

Supplementary Material
“Newspaper Closures Polarize Voting Behavior”

Matching Balance Statistics: Placebo Test

We matched on the same covariates as in the analysis in the main text, exact matching on states and utilizing the genetic algorithm to construct optimal matches. The minimum p-value after matching is 0.386. Table S1 presents the matching balance statistics for the placebo analysis.

Table S1. Matching Balance Statistics, President-Senate Split Ticketing, Placebo Analysis.

	<i>Before Matching</i>			<i>After Matching</i>		
	Paper Closure Mean	No Paper Closure Mean	Bootstrapped KS-Test <i>p</i> -value	Paper Closure Mean	No Paper Closure Mean	Bootstrapped KS-Test <i>p</i> -value
Voting-age population (VAP)	626,682	91,204	<0.001	626682	568487	0.850
% White VAP	0.756	0.816	0.027	0.756	0.764	0.978
% Black VAP	0.084	0.058	<0.001	0.084	0.077	0.975
% Latino VAP	0.101	0.091	0.046	0.101	0.098	0.844
Median age	39.484	40.228	0.148	39.484	38.604	0.386
% female	0.502	0.500	0.467	0.502	0.503	0.615
Household median income	\$58,408	\$46,571	0.011	\$58,408	\$59,395	0.634
% some college (> age 25)	0.289	0.304	0.231	0.289	0.297	0.608
Broadband Providers (2008)	10.569	7.974	<0.001	10.569	10.211	0.854
County Partisanship (2008)	0.097	0.125	0.182	0.097	0.107	0.396
Latitude	40.571	38.893	0.049	40.571	39.789	0.622
Longitude	-89.010	-93.260	0.199	-89.010	-90.411	0.980

Auxiliary Placebo Test Results

We also conducted a placebo test on the effect of newspaper closures 2009-12 on split-ticketing in 2008. Although only 12 counties experienced closure and voted in a Senate election in 2008, we were able to obtain acceptable balance, as shown in Table S2. The minimum p-value after matching is 0.433. Therefore, we present the ATT of closure in Table S3. Once again, there is no statistically significant association between a newspaper closure and subsequent split-ticketing in a county. This finding further supports a causal interpretation of our primary result.

Table S2. Matching Balance Statistics, President-Senate Split Ticketing, Auxiliary Placebo Analysis.

	<i>Before Matching</i>			<i>After Matching</i>		
	Paper Closure Mean	No Paper Closure Mean	Boot-strapped KS-Test <i>p</i> -value	Paper Closure Mean	No Paper Closure Mean	Boot-strapped KS-Test <i>p</i> -value
Voting-age population (VAP)	215020	63,984	0.013	215020	276340	0.770
% White VAP	0.749	0.780	0.457	0.749	0.764	0.981
% Black VAP	0.078	0.074	0.096	0.078	0.081	0.740
% Latino VAP	0.112	0.115	0.723	0.112	0.096	0.443
Median age	38.783	40.209	0.510	38.783	38.508	0.775
% female	0.509	0.501	0.403	0.509	0.509	0.772
Household median income	\$51,126	\$44,666	0.011	\$51,126	\$51,357	0.773
% some college (> age 25)	0.300	0.300	0.568	0.300	0.298	0.770
Broadband Providers (2008)	9.323	7.941	0.148	9.323	9.381	0.984
County Partisanship (2008)	0.121	0.147	0.273	0.121	0.126	0.800
Latitude	40.487	37.980	0.196	40.487	40.632	0.771
Longitude	-89.317	-93.965	0.405	-89.317	-88.790	0.772

Table S3. Average Treatment Effect on the Treated, Auxiliary Placebo Test.

	President-Senate Split-Ticket Voting
Estimated ATT	-0.015
Abadie-Imbens Standard Error	0.014
T-statistic	-1.081
p-value	0.280
N treated	12
N control (unweighted)	12

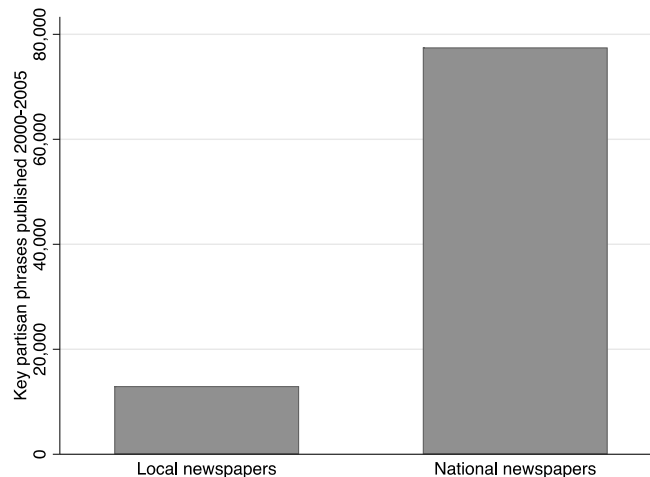
Supplemental Analysis on Partisan Cues in Local and National Media Gentzkow & Shapiro (2010) Content Analysis Data

The idea that partisan content is more common in national news than in local news is crucial to our analyses. Though this idea is indirectly supported in extant literature (Padgett, 2014; Arceneaux & Johnson, 2015; Müller et al, 2017; van Klingeren, Boomgaarden, & de Vreese, 2017), we do not directly assess this supposed difference in our manuscript. In order to test this key assumption, we turn to a reanalysis of previously published data on this topic. We used the newspaper data file from Gentzkow & Shapiro (2010; ICPSR replication data file number 26242-001-Data) to offer empirical evidence on differences in partisan cues in stories published by local and national newspapers. Though their measure of partisan slant requires calculating the proportion of Republican and Democrat phrases by newspaper, their replication data also contain the raw counts, which essentially provides for us a comparable tally of stories with key partisan phrases (partisan cues) at the newspaper level. The G&S dataset includes more than 400 local daily newspapers, plus four newspapers widely considered to be national level media outlets: *The New York Times*, *The USA Today*, *The Wall Street Journal* and the *Washington Post*. The data provide a newspaper level measure of the total count of published news articles containing key partisan phrases (TOTCOUNT), which allows for a comparison of partisan cues in stories published by local and national newspapers.

These data are not perfect for our purposes, in the sense that they only provide an analysis of a particular type of partisan cue (based on the utterances of Congressional elites), and because they are count-based which means that the relative size of the local and national newspapers complicates our ability to make comparisons. To enable comparisons between national and local newspapers (which are of such different sizes) we supplemented these data with newspaper circulation rates and a measure of the size of each newspaper's available space

for news (their “news hole” or the total number of news articles published in 2005). We base the latter on Hayes & Lawless (2018) technique which finds the total number of news articles published by newspapers in a given year by limiting article searches in the news archive database to year and paper only. Though this measure produces some error due to slight differences in how papers archive articles (see Hayes & Lawless 2018), it is the most reliable way we are aware of for accounting for the size of a newspaper’s space for news articles.

Figure S1. Partisan phrases published from 2000-2005 in local and national newspapers.



Note. Data from Gentzkow and Shapiro (2010), ICPSR data file 26242-001-Data.

Figure S1 shows clearly that national newspapers publish significantly more partisan phrases than local newspapers. Without assessing these results in relation to the total content published by each newspaper, however, this could be a function of relatively higher resources or more space devoted to news by these national newspapers. To account for these possibilities, we perform a negative binomial count regression modelling total number of partisan cues in the Gentzkow & Shapiro data, from 2000 to 2005, as a function of being a national newspaper and the logarithm of circulation size in 2005. We use the “offset” function of the ‘nbreg’ command in

Stata to account for the available space for news in each newspaper (measured by the natural logarithm of the total number of articles on Newsbank for each newspaper in 2005), and control for circulation to account for the resources available to each newspaper.

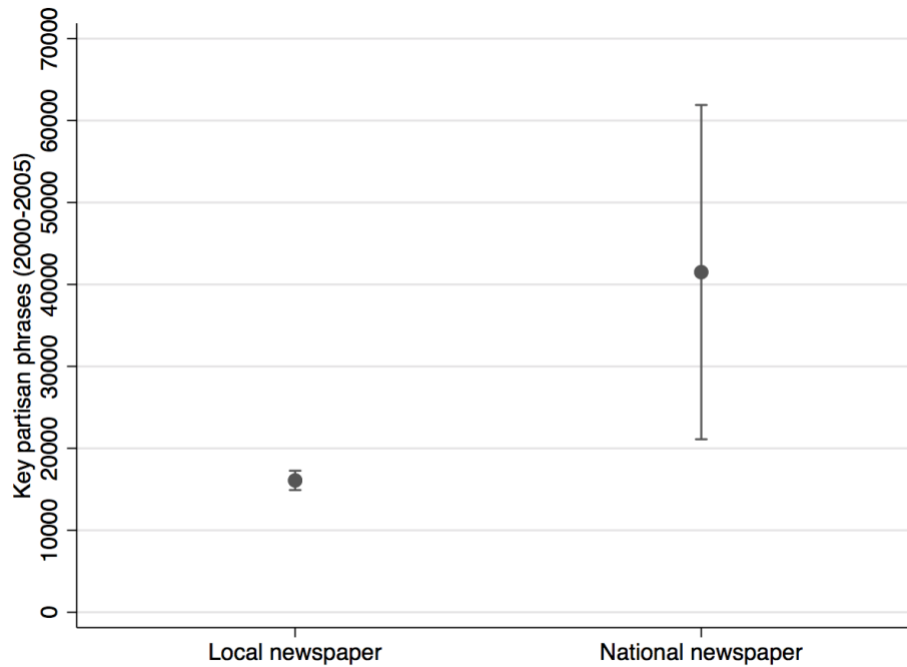
In Table S4, we observe a positive and significant effect for national newspapers, even while controlling for circulation rates. The predicted marginal effects, presented in Figure S2, reveal that the national newspapers dedicate significantly more space to news stories with partisan cues relative to local newspapers.

Table S4. Partisan phrases in national newspapers compared to partisan phrases in local newspapers, 2000-2005. Negative binomial regression, offset using the natural logarithm of the 2005 total published articles to constrain coefficient to 1.

	(1) Total key partisan phrases, 2000-2005
National newspaper	0.948*** (0.258)
Log(Circulation)	0.026 (0.024)
Constant	-0.709*** (0.263)
Observations	317

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Figure S2. Predicted marginal effects of partisan phrases in national newspapers compared to partisan phrases in local newspapers, 2000-2005.



Note. Data from Gentzkow and Shapiro (2010), ICPSR data file 26242-001-Data.

The Gentzkow & Shapiro data allow for a robust, content analysis-based test for differences in partisan cues between local and national media coverage. However, there are a few limitations and caveats worth mentioning. The first limitation is that the Gentzkow & Shapiro data are based on newspaper coverage ending in 2005, which is near the beginning of the period in which Hayes & Lawless (2018) identify a trend in which national news is taking up a growing proportion of local media news hole. These data were also gathered well before the local media ownership changes Martin and McCrain (2018) observe in 2017, which served to increase the partisanship in local television news. It is possible that the changes that occurred after 2005 were eventually significant enough to erode any systematic differences between the amounts of space national and local newspapers dedicate to stories with partisan cues. Overall, however, we believe that these analyses demonstrate a clear difference in the partisan content of local and national news that remained in place for the time period we observe.