than when describing Republicans.

<sup>29</sup>We do not report t-statistics or p-values here, but in all cases the partisan gaps are statistically significant at the .05 level, even after clustering the standard errors in various ways. Note that the sample size is smaller for Primaries, which is not surprising since the direct primary was not widely used until after the turn of the 20th century, and only some states used indirect primaries for choosing delegates (Hirano and Snyder, 2019). By contrast, the sample size for Conventions is much larger, probably because conventions were so important for nominations during this period and therefore they were covered heavily by the press.

gap might overstate partisan bias because it includes differences in the relative relevance of the two parties across states and localities. Nonetheless, for each item and in both panels, the *Within-State Partisan Gap* exhibits the same general pattern as the corresponding *Partisan Gap*.

Table 2: **Newspaper Within-State Partisan Gap, 1880 to 1900**

Item	Within-State Partisan Gap	Number of Obs.	Number of Papers	Number of States
<i>All Available Newspapers</i>				
Committees	0.14	347	1788	40
Meetings/Rallies	0.34	286	1175	39
Conventions	0.16	368	2022	40
Primaries	0.28	160	554	24
Forecasts/Wrap-ups	0.18	286	1136	38
Boss/Machine	0.50	290	1120	37
Combined Index	0.26	341	1663	40
<i>Multi-Decade Sample</i>				
Committees	0.12	159	214	19
Meetings/Rallies	0.33	139	193	17
Conventions	0.14	164	218	20
Primaries	0.23	91	186	14
Forecasts/Wrap-ups	0.16	140	205	18
Boss/Machine	0.47	138	203	17
Combined Index	0.24	157	205	18

The Number of Observations is the number of state-years used in calculating the  $\bar{\iota}$  average Within-State Partisan Gap. The Number of Papers is the number of newspapers that are used at least  $\bar{\iota}$  once. The Number of States is the number of states that are used at least once.

Finally, Table 3 shows the *Within-City Partisan Gaps*. These are analogous to the *Within-State Partisan Gaps* but at the city level rather than the state level.<sup>30</sup> We are able

<sup>30</sup>More precisely, let  $RCS_{Rkt}$  be the average *Republican Coverage Share* among Republican newspapers in city  $k$  in year  $t$ , let  $RCS_{Dkt}$  be the average among Democratic newspapers, and let  $G_{kt} = RCS_{Rkt} - RCS_{Dkt}$  be the difference between the two averages. Then let  $WCG_t = \sum_k G_{kt}/K$  be the average within-city gap, where  $K$  is the number of cities for which we are able to construct  $G_{kt}$ .

to calculate this gap for at least one city in 32 states. The patterns are very similar to those in Table 2. This suggests that we can account for most of the difference in newspaper coverage that is due to differences in the relative relevance of the two parties using the *Within-State Partisan Gap*.

Table 3: **Newspaper Within-City Partisan Gap, 1880 to 1900**

Item	Within-City Partisan Gap	Number of Obs.	Number of Papers	Number of Cities
<i>All Available Newspapers</i>				
Committees	0.15	1144	719	238
Meetings/Rallies	0.37	640	465	164
Conventions	0.17	1416	813	262
Primaries	0.17	234	170	63
Forecasts/Wrap-ups	0.17	707	465	168
Boss/Machine	0.48	567	418	156
Combined Index	0.26	1084	677	223

The Number of Observations is the number of city-years used in calculating the  $\bar{z}$  average Within-State Partisan Gap. The Number of Papers is the number of newspapers that are used at least  $\bar{z}$  once. The Number of Cities is the number of cities that are used at least once.

All three tables, the partisan differences seem substantively large. Consider, for example, the *Combined Index* and the sample of all available newspapers. The average *RCS* across Democratic papers is about 0.35 in Table 1. The *Within-State Partisan Gap* from Table 2, 0.26, implies that the average *RCS* in Republican papers would be 73 percent higher than the corresponding *RCS* in Democratic papers.

Overall the patterns in Tables 1 to 3 are consistent with the conventional wisdom that newspapers exhibited a substantial amount of partisan behavior during the late-19th century. This increases our confidence in the measures. Also, since our measures are novel, and the underlying data we use is more comprehensive than that used in previous studies, the findings provide new evidence for the conventional wisdom. One implication is that the information that many newspaper readers were receiving in this period was filtered through highly partisan lenses.

## 4 Trends

We now study the long-term trends in newspaper partisan behavior over the hundred years between 1880 and 1980. In order to keep the set of newspapers roughly consistent over time, we restrict attention to the multi-decade sample – that is, the newspapers for which we can measure *RCS* for at least 50 years and assign a *Newspaper Party ID*.

Figure 1 presents the results for the *Combined Index*. The upper-left panel shows the *Partisan Gap*, the upper-right panel shows the *Within-State Partisan Gap*, the lower-left panel shows the *Within-State Standard Deviation*, and the lower-right panel shows the *Republican Coverage Share* for Democratic and Republican newspapers separately.

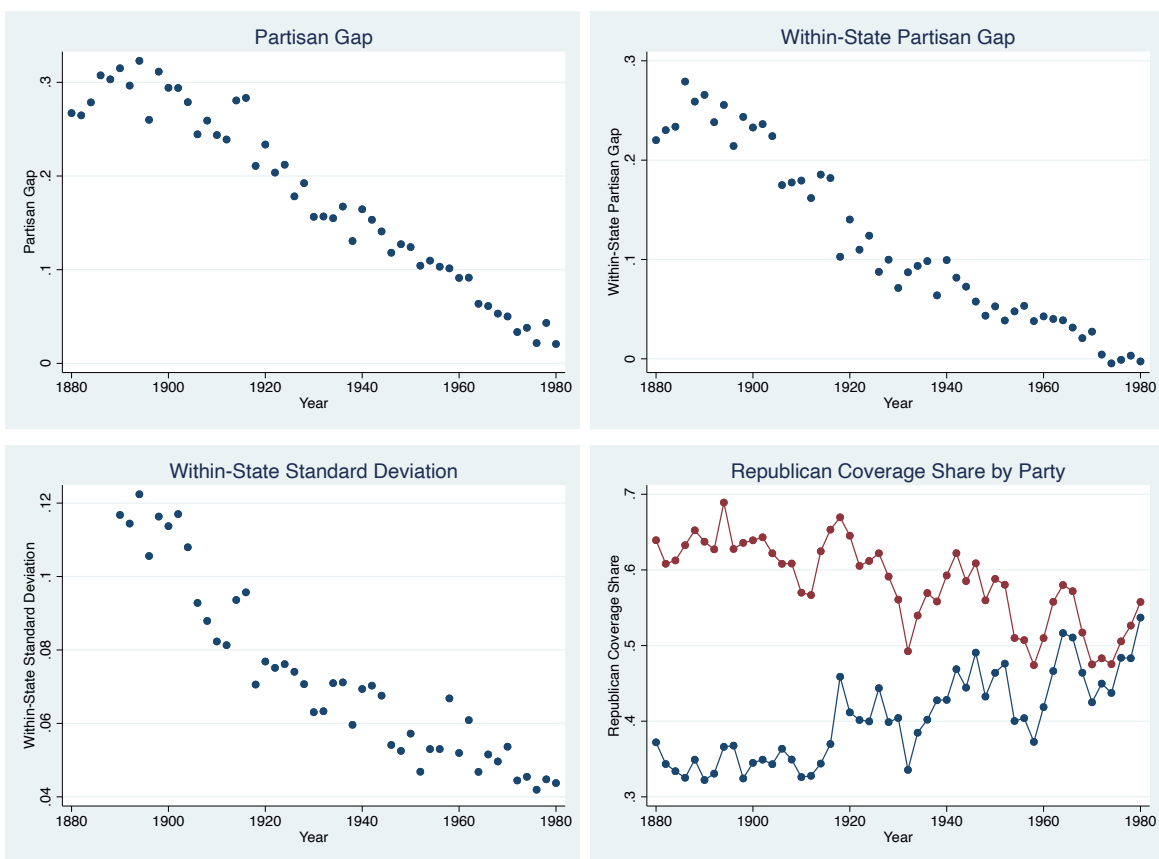


Figure 1: Combined Index, Multi-Decade Sample

Both upper panels display the same basic pattern of a steady and gradual decline. The *Within-State Standard Deviation* panel also shows a long and slow decline. The panel in the lower-right shows that Republican and Democratic papers converged over time by roughly

the same amount to a *Republican Coverage Share* of about 0.50.

The *Within-State Partisan Gap* fell from an average of 0.26 in 1884–1890 to an average of 0.15 in 1914–1920, a decline of 0.11. The average continued to fall after 1920, to zero in 1974–1980, a decline of 0.15. Thus, based on our measure of newspaper content, partisan newspaper behavior had not disappeared by 1920. Instead, there was an even larger decline in the *Within-State Partisan Gap* between the late 1910s and late 1970s.

The patterns are consistent with the conventional wisdom that newspapers became increasingly independent of political parties around the turn of the 20th century. However, many studies of the emergence and development of press independence end their analyses in the early 1900s. For example, Hamilton (2004) focuses on the period up to 1900 and Kaplan (2002) focuses on the period until 1920. The figures show that substantial changes in partisan coverage occurred after 1900, and even after 1920.

The patterns are less clear regarding the claim in Kaplan (2002) that 1896 was a critical turning point in newspaper independence. The overall *Partisan Gap* did not clearly begin to decline until the late 1890s, which is consistent with the argument. Also the *Within-State Partisan Gap* appears to show a small, but noticeable drop just after 1900 (between 1904 and 1906). Similarly, the *Within-State Standard Deviation* begins its more apparent decline after 1900. However, when viewed in the context of the entire period 1880 to 1980, the changes around 1896 are not particularly large.<sup>31</sup>

In the Appendix we show the *Partisan Gap*, the *Within-State Partisan Gap*, the *Within-State Standard Deviation*, as well as *RCS* by party, for each of the six items separately (Figures A1-A4). We also present the *Within-State Standard Deviation* using all available newspapers, not only those in the multi-decade sample (Figure A5). Overall, they exhibit similar patterns, in particular, a long gradual decline in partisan behavior after 1900 or in some cases earlier. It is also interesting that the two measures involving “tone” – i.e., Boss/Machine and Forecast/Wrap-up – show the same basic patterns as the other measures. While the figures shows some variation across the items, these probably reflect measurement error as well as real differences. Thus, we hesitate to speculate about them here.

## 4.1 Trends with Fixed Samples of Newspapers

In the analysis above we restrict the sample to long-lived newspapers that existed for at least fifty years of our hundred year period of investigation. However, even in these figures,

---

<sup>31</sup>The *Partisan Gap* measure appears to change slope in the late 1800s. However, we need more data and more precise measures before drawing any strong conclusions about this.



there is some entry and exit into the sample. Here we examine the trends in the partisan gap within overlapping fifty-year windows, holding the sample of newspapers fixed within each window.<sup>32,33</sup>

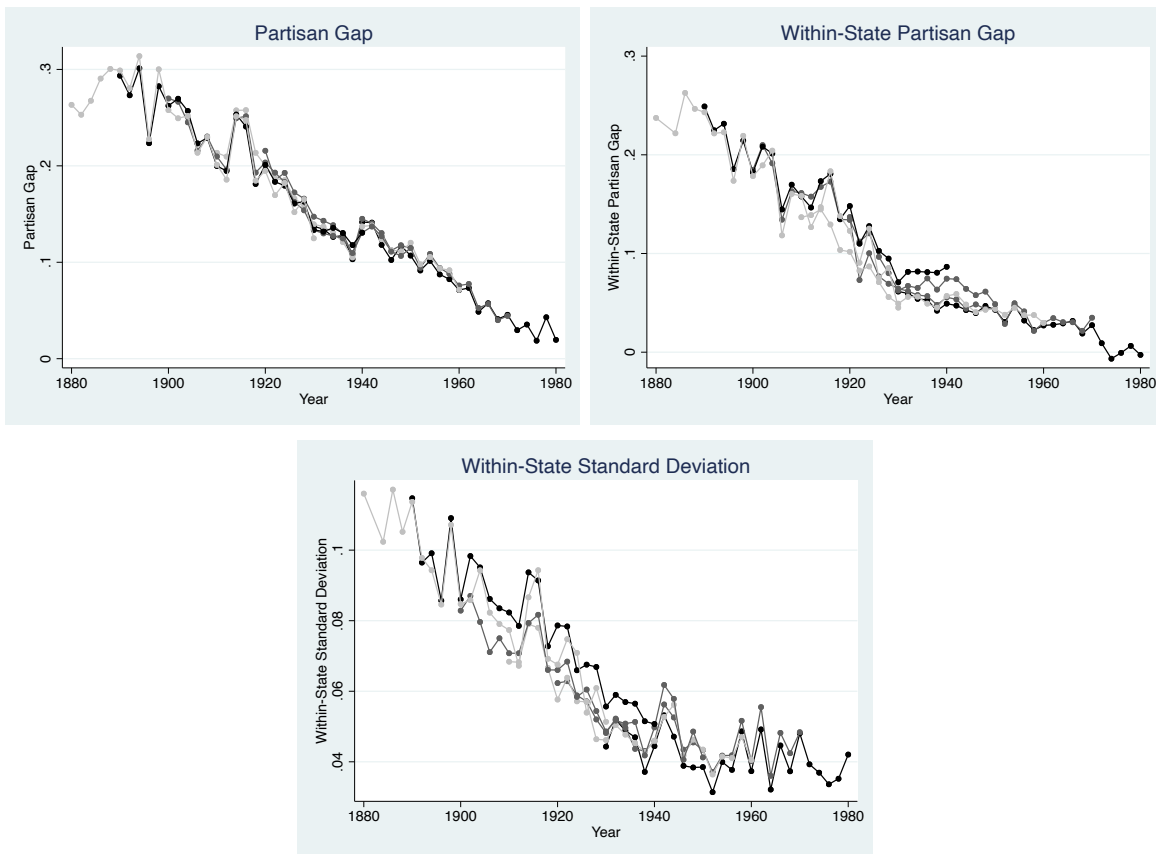


Figure 2: Fixed Overlapping 50 Year Samples

Figure 2 shows that the newspapers within each fifty year window show the same pattern of decline in the partisan gap as Figure 1. Thus, the pattern is reflecting a change in the partisan behavior within newspapers and not merely due to changes in the newspapers included our sample.<sup>34</sup>

<sup>32</sup>We keep a newspaper in the sample if it is present for forty-two of the fifty years, and must be present in the first and last year of the window.

<sup>33</sup>The fifty year windows are 1880 to 1930, 1890 to 1940, 1900 to 1950, 1910 to 1960, 1920 to 1970 and 1930 to 1980.

<sup>34</sup>It is possible that the long-lived papers included in our sample may be responding to the entry and exit of competitors.

## 4.2 What About Post-1980?

The analyses above stop in 1980 primarily because of limited data availability together with our decision to define *Newspaper Party ID* using only information through 1920. As noted earlier, the sample of newspapers available in our data source shrinks noticeably just before 1980 and continues to decline almost every year afterwards. The sample of newspaper years for which *Newspaper Party ID* is non-missing is even smaller. Many of the newspapers that exist in the database post 1980 first appear after 1920; also, we “restart” newspapers as new objects after consolidations (except where one newspaper acquired the other or was the “senior” partner). This means that our preferred measure, the *Within-State Partisan Gap*, is based on relatively small samples for many states.

With that caveat in mind, it is nonetheless interesting to extend our figures to the present. In addition, the *Within-State Standard Deviation* measure does not rely on *Newspaper Party ID*, so we have a reasonably large number of newspapers in the multi-decade sample to compute this measure through 2018. The *RCS* measure is non-missing for nearly 200 newspapers in the 2010s, as compared to more than 350 newspapers in the 1970s.<sup>35</sup>

We again focus on the *Combined Index*. The left panel of Figure 3 shows the *Within-State Partisan Gap* and the right panel shows the *Within-State Standard Deviation*. Both panels show a similar pattern – that is, no significant change in either the *Within-State Partisan Gap* or the *Within-State Standard Deviation* between 1980 and 2018.<sup>36</sup>

The lack of change in newspaper behavior is interesting because contrasts sharply with the increase in partisan polarization among political elites identified in the literature during this recent period (e.g., Shor and McCarty (2011); McCarty, Poole and Rosenthal (2016); Lewis (2020)). Polarization occurred in congressional roll-call voting and also in state legislative roll-call voting in most states. The media overall might have also become more polarized during this period, especially with the growth of conservative talk radio, the introduction of cable news networks, such as Fox News on the right and MSNBC on the left, and the expansion of the conservative Sinclair Broadcast Group (e.g., Ridout (2013)). Moreover, two text based measures find evidence of partisan polarization among political elites. Jensen et al. (2012) and Gentzkow, Shapiro and Taddy (2019) examine the text of the Congressional Record and find an increasing partisan divide in the speeches made by Members of Congress

---

<sup>35</sup>Recall that when computing the *Within-State Standard Deviations* we only include state-years for which *RCS* is non-missing for at least five newspapers. When we limit attention to these state-years, there are about 140 newspapers in our sample for the 2010s.

<sup>36</sup>The pattern is the same even if we use the same sample of newspapers in 50 year blocs, as in Figure 2.

since the 1980s.<sup>37</sup>

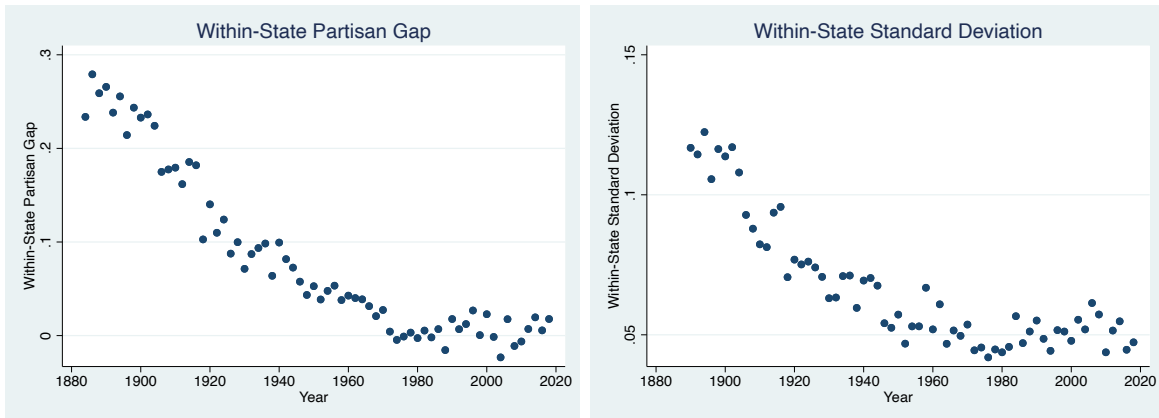


Figure 3: Combined Index, Multi-Decade Sample, to 2018

## 5 Tone-Based Partisan Differences

Does the decline in newspapers’ partisan behaviors mainly reflect a change in amount of coverage given to each party’s activities, events and elites, or was there also a change in the tone of the coverage? Only one of the items in the *Combined Index*, *Boss/Machine*, reflects a clear difference in the tone of the coverage of the political parties – “Republican machine” is not a favorable description of the Republican party.<sup>38</sup> The terms used for the other items, such as “Republican primary,” “Republican committee,” “Republican meeting,” or “Republican convention,” have a more neutral tone. Newspapers might have become more balanced in the amount of coverage of partisan activities, but the tone of the coverage may have continued to favor one party. While the partisan gap in the use of *Boss/Machine* also declined over time as discussed above, this is just one search string.

In this section we examine two other types of news stories in which we can identify search strings that capture, at least to some degree, differences in tone. The first type involves direct accusations of improper behavior, malfeasance, or incompetence by one of the parties. The second type exploits the fact that Democrats and Republicans often use different language to frame issues and policies, and in some cases used charged phrases that

<sup>37</sup>Jensen et al. (2012, 1) also analyze the Google Books corpus and find that “political discourse expressed in books did become more polarized in the late 1990s.”

<sup>38</sup>*Horse-race / post election coverage* has some partisan tone, but could also simply reflect differences in the amount of coverage of election outcomes.

were widely adopted in the press. We do not include these in the analyses above, because they appear so infrequently in the newspapers compared to the items in the *Combined Index*.

## 5.1 Corruption, Ring, Scandal and Waste

References to corruption and wastefulness in connection with one of the parties provides another possible way to measure tone, at least to the degree that the references are not merely reports about clear, specific acts of corruption or waste. In reading through numerous newspaper articles, we found that these accusations were commonly used to impugn the integrity of one of the parties, especially in the late 19th and early 20th centuries. These items are similar in spirit to the *Boss/Machine* item used above, but often involved more serious – sometimes even criminal – charges.

For references to Republican corruption, we used the following search strings: [Republican corruption OR corrupt Republican] and [Republican ring OR ring Republican]. For Republican waste we used the following search string: [Republican extravagance OR extravagant Republican OR Republican waste OR wasteful Republican]. For scandals we searched for the following string, which was more frequently used in the second half of the 20th century: [Republican scandal OR scandal Republican]. For Democratic terms we used the natural analogs. Since the tone of these terms is negative, *Republican Coverage Share* is the number of pages with the terms referring to the Democratic party divided by the total number of pages with these references applied to either party. Although these phrases appeared regularly, they were not used commonly enough to compute an accurate *RCS* measure at the newspaper-year level. Therefore, we aggregate across years by decade. We examine the period 1880 to 1980, and include 1980 in the decade of the 1970s.

Figure 4 shows the results. Again we observe a steep decline in all three measures, *Partisan Gap*, *Within-State Partisan Gap*, and *Within-State Standard Deviation*. Unlike Figure 1 above, the partisan differences appear to have bottomed out by the 1930s as opposed to 1980. This resembles the pattern in the figures for the other tone-based measures – i.e., Appendix Figures A1, A2 and A3 for *Boss/Machine*, and Figure 5 for the tariff issue described in the next section.

In addition to the changes in the relative frequencies shown in Figure 4, there were also changes in the overall usage of these highly charged phrases. In fact, it appears that all but one of them went almost completely out of fashion by 1980. The only phrases for which there was an increase in use over time were those involving the word scandal.

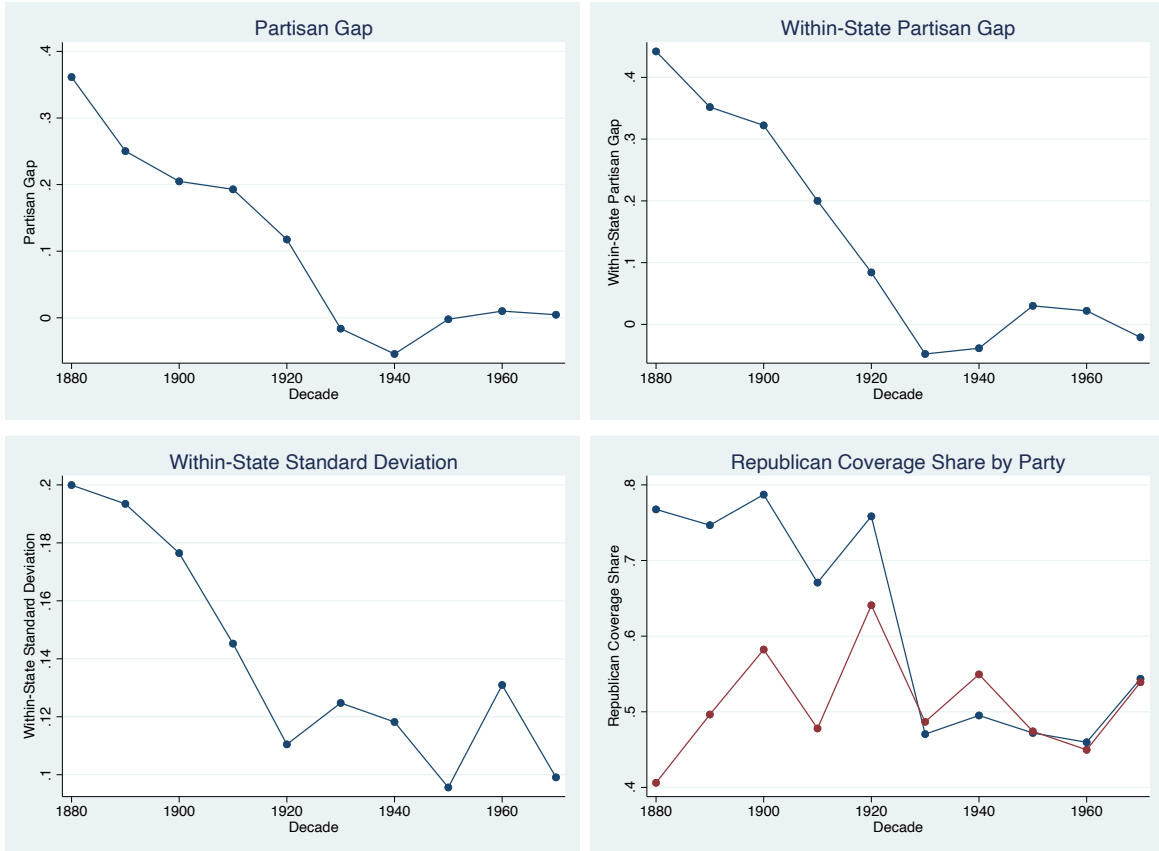


Figure 4: Corruption, Ring, Scandal and Waste, Multi-Decade Sample

## 5.2 Tariff Issue

The tariff divided the Democrats and Republicans after the Civil War through the first decades of the 20th century, with the Republican party favoring high tariffs and the Democratic party favoring low tariffs. We focus on the period 1888 to 1938, a period in which the tariff was a particularly partisan and salient issue.<sup>39,40</sup>

<sup>39</sup>In describing the tariff, O’Halloran (1994, 51) writes “After the Civil War, the tariff became the litmus test for political affiliation. Grover Cleveland, in his 1887 address, declared the tariff the most important issue of the day. The tariff continued to divide the political parties and define the political debate for the next fifty years... Each peak in the tariff rate was associated with Republican control of government and each trough with Democratic control of government.” Eiteman (1930) highlights the particular importance of the American Protective League, which was founded in 1885. The League began publishing a highly influential monthly bulletin in 1887. The tariff was a central issue in many of the subsequent electoral campaigns for a wide range of national and state offices.

<sup>40</sup>The Democratic and Republican parties continued to take clear opposing positions on the tariff through the early decades of the 20th century. Eiteman (1930, 22) writes, “Until within a year or two only the

We measure the partisan coverage of the tariff issue using two search strings that have a positive connotation for tariffs – [protective tariff OR tariff protection] – and four search strings that have a negative connotation – [high tariff OR monopoly tariff OR trust tariff OR tariff tax].<sup>41</sup> As above, we can calculate the number of newspaper pages with at least one of the terms with a positive connotation and the number of pages with at least one of the terms with a negative connotation. In this case, *Republican Coverage Share* would be the number of pages with terms that have a positive connotation divided by the total number of pages with these terms. We include newspapers that, roughly speaking, exist in the archive for at least half of the years during this period.<sup>42</sup>

Figure 5 shows the results. The upper-left panel shows the *Partisan Gap*, the upper-right panel shows the *Within-State Partisan Gap*, the lower-left panel shows the *Within-State Standard Deviation*, and the lower-right panel shows the *Republican Coverage Share* for Democratic and Republican newspapers separately.

The patterns in Figure 5 are roughly similar to the patterns in Figure 1 described above. Both of the upper panels show a steady and gradual decline in differential use of the positive and negative terms for the tariff by Democratic and Republican papers. The *Within-State Standard Deviation* panel also exhibits a decline, although there are two outlier years. The panel in the lower-right shows that Republican and Democratic papers converged over time to a *Republican Coverage Share* of about 0.50 in 1938.

### 5.3 Other Specific Issues

Here we examine several other issues which, like the tariff, were quite partisan, but involved specific pieces of legislation or government actions that were newsworthy for only a short time. They are: (1) the Federal Elections Bill introduced in 1890; (2) the Judicial Procedures Reform Bill of 1937; (3) President Harry Truman’s Healthcare Reform Plan of 1949; and (4) the Bay of Pigs Invasion of 1961. We searched for strings associated with these issues in the newspaper archives during the years when these bills or events were most widely covered by

---

economist and the Democrat dared to raise voices in seemingly unpatriotic and sacrilegious opposition to the protective tariff.” We stop in 1938 because after the Smoot-Hawley tariff bill and continued economic depression the Republican protectionist position began to lose its popularity. After World War II clear divisions had emerged among Republicans (e.g., (Hiscox, 1999).

<sup>41</sup>Critics of high tariffs often argued that high tariffs benefited monopolies and trusts, and that tariffs were a form of taxation.

<sup>42</sup>More precisely, let  $Y_{ij}^{min}$  be the first year for which we can compute  $RCS_{ijt}$  for the tariff measure for newspaper  $i$  in state  $j$ , and let  $Y_{ij}^{max}$  be the last year. We include newspaper  $i$  if and only if  $Y_{ij}^{max} - Y_{ij}^{min} \geq 25$ , and  $RCS_{ijt}$  is non-missing for at least 10 years between  $Y_{ij}^{min}$  and  $Y_{ij}^{max}$ .



Figure 5: Tariff, Multi-Decade Sample

the press.

The Federal Election Bill was first introduced in 1890. It was supported by Republicans and opposed by Democrats. According to proponents, the bill’s purpose was to insure that voting rights were respected and to improve election administration, and it would have involved expanding the federal government’s role in congressional elections (see Welch (1965) for more details). Opponents referred to it as the “(Lodge) Force Bill.” We use the following search strings for the supporting and opposing sides, respectively: [election bill] and [force bill]. We search for these strings during the years 1890 to 1892.

The Judicial Procedures Reform Bill was proposed by Franklin D. Roosevelt and supported by Democrats in 1937. The bill contained several reforms, but the most controversial was the provision allowing the president to appoint new Supreme Court judges. Opponents, primarily Republicans (together with some southern Democrats), referred to it as the “court packing plan.” We use the following search strings for the supporting and opposing sides,

respectively: [court reform] and [court packing]. We search for these strings in 1937.

President Harry Truman strongly supported attempts to pass a national universal health-care plan, along the lines of legislation proposed by Senator Robert F. Wagner, Senator James E. Murray and Representative John D. Dingell, Sr. Truman pushed especially hard in 1949, making it part of his Fair Deal. It was supported mainly by Democrats, while opponents referred to it as “socialized medicine.” We use the following search strings for the supporting side: [national health insurance OR national health program OR national health plan OR trumans health program OR trumans health plan OR medical insurance program OR medical insurance plan]. For the opposing side we use: [socialized medicine]. We search for these strings in 1949 and 1950.

Finally, the Bay of Pigs Invasion was a failed military operation that attempted to stop the Cuban Revolution in 1961. Critics of the operation referred to it as a “fiasco”, “debacle” or “disaster.” It was viewed as a major failure of John F. Kennedy’s administration, and Republicans were especially vocal in their criticism. We use the following search strings for the critics of the administration: [bay of pigs fiasco OR bay of pigs debacle OR bay of pigs disaster]. The search strings more favorable towards the Democratic administration are: [bay of pigs operation OR bay of pigs invasion]. We search for these strings during the years 1962 to 1964.

The results in Table 4 show that the *Partisan Gap* for the Election Bill was similar in magnitude to the gap of the *Combined Index* reported in Table 1 as well as the gap for the tariff issue, for the period 1880 to 1900. The gap for the Court Reform Plan is lower but still fairly large, and in fact somewhat larger than the gap of the *Combined Index* in the 1930s as shown in Figure 1. The gaps for the Health Insurance and Bay of Pigs items are both tiny.

Taken together, the items in this section – which reflect differences in tone between Democratic and Republican newspapers – show the same pattern of decline in the *Partisan Gap* over time as the other measures documented above. In fact, the data presented here suggest that stark differences in tone fell out of usage even earlier than differences in the rates of coverage of the two parties.

## 6 Counting Newspaper Mentions: Pages vs. Articles

In *Newspapers.com* the searches are done by *page*. Our counts therefore provide a crude estimate of the “true” amount of coverage we hope to capture in our measures ( $D_{ijt}$  and  $R_{ijt}$  above), and might even lead to measurement error in our relative measures based on shares,



Table 4: Newspaper Partisan Content on Selected Issues

Item	<i>RCS</i> in R Papers	<i>RCS</i> in D Papers	Partisan Gap	Number of Obs.
<i>All Available Newspapers</i>				
Elections Bill, 1890–1892	0.62	0.30	0.31	1201
Court Reform Plan, 1937	0.51	0.30	0.20	336
Health Insurance, 1949–1950	0.69	0.67	0.01	389
Bay of Pigs, 1962–1964	0.14	0.13	0.01	297
<i>Multi-Decade Sample</i>				
Elections Bill, 1890–1892	0.60	0.31	0.30	202
Court Reform Plan, 1937	0.49	0.29	0.21	266
Health Insurance, 1949–1950	0.66	0.64	0.02	298
Bay of Pigs, 1962–1964	0.14	0.13	0.01	271

The Number of Observations is the number of newspaper-years used in calculating  $\hat{\iota}$  the *RCS* for either Democratic or Republican newspapers. The Number of Papers is the number of newspapers that are used at least once.

*Republican Coverage Share* $_{ijt}$ . Consider, for example, a newspaper that prints three stories about the upcoming Republican convention, all on the same page, and one story about the upcoming Democratic convention. Then *RCS* would be 0.5 in this case since the Republican stories would only be counted once. If the stories were of similar length and importance, then an *RCS* of 0.75 would be a more accurate measure of partisan behavior. On the other hand, if the Democratic story was three times as long and detailed, then 0.5 might be better.

Another popular newspaper archive, in which searches are done by article rather than page, is *Proquest Historical Newspapers*. Unfortunately, the *Proquest* archive only contains about two dozen general interest newspapers, versus more than 2000 in *Newspapers.com*. Also, almost all of the newspapers in *Proquest* serve major U.S. cities. Therefore, we cannot use the *Proquest* archive as our main data source, since it is not large enough or representative enough for our purposes.

Fortunately, since most of the *Proquest* newspapers are also in *Newspapers.com*, we can directly compare measures based on page counts versus those based on article counts to see whether there are large systematic differences between them. The list of papers and years of overlap is shown in Appendix Table A1.

The results are encouraging. Figure 6 presents scatter plots of *RCS*. The y-axis is based on page counts from *Newspapers.com* and the x-axis is based on article counts from *ProQuest*. The panel on the left displays the scatter plot pooling all possible newspaper-year-item observations and the panel on the right shows the plot of the newspaper-years for the Combined Index. The figure also presents 45-degree lines. In both cases, the two measures are highly correlated. Pooling all newspaper-year-item observations, the correlation is 0.95. The correlations are also high within newspaper-item. The average and median correlations are 0.91 and 0.94, respectively. The correlation for the Combined Index is 0.95.

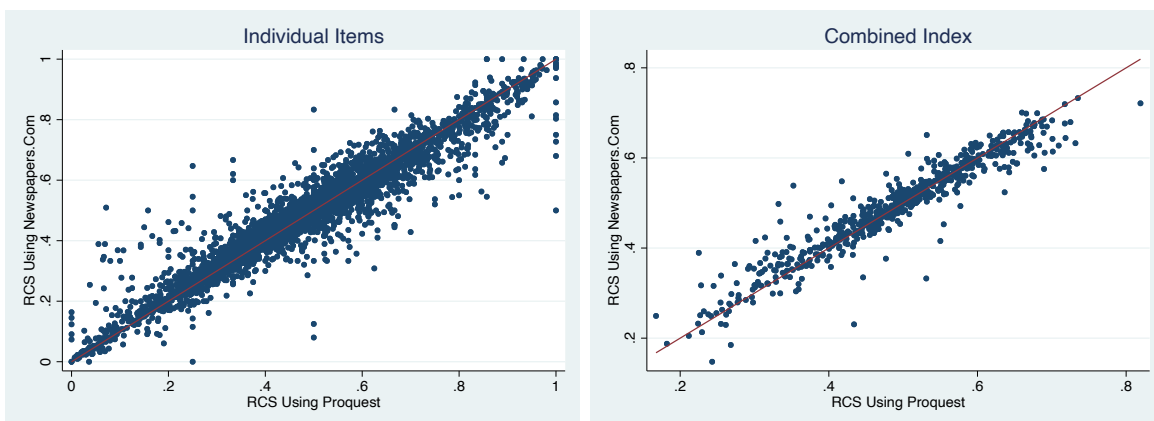


Figure 6: Newspaper-Year Article Hits versus Page Hits

Finally, we can conduct an analysis of the over time patterns similar to those above, comparing the *Newspapers.com* and *ProQuest* samples. This analysis is only suggestive, since there are only six Democratic newspapers and four Republican newspapers that are in both archives and in our multi-decade sample. Despite the small size of the overlapping sample, the trends in the *Partisan Gap* for the Combined Index for both measures are similar to that in Figure 1 based on the full multi-decade sample. That is, both exhibit long downward trends between 1900 and 1980 (see Appendix Figure A6).

## 7 Possible Explanations: Population, Voter Partisanship and Amount of Coverage

Why did newspaper partisan behavior decline during the 20th century? While answering this question is beyond the scope of this paper, in this section we present some empirical patterns that shed light on a few of the common explanations in the literature. Our findings

are not conclusive, but they do provide some guidance for future research in this area. All analyses in this section focus on the *Republican Coverage Share* of the Combined Index.

A standard argument is that as newspaper advertising markets became more lucrative, newspapers had a strong incentive to reduce their partisan slant to appeal to a broader cross section of readers. It would appear to be impossible to construct a comprehensive panel of information on newspaper advertising – including rates, line inches, and revenues – for the 100-year period we are studying.<sup>43</sup> However, two of the main determinants of advertising market size are population and income (or wealth). Regarding population, the number of consumers in a given market area is highly correlated with the population of that area, and advertising prices appear to be related to population as well – e.g., Hamilton (2004) finds that in 1880 city population is positively correlated with advertising rates. Regarding income, households with higher income can obviously afford to buy more consumer goods.

Since there is no consistently and regularly calculated income measure at the county level before 1950, we use population in the county where a newspaper circulates as a rough proxy for the size of the paper’s potential advertising market. Measures of wealth at the county level do exist for the period 1880 to 1912. We show below that using wealth in place of population does not significantly affect the substantive conclusions.

In our multi-decade sample, there are modest but statistically significant correlations between newspaper *Republican Coverage Share* and the population of the counties where newspapers are based. Measuring population in logs, for Republican newspapers the correlation is  $-0.30$  and for Democratic papers the correlation is  $0.35$ .<sup>44</sup> Thus, in both cases, the correlations indicate that newspapers based in more populous counties are less partisan.

However, accounting for county population does not significantly affect the overall pattern of convergence in *RCS* of Democratic and Republican newspapers. To see this, consider the following analysis. We run two regressions of *RCS* of the Combined Index on year-trends and newspaper fixed-effects, one that controls for the log of county population and one that does not. In the regressions we use third-order polynomials for both the log of population and year trend variables.<sup>45</sup> We then calculate the expected values of *RCS*, as predicted by the year-trend variables alone, for each of the two regressions. We do this separately for Democratic and Republican newspapers (as above, partisanship is defined using *Newspaper Party ID*).

---

<sup>43</sup>For example, Petrova (2011) restricts her analysis to the period 1881 to 1886 because these are the only years the *N. W. Ayers* directories published advertising rates.

<sup>44</sup>Population data are from the decennial U.S. Census with population imputed linearly between census years.

<sup>45</sup>Appendix Figure A7 shows the analogous figures using fifth-order polynomials.

The top left panel of Figure 7 shows that the two curves for Republican newspapers are quite similar to one another, as are the curves for Democratic newspapers.<sup>46</sup>

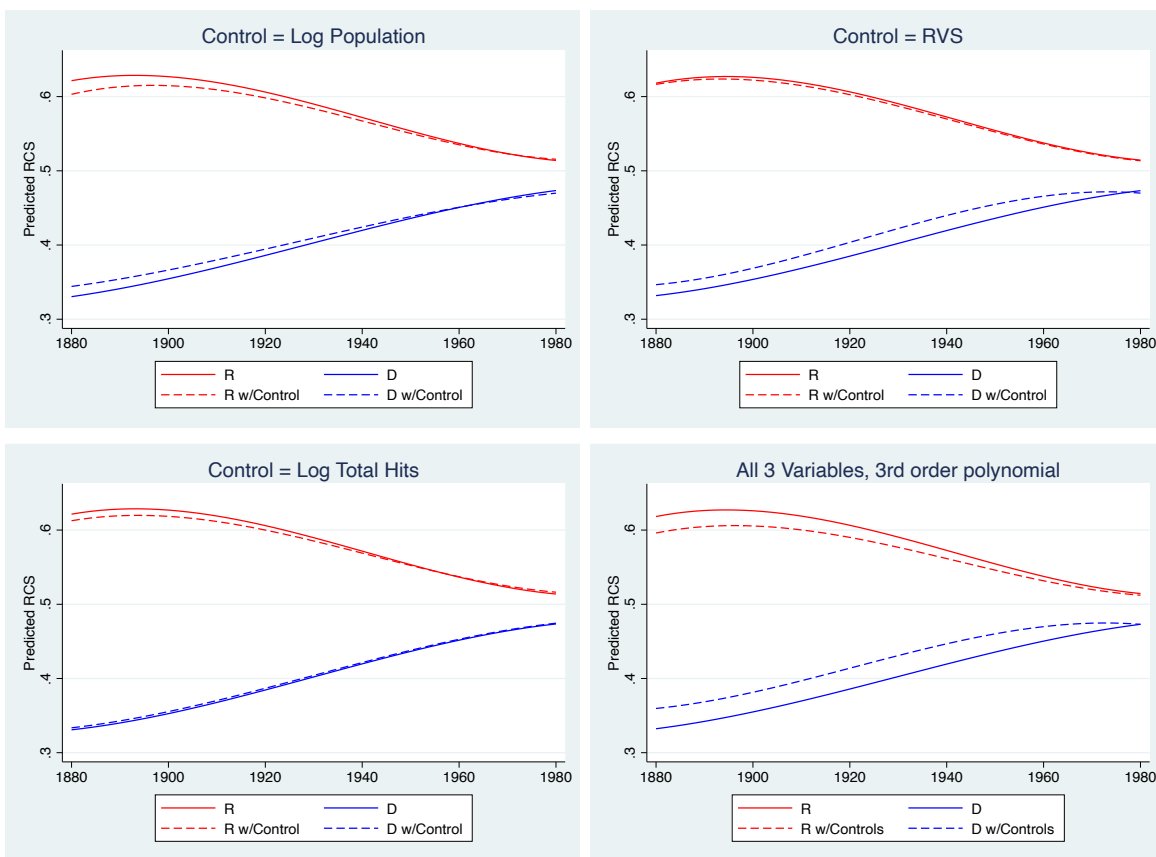


Figure 7: Predicted  $RCS$  of Combined Index, With and Without Controls for the Log of Population, Republican Vote Share and/or Log of Total Hits

Another potential explanation is that newspapers exhibited less partisan behavior over time in response to the changing political preferences of their readers. Let  $RVS_{it}$  be the average Republican party vote share in county  $i$  and year  $t$ .<sup>47</sup> Throughout the period

<sup>46</sup>In the regressions, an F-test for the joint significance of the five year-trend variables is always highly significant. This is also true for the three log population variables.

<sup>47</sup>For each county  $i$ , we compute  $RVS_{it}$  by taking the average of the Republican vote share in all elections for president, U.S. Senate, U.S. House and governor held in year  $t - 8$  to  $t$ . We drop the presidential vote in 1872, 1896 and 1912 because of the high vote shares for fusion and third party candidates. We keep elections in which there were both Democratic and Republican candidates on the ballot and no third party candidates received more than 15% of the vote. The county level data comes from *ICPSR Study Number 1 United States Historical Election Returns, 1824-1968* and *ICPSR Study Number 13 General Election Data for the United States, 1950-1990* with some additional cleaning and additions by the authors.

of study, but especially in the early decades, there is a large and positive correlation between both *Newspaper Party ID* and newspaper *Republican Coverage Share*, and the partisanship of the county where the newspaper circulates. For example, focusing on the period 1880 and 1910, the correlation between *RCS* and *RVS* is 0.54 and the correlation between *Newspaper Party ID* and *RVS* is 0.51. These correlations are consistent with hypothesis that newspaper partisan behavior is driven, at least in part, by reader demand, which previous researchers have also found (e.g., Gentzkow and Shapiro (2010)).

However, systematic changes in Republican vote share do not account for a large amount of the convergence in *RCS*. We ran an analysis analogous to that in the discussion immediately above, but with *RVS* in place of population. The resulting predicted values are displayed in the upper right-hand panel of Figure 7. The panel shows that the curves with and without the *RVS* control variables are quite similar to one another for Republican newspapers, and also for Democratic newspapers.<sup>48</sup>

This is perhaps not surprising, given the patterns we observe in *RVS* over time. In particular, the counties where Republican and Democratic newspapers circulated did not become steadily more similar in their partisan orientations. Consider the difference between the average *RVS* of counties where Republican newspapers circulated and the average *RVS* of counties where Democratic papers circulated. For the newspapers in our multi-decade sample, this difference did not decline monotonically over time. Instead the pattern is: first up from the 1880s to 1910s, then flat from the 1910s to 1950s, and then falling from the 1950s through 1970s.

Between 1880 and 1980 there was also an increase in the amount of coverage of the items in our Combined Index for the papers in our multi-decade sample.<sup>49</sup> There are a number of reasons higher levels of coverage on an issue might be associated with less partisan slant in the coverage. Some events are so important that almost any news outlet should consider them newsworthy. Examples might include the parties' national conventions and, within a state, the parties' state conventions, as well as contested primaries for U.S. president, U.S. senator, or governor. To the degree that these events occur equally often for both parties, higher coverage will be correlated with values of *RCS* closer to 0.5. Journalistic norms

---

<sup>48</sup>In the regressions, an F-test for the joint significance of the three year-trend variables is always highly significant. This is also true for the three *RVS* variables.

<sup>49</sup>Using the average hits for search terms associated with an item for 1898, 1900, 1902 and compare it to the average for 1976, 1978, 1980, we see that Committees increased 88%; Meetings/Rallies increased 9%; Conventions increased 38%; Primaries increased 476%; Forecasts/Wrap-ups increased 117%; and Boss/Machine increased 6%.

might also have changed over time, leading newspapers to devote more equal coverage to both parties. If papers do this mainly by expanding coverage of “the other side” because they do not want to reduce the coverage they support, then higher amounts of coverage will again be correlated with values of  $RCS$  closer to 0.5.

To measure the total amount of space newspapers devote to each item, we find the number of pages with at least one Democratic hit and the number of pages with at least one Republican hit, for that item, and sum them:  $T_{ijt} = R_{ijt} + D_{ijt}$ . We then calculate  $\bar{T}_{ijt}$  by averaging  $T_{ijt}$  across all six items in the Combined Index. Because  $\bar{T}$  is right skewed, we use the log of  $\bar{T}$  in our analyses. The correlations between the log of  $\bar{T}$  and  $RCS$  indicate that newspaper-years with higher  $\bar{T}$  are a bit less partisan. For Republican newspapers the correlation is  $-0.37$  and for Democratic papers the correlation is  $0.34$ .

Again, accounting for this factor, as was done for population and Republican vote share, does not significantly affect the overall pattern of convergence in  $RCS$  of Democratic and Republican newspapers. The bottom left-hand panel of Figure 7 shows that the curves with and without the log of  $\bar{T}$  as control variables are quite similar to one another for Republican newspapers, and also for Democratic newspapers.<sup>50</sup>

The bottom-right panel shows the predicted values from regressions that include all three variables together, again as third-order polynomials. Collectively they appear to account for a non-trivial amount of the convergence between Republican and Democratic newspapers. Most of the change, however, remains unexplained.

Returning to the issue of advertising market potential, as noted above we can compare wealth and population for the period 1880 to 1912 – the period of high partisan behavior.<sup>51</sup> Figure 8 is analogous to Figure 7 above but restricted to the period 1880 to 1912.<sup>52</sup> The panel on the left shows the predicted  $RCS$  values, with and without log of population as a control, and the panel on the right shows them with and without log of wealth as a control. The pairs of dashed lines showing that the residual differences in partisanship are similar whether log population or log wealth is included.

In sum, even after controlling for the variables we have explored above, it appears that a

---

<sup>50</sup>In the regressions, an F-test for the joint significance of the three year-trend variables is always highly significant. This is also true for the three  $\bar{T}$  variables.

<sup>51</sup>The measure of wealth that is available for the greatest number of years – 1880, 1890, 1900, 1904 and 1912 – is the total assessed value of real estate. The data are from the U.S. Census, as well as the *Report on Wealth, Debt and Taxation* produced by the Census Bureau. Measures that include personal wealth are also available in 1880 and 1912. The correlation between total wealth and real estate wealth is above 0.99 in both years. We deflate wealth by the consumer price index values from the Federal Reserve Bank of Minneapolis.

<sup>52</sup>Again, the year trends and controls are included as third-order polynomials.

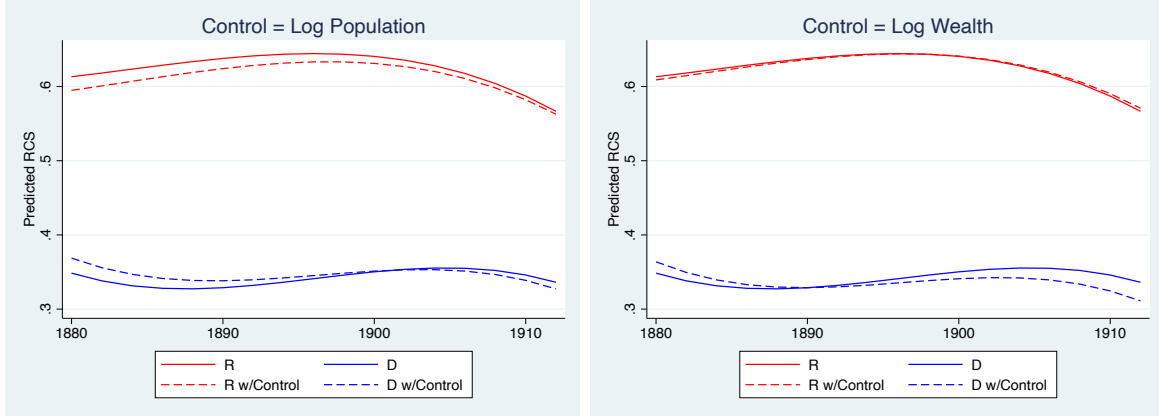


Figure 8: Predicted *RCS* of Combined Index, With and Without Controls for the Log of Population or Log of Wealth

substantial amount of the decline in newspaper partisan behavior remains unaccounted for. This does not necessarily mean that the theoretical arguments underpinning these variables are invalid. First, some of the variables capture a non-trivial amount of the cross-sectional variation. Second, the variables we use are rough proxies for the underlying theoretical concepts, and therefore the estimates may understate the actual relationships due to measurement error. Better measures might account for a larger share of the variation over time.

## 8 Conclusion

In this paper we develop two new measures of newspaper partisan behavior. We document: (1) a high degree of partisanship in the U.S. press between 1880 to 1900, consistent with the conventional wisdom; and (2) a long steady decline in partisan behavior in terms of both issue intensity and tone, beginning in 1900 or perhaps earlier, and continuing all the way until 1980. We also find no evidence of an increase in partisan polarization in coverage after 1980. We also provide some preliminary analyses of three potential explanatory variables, but we find that even collectively these variables only account for a small fraction of the total change.

We focus on long-term trends rather than cross-sectional variation. However, there is a large amount of variation in *Republican Coverage Share* even among papers with a Republican *Newspaper Party ID* and among those that are Democratic. For example, it appears that during the period 1880 to 1900, non-daily newspapers were more partisan than dailies

in their behavior. This is true even after controlling for population in the county where each newspaper circulates, as well as total coverage.<sup>53</sup> The *RCS* of Republican non-dailies is 0.032 higher than that of Republican dailies, while the *RCS* of Democratic non-dailies is 0.026 lower than that of Democratic dailies. These differences were potentially important because during this period there were many more non-dailies than dailies, and non-dailies accounted for more than sixty percent of total U.S. newspaper circulation.

Also, we have focused on newspapers with Democratic or Republican *Newspaper Party IDs*. Although less common around the turn of the 20th century, there were also independent, non-partisan, and third party newspapers. Interestingly, these tended to be less biased towards either the Democratic or Republican party in their coverage. For example, during the period 1880 to 1900, the average Combined Index *RCS* for these other papers is 0.54, which is close to the midpoint between the *RCS* for Democratic and Republican papers. The interquartile range is 0.47 to 0.60, which lies between the average *RCS* for Democratic and Republican newspapers of 0.35 and 0.66 respectively. The entry or exit of these other newspapers into local newspaper markets may have affected the partisan behavior of the Democratic and Republican newspapers. For example, competition from these papers may have forced partisan papers to moderate their behavior. This clearly deserves further investigation but is beyond the scope of this paper.

Clearly, much remains to be done to explain newspaper partisan behavior. Scholars have identified a number of factors that might affect newspaper partisanship, including: consolidations, internal party conflicts, institutional reforms, and new media (i.e., radio and television). Important internal party conflicts were produced by populism in 1890s, progressivism in 1910s, and the New Deal in the 1930s. Institutional reforms include changes in electoral laws such as the direct primary and non-partisan elections, as well as other reforms that affected traditional party organizations, such as the adoption of civil service laws. These are not “trending” variables, so individually none of them is likely to account for the pattern of decline we observe in the *Republican Coverage Share* variables. Collectively, however, they might account for a substantial amount of the long-term changes, especially if their effects on behavior were gradual. Some of them might also help account for some of the cross-sectional geographic variation.

One potential driver of a newspaper’s partisan behavior is the advertising potential of the newspaper’s market area. Following Hamilton (2004), we used county population as a

---

<sup>53</sup>As in section 7 above, we include county population in logs and  $\bar{T}$  as the control variables. We also include for state and year fixed-effects.



rough proxy of the size of each newspaper’s advertising market. However, much more needs to be done to explore this – e.g., incorporating income and other variables associated with consumer demand, and measuring more accurately the geography of each paper’s (potential) market area. Since population and income tend to be trending variables, it is possible that advertising potential could account for a significant portion of the trending in our measures.

Another variable that exhibits long-term trending – interrupted occasionally with shocks due to factors such as technological innovations and government policies – is the cost of ground transportation. For example, for most of the period 1890 to 2000, railroad shipping rates fell steadily, from about 18.5 cents per-ton-mile to about 2.3 cents (in 2001 dollars) (Glaeser and Kohlhase, 2004). This decline in costs, together with the introduction of trucking and the massive expansion and improvement in urban and suburban roads and highways, expanded the potential market area where newspapers could circulate. Thus, with time, many small-town newspapers in formerly isolated communities might have found themselves in competition with newspapers from larger neighboring towns and cities.<sup>54</sup>

The norms of journalistic professionalism also changed over time, and in particular “objectivity” became increasingly valued (Schudson, 1978). Measuring this is challenging, but one possible way to proceed is to investigate whether a newspaper’s behavior shifts when its owner or top editors change – for example, when an editor who was a party “insider” is replaced by someone without clear political ties.<sup>55</sup> Of course, each of these replacements is a discrete event. However, since turnover is a constant feature of the industry, when averaged over many newspapers it could appear as a trending variable.

Finally, although the measures here appear to capture meaningful variation across newspapers and over time, much more can be done with the massive online archives that exist and continue to grow. For example, a number of machine learning algorithms exist to analyze text and these continue to improve. Applying these techniques to the corpus of newspaper text should allow researchers to develop even more refined measures of partisan behavior – as well as other types of behavior – in coming years.

---

<sup>54</sup>Increased competition in a media market might increase or decrease the degree to which each newspaper in that market exhibits a partisan or ideological slant. See for example, (Mullainathan and Shleifer, 2005; Besley and Prat, 2006; Gentzkow and Shapiro, 2006).

<sup>55</sup>Party insiders include individuals who ran for office, served in party patronage positions, or held formal positions with a party.

## References

- Anderson, Simon P. and John McLaren. 2012. "Media Mergers and Media Bias with Rational Consumers." *Journal of the European Economic Association* 10(4).
- Baldasty, Gerald J. 1992. *The Commercialization of News in the Nineteenth Century*. Madison: University of Wisconsin Press.
- Bernhardt, Dan, Stefan Krasa and Mattias Polborn. 2008. "Political Polarization and the Electoral Effects of Media Bias." *Journal of Public Economics* 92(5-6).
- Besley, Timothy and Andrea Prat. 2006. "Handcuffs for the Grabbing Hand? Media Capture and Government Accountability." *American Economic Review* 96(3):720–736.
- Chan, Jimmy and Wing Suen. 2008. "A Spatial Theory of News Consumption and Electoral Competition." *The Review of Economic Studies* 75(3).
- Chan, Jimmy and Wing Suen. 2009. "Media as Watchdogs: The Role of News Media in Electoral Competition." *European Economic Review* 53(7):799–814.
- DellaVigna, Stefano and Matthew Gentzkow. 2010. "Persuasion: Empirical Evidence." *Annual Review of Economics* 2:643–669.
- Duggan, John and Cesar Martinelli. 2011. "A Spatial Theory of Media Slant and Voter Choice." *The Review of Economic Studies* 78(2).
- Eiteman, Wilford J. 1930. "The Rise and Decline of Orthodox Tariff Propaganda." *The Quarterly Journal of Economics* 45(1):22–39.
- Gentzkow, Matthew, Edward L. Glaeser and Claudia Goldin. 2006. The Rise of the Fourth Estate. How Newspapers Became Informative and Why It Mattered. In *Corruption and Reform: Lessons from America's Economic History*, ed. Edward L. Glaeser and Claudia Goldin. Chicago, IL: University of Chicago Press pp. 187–230.
- Gentzkow, Matthew and Jesse M. Shapiro. 2006. "Media Bias and Reputation." *Journal of Political Economy* 114(2).
- Gentzkow, Matthew and Jesse M. Shapiro. 2010. "What Drives Media Slant? Evidence from U.S. Daily Newspapers." *Econometrica* 78(1):35–71.

- Gentzkow, Matthew, Jesse M. Shapiro and Matt Taddy. 2019. “Measuring Polarization in High-Dimensional Data: Method and Application to Congressional Speech.” *Econometrica* 84(4):1307–1340.
- Gentzkow, Matthew, Jesse M. Shapiro and Michael Sinkinson. 2011. “The Effect of Newspaper Entry and Exit on Electoral Politics.” *American Economic Review* 101(7):2980–3018.
- Gentzkow, Matthew, Jesse M. Shapiro and Michael Sinkinson. 2014. “Competition and Ideological Diversity: Historical Evidence from US Newspapers.” *American Economic Review* 104(10):3073–3114.
- Glaeser, Edward L. and Janet E. Kohlhase. 2004. “Cities, Regions and the Decline of Transport Costs.” *Papers in Regional Science* 83(1):197–228.
- Groeling, Tim. 2013. “Media Bias by the Numbers: Challenges and Opportunities in the Empirical Study of Partisan News.” *Annual Review of Political Science* 16:129–51.
- Groeling, Tim and Matthew Baum. 2013. “Partisan News Before Fox: Newspaper Partisanship and Partisan Polarization, 1869-1992.” *Typescript* .
- Hamborg, Felix, Karsten Donnay and Bela Glpp. 2019. “Automated Identification of Media Bias in News Articles: An Interdisciplinary Literature Review.” *International Journal on Digital Libraries* 20:391–415.
- Hamilton, James T. 2004. *All the News That’s Fit to Sell: How the Market Transforms Information into News*. Princeton, NJ: Princeton University Press.
- Hirano, Shigeo and James M. Snyder, Jr. 2019. *Primary Elections in the United States*. New York: Cambridge University Press.
- Hiscox, Michael J. 1999. “The Magic Bullet? The RTAA, Institutional Reform, and Trade Liberalization.” *International Organization* 53(4):669–698.
- Jensen, Jacob, Suresh Naidu, Ethan Kaplan and Laurence Wilse-Samson. 2012. “Political Polarization and Dynamics of Political Language: Evidence from 130 Years of Partisan Speech.” *Brookings Papers on Economic Activity* pp. 1–81.
- Kaplan, Richard L. 2002. *Politics and the American Press: The Rise of Objectivity, 1865-1920*. New York: Cambridge University Press.

- Lawrence, David. 1928. "Reporting the Political News at Washington." *The American Political Science Review* 22(4):893–902.
- Lewis, Jeffrey B. 2020. "Polarization in Congress." [https://voteview.com/articles/party\\_polarization](https://voteview.com/articles/party_polarization).
- Martin, Gregory J. and Ali Yurukoglu. 2017. "Bias in Cable News: Persuasion and Polarization." *American Economic Review* 107(9):2565–99.
- McCarty, Nolan M., Keith T. Poole and Howard Rosenthal. 2016. *Polarized America: The Dance of Ideology and Unequal Riches, Second Edition*. Cambridge, MA: MIT Press.
- McGerr, Michael E. 1986. *The Decline of Popular Politics*. New York: Oxford University Press.
- Mullainathan, Sendhil and Andrei Shleifer. 2005. "The Market for News." *American Economic Review* 95(4):1031–1053.
- O'Halloran, Sharyn. 1994. *Politics, Process and American Trade Policy*. Ann Arbor, MI: University of Michigan Press.
- Petrova, Maria. 2011. "Newspapers and Parties: How Advertising Revenues Created an Independent Press." *American Political Science Review* 105(4):790–808.
- Puglisi, Riccardo and James M. Snyder, Jr. 2015. Empirical Studies of Media. In *Handbook of Media Economics*, ed. Simon P. Anderson, Joel Waldfogel and David Stromberg. Oxford, UK: Elsevier pp. 647–667.
- Ridout, Travis N. 2013. Introduction. In *New Directions in Media and Politics*, ed. Travis N. Ridout. New York: Routledge Press pp. 1–5.
- Rutenbeck, Jeffrey B. 1995. "Newspaper Trends in the 1870s: Proliferation, Popularization, and Political Independence." *Journalism & Mass Communication Quarterly* 72(2):361–375.
- Schudson, Michael. 1978. *Discovering the News: A Social History of American Newspapers*. New York: Basic Books.
- Shor, Boris and Nolan McCarty. 2011. "The Ideological Mapping of American Legislatures." *American Political Science Review* 105(3):530–51.

Welch, Richard E., Jr. 1965. "The Federal Elections Bill of 1890: Postscripts and Prelude."  
*The Journal of American History* 52(3):511–526.

## A Appendices

Here we present figures of the four main measures analyzed in the main text, for each of the six newspaper content items separately. Figure A1 presents the *Partisan Gap*. Figure A2 shows the *Within-State Partisan Gap*. Figure A3 displays the within-state standard deviation. Finally, Figure A4 shows the *Republican Coverage Share* for Democratic and Republican newspapers separately.

Note that since “boss” and “machine” are terms with negative connotations, a “pro-Republican” pattern of coverage would use these terms more in conjunction with the Democratic party than the Republican party. This is why the bottom right panels of Figures A1 and A2 are negative and tend towards zero over time.

In Figure A3, the Convention item exhibits an on-year / off-year presidential cycle due at least in part to the substantial coverage of the Democratic and Republican national conventions, which are held only in presidential years.

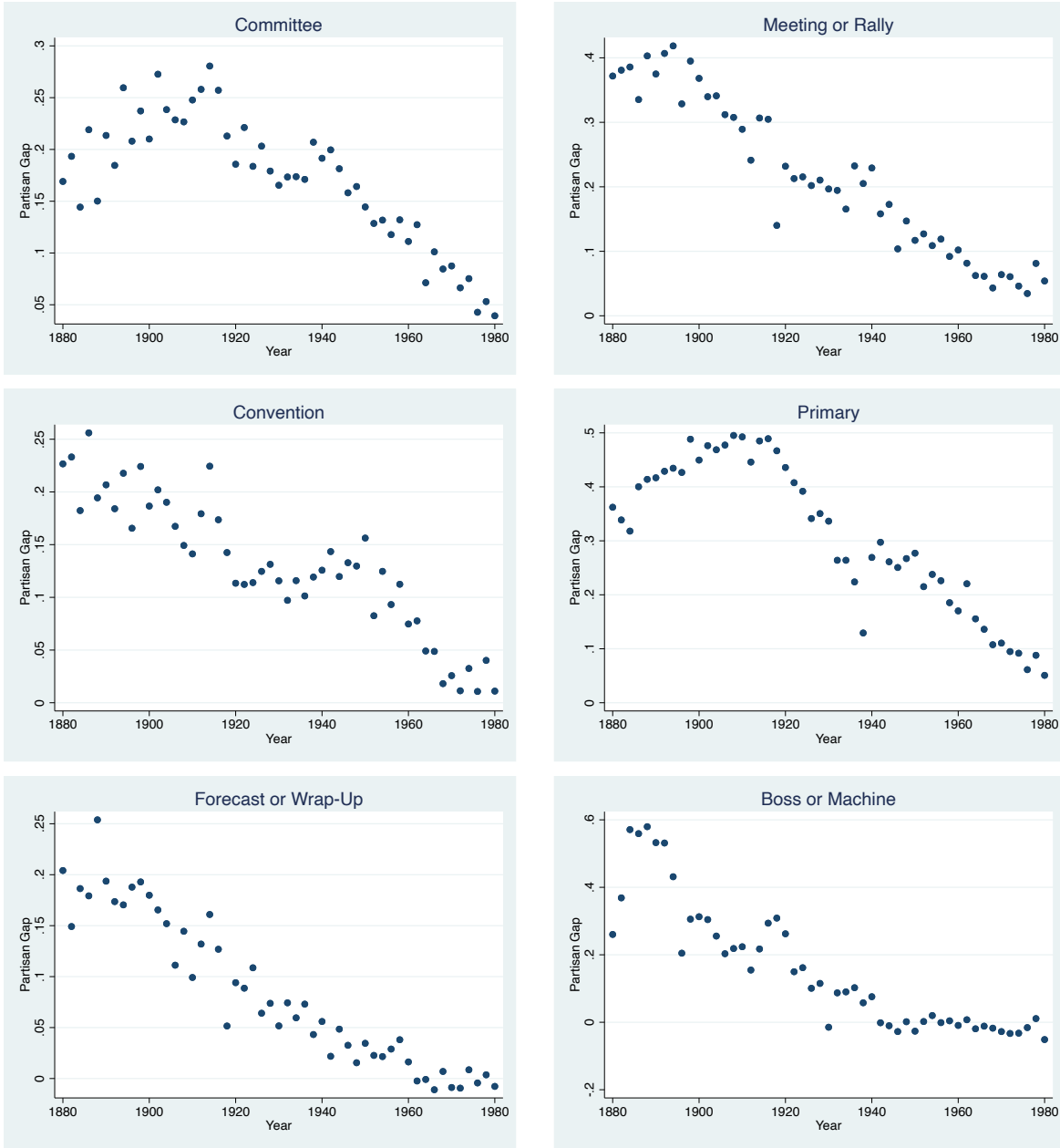


Figure A1: Partisan Gap Over Time, by Item

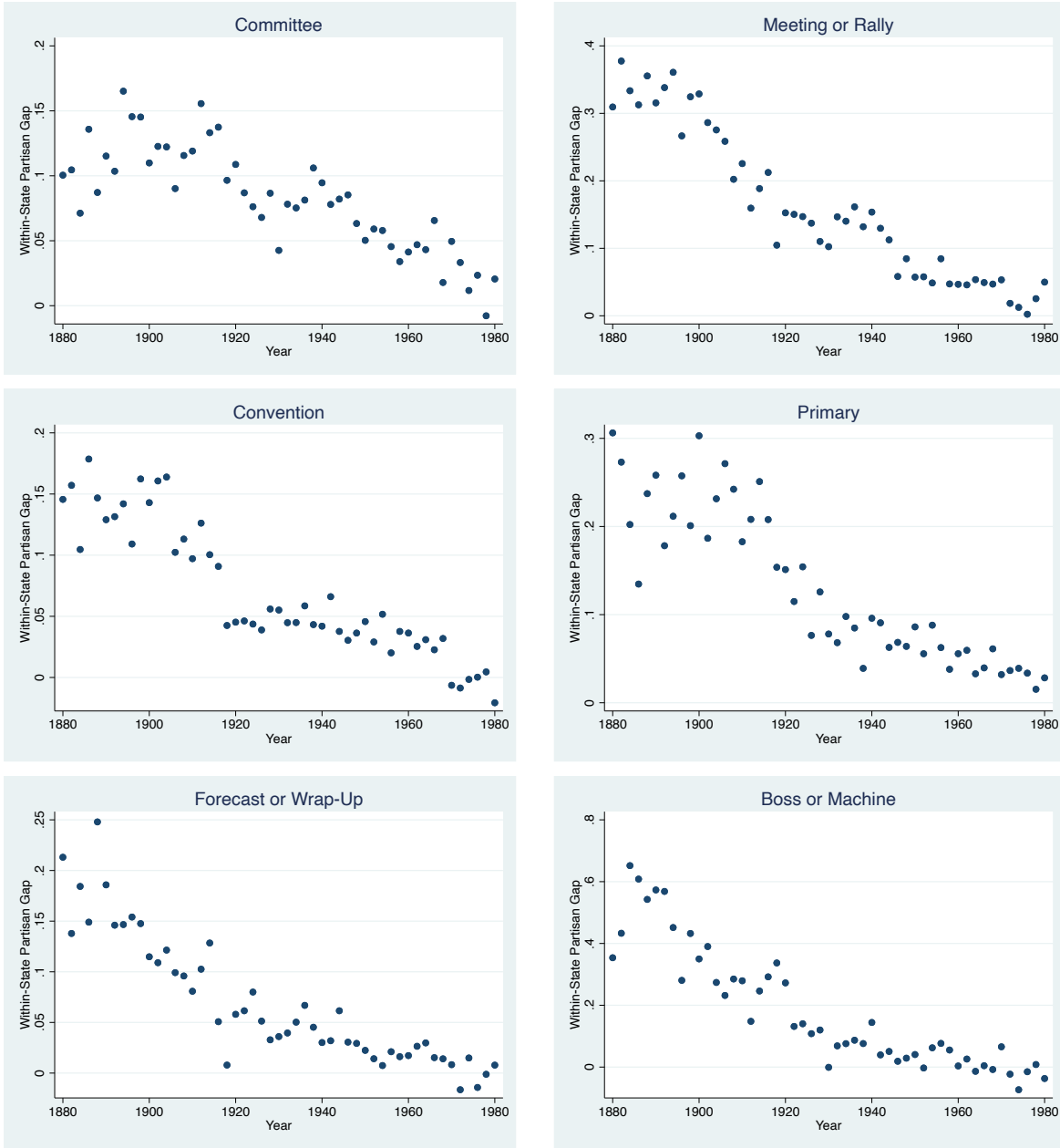


Figure A2: Within-State Partisan Gap Over Time, by Item



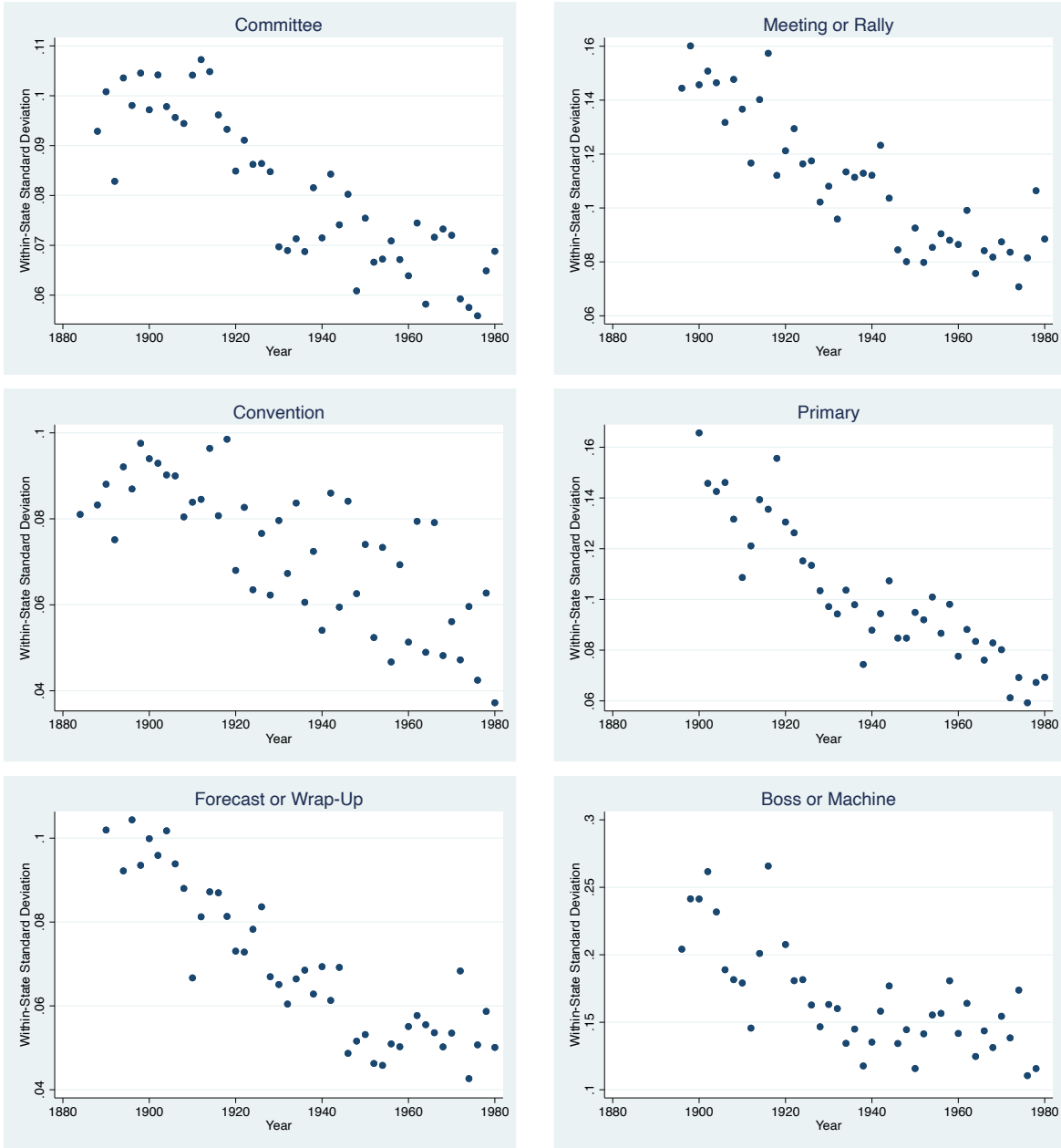


Figure A3: Within-State Standard Deviation Over Time, by Item

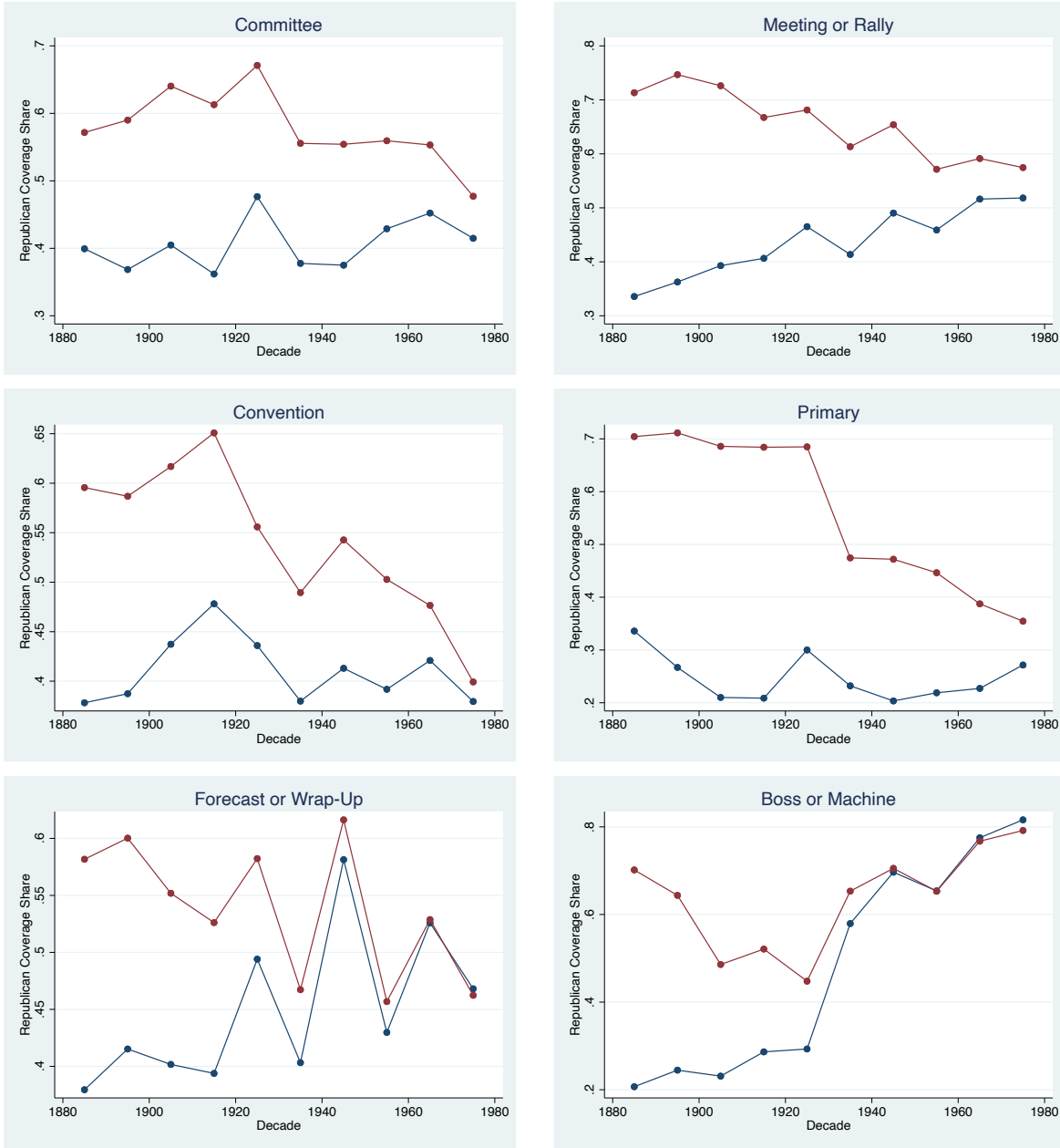


Figure A4: Republican Coverage Share by Party and Item

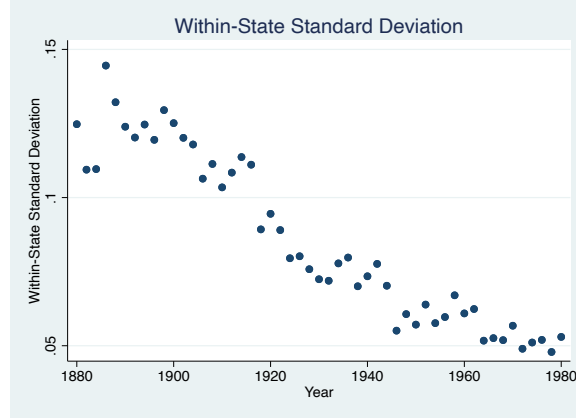


Figure A5: Average Standard Deviation, Combined Index, All Available Newspapers

Table A1: **ProQuest and Newspapers.com Overlap**

Newspaper Name	Overlapping Years
The Atlanta Constitution	1880 to 1980
The Austin American Statesman	1880 to 1980
The Baltimore Sun	1880 to 1980
The Boston Globe	1880 to 1980
Chicago Tribune	1880 to 1980
Cincinnati Enquirer	1880 to 1922
Detroit Free Press	1880 to 1980
Hartford Courant	1880 to 1980
Los Angeles Times	1881 to 1980
Louisville Courier Journal	1880 to 1980
The Nashville Tennessean	1910 to 1922
The New York Times	1880 to 1980
New York Tribune	1880 to 1922
Philadelphia Inquirer	1880 to 1980
Pittsburgh Courier	1911 to 1976
San Francisco Chronicle	1880 to 1922
St. Louis Post Dispatch	1880 to 1980
Wall Street Journal	1888 to 1922
The Washington Post	1899 to 1922

Figure A6 presents the *Partisan Gap* for the Combined Index over time. The Republican papers included in this measure are the *Hartford Courant*, *Chicago Tribune*, *Los Angeles*

*Times*, and *Philadelphia Inquirer*. The Democratic newspapers included are the *Atlanta Constitution*, *Austin American Statesman*, *The Boston Globe*, *Detroit Free Press*, *Louisville Courier Journal*, and *St. Louis Post Dispatch*. The left-hand side panel shows the gap using *Newspapers.com* page counts, while the panel on the right shows the gap based on *ProQuest* article counts. Both graphs reveal the same basic pattern, a long downward trend and a drop between 1960 and 1962.

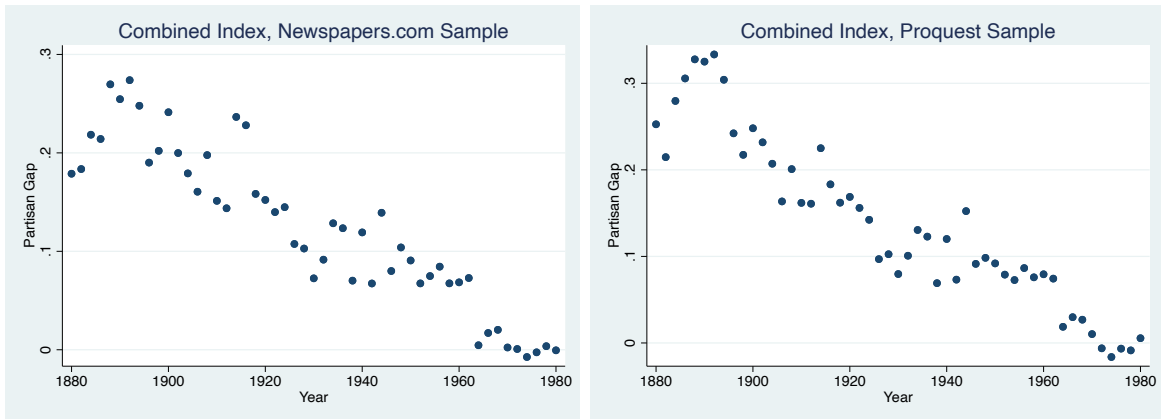


Figure A6: Partisan Gap Using Articles versus Pages to Measure Coverage

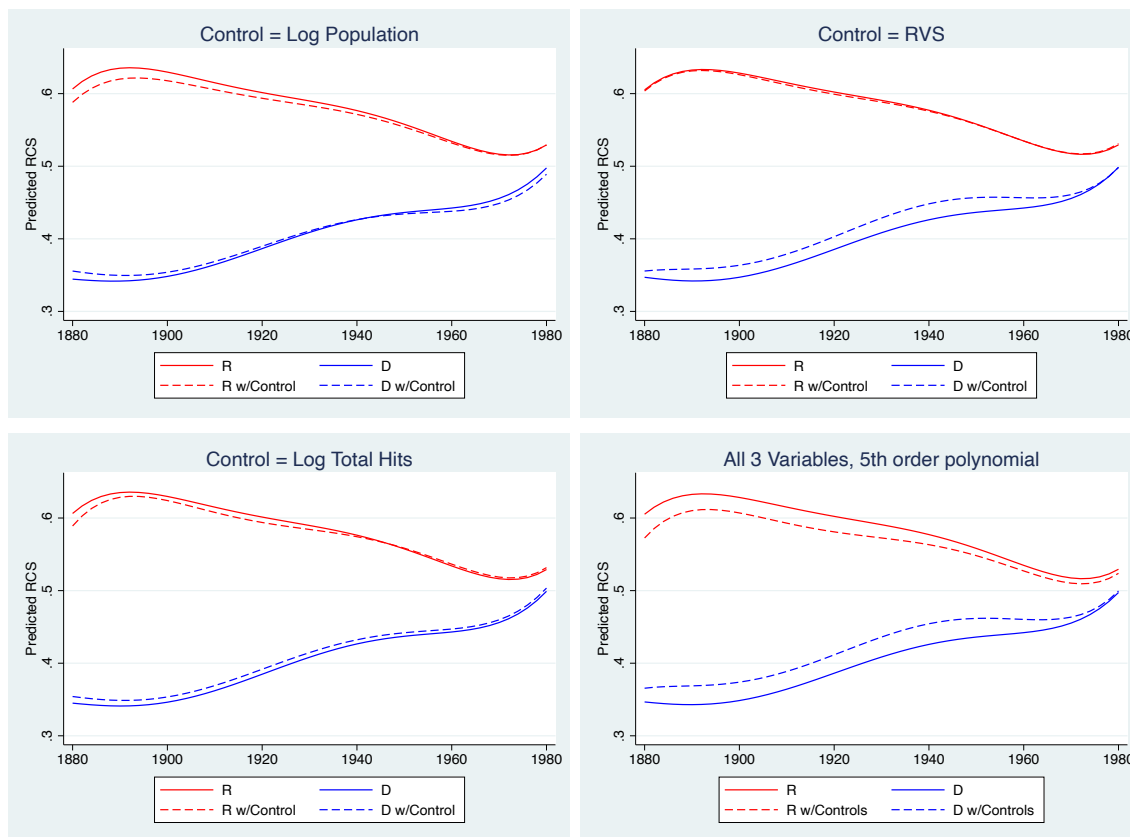


Figure A7: Predicted *RCS* of Combined Index, With and Without Controls for the Log of Population or Republican Vote Share