# The Effect of Newspaper Entry and Exit on Electoral Politics
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## Web Appendix

# 1 Sources of Voting Data

Our primary source for county-level voting data is a set of data files generously provided by James Snyder, which in turn are based on ICPSR Study 8611, *Congressional Quarterly*, and other public sources. From these files we obtain vote totals by party and year at the county level for presidential, congressional, senate, and gubernatorial elections from 1868-1990.

For years 1990 and onward for senate and gubernatorial elections, and for years 2000 and 2004 for presidential elections, we use data on county-level vote totals from files purchased from David Leip through uselectionatlas.org. For years 1990-1996, we use data on county-level vote totals for presidential elections from USA Counties 1998. We do not have a source for county-level vote totals in congressional elections after 1990.

From the files provided by Snyder, we obtain vote totals by party and year at the congressional district level for congressional elections, as well as the major party affiliation of the incumbent candidate (if any), from 1868-2004. When the winning candidate ran on both a major and minor party ticket, we coded the major party as the incumbent candidate's party in the subsequent election.

The files provided by Snyder contain a crosswalk from counties to congressional districts by year for 1868-1988. We use this crosswalk to match newspaper locations to congressional districts. A small number of county-years are not matched to congressional districts. We do not have a source for matching counties to congressional districts after 1988.

We obtain data on the number of eligible voters by county and year for 1868-1972 from ICPSR 8611. These data are constructed through a linear interpolation of decennial Census figures using age, race, sex and citizenship criteria. We supplement these data through 2004 using a linear interpolation of decennial Census figures that follows the methodology of ICPSR 8611. For the year 1972, in which our calculations overlap with ICPSR 8611, the two estimates are close on average.

We obtain data on the timing of redistricting at the state level through 1980 from Martis' (1982) *Historical Atlas of United States Congressional Districts*.

# 2 Additional Summary Statistics

Table 1 breaks down the events in our data by the number of papers before and after. We observe a large number of entries and exits of monopoly newspapers, as well as a large number of changes in the structure of competitive markets.

Figure 1 gives an overview of our data. Panel A shows the number of daily newspapers by year. Panel B shows the number of counties with one, two, and three or more newspapers.

Figure 2 shows the distribution of these net entries and net exits by year. The figure makes clear that the number of events declines throughout the twentieth century, but remains nontrivial even in recent years.

## 3 Estimates for Gubernatorial and Senate Elections

In table 2, we report results on the effect of newspaper entry and exit on gubernatorial elections. Because we are only able to include county years in which gubernatorial and presidential elections coincide, our sample size for this exercise is smaller than in the analysis of presidential or congressional elections.

In column (1), we report effects of entry/exit events on gubernatorial turnout. Aside from the dependent variable, the specification is identical to columns (2) and (3) of table 5 of the main paper. The results look similar to the results for congressional turnout reported in table 5 of the main paper, with marginally significant positive effects in the newspaper period, smaller effects in the radio period, and positive but less precisely estimated effects in the television period. As expected given the smaller sample, the standard errors are larger than in the estimates for congressional turnout.

In column (2), we report effects of entry/exit events on the Republican vote share. These specifications parallel columns (3) and (4) of table 6 of the main paper. As with other types of elections, we find no statistically significant evidence of persuasive effects and can rule out positive coefficients greater than about a tenth of a percentage point.

In table 3, we report results on the effect of newspaper entry and exit on senate elections. Prior to the passage of the 17th Amendment to the Constitution in 1913, Senators were not directly elected. We therefore restrict this analysis to the radio period (1932-1952) and television period (1956-2004) as defined in the main paper. Moreover, because senators serve terms of 6 years, not every county has a senate election in every presidential year. Our dependent variables—the change in turnout and Republican share in Senate election—are therefore only defined for presidential election years in which a given county had a senate election in both the current and previous presidential election year. Note that the current and previous elections we are differencing will not typically be for the same Senate seat.

In column (1), we report effects of entry/exit events on senate turnout. In column (2), we report effects on the Republican vote share. In neither case do we find evidence of statistically significant effects.

## 4 Additional Results

Table 4 shows how the effect of newspapers on party vote shares varies with market competition. Column (1) shows that as predicted, the effect of entries and exits on the balance of readership interacts strongly with the number of papers. Monopoly entries shift the readership share by approximately one. Second newspapers shift it by about 46 percentage points and third and later entrants by about 27 percentage points. Columns (2) and (3) present effects on presidential and congressional vote shares respectively. In no case do we detect a significant effect of events. If anything, the coefficient on duopoly papers tends to be larger than the coefficient on monopoly papers, possibly reflecting the role of endogenous positioning. However, we cannot reject the hypothesis that all the coefficients are equal to zero, either individually or jointly.

In table 5 we present estimates of the effect of entries and exits of partisan papers on the Republican share of the two-party vote, using a stricter definition of partisanship than that employed in the main results. Here, we define a paper as Republican (Democratic) if and only if it declares a Republican (Democratic) affiliation in all years of its existence. We therefore consider as non-partisan any newspaper that ever declares itself to be Independent or otherwise unaffiliated. We find no statistically significant evidence of effects on presidential or congressional vote shares. The point estimate shows a larger effect on presidential vote shares and a smaller effect on congressional vote shares than in our main specifications, with the standard errors larger due to the smaller number of events.

In table 6 we present estimates that separate the effect on turnout of an increase in the number of newspapers from the effect of a decrease. In this specification we interact the change in the number of newspapers with a dummy for whether the change is positive or negative. We find no statistically significant difference between the effects of increases and decreases.

In table 7 we present estimates using alternative methods to adjust our estimates for serial correlation. In rows (2) and (3) only the method of adjusting the standard errors changes. In rows (4) through (6) the method of computing point estimates changes as well. In all cases the point estimates and standard errors are similar to those in our baseline models.

Figure 3 shows the effect of the entry and exit of partisan papers on the Republican share of circulation.

Figure 4 presents a graphical analysis of the effect of newspapers on the incumbency advantage, parallel to the main figures in the paper.

**Table 1:** Market structure transition matrix

| | After | | | | |
|---|---|---|---|---|---|
| Before | 0 | 1 | 2 | 3 | 4+ |
| 0 newspapers | | 1419 | 294 | 53 | 48 |
| 1 newspaper | 574 | | 831 | 103 | 20 |
| 2 newspapers | 39 | 1061 | | 532 | 86 |
| 3 newspapers | 8 | 60 | 657 | | 292 |
| 4+ newspapers | 0 | 8 | 69 | 354 | |

Notes: Table shows number of county-years in sample experiencing a given transition. Time period is 1868-2004.

**Table 2:** The effect of newspapers on gubernatorial elections

| | Gubernatorial Turnout (1) | Gubernatorial Vote Share (2) |
|---|---|---|
| Effect of having at least one newspaper: | | |
| Newspaper period | 0.0073 | |
| (1868-1928) | (0.0036) | |
| Radio period | -0.0003 | |
| (1932-1952) | (0.0035) | |
| Television period | 0.0088 | |
| (1956-2004) | (0.0087) | |
| Effect of (#Rep - #Dem) papers | | -0.0016 |
| | | (0.0014) |
| $F-test$ of equality of coefficients | 1.279 | |
| $p-value$ | 0.2787 | |
| $R^2$ | 0.562 | 0.679 |
| Number of counties | 1163 | 896 |
| Number of county-years | 25393 | 8212 |

Notes: Standard errors in parentheses are clustered by county. All specifications include state-year fixed effects. Demographic controls are changes in county demographics as defined in section 2.4, with dummies included for missing data.

**Table 3:** The effect of newspapers on senate elections

| | Senate Turnout (1) | Senate Vote Share (2) |
|---|---|---|
| Effect of having at least one newspaper: | | |
| Radio period | 0.0050 | |
| (1932-1952) | (0.0058) | |
| Television period | -0.0006 | |
| (1956-2004) | (0.0036) | |
| Effect of (#Rep - #Dem) papers | | |
| Radio period | | -0.0004 |
| (1932-1952) | | (0.0036) |
| Television period | | -0.0003 |
| (1956-2004) | | (0.0037) |
| $F-test$ of equality of coefficients | 0.694 | 0.000 |
| $p-value$ | 0.4050 | 0.9870 |
| $R^2$ | 0.645 | 0.852 |
| Number of counties | 1488 | 1488 |
| Number of county-years | 10591 | 9854 |

Notes: Standard errors in parentheses are clustered by county.
All specifications include state-year fixed effects.
Demographic controls are changes in county demographics as defined in section 2.4, with dummies included for missing data.

**Table 4:** Vote share effects by number of newspapers

| | Circulation Rep Share - Dem Share (1) | Presidential Vote Share (2) | Congressional Vote Share (3) |
|---|---|---|---|
| (#Rep - #Dem) newspapers: | | | |
| 1 newspaper | 0.9472 | 0.0007 | 0.0025 |
| | (0.0055) | (0.0017) | (0.0031) |
| 2 newspapers | 0.4586 | 0.0011 | 0.0043 |
| | (0.0045) | (0.0012) | (0.0025) |
| 3+ newspapers | 0.2715 | -0.0003 | 0.0008 |
| | (0.0067) | (0.0011) | (0.0020) |
| $F-test$ of equality of coefficients | 7455.9 | 0.582 | 0.940 |
| $p-value$ | 0.000 | 0.559 | 0.391 |
| $R^2$ | 0.911 | 0.736 | 0.351 |
| Number of counties | 1181 | 1195 | 1191 |
| Number of county-years | 11281 | 15401 | 14295 |

Notes: Standard errors in parentheses are clustered by county. Time period is 1868-1928. Models are estimated in first differences. All specifications include state-year fixed effects and demographic controls as defined in section 2.4, with dummies included for missing data.

**Table 5:** Effects of consistently partisan papers on Republican vote share

| | Presidential Vote Share (1) | Congressional Vote Share (2) |
|---|---|---|
| (#Rep-#Dem) newspapers | 0.0016 | 0.0019 |
| (Consistently partisan papers only) | (0.0012) | (0.0023) |
| Demographic controls? | yes | yes |
| $R^2$ | 0.736 | 0.351 |
| Number of counties | 1195 | 1191 |
| Number of county-years | 15401 | 14295 |

Notes: Standard errors in parentheses are clustered by county. All specifications include state-year fixed effects. Demographic controls are changes in county demographics as defined in section 2.4, with dummies included for missing data. Consistently partisan papers are those that declare a Republican or Democratic affiliation in each year of their existence.

**Table 6:** Turnout effects by increase/decrease

| | Presidential Turnout |
|---|---|
| Effect of a newspaper: increase | 0.0038 |
| | (0.0013) |
| Effect of a newspaper: decrease | 0.0027 |
| | (0.0013) |
| $F-test$ of equality of coefficients | 0.364 |
| $p-value$ | 0.5465 |
| $R^2$ | 0.579 |
| Number of counties | 1195 |
| Number of county-years | 15627 |

Notes: Standard errors in parentheses are clustered by county. All specifications include state-year fixed effects. Demographic controls are changes in county demographics as defined in section 2.4, with dummies included for missing data.

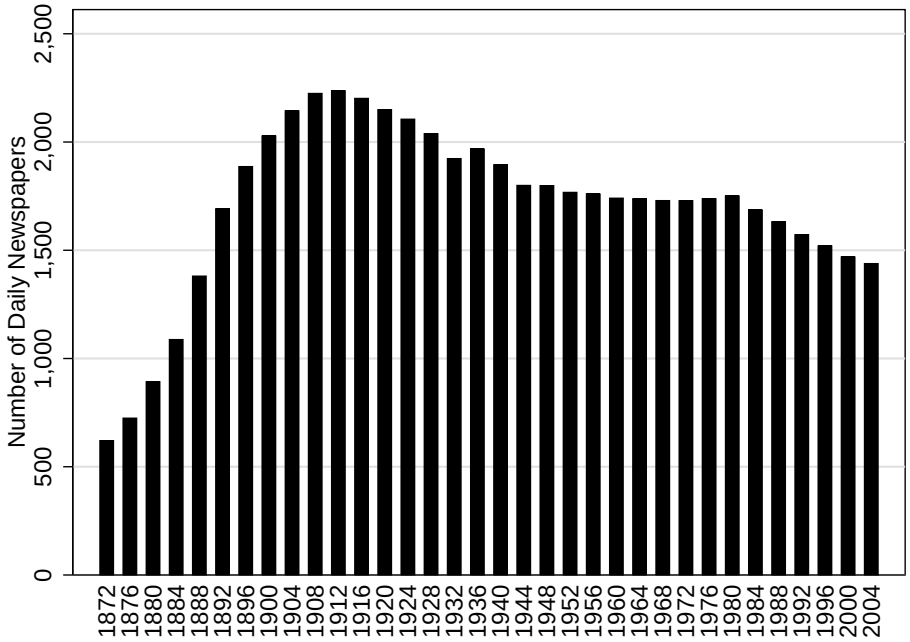
**Table 7:** Alternative adjustments for serial correlation

| | | Turnout | Vote Share |
|---|---|---|---|
| (1) | Baseline | 0.0034 | 0.0002 |
| | | (0.0009) | (0.0010) |
| (2) | Block bootstrap by county | 0.0034 | 0.0002 |
| | | (0.0008) | (0.0010) |
| (3) | Cluster standard errors | 0.0034 | 0.0002 |
| | by state-decade | (0.0010) | (0.0010) |
| (4) | County-level random effects | 0.0034 | 0.0002 |
| | | (0.0010) | (0.0010) |
| (5) | AR(1) within county | 0.0033 | 0.0001 |
| | | (0.0009) | (0.0010) |
| (6) | AR(2) within county | 0.0032 | 0.0001 |
| | | (0.0009) | (0.0010) |

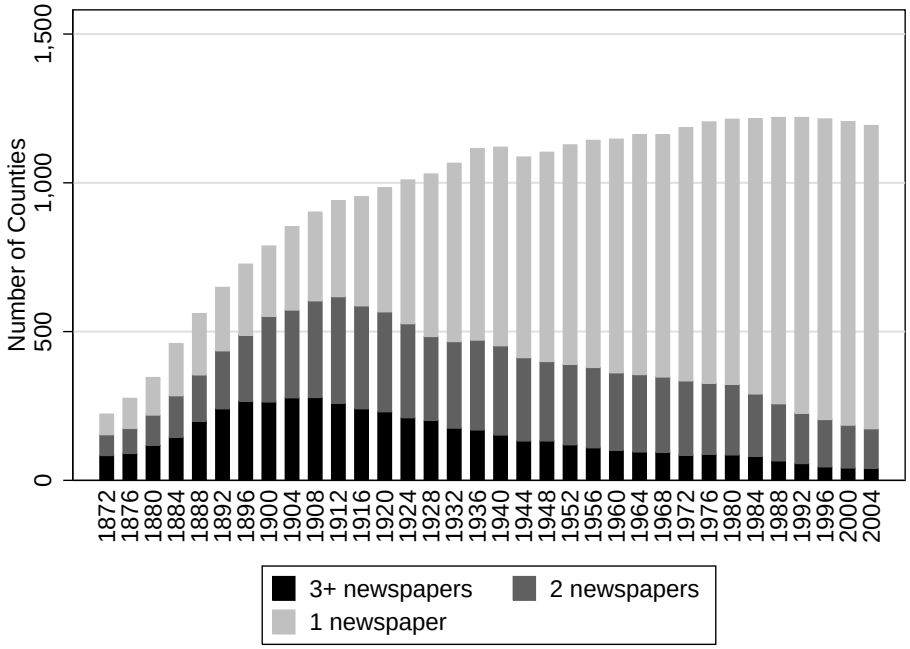
Notes: Rows (1), (2), and (5) reproduce specifications from the Appendix Table in the paper. Row (1) reproduces our main estimates. Row (2) computes bootstrapped standard errors using a block bootstrap at the county level. Row (3) clusters standard errors by state-decade. Row (4) estimates a model with a county-level random effect. Row (5) estimates a model allowing for an AR(1) error structure within county. Row (6) allows for an AR(2) error structure within county.

**Figure 1:** Summary statistics

Panel A: Number of daily newspapers by year

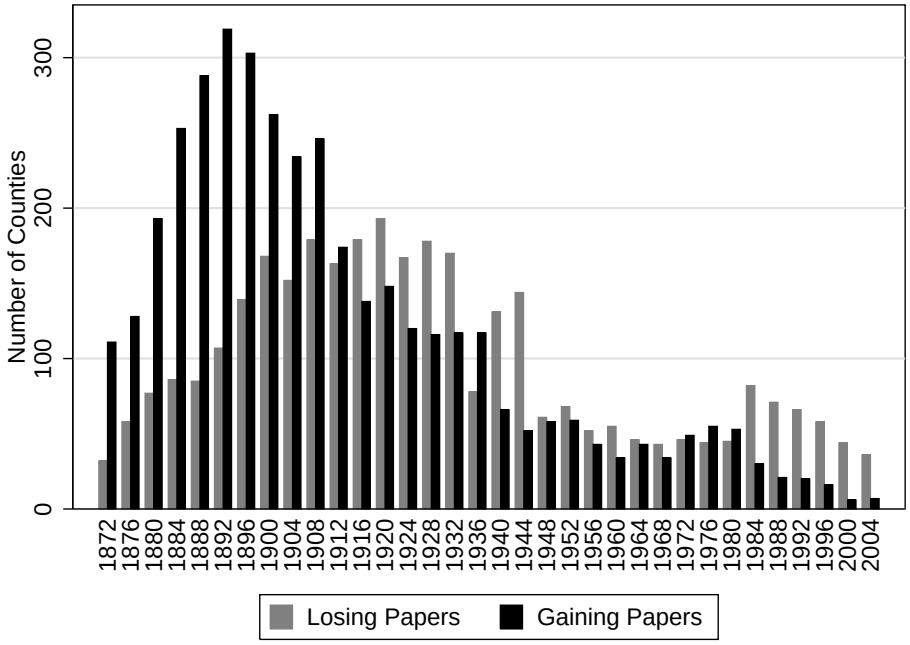



Panel B: Number of counties by number of papers



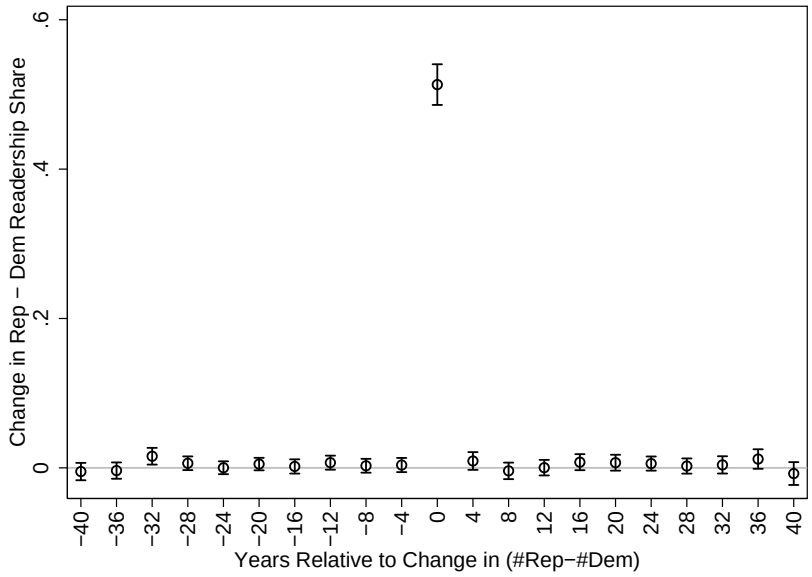

Notes: Panel A shows the number of English-language daily newspapers by year in presidential election years. Panel B shows the number of counties with a given number of newspapers in each presidential election year.

**Figure 2:** Number of entry and exit events by year




Notes: Figure shows the number of counties experiencing an increase/decrease in the number of English-language daily newspapers between a given presidential election year and the previous presidential election year.

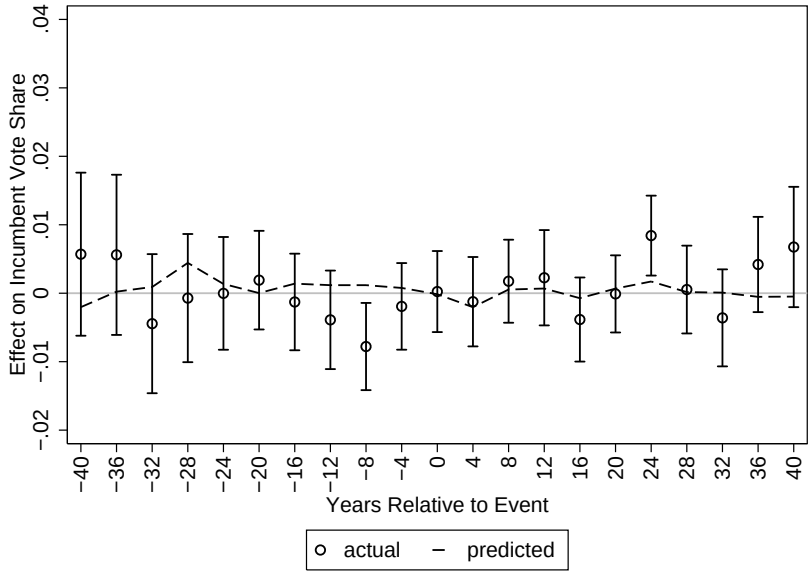
**Figure 3:** Republican share of readership and newspaper entries/exits



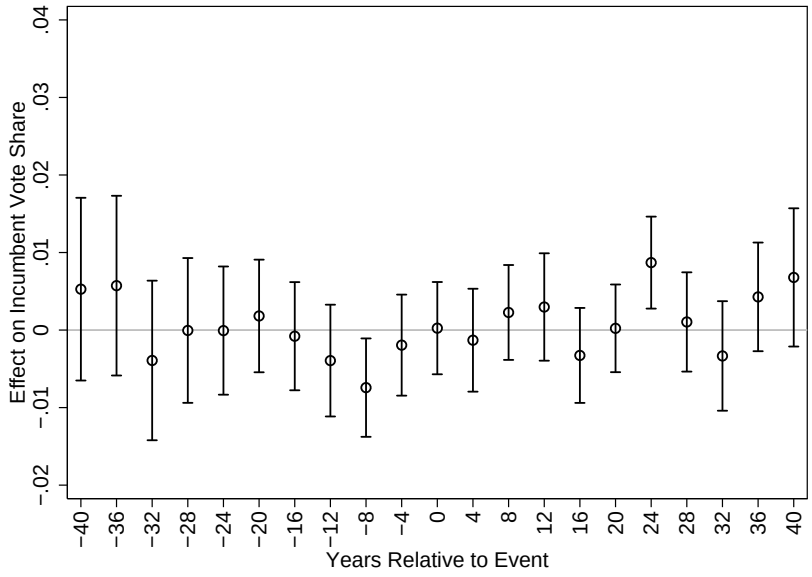

Notes: Figure shows coefficients from a regression of changes in the difference between the Republican and Democratic share of newspaper readership on a vector of leads and lags of changes in the difference in the number of Republican and Democratic newspapers. Models include state-year fixed effects. Error bars are $\pm 2$ standard errors. Standard errors are clustered by county. Time period is 1868-1928.

**Figure 4:** Incumbency advantage and newspaper entries/exits

Panel A: Incumbency advantage and incumbency advantage predicted from demographics




Panel B: Incumbency advantage controlling for demographics




Notes: Panel A shows estimated effect on the incumbency premium of a vector of indicators for the occurrence of an event at different time horizons. Panel B shows the estimated effect on the incumbency premium of a vector of indicators for the occurrence of an event at different time horizons, controlling for demographics. Models include state-year fixed effects. Error bars are $\pm 2$ standard errors. Standard errors are clustered by county. Time period is 1868-1928.