The Electric Telegraph, News Coverage and Political Participation

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Abstract

Using newly digitized data on the growth of the telegraph network, the paper studies the impact of the electric telegraph on political participation in the mid-19$^{\text{th}}$ century America. I use proximity to daily newspapers with telegraphic connection to Washington to generate plausibly exogenous variation in access to telegraphed news from Washington. I find that access to Washington news with less delay increased presidential election turnout. Effects were concentrated in regions least connected to Washington prior to the telegraph. For mechanisms, I provide evidence that newspapers facilitated the dissemination of national news to local areas. Text analysis on historic newspapers shows that the improved access to news from Washington led newspapers to cover more national political news, including coverage of Congress, the presidency, and sectional divisions involving slavery. The results suggest that the telegraph made newspapers less parochial, facilitated a national conversation and increased political participation.

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1 Introduction

Newspapers are essential to democracy, and timely access to national news is of utmost importance in informing and engaging citizens. The most consequential improvement in timeliness of national news was due to the electric telegraph, which reduced typical lag of Washington news for American families in the Midwest by seven days during the 1840s. Yet the telegraph has gone largely unstudied in economics, particularly with regard to potential impacts on the political realm. This paper assembles a novel dataset to study the political impact of the telegraph. Specifically, I study the impact of timely access to national news brought by the telegraph on political participation, focusing on voter turnout in the mid-19$^{\text{th}}$ century America.

The invention of the telegraph was a watershed in the history of newspapers. While newspapers contribute to civic engagement and political participation (Gentzkow et al., 2011; Drago et al., 2014; Schulhofer-Wohl and Garrido, 2013), up until the early 1840s the speed of transportation dictated the speed of news; days and even weeks would pass before newspapers reported on distant events (Schwarzlose, 1989). For instance, the death of President William Harrison in 1841 was reported five days later in Cleveland and nine days later in St. Louis. Introduced in 1844, the telegraph allowed news to travel instantly over vast distances for the first time, revolutionizing the news industry and speeding up the dissemination of news throughout the nation. As a result, the public received unprecedented access to timely national news. At a time when close to 90 percent of the American population still lived in rural areas, the improved access to national news could have important political implications by informing and engaging citizens.

To study the impact of the telegraph on political participation, one ideally would need data measuring both spatial and temporary variation in access to the telegraph. A challenge, however, is the shortage of data on the telegraph network in general. As a result, previous studies involving the telegraph mostly relied on cross-sectional data (Garcia-Jimeno et al., 2018) or one-off event such as the establishment of the transatlantic telegraph cable (Stein-

wender, 2018; Hoag, 2006) to provide variation in access to the telegraph. In this paper, I collect unique data on the growth of the telegraph network in the U.S. from its inception in 1844 to 1852, when telegraph lines had reached all major and most minor cities. The data set provides precise information on when and where a telegraph line opened for operation. From this data set I obtain variation in access to the telegraph across the country in each election year between 1840 and 1852. To my knowledge, this data set is the first in the literature to provide systematic and detailed information on the expansion of the U.S. telegraph network.

My empirical work relates access to telegraphed national news to voter turnout. In particular, I focus on telegraphed news from Washington, because Washington was the primary source of national political news in the mid-19$^{\text{th}}$ century (Kernell and Jacobson, 1987). To measure access to telegraphed news from Washington, I first obtain data on the spatial distribution of newspapers across U.S. counties from the 1840 *Census of Manufactures*. The high cost of using the telegraph, however, means that only daily newspapers during the period could afford to gather news with the telegraph (Thompson, 1947; Kielbowicz, 1989). Once connected to the telegraph, daily newspapers received instant Washington news, which then diffused from the daily newspapers to the rest of the nation. I therefore use a county's distance to the nearest daily newspaper with telegraphic connection to Washington to measure the county's access to telegraphed Washington news in each election year. I call this distance the "effective distance to Washington," which I use as my explanatory variable. My empirical specification follows a generalized difference-in-difference approach, in which I regress county-level voter turnout from the period 1840-1852 on effective distance to Washington, while controlling for time-invariant differences among counties and statewide shocks to all counties. Prior evidence suggests that here any bias from omitted variables is likely to work against finding a positive effect of access to the telegraph, because local area population and income growth tend to be associated with decreases in voter turnout (Gentzkow et al., 2011).

I find that access to telegraphed news from Washington increased voter turnout in presidential elections. Specifically, my estimate suggests that a reduction in effective distance to

Washington by 100 miles increased presidential election turnout by approximately 1.2 percentage points (about 1.7 percent relative to the mean of the period). The estimated effect increases monotonically as effective distance to Washington decreases. In terms of heterogeneity, I find that the effects were concentrated in the Midwest and the South Central regions, which were areas least well connected to Washington prior to the telegraph.

To provide further evidence that the effect is not driven by unobserved confounding factors which might have systematically increased people's political participation, I run the same regression with congressional election turnout as the outcome. Congressional elections in the 19th century were only to elect members of the House of Representatives at the congressional district level, where candidates came from the local area.[1] Telegraphed news from Washington should have little impact on access to information concerning the local congressional district and House candidates. Moreover, House elections in the mid-19th century were frequently held on different days as presidential elections (Dubin, 1998). I therefore expect the impact of access to telegraphed news from Washington to be limited for House election turnout. Consistent with the expectation, I find that the estimated effect of access to telegraphed news from Washington on House election turnout is small in magnitude and statistically insignificant. The contrast in the estimated effects for presidential and House election turnout suggests that access to telegraphed news from Washington was unlikely correlated with unobserved variables that systematically increased people's interest or ability to participate in politics.

Moreover, I provide evidence that counties with improved access to telegraphed news from Washington were not already on an upward trend in voter turnout before the introduction of the telegraph. The results also hold under a series of robustness checks, including controlling for railroad access and restricting my sample to counties whose access to telegraphed news was more exogenous, such as counties with only rural population and counties that never received the telegraph. These various checks increase my confidence that the

[1] U.S. Senators were not popularly elected until 1913.

results can be interpreted as causal.

Turning to examine the mechanisms, I find that the effect on presidential turnout was larger in counties with a newspaper in 1840, whereas whether a county had a non-news periodical did not matter for turnout. This finding suggests that the newspapers played a key role in facilitating the diffusion of more timely national news to local areas, potentially contributing to participation in national elections.

By providing timely access to national news, the telegraph could also have altered the content of newspapers. I find evidence supporting this hypothesis. Text analysis on a sample of 99 newspapers published during the 1840s suggests that access to telegraphed news from Washington led newspapers to cover more national political news, including coverage of Congress, the presidency, and sectional divisions involving slavery. A reduction in effective distance to Washington by 100 miles is estimated to increase the coverage of national news topics by approximately 5-10%. The results suggest that the telegraph made newspapers less parochial and facilitated a national conversation on major issues, which possibly contributed to turnout in presidential elections.

The paper is closely related to the literature on the political impacts of newspapers (Gentzkow et al., 2011; Perlman and Sprick Schuster, 2016; Drago et al., 2014; Schulhofer-Wohl and Garrido, 2013; Snyder and Strömberg, 2010; Bruns and Himmler, 2011; Gerber et al., 2009; George and Waldfogel, 2006; Boix et al., 2003). While previous studies have focused on the impacts of newspapers on some political outcomes, this paper examines the impact of a revolutionary technology on newspapers themselves, which has received little attention in the literature. By disseminating news throughout the nation with unprecedented speed, the telegraph greatly improved the ability of newspapers to inform and engage the people, contributing to the health of democracy.

The paper also contributes to the literature on the impacts of information technologies on electoral politics and participation. Previous studies have examined the impacts of information technologies such as the internet (Campante et al., 2018; Falck et al., 2014), television

(Gentzkow, 2006), and radio (Strömberg, 2004) on electoral participation. The telegraph was a watershed in the history of information technologies, signaling the beginning of electronic communication. In addition, unlike modern forms of information technology that frequently mix information and entertainment, the telegraph transmitted only information and provides an opportunity to study the impacts of information technology in its "purest" form. Despite its revolutionary nature and far-reaching influence, the telegraph remains one of the least studied information technologies in the literature. The paper provides new insight on the impact of the telegraph on political outcomes.

Finally, the paper contributes to the literature on the impact of the telegraph, widely considered as one of the most important inventions in history. Previous work on the telegraph have examined its impacts on financial and commodity markets (Hoag, 2006; Field, 1998; Garbade and Silber, 1977; Langdale, 1979), international trade (Steinwender, 2018; Steinwender and Juhász, 2019; Lew and Cater, 2006), collective action in protests (Garcia-Jimeno et al., 2018) and firm management (Field, 1992; Yates, 1986; DuBoff, 1980, 1983). The findings of this paper underscore the importance of timely access to information for voters.

2 Historical Background

The electric telegraph was a hallmark of the Industrial Revolution. Before the introduction of the telegraph in 1844, how fast information flew largely depended on transportation technologies, be it foot, horse, or rail. Invented by Samuel F.B. Morse, the telegraph transmitted electrical signals encoded as lines and dots over a wire laid between stations, where different combinations of the lines and dots represented different English alphabets and punctuations. The telegraph enabled instant transmission of information over vast distances, at last freeing communication from transportation (Carey, 1992).[2]

[2] A precursor of the electric telegraph was the semaphore telegraph, which conveyed information through visual signals, using towers with pivoting shutters that could form into different positions to encode messages.

At the beginning of the 1840s, almost 90 percent of Americans were still living in rural areas (US Census, 1840), where access to external information was limited. States had extended suffrage to almost all adult white males by 1840 and citizens demonstrated a strong interest in politics (Silbey, 2014; Altschuler and Blumin, 1997). The primary source of political information during this era were newspapers, and newspaper content was predominantly political in nature. For the most part, newspapers discussed political issues and printed summaries or transcripts of legislative proceedings as well as presidential and gubernatorial messages (Altschuler and Blumin, 1997). Washington was the primary source of national political news, which mainly consisted of coverage of Congress and the presidency (Kernell and Jacobson, 1987). The federal government had long recognized the importance of newspapers to an informed electorate. To encourage the circulation of news, the federal government had passed the Postal Service Act of 1792, which allowed newspaper editors to exchange newspapers with one another by the postal system for free. Yet, news was slow-moving. Up until the early 1840s, a typical newspaper in the Midwest or the South reported Washington news with a lag of one to two weeks. Some newspapers occasionally even ran out of news to report and had to use non-news items, such as poems and anecdotal stories, to fill the space (Blondheim, 1994). The slowness and meagerness of news were much to the dissatisfaction of newspaper editors and readers (Standage, 2009).

On May 24$^{\text{th}}$, 1844, the first telegraph line opened between Washington and Baltimore, a length of 40 miles. Realizing the commercial potential of the telegraph, several private companies were soon formed to build telegraph lines across the country. By 1848, there were 2,311 miles of telegraph in operation, and the mileage further increased to 12,000 miles by 1850 (Highton, 1852). The relatively low cost of building telegraph lines facilitated the rapid spread of the telegraph across the nation (Thompson, 1947).[3] To maximize profits,

Because the semaphore system operated through line-of-sight, the system was constrained by geography, daylight, and weather conditions for clear visibility. The semaphore telegraph, briefly used in the U.S. to transmit shipping news at several locations since the early 1800s, was never widely adopted in the U.S.

[3]The cost of building telegraph lines, including wire, posts, and labor, was about 150 dollars per mile (US Census Office, 1852), which was much lower than the cost of building a railroad and even lower than the cost of building a good road (Calvert, 2008).

telegraph companies primarily built lines to connect places of commercial importance, with major cities targeted in particular (Thompson, 1947; Reid, 1886). By 1850, the telegraph had grown into a national network.[4]

The telegraph revolutionized news gathering by greatly accelerating the flow of news. The high expenses of using the telegraph to gather news, however, made the telegraph out of reach for almost all but daily newspapers, which were predominantly located in big cities (Thompson, 1947; Kielbowicz, 1989).[5] With larger readerships to spread the costs, big-city dailies were able to adopt the telegraph almost immediately after the city received the telegraph (Thompson, 1947). For instance, the telegraph connected Pittsburgh to Washington on December 26$^{\text{th}}$, 1846, and three days later daily newspapers in Pittsburgh started to report telegraphed news from Washington. Operating with smaller budgets, other newspapers, most of which were weeklies and located in smaller cities or towns, hardly used the telegraph (Kielbowicz, 1989). Instead, small newspapers frequently copied national news from big-city dailies that they received by the postal system for free and therefore obtained, albeit with a lag, news that had originally been telegraphed to the dailies. For example, a small-town weekly 120 miles outside of St. Louis, *The Boon's Lick Times*, frequently copied its news from St. Louis's dailies and saw the delay of its latest Washington news going down by ten days between 1847 and 1848 as the telegraph expanded westward and reached St. Louis. Thus, the telegraph reduced the delay of news across the nation, directly for daily newspapers and indirectly for other smaller newspapers.

Newspapers in general were confident about the role of the telegraph in engaging the public. For instance, the newspaper *Philadelphia North American* predicted in late 1845 that

[4]Based on my data on the telegraph network, 48 out of the 50 most populous urban places in 1850 had received the telegraph by that year.

[5]The usual charge for telegraphic transmission in its early days was 25 cents for ten words or less per one hundred miles, with additional charges for each additional word beyond the first ten words (Thompson, 1947). Based on a telegraph rate schedule published in 1853, sending a ten-word message from Pittsburgh, PA to Washington, D.C. cost 50 cents (Barr, 1853). In comparison, in 1845 the postal rate for a *one-sheet* letter mailed anywhere within 300 miles (which is greater than the distance between Pittsburgh and Washington) was 5 cents (USPS, 2008). In fact, even big-city daily newspapers had to find ways to cut telegraph expenses — sometimes by gaming the telegraph system. For instance, to cut telegraph expenses, several big-city dailies used code words to convert long messages into shorter ones (Thompson, 1947).

the telegraph would increase "the appetite for news" by "feeding public curiosity." Likewise, James Gordon Bennett, the founder and editor of the *New York Herald*, asserted that the faster flow of news brought by the telegraph would increase people's interest in public affairs (Blondheim, 1994).

3 Data

3.1 Growth of the Telegraph Network

In this section I describe the data on the telegraph network. Data on the telegraph are surprisingly scarce in the literature. Previous studies on the telegraph have mostly relied on cross-sectional data (Garcia-Jimeno et al., 2018) or one-off event such as the establishment of the transatlantic telegraph cable (Steinwender, 2018; Hoag, 2006).[6] For this study, I collect new data from several sources to measure the continuous growth of the U.S. telegraph network during 1844-1852.

The main data source is Thompson (1947)'s seminal book on the history of the early U.S. telegraph industry, *Wiring a Continent: The History of the Telegraph Industry in the United States, 1832-1866*, which provides precise information on when and where a telegraph line opened for operation in America during 1844-1850. I supplemented Thompson (1947) with additional data sources for both the pre-1850 period and the year of 1852. Section 7.1 of the Data Appendix provides more details on the data sources used and the data construction process. The resulting data set provides detailed information on when and where a telegraph line opened for operation in America during 1844-1852. Based on these data, Figure A.1 shows the telegraph lines in operation in the U.S. every other year for the period 1844-1852.

Data on the telegraph network after 1852 are more sporadic. I therefore focus my study on the period up to 1852. Although a seemingly short span of time, the period 1844-1852

[6] An exception is Steinwender and Juhász (2019), who use the timing of connection to the global telegraph network by countries to study the effect of a reduction in communication time on international trade in 19th century cotton textile.

saw rapid growth of the telegraph network from a single line to a national network. To my knowledge, the data set created for this study is the first in the literature to provide systematic and detailed information on the expansion of the U.S. telegraph network across space and time.

3.2 Voter Turnout and Other County Characteristics

To measure political participation, I obtain county-level data on voter turnout in presidential and congressional elections for the period 1840-1852 from ICPSR Study 8611 (Clubb et al., 2006). I focus on data from presidential election years to make the results on presidential and congressional elections more directly comparable. To improve precision, I exclude outlier observations with turnout per eligible voter greater than one. These observations constitute about 1 percent of the data, but the main results are not affected when I relax this sample restriction.

I obtain demographic characteristics of counties between 1840-1860 from Haines (2010), including county population and the shares of urban population, white population, white males above 20 years old, and slave population. To deal with changes in county boundaries over time, I harmonize county boundaries to the 1840 boundary following Hornbeck (2010) and linearly interpolate missing data on demographic characteristics for intercensal years.

I obtain the geographic distribution of newspapers across counties from the 1840 *Census of Manufactures*. The data provides the number of newspapers published in each county as of 1840, including the number of daily, weekly, and semi-/tri-weekly newspapers.[7] Using this data set, I can identify the location (county) of all daily newspapers published in 1840. Figure A.2 shows the location of daily newspapers in 1840. Not surprisingly, daily newspapers appear to center around big cities. In addition, the 1840 *Census of Manufactures* also provides the number of periodicals published in each county as of 1840.

[7]Based on the data, there were 1,404 newspapers in the U.S. in 1840, out of which about 81% were published weekly, 9% semi- or tri-weekly, and 10% daily. The 138 daily newspapers in 1840 were published in 67 different counties.

Lastly, I obtain data on the railroad network from Atack (2016), which allows me to measure each county's access to the railroad for the period 1840-1852. Table A.1 provides summary statistics for all the variables used in the main analysis.

4 Empirical Strategy

In my empirical work, I aim to measure the impact of timely access to national news brought by the telegraph on voter turnout. In particular, I focus on access to the latest Washington news, because Washington was the primary source of national political news during the mid-19th century (Kernell and Jacobson, 1987). My empirical strategy is motivated by considerations for where the latest Washington news could be accessed before and after the introduction of the telegraph. Before the introduction of telegraph, only daily newspapers in Washington itself had the latest Washington news, and the news had to diffuse from Washington to the rest of the nation. As the telegraph connected Washington to other cities, daily newspapers in connected cities received instant news from Washington by the telegraph, and the news only had to diffuse from the locations of the daily newspapers to the rest of the nation.[8] I therefore construct my explanatory variable, which I call "the effective distance to Washington," in the following way to measure access to the latest Washington news: for election years before the introduction of the telegraph (i.e. up to 1844), I measure a county's effective distance to Washington using its actual distance to Washington; for election years after the introduction of the telegraph (i.e. 1848 and 1852), I measure a county's effective distance to Washington using its distance to the nearest daily newspaper that had telegraphic connection to Washington.[9]

[8] As detailed in Section 2, the high cost of using the telegraph during the period means that gathering news with the telegraph was a privilege exclusive to daily newspapers, almost all of which were in major cities (Thompson, 1947; Reid, 1886); other newspapers, most of which were small-town weeklies, frequently copied their news (including telegraphed Washington news) from major-city dailies (Kielbowicz, 1989; Schwarzlose, 1989).

[9] I consider the effective distance to Washington at the beginning of each year based on the extent of the telegraph network on Jan 1st of each year, but the results are similar and not sensitive if I instead use the effective distance at the middle (July 1st) of each year. In practice, I measure the straight-line

As an illustration, Figure 1 maps the locations (shown as triangles) of daily newspapers that had the latest Washington news at the beginning of each year between 1844 and 1852. As seen from the figure, at the beginning of 1844 the telegraph was yet to be introduced, and therefore only daily newspapers in Washington had the latest Washington news. Between 1844 and 1852, telegraph lines spread across the nation, providing access to the latest Washington news to more daily newspapers throughout the nation. The expansion of the telegraph network brought the latest Washington news to more locations and therefore lowered the average effective distance to Washington over time. Figure A.3 plots the average effective distance to Washington across counties in each presidential election year during the period 1840-1852, showing a reduction from an average of about 473 miles in 1840 to an average of about 90 miles in 1852, a drop of 81%.

To support the validity of using the effective distance to Washington variable to measure access to the latest Washington news, I examine the relationship between the effective distance to Washington and the lag of Washington news in newspapers. Figure 2 plots the effective distance to Washington and the lag of the Washington news over time for *The Boon's Lick Times*, a small-town newspaper in Fayette, Missouri. The vertical axis on the left shows the minimum lag (in number of days) of Washington news over the first two months of each year, and the vertical axis on the right shows the effective distance to Washington. The figure shows that the lag of Washington news tracks the effective distance to Washington closely. Before 1846, the telegraph network was in its infancy and *The Boon's Lick Times's* effective distance to Washington was its actual distance to Washington, or about 840 miles; the lag of Washington news until 1846 was 14 days. The lag of Washington news dropped drastically from 14 days to 6 days over the next four years as the telegraph network expanded westward and reached cities closer to Fayette; the largest drop took place between 1847 and 1848, during which a telegraph line connected St. Louis to Washington and reduced the

distance between county centroids. A county's effective distance is therefore measured between the centroid of the county and the centroid of the nearest county with a daily newspaper and telegraphic connection to Washington.

effective distance to about 120 miles, the distance between Fayette and St. Louis. The close co-movement of effective distance to Washington and lag of Washington news as seen in Figure 2 supports the use of effective distance to Washington as a measure of access to the latest Washington news. It is also worth mentioning that Fayette never received a telegraph line during the entire period. Thus, the drops in the effective distance to Washington and in the lag of Washington news resulted entirely from telegraphic connection to Washington by faraway major cities, which was arguably exogenous to Fayette's circumstances and demand for the telegraph.[10]

My empirical specification follows a generalized difference-in-difference approach:

$$Turnout_{ct} = \alpha + \beta EffectiveDist_{ct} + X_{ct}\delta + \eta_c + \sigma_{st} + \epsilon_{ct} \tag{1}$$

where $Turnout_{ct}$ is the voter turnout (in percentage points) during the presidential or the congressional election in county c and year t. I focus my analysis on presidential election years to make the results from presidential and congressional elections more directly comparable. X_{ct} is a vector of socioeconomic controls of county c, including the county's natural log of population and the shares of urban population, white population, white males above 20 years old, and slave population. η_c are county fixed effects, which control for any time-invariant county characteristics such as geographic location. σ_{st} are state-by-year fixed effects, which control for statewide shocks common to all counties in the same state, such as changes in state electoral laws and procedures and other statewide policy or economic shocks.[11] I weight the regression using the population of white males above 20 years old in 1840, which proxies for the size of the voting-eligible population. Standard errors are corrected for clustering at

[10]It is evident from the figure that the lag of Washington news dropped from 14 days to 11 days between 1846 and 1847, during which telegraph lines reached cities closer to Fayette but were still more than 600 miles away.

[11]Up until 1844, each state decided when to hold its elections, and presidential elections were held on different dates across states ranging from late October to early December. In 1845, Congress mandated presidential elections in all states to be held thenceforth on the Tuesday after the first Monday in November, but each state still chose when to hold its congressional elections, whose timing varied significantly over time within states (Dubin, 1998)

the county level (Bertrand et al., 2004).

The variable of interest is the effective distance to Washington $EffectiveDist_{ct}$, which is measured in hundred miles. The *negative* of β captures the effect of a 100-mile *reduction* in the effective distance to Washington on voter turnout. A negative coefficient of β therefore would suggest that access to telegraphed news from Washington increased voter turnout. Prior evidence suggests that here any bias from omitted variables is likely to work against finding a positive effect of access to the telegraph, because local area population and income growth tend to be associated with decreases in voter turnout (Gentzkow et al., 2011). I also argue that the pattern of results for presidential and congressional elections makes it highly unlikely for the results to be driven by some omitted variables. Moreover, I test and provide support to the usual parallel trends assumption in the results section.

In an alternative specification, instead of using a continuous measure, I measure effective distance to Washington with a set of mutually exclusive dummies to allow the estimates to vary by distance flexibly. Specifically, I use the following specification:

$$Turnout_{ct} = \alpha + \sum_{k} \beta_k EffectiveDist_{ctk} + X_{ct}\delta + \eta_c + \sigma_{st} + \epsilon_{ct} \tag{2}$$

where everything else is the same as in equation (1), except here I measure effective distance to Washington with five dummy variables indicating whether the effective distance falls into one of the following five categories: within 100 miles, 100-200 miles, 200-300 miles, 300-400 miles, and 400-500 miles. By construction, the excluded category of effective distance to Washington is "more than 500 miles." Therefore, the coefficient on each distance category, β_k, is to be interpreted relative to the excluded category. For instance, one can interpret β_1 as the effect of cutting the effective distance to Washington from more than 500 miles to below 100 miles on voter turnout. The choice of five distance categories represents an effort to allow the data, rather than parametric assumptions, to determine the relationship between access to telegraphed news and voter turnout, while also obtaining estimates that are precise enough that they have empirical content.

5 Results

5.1 Baseline Results on Voter Turnout

This section presents the impacts of access to telegraphed news from Washington on voter turnout. I first provide visualization of the estimated effects based on equation (2), which allows the estimates to vary flexibly by distance. Panel A of Figure 3 presents these estimates for presidential election turnout. Based on the figure, the estimated effects on presidential election turnout increase monotonically as access to telegraphed news from Washington increases (or, equivalently, as effective distance to Washington decreases).[12] Column 1 and 2 of Table 1 present the estimates based on equation (1) for presidential election turnout. Column 1 of Table 1 includes no county demographic control and shows that a reduction in the effective distance to Washington by 100 miles is associated with an increase in presidential election turnout by about 1.2 percentage points. Column 2 controls for county demographic characteristics and the estimate changes little. Based on the estimate in column 2, a reduction in effective distance to Washington by a standard deviation (about 260 miles) would increase presidential election turnout by about 3.2 percentage points or about 4.5% relative to the mean during the period 1840-1852.

A potential concern is that some unobserved variables correlated with access to telegraphed news from Washington might have systematically increased people's participation in politics. To address the concern, I turn to House election turnout as an outcome. During the 19$^{\text{th}}$ century, congressional elections were to elect only members of the House of Representatives at the congressional district level, where candidates came from the local region.[13] Telegraphed news from Washington should affect access to information concerning the local congressional district and candidates little. Moreover, House elections in presidential election years during this period were frequently held on different dates from the presidential election

[12]Results are similar and not sensitive to using alternative sets of distance dummies to measure the effective distance to Washington.

[13]U.S. Senators were not popularly elected until the Seventeenth Amendment to the United States Constitution in 1913. Before 1913, senators were chosen by state legislatures.

day (Dubin, 1998), so the spillover effect from turning out for presidential elections on voting for House elections was much limited as compared to today.[14] I therefore expect access to telegraphed news from Washington to have limited impact on House election turnout. If, on the other hand, access to telegraphed news was correlated with unobserved variables that systematically increased people's interest or ability to participate in politics, one would expect to find a positive turnout effect for House elections as well.

Panel B of Figure 3 plots the estimates for House election turnout. Unlike Panel A which shows a positive and statistically significant relationship between access to telegraphed news from Washington and turnout in presidential elections, Panel B shows no significant relationship between access to telegraphed news from Washington and House election turnout. Columns 3 and 4 of Table 1 are consistent with the figure for House election turnout, showing the estimated turnout effects for House elections, with or without demographic controls, are close to zero and statistically insignificant. The contrast between the estimates for presidential and House election turnout suggests that access to telegraphed news from Washington was unlikely correlated with unobserved variables that systematically increased people's interest or ability to participate in politics. Thus, the results from both Figure 3 and Table 1 support the view that access to telegraphed news from Washington had a positive impact on participation in presidential elections.

Another potential threat to identification would be the possibility that counties receiving greater access to telegraphed news from Washington might have already been on an upward trend in turnout before the introduction of the telegraph, which would violate the usual parallel trends assumption. To address this concern, I test for the presence of pre-trends by running long-difference versions of equation (1) for different sub-periods during 1840-1852. In column 1 of Table 2, I first show that the baseline finding still holds when I run a long-difference version of equation (1) for the period 1844-1852, during which the telegraph grew

[14]Based on Dubin (1998), in 1852 only 6 (CA, IL, MI, NJ, NY, and WI) out of 31 states held their House elections on the same day as the presidential election; similarly, 4 (MI, NJ, NY, WI) out of 30 states held same-day elections in 1848.

from a single line between Washington and Baltimore to a national network. Specifically, I regress the change in presidential election turnout between 1844 and 1852 on the change in effective distance to Washington during the same period, while controlling for state dummies and changes in demographic characteristics during the same period. Column 1 of Table 2 shows that, similar to what I find from the panel regressions for the whole period, access to telegraphed news from Washington had a positive effect on presidential election turnout. The estimate suggests that a 100-mile reduction in the effective distance to Washington during the period 1844-1852 increased presidential election turnout by about 1.5 percentage points.

In column 2 of Table 2, I run a placebo test regressing the change in presidential election turnout between 1840 and 1844, the period *before* the spread of the telegraph, on the change in effective distance between 1844 and 1852.[15] A statistically significant estimate would suggest the presence of differential pre-trends. Based on column 2, the estimate from the placebo test is close to zero and statistically insignificant, which suggests that counties receiving greater access to telegraphed news from Washington were not already on a differential pre-trend in turnout and hence supports the parallel trends assumption.

To further validate that the result is not driven by differential pre-trends, in column 3 of Table 2 I include the change in presidential election turnout between 1840 and 1844 as a control variable in the regression from column 1. The estimate remains statistically significant and, if anything, increases slightly in magnitude. Table 2 therefore provides evidence that my results are not driven by pre-trends and supports my baseline findings.

5.2 Robustness Checks

I run several robustness checks on the baseline results on presidential election turnout in Table A.2. A potential concern is that the results might be confounded by access to the railroad. In column 1 of Table A.2, I control for distance to the nearest railroad. The result

[15]Following its completion in May, 1844, the line between Washington and Baltimore, about 40 miles in length, remained the only telegraph line in the U.S. through early 1846.

is similar to my baseline estimate.[16] In column 2, I show the result from an unweighted regression. The point estimate appears slightly smaller but remains statistically significant.

In columns 3-5, I restrict my sample to counties whose access to telegraphed news was increasingly more exogenous. In column 3 I drop counties that had a daily newspaper in 1840; the presence of daily newspapers generated demand for the telegraph and could have influenced where the telegraph went. I find the result robust to dropping these counties. In column 4, I restrict the sample to counties with only rural population. Rural counties were less commercially important from the perspective of telegraph companies and their access to telegraphed news was more likely exogenous. The result is again robust to this sample restriction. In column 5, I focus on counties that were more than 50 miles away from any telegraph line by 1852. Counties far away from any telegraph line in 1852, by which time telegraph lines had spread across the nation, were small and most likely not targeted by telegraph companies.[17] Instead, these remote counties gained better access to telegraphed news from Washington through distant cities' connection to the telegraph, which was more exogenous to their own circumstances and demands. As seen in column 5, the estimate is robust to using this subsample and becomes somewhat larger in magnitude than the baseline estimate.[18]

To show that the results are not driven by the method to harmonize county boundaries over time (Hornbeck, 2010), I report in column 6 the estimate only for counties with consistent boundaries between 1840 and 1850. As seen in column 6, the result is robust and slightly larger in magnitude than the baseline estimate. Taken together, the series of robustness checks increase the confidence that the baseline results on presidential election turnout can be interpreted as causal.

[16]The estimate is also similar when I instead control for an indicator for having a railroad within 10 miles.

[17]Counties within 50 miles of a telegraph line by 1852 had an average population of 15,802 in 1840. In comparison, counties more than 50 miles away from any telegraph line by 1852 had an average population of 7,199 in 1840.

[18]The results are also robust to using other distance cutoffs, such as restricting the sample to counties more than 10 miles, 20 miles, 30 miles or 40 miles away from any telegraph line by 1852.

5.3 Heterogeneity of Effects Across Regions

In this subsection I explore heterogeneity of the effect on presidential election turnout across broad geographic regions. In the early 1840s before the introduction of the telegraph, access to information from Washington differed significantly across regions because of differences in geographical proximity to Washington and in the extent of transportation networks. Notably, the Northeast was particularly well connected to Washington because of its geographical proximity to Washington and more developed transportation networks such as the railroad. For instance, while St. Louis typically received news from Washington with a lag of 7-10 days in the early 1840s, Boston experienced a lag of only 3 days. Similarly, places along the Atlantic coast were also fairly well connected to Washington because of coastal steamships. *Ex ante* one would expect the telegraph to have the largest impact on access to Washington news for regions that were least well connected to Washington prior to the telegraph, such as the Midwest and other frontier regions further inland.

Table 3 reports the estimates for presidential election turnout by Census region. Consistent with my expectation, I find the estimated effects concentrated in the Midwest and the South Central regions, which were areas least well connected to Washington prior to the telegraph. Specifically, a 100-mile reduction in effective distance to Washington increased turnout by 1.6 percentage points in the Midwest and 1.8 percentage points in the South Central. Estimates for the Northeast and the South Atlantic are smaller in magnitude and statistically indistinguishable from zero. Thus, the results suggest that the telegraph increased turnout in presidential elections primarily in the more inland and frontier regions.

6 Mechanisms

In this section I explore the mechanisms through which access to telegraphed news from Washington affected presidential voter turnout. I first provide evidence that a potential mechanism is the provision of information through newspapers. I then conduct text analysis

on a sample of historic newspapers from the 1840s to show how access to telegraphed news from Washington altered news content.

6.1 Provision of Information by Local Newspapers

A natural mechanism linking the telegraph and voter turnout is information. By providing newspapers with more timely information on national politics, the telegraph increased the ability of newspapers to inform and engage the electorate; more informed voters are more likely to vote (Feddersen, 2004; Matsusaka, 1995; Lassen, 2005).

To further explore the provision of information through newspapers as a mechanism, I compare the estimated effects on turnout between counties with and without a newspaper. Because data on the availability of newspapers at the county level during this period are available only from the 1840 *Census of Manufactures*, I compare the turnout effects between counties with and without a newspaper as of 1840.[19] To do this, I augment the baseline regression from equation (1) with an interaction term, interacting the effective distance to Washington with an indicator variable that equals 1 if the county had a newspaper in 1840 and 0 otherwise. The coefficient on the interaction term therefore represents the additional turnout effect in counties with a newspaper in 1840 over counties without one.

Column 1 of Table 4 reports the results from the augmented regression. The estimated coefficient on the interaction term is -0.32 and statistically significant at the 5 percent level, suggesting that a 100-mile reduction in effective distance to Washington increased presidential election turnout by an *additional* 0.32 percentage points in counties with a newspaper than in counties without one. The coefficient on effective distance to Washington itself is about -1 and statistically significant, suggesting that a 100-mile reduction in effective distance to Washington increased presidential election turnout by about 1 percentage points in counties without a newspaper as of 1840. The relatively large and statistically significant estimate in counties without a newspaper as of 1840 could be because a newspaper entered

[19] Annual publications of newspaper directories did not start until 1869 (Gentzkow et al., 2011).

subsequently in many of these counties between 1840 and 1852, or because information from daily newspapers diffused through alternative channels to the local areas, such as word-of-mouth and direct subscriptions to daily newspapers by the local population. Nonetheless, this regression provides evidence that the estimated effects were larger in counties with a newspaper, supporting the provision of information by local newspapers as a mechanism.

To test whether the number of newspapers in a county mattered, I run a similar regression in column 2 of Table 4 with an interaction term between the effective distance to Washington and the number of newspapers in the county as of 1840. As seen from column 2, the estimated coefficient on the interaction term is small and statistically insignificant, suggesting that the number of newspapers in a county did not matter. The comparison between column 1 and 2 of Table 4 suggests that having a newspaper, and not necessarily the number of newspapers, mattered for the effect of access to telegraphed national news on voter turnout.

Newspapers, however, were not randomly assigned across counties. Having a printing publication such as a newspaper could be correlated with the literacy level and other demographic characteristics of the county. To provide some evidence that I did not just capture the effect of some unobserved county characteristics associated with having a printing publication, I use the publication of periodicals to perform a falsification test. Periodicals during the mid-19$^{\text{th}}$ century were typically published at a lower frequency than newspapers and focused on non-news topics such as trade, literature, and science, with some periodicals catering to the interests of specific audience such as women and children. Because periodicals provided predominantly non-news items, I would not expect the presence of a periodical in a county to have an interactive effect with access to telegraphed news from Washington.

Column 3 of Table 4 reports the regression with an interaction term between effective distance to Washington and an indicator that equals 1 if the county had a periodical in 1840 and 0 otherwise. Consistent with the expectation, the estimated coefficient on the interaction term is much closer to zero, statistically insignificant and of the opposite sign as compared to that in column 1 of the same table. The comparison between column 1 and 3 of the table

suggests that the presence of newspapers in a county played a unique role in facilitating the diffusion of more timely national news to the local area. Taken together, results from Table 4 support the provision of information by local newspapers as a channel through which the telegraph increased presidential election turnout.

6.2 Impact of the Telegraph on News Content

By accelerating the dissemination of news throughout the nation and providing timely access to national news, the telegraph could have increased the coverage of national news in newspapers, which could then contribute to informing and turning out voters. To explore this channel, I collect text data from historic newspapers published during the 1840s and perform text analysis on news content.

6.2.1 Text Data from Historical Newspapers

The newspaper text data come from the *Chronicling America* database, which to my knowledge holds the largest collection of digitized newspaper text data for the mid-19th century.[20] I scraped *Chronicling America*'s website to obtain all digitized newspapers published between January 1, 1840 and December 31, 1849.[21] My analysis focuses on small-town newspapers, both because there are few big-city newspapers in the *Chronicling America* database for the period and because access to the telegraph by small-town newspapers was more likely to be exogenous.[22] After removing the few big-city newspapers and atypical newspapers that did not focus on providing news, such as abolitionist newspapers that printed mostly anti-slavery

[20]The *Chronicling America* database is available online from `https://chroniclingamerica.loc.gov/`

[21]I focus on the period 1840-1849 for my newspaper text analysis because for this period I have relatively precise information on the continuous *within-year* growth of telegraph lines, which is essential for analyzing high-frequency newspaper text data with substantial within-year variation; after 1849, I have a snapshot of telegraph lines in 1852, which is used for the voting analysis but less ideal for the newspaper text analysis because of the high-frequency nature of the text data.

[22]To restrict my newspaper sample to small-town newspapers, I removed from my sample the few newspapers published in any of the "100 largest urban places in 1840" based on the 1840 Census (`https://www.census.gov/population/www/documentation/twps0027/tab07.txt`). Since the 100th largest urban place in 1840 (New Albany, IN) had 4,226 people, the resulting sample consists of newspapers from places with a population of about 4,000 or below, which I consider as small towns in the paper.

materials, I obtain a sample of 99 small-town newspapers from 17 states. All the newspapers in my sample are four pages in size and published weekly. Section 7.2 of the Data Appendix provides more information on *Chronicling America* and my newspaper sample.

6.2.2 Measuring News Topics

The goal of my newspaper text analysis is to study the impact of the telegraph on news coverage, focusing on the coverage of national news. This section describes how I measure coverage of national news and other news topics.

National news in the mid-19th century primarily consists of news on Congress and the presidency (Kernell and Jacobson, 1987). I therefore focus my analysis on the coverage of these topics. Because *Chronicling America* provides each newspaper's text data in bulk, which are separable only by date and page number, one cannot easily separate news by articles or count the number of articles on a certain topic. I therefore use the frequency of words that are typically associated with each news topic to measure coverage. For example, I use the frequency of the word "Congress" to measure the coverage of news on Congress.[23] The assumption is that the more frequently the word "Congress" was mentioned on a date, the greater the coverage was for Congress-related news on that date. Section 7.3 of the Data Appendix provides evidence supporting this assumption and the validity of using word frequencies to measure news coverage. Similarly, I use the frequency of the last names of the U.S. presidents in the 1840s to measure the coverage of presidential news.[24]

Besides news coverage of Congress and the presidency, I have also measured coverage of local, state and European news using the mentioning of the newspaper town's name, the county's name, the state's name and European country names. Moreover, I have measured

[23]It is worth noting that when counting the frequency of words associated with a news topic, I count the frequency of the root word wherever applicable. Therefore, the frequency of "Congress" represents the sum of the frequencies of all words with the root "Congress," such as "Congress," "congressional," and "congressman" et cetera. Similarly, the frequency of the word "telegraph" also includes words such as "telegraphed" and "telegraphic." All the words in the text data have also been converted to lower case before being analyzed, so letter case does not matter. By considering the root word, I avoid omitting related variants of the words and measure news coverage more accurately.

[24]The presidents' last names consist of "Van Buren," "Harrison," "Tyler," "Polk," and "Taylor."

coverage of major national issues during the 1840s. The most prominent national issues of the 1840s were arguably sectional divisions involving slavery and various territorial disputes as a result of territorial expansionism and debates on whether slavery should be allowed in new territories. I use the frequency of the word "slavery" to measure coverage of slavery and the word "territor" to measure coverage related to territorial disputes.[25] Table A.4 provides summary statistics of all the words used in the paper to measure news topics.

6.2.3 Evidence from Text Analysis

This section presents results from my newspaper text analysis. To estimate the effect of the telegraph on news coverage, I run the following regression:

$$\ln(WordFreq_{it}) = \alpha + \beta EffectiveDist_{it} + X_{ct}\delta + \eta_i + \sigma_t + \epsilon_{it} \tag{3}$$

where $WordFreq_{it}$ is the frequency of a word, such as "Congress," in newspaper i and year-month t. For the ease of interpretation I use the natural log of the frequency as my outcome variable. X_{ct} is the same set of demographic controls of county c as in the baseline equation (1). η_i are newspaper fixed effects, which control for any time-invariant newspaper characteristics such as geographic location, local culture, and editor preferences for news topics. σ_t are month-by-year fixed effects, which control for common shocks to all newspapers, such as national elections and breakout of other national events.[26] In some specifications I also include newspaper-specific linear time trends to account for the possibility that each newspaper's coverage may evolve at a different rate. Standard errors are corrected for clustering at the level of newspaper locations (i.e. towns) (Bertrand et al., 2004).

The variable of central interest is the effective distance to Washington $EffectiveDist_{it}$, which is my measure of access to telegraphed news from Washington and is defined simi-

[25]The frequency of the root "territor" captures variants of the word "territory" such as "territory," "territories" and "territorial." I use the word "slavery" instead of the root word "slave" to avoid confusing the issue of slavery with advertisements involving slaves.

[26]I aggregate weekly newspaper data to the monthly level to reduce noise in the weekly data. The results based on the weekly data are similar.

larly as in the equation (1). Specifically, for periods after the introduction of the telegraph $EffectiveDist_{it}$ is equal to newspaper i's distance (in hundred miles) to the nearest daily newspaper with telegraphic connection to Washington in year-month t.[27] For periods before the introduction of the telegraph, I define $EffectiveDist_{it}$ to be newspaper i's actual distance to Washington to proxy for access to the latest Washington news. For a given news topic, the *negative* of β captures the effect of a 100-mile *reduction* in the effective distance to Washington on coverage of the topic.

To provide evidence that the effective distance to Washington is associated with greater access to telegraphed news, I first run equation 3 with the frequency of the word "telegraph" as the outcome. The idea is that, during this era, newspapers would often mention the source of their news; when a small-town paper copied news that had originally been telegraphed to big-city dailies, the small-town paper would often mention that the news had been telegraphed, perhaps to highlight the recency of the news. Thus, I would expect the word "telegraph" to appear more frequently as effective distance to Washington decreases. Table A.5 reports the estimates from this regression. Consistent with the expectation, the estimates are statistically significant across different specifications and suggest a 7-11% increase in the mentioning of the word "telegraph" for a 100-mile reduction in the effective distance to Washington.

Table 5 provides the estimates for the impact of access to telegraphed news from Washington on coverage of various news topics. Panel A presents the estimated effects on coverage of Congress and the presidency. Column 1 of Panel A shows that a 100-mile reduction in effective distance to Washington increased the mentioning of "Congress" by about 5%. Column 2 shows that the estimated effect is slightly larger (at about 6%) for the mentioning of the presidents' last names. Kernell and Jacobson (1987) find that in the mid-19$^{\text{th}}$ century presidential news dominated national news coverage during presidential election years but

[27] Again, this is because small-town newspapers in the mid-19$^{\text{th}}$ century frequently copied Washington news from big-city daily newspapers (Kielbowicz, 1989; Schwarzlose, 1989). Thus, a small-town newspaper's access to telegraphed news from Washington depended on its distance to the nearest daily newspaper with telegraphic connection to Washington.

was much less so during other years (i.e. off years). I therefore separate my analysis for presidential news by presidential election years and off years. Column 3 and 4 report these estimates. As seen from column 3, the estimated effect on presidential news are stronger in both magnitude and statistical significance during presidential election years. Based on column 3, a 100-mile reduction in effective distance to Washington increased the mentioning of the presidents' last names by about 12.5% in presidential election years. In comparison, column 4 shows that the estimate during off years halves in magnitude and is not statistically significant at the conventional level (p-value = 0.137), although the coefficient still has the same sign and suggests an economically meaningful effect. Taken as a whole, Panel A of Table 5 suggests that access to telegraphed news from Washington increased coverage of national political news in newspapers, which could have contributed to informing and engaging the public and increasing participation in national elections.

Panel B of 5 provides the estimates for local, state and European news coverage. In column 1 of Panel B, I find a 100-mile reduction in effective distance to Washington *decreased* the mentioning of the newspaper town's name by about 5%. During this era, coverage of a newspaper's locality (i.e. the town itself) primarily consisted of items such as local commercial advertisements, obituaries, marriage announcements, and legal notices (Blondheim, 1994). The decrease in the mentioning of the newspaper town's name therefore most likely reflects a decrease in the coverage of these items. In contrast, column 2 of Panel B suggests that the estimated effect on the mentioning of the county's name is close to zero and statistically insignificant. The contrast between column 1 and 2 of the panel suggests that access to telegraphed news from Washington crowded out information related to the newspaper town's immediate vicinity but did not affect coverage of the broader local region such as news related to the county.

Column 3 of the panel reports the estimates for the mentioning of the newspaper's state. The estimated effect on the mentioning of the state's name is small and statistically insignificant, suggesting that access to telegraphed news from Washington had little impact

on news coverage of the state.[28] In column 4, I turn to the coverage of European news. European news was scarce during the mid-19th century and the first transatlantic telegraph communication was not achieved until 1858. Partly because of its scarcity, European news were always considered interesting and eagerly welcomed by newspaper readers regardless of the delay (Schwarzlose, 1989). I therefore expect access to telegraphed news from Washington to have little impact on the coverage of European news. Consistent with my expectation, I find in column 4 that the estimated effect on the mentioning of European country names is small in magnitude and statistically indistinguishable from zero.

Panel C of Table 5 provides the estimates for the mentioning of major national issues. Column 1 reports the estimate for the mentioning of the word "slavery." I find that a 100-mile reduction in effective distance to Washington increased the mentioning of "slavery" by approximately 10%. Column 2 reports the estimate for the word "territor," which I use to capture the coverage of various territorial disputes. The estimated effect for "territor" has the same sign as that of "slavery," but it is not statistically significant, perhaps because the word "territor" is not a precise enough measure of territorial issues. In column 3, I report the estimated effect on the sum of the frequencies of "slavery" and "territor." The estimate suggests a 4.7% increase in the combined mentioning of "slavery" and "territor" for a 100-mile reduction in effective distance to Washington, although the estimate is not precisely estimated (p-value=0.18). Lastly, in column 4 of the panel I use the frequency of the word "vote" as the outcome to examine whether access to telegraphed news from Washington affected the provision of voting-related information. The estimate shows a 3.6% increase in the mentioning of the word "vote" for a 100-mile reduction in effective distance to Washington, although the estimate is not statistically significant at the conventional level (p-vlaue=0.11). I interpret this result as suggestive evidence that access to telegraphed news from Washington was associated with greater provision of voting-related information, which might have contributed to voter turnout.

[28] I find an estimate similar in magnitude and statistical significance when I instead use the mentioning of the governor's name as the outcome.

Overall, Table 5 suggests that access to telegraphed news from Washington led newspapers to cover more national politics, including coverage of Congress, the presidency, and sectional divisions involving slavery.[29] The greater access to national political news could have informed and engaged the public, contributing to turnout in national elections.

7 Conclusion

A revolutionary technology, the electric telegraph enabled instant communications over vast distances for the first time and greatly accelerated the dissemination of news throughout the nation. Yet the telegraph has gone largely unstudied in economics, particularly with regards to its impacts on the political realm. Using novel data on the growth of the telegraph network in the U.S. during 1840-1852, this paper studies the impact of the telegraph on political participation. I find that access to telegraphed news from Washington increased voter turnout in presidential elections. Effects were concentrated in regions least connected to Washington prior to the telegraph. Exploring the mechanisms, I find evidence that newspapers played a key role in facilitating the diffusion of more timely national news to local areas. Moreover, text analysis using historic newspapers suggests that access to telegraphed news from Washington led newspapers to cover more national politics, including coverage of Congress, the presidency, and sectional divisions involving slavery.

At a time when almost 90 percent of Americans were still living in rural areas and had limited access to national news, the telegraph connected the nation to an unprecedented degree and greatly improved access to timely national news. The results suggest that the telegraph made newspapers less parochial, facilitated a national conversation on important issues, and increased political participation in antebellum America.

[29] Table A.6 presents the results from the same set of regressions as in Table 5 after controlling for newspaper-specific linear time trends. The results are broadly similar.

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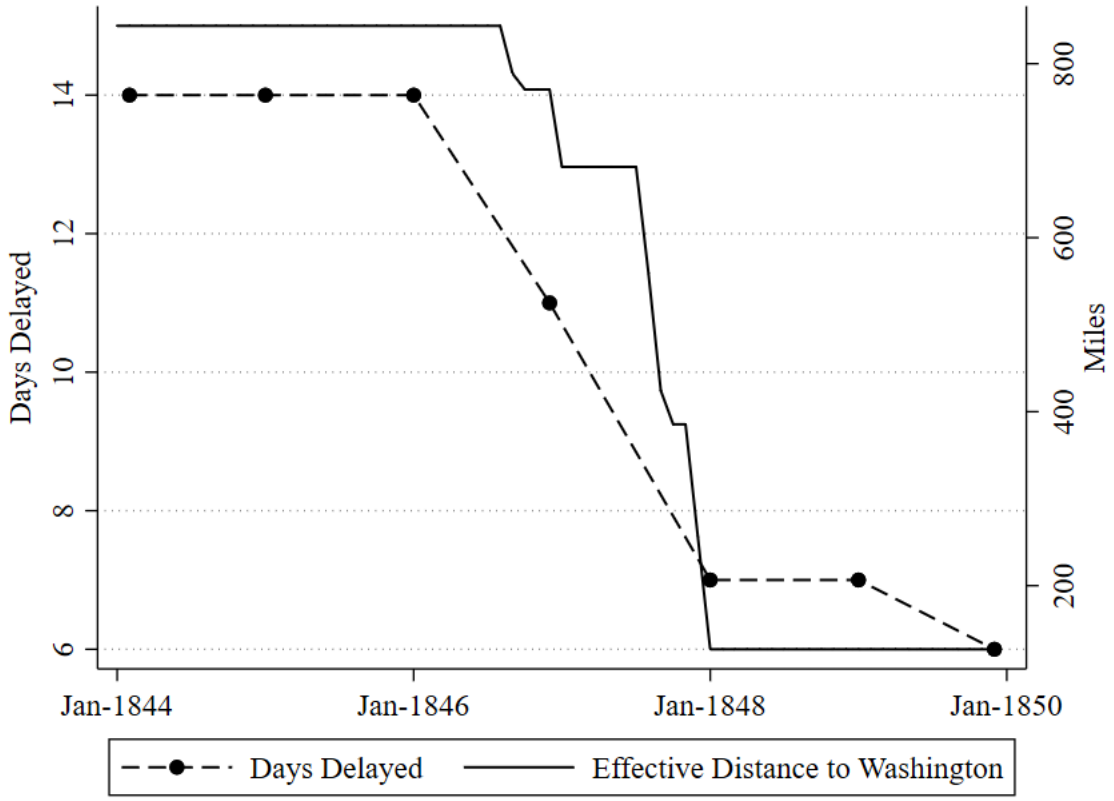
Figure 1: Daily Newspapers with the Latest News from Washington, 1840-1852

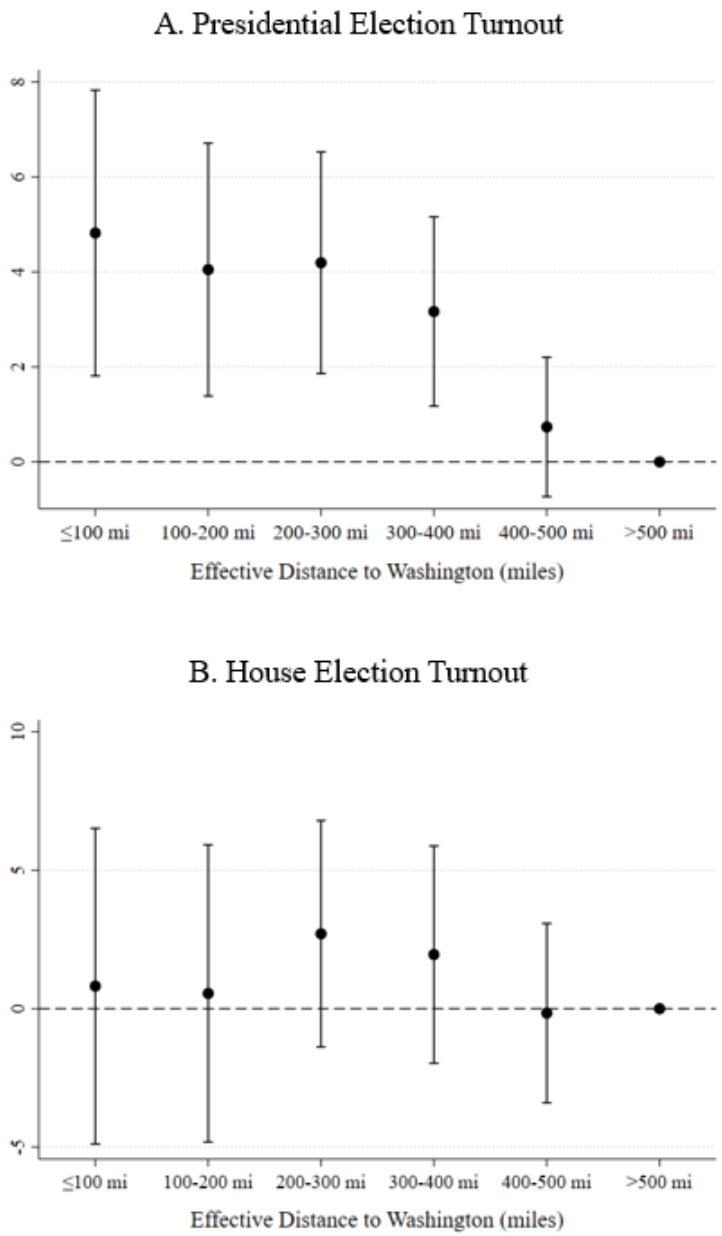
Notes - The figure shows the locations (county centroids) of daily newspapers with the latest Washington news in presidential election years during 1840-1852. Up to the beginning of 1844, only daily newspapers in Washington had the latest Washington news. After 1844, daily newspapers on the telegraph network connected to Washington had the latest Washington news. The locations of daily newspapers come from the 1840 *Census of Manufactures*. Data on the telegraph network are the same as in the footnote of Figure A.1.

Figure 2: Delay of Washington News and Effective Distance to Washington — Evidence from the Newspaper *The Boon's Lick Times*



Notes - The figure shows the delay of Washington news and the effective distance to Washington during 1844-1850 for the newspaper *The Boon's Lick Times*, which was published in Fayette, Missouri, a small town 120 miles outside of St. Louis. The dashed line plots the minimum number of days delayed of Washington news in the first two months of each year, as appeared in *The Boon's Lick Times*. The solid line plots Fayette's effective distance (miles) to Washington during the same period.

Figure 3: The Effects of Telegraphed News from Washington on Voter Turnout



Notes - The figure shows the estimated effects of access to telegraphed news from Washington on voter turnout during 1840-1852. The dots are the estimated coefficients, and the vertical lines represent the 95% confidence intervals. The estimates in each panel come from a single OLS regression following equation (2), where each observation is a county-year. The outcomes are presidential election turnout in Panel A and house election turnout in Panel B, both measured in percentage points on a scale from 0 to 100. The explanatory variables are the five dummy variables measuring a county's effective distance to Washington: within 100 miles, 100-200 miles, 200-300 miles, 300-400 miles, and 400-500 miles; the omitted category is being more than 500 miles. Each regression controls for county fixed effects, state-by-year fixed effects, and county demographic characteristics including the natural log of population, the population share of whites, share of urban population, share of white males above 20 years old, and share of slaves. Each regression is weighted by the voting eligible population as proxied by the population of white males above 20 years old in 1840. Standard errors are corrected for clustering at the county level.

Table 1: Access to Telegraphed News from Washington and Voter Turnout, 1840-1852

	Outcome: Voter Turnout			
	Presidential Election		House Election	
	(1)	(2)	(3)	(4)
Eff. Dist. to Washington (100 miles)	-1.159***	-1.224***	0.0176	-0.104
	(0.421)	(0.345)	(0.614)	(0.548)
Observations	4,659	4,659	3,892	3,892
R-squared	0.918	0.925	0.826	0.834
County FE	Yes	Yes	Yes	Yes
State-by-Year FE	Yes	Yes	Yes	Yes
Demographic controls		Yes		Yes
Mean of Dep. Var.	69.78	69.78	68.09	68.09
Std. Dev. of Dep. Var.	15.71	15.71	16.55	16.55

Notes - The table shows the estimated effects of access to telegraphed news from Washington on voter turnout (in percentage points) for the period 1840-1852. Each column represents the results from a separate OLS regression following equation (1), where each observation is a county-year. The outcome variables are presidential election turnout in column 1 and 2 and House election turnout in column 3 and 4. The explanatory variable is effective distance to Washington measured in hundred miles. Each regression controls for county fixed effects and state-by-year fixed effects. Column 2 and 4 further control for county demographics including the natural log of population, the population share of whites, share of urban population, share of white males above 20 years old, and share of slaves. Each regression is weighted by the voting eligible population as proxied by the population of white males above 20 years old in 1840. Standard errors are corrected for clustering at the county level. *** p<0.01, ** p<0.05, * p<0.1

Table 2: Testing and Controlling for Pre-trends

	Outcome: Change in Pres. Turnout		
	Δ Turnout, 1844-52 (1)	Δ Turnout, 1840-44 (2)	Δ Turnout, 1844-52 (3)
Δ Eff. Dist. Washington, 1844-52	-1.539***	-0.0363	-1.658***
	(0.441)	(0.359)	(0.400)
Observations	1,153	1,147	1,133
R-squared	0.521	0.394	0.629
State dummies	Yes	Yes	Yes
Demographic controls	Yes	Yes	Yes
Controlling for the change in pres. turnout between 1840-1844			Yes

Notes - The table presents estimates from running long-difference versions of equation (1) for different sub-periods between 1840 and 1852. Each column represents the results from a separate OLS regression, where each observation is a county. The explanatory variable is the change in effective distance to Washington (in hundred miles) between 1844 and 1852. The outcome variables are the changes in presidential election turnout during 1844-1852 in column 1 and 3 and the change in presidential election turnout during 1840-1844 in column 2, all measured in percentage points. Each regression controls for state dummies and changes in county demographics between 1844 and 1852, including changes in the natural log of population, the population share of whites, share of urban population, share of white males above 20 years old, and share of slaves. Column 3 further controls for the change in presidential election turnout during 1840-1844. Each regression is weighted by the voting eligible population as proxied by the population of white males above 20 years old in 1840. Standard errors are corrected for clustering at the county level. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 3: Heterogeneity of Effects by Region

	Outcome: Presidential Election Turnout			
	Northeast (1)	Midwest (2)	South Atlantic (3)	South Central (4)
Eff. Dist. to Washington (100 miles)	0.115	-1.570***	0.630	-1.820***
	(0.628)	(0.558)	(1.761)	(0.495)
Observations	765	1,391	1,193	1,310
R-squared	0.943	0.860	0.931	0.913
County FE	Yes	Yes	Yes	Yes
State-by-Year FE	Yes	Yes	Yes	Yes
Demographic controls	Yes	Yes	Yes	Yes
Mean of Dep. Var.	68.35	73.86	65.38	70.31
Std. Dev. of Dep. Var.	13.56	13.60	17.92	15.66

Notes - The table shows the estimated effects of access to telegraphed news from Washington on presidential election turnout for the period 1840-1852 by Census region. The regions are the Northeast in column 1, the Midwest in column 2, the South Atlantic in column 3, and the South Central in column 4. Each column represents the results from a separate OLS regression following equation (1), where each observation is a county-year. The outcome variable is presidential election turnout measured in percentage points. The explanatory variable is effective distance to Washington measured in hundred miles. Each regression controls for county fixed effects, state-by-year fixed effects, and county demographics including the natural log of population, the population share of whites, share of urban population, share of white males above 20 years old, and share of slaves. Each regression is weighted by the voting eligible population as proxied by the population of white males above 20 years old in 1840. Standard errors are corrected for clustering at the county level. *** p<0.01, ** p<0.05, * p<0.1

Table 4: Effects of the Presence of Local News and Non-News Publications

	Outcome: Presidential Election Turnout		
	(1)	(2)	(3)
Eff. Dist. to Washington (100 miles)	-0.995***	-1.219***	-1.250***
	(0.369)	(0.360)	(0.347)
Eff. Dist. to Washington × Had Newspapers in 1840	-0.321**		
	(0.155)		
Eff. Dist. to Washington × Number Newspapers 1840		-0.0169	
		(0.0155)	
Eff. Dist. to Washington × Had Periodicals 1840			0.0743
			(0.192)
Observations	4,659	4,595	4,659
R-squared	0.926	0.926	0.925
County FE	Yes	Yes	Yes
State-by-Year FE	Yes	Yes	Yes
Demographic controls	Yes	Yes	Yes
Mean of Dep. Var.	69.78	69.78	69.78
Std. Dev. of Dep. Var.	15.71	15.71	15.71

Notes - The table shows the estimated interactive effects between access to telegraphed news from Washington and county publishing characteristics on presidential election turnout for the period 1840-1852. Each column represents the results from a separate OLS regression, where each observation is a county-year. The outcome variable is presidential election turnout measured in percentage points. The explanatory variables are effective distance to Washington (in hundred miles) and its interaction with a county publishing characteristic in 1840. In column 1, I interact effective distance to Washington with an indicator for whether the county had a newspaper in 1840. In column 2, the interaction is between effective distance to Washington and the county's number of newspapers in 1840. In column 3, the interaction is between effective distance to Washington and an indicator for whether the county had a (non-news) periodical in 1840. Each regression controls for county fixed effects, state-by-year fixed effects, and county demographics including the natural log of population, the population share of whites, share of urban population, share of white males above 20 years old, and share of slaves. Each regression is weighted by the voting eligible population as proxied by the population of white males above 20 years old in 1840. Standard errors are corrected for clustering at the county level. *** p<0.01, ** p<0.05, * p<0.1

Table 5: Access to Telegraphed News from Washington and News Coverage

	(1)	(2)	(3)	(4)
	Panel A. Mentioning of "Congress" and Presidents' Last Names			
		ln(President	ln(President Name)	
	ln("Congress")	Name)	Pres. Year	Off Year
Eff. Dist. to Washington (100 miles)	-0.0494*	-0.0601*	-0.125**	-0.0603
	(0.0290)	(0.0305)	(0.0476)	(0.0402)
Observations	4,693	4,693	1,371	3,318
R-squared	0.466	0.512	0.570	0.523
	Panel B. Mentioning of Local, State, and European Country Names			
	ln(Town Name)	ln(County Name)	ln(State Name)	ln(European Country Names)
Eff. Dist. to Washington (100 miles)	0.0537*	-0.00435	-0.0181	0.00957
	(0.0286)	(0.0295)	(0.0249)	(0.0327)
Observations	4,693	4,693	4,693	4,693
R-squared	0.776	0.709	0.621	0.487
	Panel C. Mentioning of Issues of National Importance			
	ln("Slavery")	ln("Territor")	ln("Slavery"+ "Territor")	ln("Vote")
Eff. Dist. to Washington (100 miles)	-0.0997***	-0.0286	-0.0474	-0.0363
	(0.0315)	(0.0351)	(0.0354)	(0.0225)
Observations	4,693	4,693	4,693	4,693
R-squared	0.531	0.567	0.560	0.484
Newspaper FE	Yes	Yes	Yes	Yes
Month-by-year FE	Yes	Yes	Yes	Yes
Demographic controls	Yes	Yes	Yes	Yes

Notes - The table shows the estimated effects of access to telegraphed news from Washington on the mentioning of words related to different news topics in my sample of newspapers from the 1840s. Each column of each panel represents the results from a separate OLS regression following equation (3), where each observation is a newspaper-year-month. The explanatory variable is effective distance to Washington measured in hundred miles. The outcome variables are the frequencies of words on news topics, all measured in natural logs. Panel A examines the mentioning of the word "Congress" and the presidents' last names, with the latter examined in both presidential election years and off-years. Panel B examines the mentioning of the newspaper's town, county, and state names, as well as European country names. Panel C examines the mentioning of the words "slavery," "territor," and "vote." Each regression controls for newspaper fixed effect, month-by-year fixed effects, and county demographics including the natural log of population, the population share of whites, share of urban population, share of white males above 20 years old, and share of slaves. Standard errors are corrected for clustering at the newspaper location (town) level. *** p<0.01, ** p<0.05, * p<0.1

Appendix I: Data Appendix

7.1 Data on the Telegraph Network

Data on the telegraph network are compiled from several sources. For the pre-1850 period, I obtain data primarily from the books *Wiring a Continent: The History of the Telegraph Industry in the United States, 1832-1866* (Thompson, 1947) and *The Telegraph in America and Morse Memorial* (Reid, 1886). Thompson (1947)'s seminal historical work on the telegraph traces the history of the development of the telegraph network in the U.S. and provides detailed information on when and where a telegraph line opened for operation. For each telegraph line, the book provides the line's opening date as well as the terminal and the intermediary stations on the line.[30] Reid (1886), a detailed history on the early days of the telegraph industry, supplements Thompson (1947) with more detailed information on some lines and adds several smaller stations and feeder lines omitted by Thompson (1947). While it is possible that some small stations might have been omitted by both sources, it should be noted that my empirical work exploits connection to the telegraph by major cities (i.e. cities with daily newspapers), which are well documented in these sources.[31] Using the information from Thompson (1947) and Reid (1886), I digitize the continuous development of the telegraph network from its infancy in 1844 to the beginning of 1850.

Partly because the telegraph network sprouted more rapidly after 1850, information on the telegraph network since 1850 is not systematically accounted for by either Thompson (1947) or Reid (1886). To overcome this challenge, I find data from several additional sources published in the early 1850s, which allow me to digitize the telegraph network in 1852. The primary source for the 1852 lines is *Report of the Superintendent of the Census* (US Census Office, 1852), which lists all the telegraph lines in operation in the US in 1852. I supplement

[30] In most cases the book provides an exact date or at least the month for when a line opened. In the few cases where only a vague date is offered, such as the season, I look up historic newspapers from cities or towns on the line to identify a more precise date.

[31] I also check and confirm that Thompson (1947) and Reid (1886) account for all the chief telegraph lines before 1850 as listed in the book *Historical Sketch of the Electric Telegraph: Including Its Rise and Progress in the United States* (Jones, 1852), which I use to digitize the 1852 lines.

this source with the book *Historical Sketch of the Electric Telegraph: Including Its Rise and Progress in the United States* (Jones, 1852) and the January 1st issue of *Appleton's Mechanics' Magazine and Engineers' Journal* (Adams, 1853), which contain more details for some lines. These primary sources provide me with a cross section of the telegraph network in 1852, including the location of the lines and the cities and towns connected. Combining the 1852 data with the pre-1850 data from Thompson (1947) and Reid (1886), I am able to measure the growth of the U.S. telegraph network during 1844-1852. Based on these data, Figure A.1 shows the telegraph lines in operation in the U.S. every other year for the period 1844-1852.

7.2 The *Chronicling America* Database

Chronicling America is produced by the National Digital Newspaper Program (NDNP), a partnership between the Library of Congress and the National Endowment for the Humanities (NEH). The NDNP describes itself as "a long-term effort to provide permanent access to a national digital resource of newspaper bibliographic information and historic newspapers, selected and digitized by NEH-funded institutions (awardees) from all U.S. states and territories." Since 2005, the NEH has been awarding grants annually to state institutions such as state libraries, historical societies, and universities to participate in the program. According to *Chronicling America*, newspapers to be digitized are primarily chosen based on technical considerations, such as the quality of the underlying microfilms; preference was also given to newspapers of high historical value for representing the"state's regional history, geographic coverage, and events of note," that have not been digitized elsewhere, and that are at risk because of the absence of an active ownership. Newspaper pages are digitized with the Optical Character Recognition (OCR) technology and digitized pages are available as text documents on *Chronicling America*'s website.

A caveat of the data, however, is that a digitized newspaper is not available from every single state during this period and geographically the newspapers in my sample are more

representative of the Midwest and the South.[32] Despite the limitation, to my knowledge *Chronicling America* holds the largest collection of digitized newspaper text data for my period of study, which are essential for my subsequent text analysis.

7.3 Validity Checks on Using Word Frequencies to Measure News Coverage

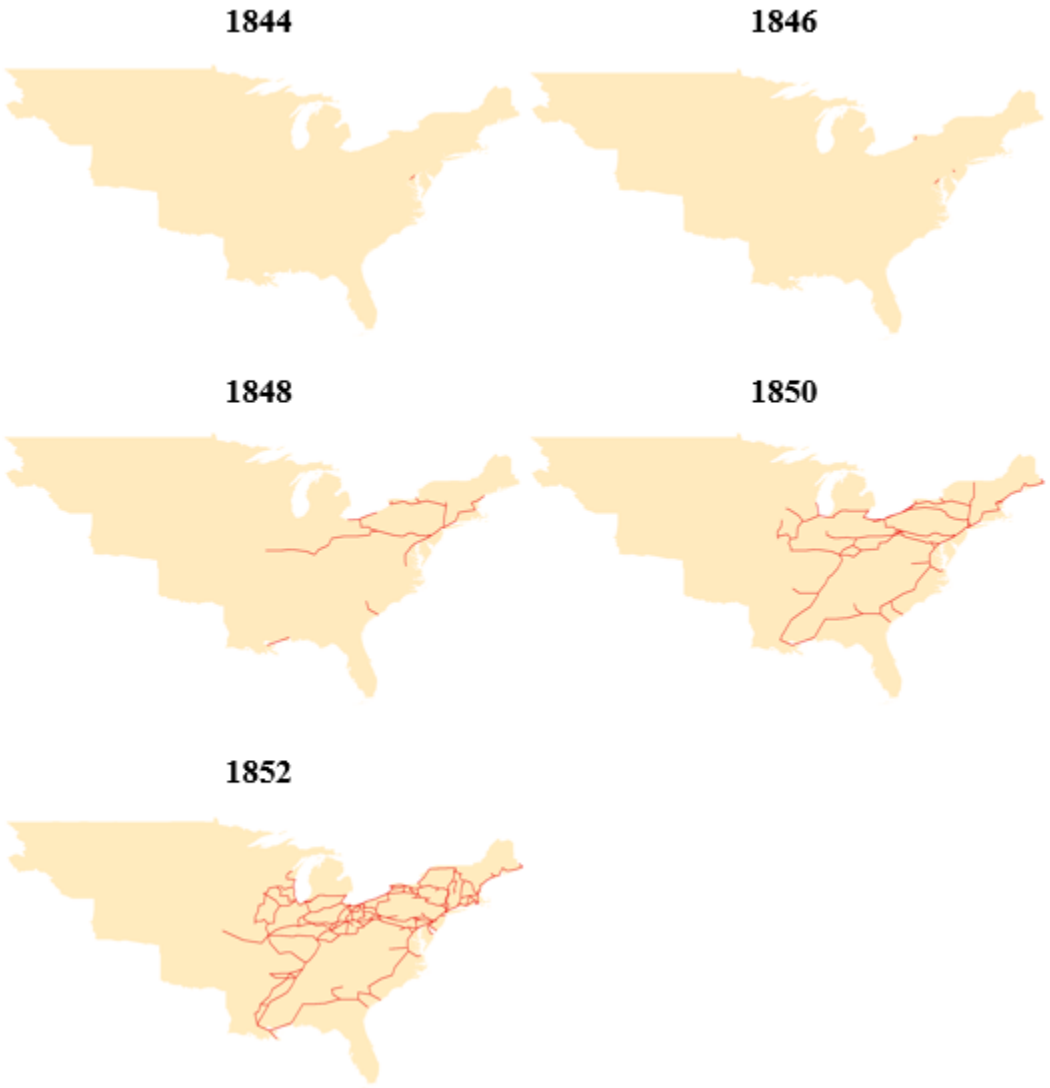
Here I check whether frequencies of words provide a reasonable measure of news coverage. To conduct this exercise, I plot the monthly average frequencies of words in my newspaper sample over time in Figure A.5. Panel A of Figure A.5 shows the average frequency of the presidents' last names as appeared in my newspaper sample over time. It is evident from this figure that the frequency of the presidents' last names spiked in presidential election years, consistent with what Kernell and Jacobson (1987) find that in the mid-19$^{\text{th}}$ century presidential news dominated national news during presidential election years.

Panel B of Figure A.5 shows the average frequency of the word "Congress." Although the frequency of "Congress" exhibits a less clear trend at first glance, a closer inspection of the figure using congressional calendar during the 1840s reveals that the frequency of the word "Congress" largely followed the calendar of congressional meetings during the 1840s. Lastly, Panel C plots the average frequency of the word "telegraph" over time and shows a drastic increase in the mentioning of the word since the introduction of the technology in May, 1844, consistent with the rise in the use of the telegraph for news gathering during the period. Taken as a whole, Figure A.5 suggests that the frequency of words does provide a meaningful measure of news coverage.

[32]Out of the 30 states in the U.S. in 1850, my newspaper sample from *Chronicling America* contains newspapers from 17 states; other states so far have only digitized newspapers from the more recent past. Out of the 17 states, only 2 states (Pennsylvania and Vermont) are from the Northeast, and the rest of the newspapers are from the Midwest and the South. While a relatively large share of the observations (about 21%) come from Mississippi newspapers, the results are qualitatively similar if I drop Mississippi newspapers from the analyis.

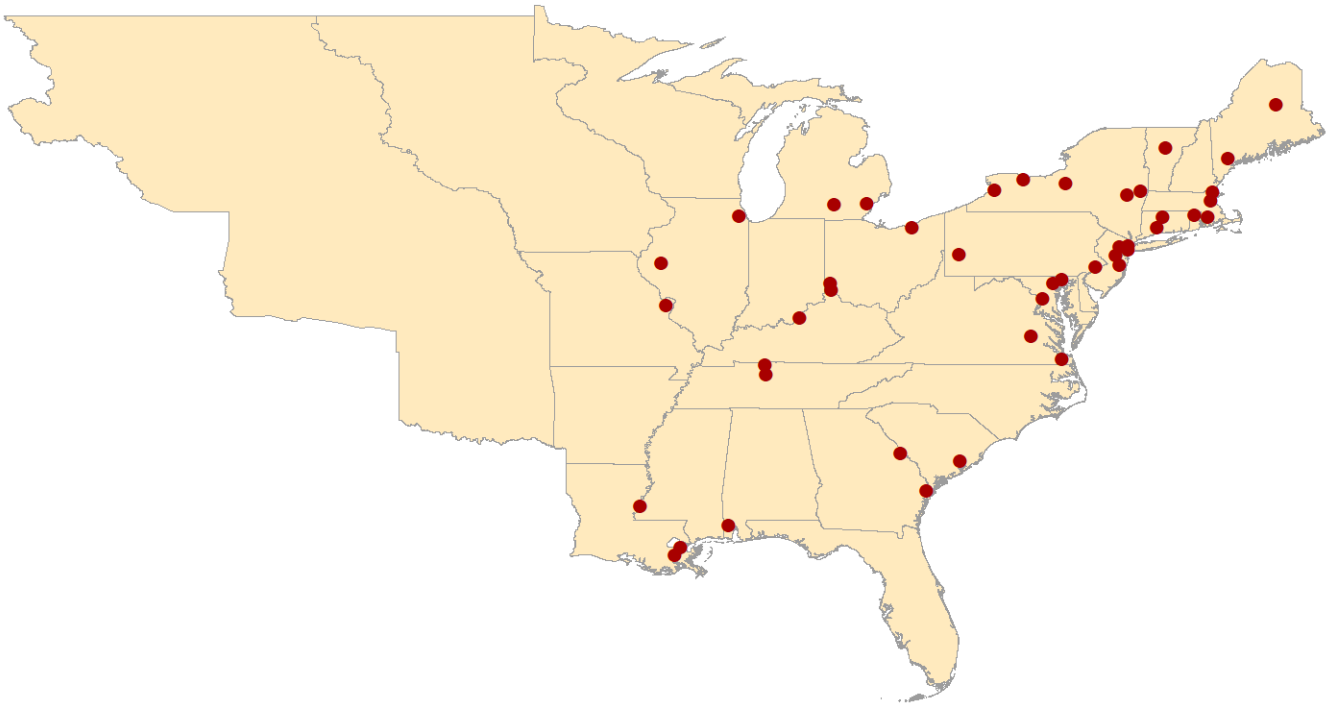
Appendix II: Supplemental Figures and Tables

Figure A.1: Growth of Telegraph Lines, 1844-1852



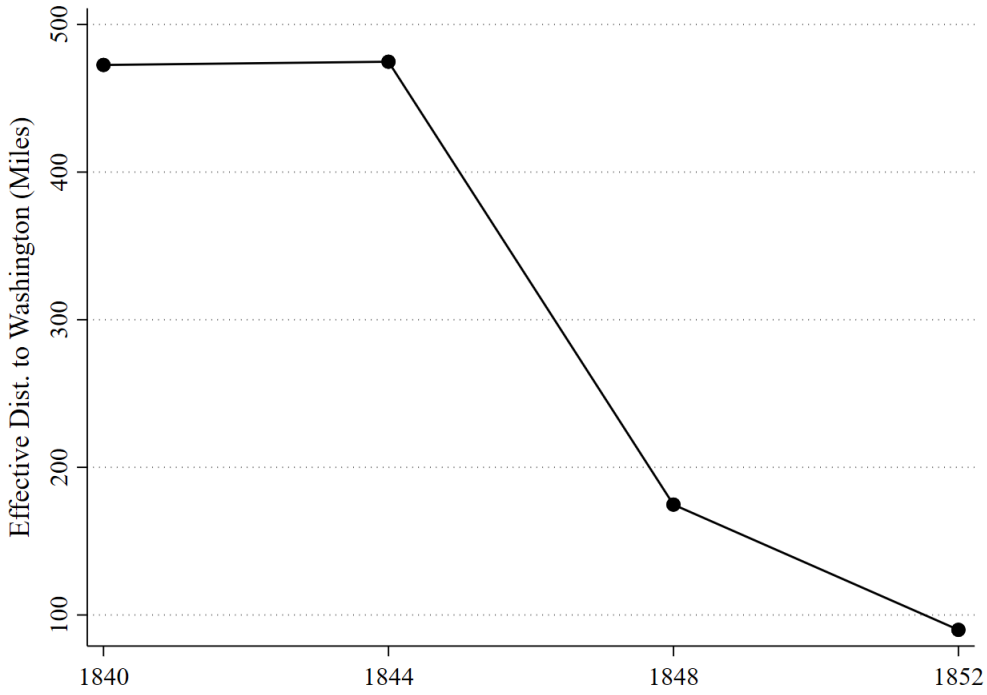
Notes - Telegraph lines in operation in the U.S. during 1844-1852. For the period 1844-1850, data are primarily from Thompson (1947) and Reid (1886), and lines at the beginning (January 1) of each year are shown. Data on the 1852 lines are primarily from *Report of the Superintendent of the Census* (US Census Office, 1852).

Figure A.2: Locations of Daily Newspapers in 1840



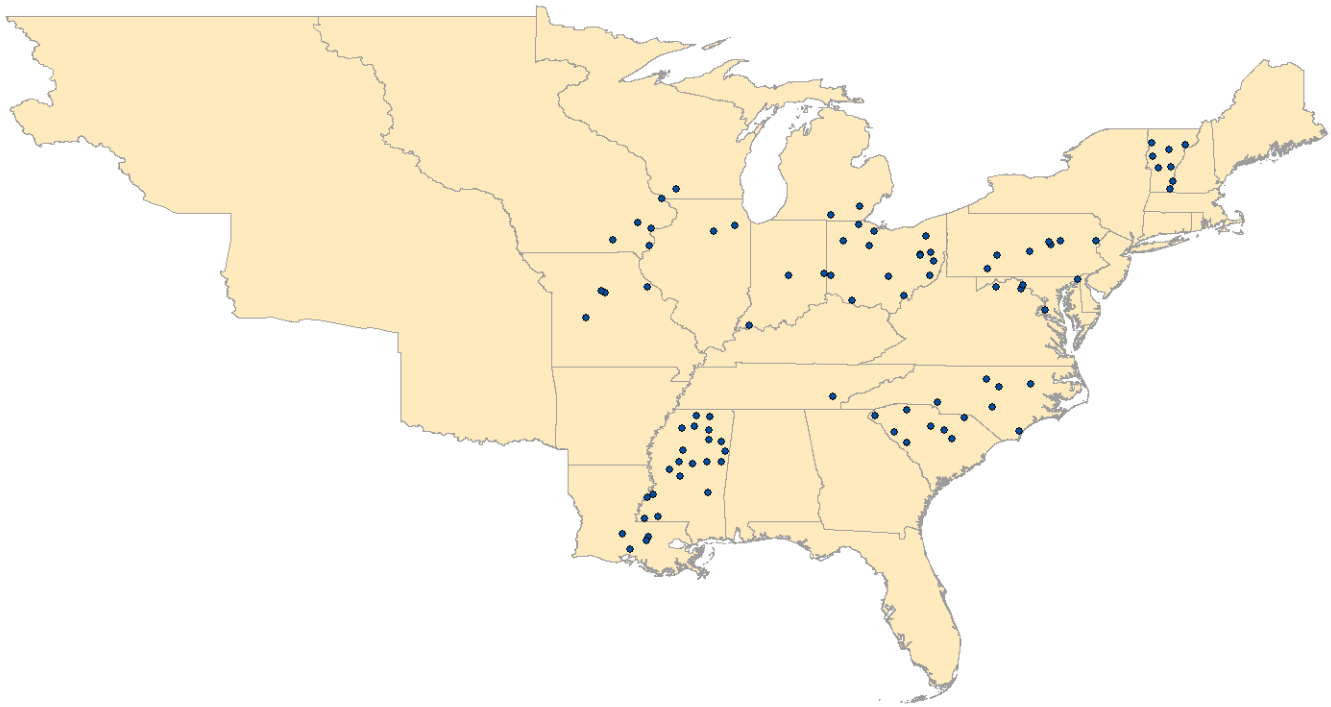
Notes - This figure maps the locations (county centroids) of daily newspapers in 1840. The locations of daily newspapers come from the 1840 *Census of Manufactures*.

Figure A.3: Average Effective Distance to Washington, 1840-1852



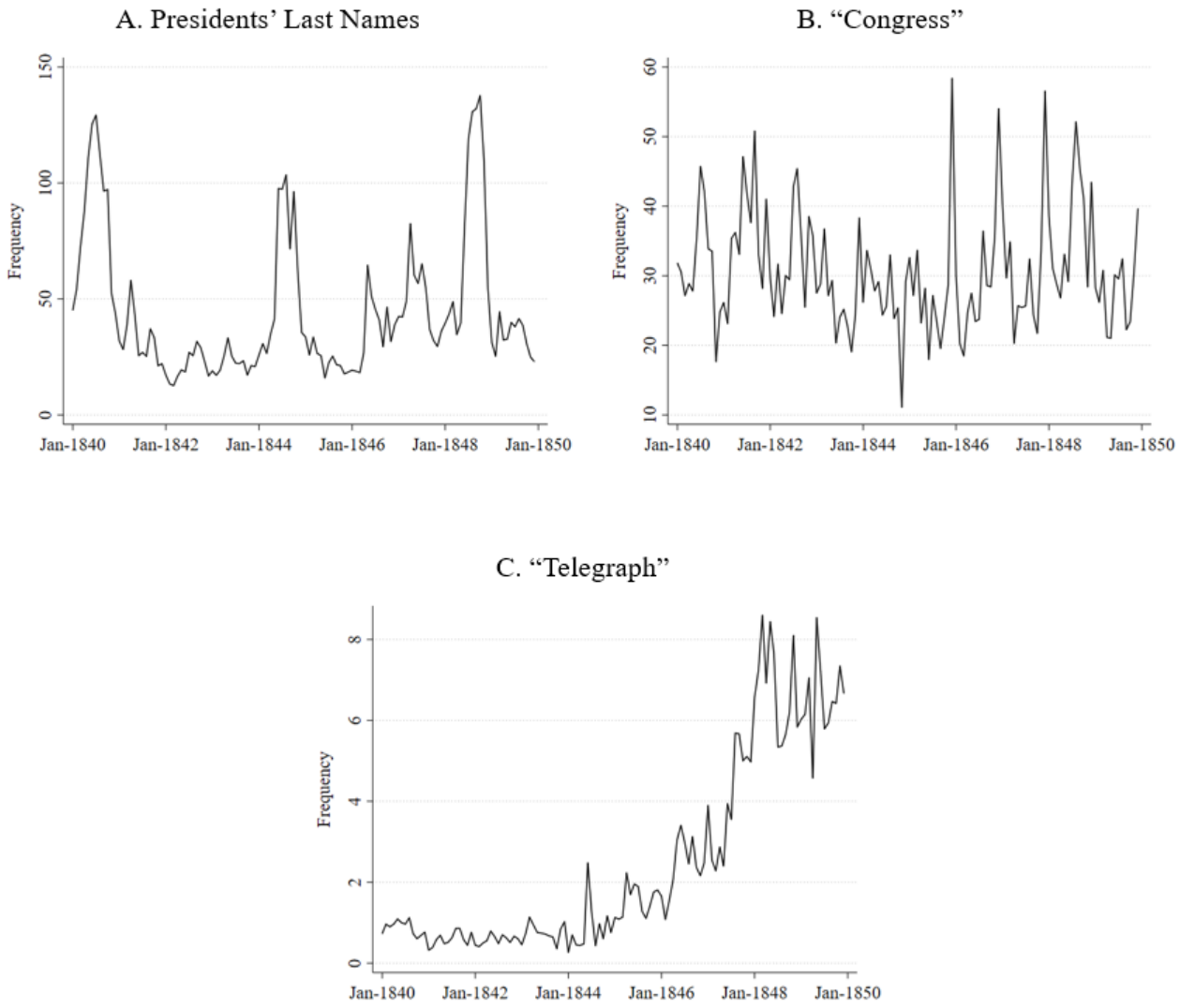
Notes - The figure shows the average effective distance to Washington (in miles) across counties in each presidential election year during the period 1840-1852.

Figure A.4: Locations of the Small-Town Newspapers in My Sample



Notes - This figure maps the locations (towns) of the small-town newspapers in my sample. The newspapers are obtained from the *Chronicling America* database.

Figure A.5: Monthly Frequencies of Words, 1840-1849



Notes - The figure shows the monthly average frequencies of the following words based on my newspaper sample for the period 1840-1849. Panel A shows the frequency of the last names of the U.S. Presidents during the 1840s, which equals the sum of the frequencies of "Van Buren," "Harrison," "Tyler," "Polk," and "Taylor." Panel B shows the frequency of the word "Congress." Panel C shows the frequency of the word "telegraph." The monthly frequency of each word is averaged across the newspapers in my sample.

Table A.1: Summary Statistics of Voting Analysis

	N	Mean	SD	Min	Max
Variables	(1)	(2)	(3)	(4)	(5)
Presidential election turnout	4,659	68.26	16.02	0	99.97
House election turnout	3,892	68.09	16.55	0	99.51
Effective dist. to Washington (100 miles)	4,659	2.199	2.131	0	10.74
Population	4,659	52,961	83,317	561	575,171
% Urban	4,659	15.62	27.48	0	100
% White	4,659	90.13	16.54	8.975	100
% White males above 20 years old	4,659	22.14	5.118	3.424	47.13
% Slaves	4,659	7.866	15.98	0	90.94

Notes - The table shows the summary statistics of the variables used in my baseline analysis. Each observation is a county-year. House election turnout has fewer observations because of missing values of some counties. Effective distance to Washington is defined as distance to the nearest daily newspaper with the latest Washington news. By construction, the effective distance to Washington before the introduction of the telegraph (i.e. in 1840 and 1844) is equal to the actual distance to Washington, and after the introduction of the telegraph (i.e. 1848 and 1852) it is equal to the distance to the nearest daily newspaper with telegraphic connection to Washington.

Table A.2: Robustness Checks

	Outcome: Presidential Election Turnout					
	Control for railroad (1)	Unweighted (2)	Drop counties with dailies (3)	Only rural counties (4)	Counties far from telegraph (5)	Consistent boundary (6)
Eff. Dist. to Washington (100 miles)	-1.222***	-0.754**	-0.946***	-0.925***	-1.880***	-1.388***
	(0.345)	(0.333)	(0.333)	(0.346)	(0.634)	(0.384)
Observations	4,659	4,659	4,458	4,271	1,006	3,158
R-squared	0.925	0.855	0.885	0.868	0.868	0.941
County FE	Yes	Yes	Yes	Yes	Yes	Yes
State-by-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Demographic controls	Yes	Yes	Yes	Yes	Yes	Yes

Notes - The table provides robustness checks on the estimated effects of access to telegraphed news from Washington on presidential election turnout for the period 1840-1852. Each column represents the results from a separate OLS regression, where each observation is a county-year. The outcome variable is presidential election turnout measured in percentage points. The explanatory variable is effective distance to Washington measured in hundred miles. Column 1 controls for distance to the nearest railroad. Column 2 uses an unweighted regression. Column 3 drops counties with a daily newspaper in 1840. Column 4 restricts the sample to counties with only rural population. Column 5 restricts the sample to counties that were more than 50 miles away from any telegraph line by 1852. Column 6 restricts the sample to counties with the same boundary between 1840-1850. Each regression controls for county fixed effects, state-by-year fixed effects, and county demographic characteristics including the natural log of population, the population share of whites, share of urban population, share of white males above 20 years old, and share of slaves. Each regression, except that in column 3, is weighted by the voting eligible population proxied by the population of white males above 20 years old. Standard errors are corrected for clustering at the county level. *** p<0.01, ** p<0.05, * p<0.1

Table A.3: List of the Small-Town Newspapers in My Sample and Their Locations

Title	Place	State	Title	Place	State
The Illinois free trader.	Ottawa	Illinois	Louisville messenger.	Louisville	Mississippi
Juliet signal.	Juliet	Illinois	The Yazoo Democrat.	Yazoo	Mississippi
Indiana State sentinel.	Indianapolis	Indiana	The Yazoo City Whig.	Yazoo	Mississippi
The Evansville journal.	Evansville	Indiana	Saturday morning visitor.	Warsaw	Missouri
Richmond palladium.	Richmond	Indiana	Boon's Lick times.	Glasgow	Missouri
Burlington hawk-eye.	Burlington	Iowa Territory	Salt River journal.	Bowling Green	Missouri
Iowa territorial gazette and advertiser.	Burlington	Iowa Territory	The North-Carolinian.	Fayetteville	North Carolina
			Tarboro' press.	Tarboro	North Carolina
Weekly miners' express.	Dubuque	Iowa Territory	The Charlotte journal.	Charlotte	North Carolina
Iowa capitol reporter.	Iowa City	Iowa Territory	Wilmington journal.	Wilmington	North Carolina
Bloomington herald.	Bloomington	Iowa Territory	The Hillsborough recorder.	Hillsboro	North Carolina
Baton-Rouge gazette.	Baton Rouge	Louisiana	The North-Carolina standard.	Raleigh	North Carolina
The Planters' banner.	New Iberia	Louisiana	Democratic standard.	Georgetown	Ohio
Southern sentinel.	Plaquemine	Louisiana	Carroll free press.	Carrollton	Ohio
The St. Landry whig.	Opelousas	Louisiana	The Lancaster gazette.	Lancaster	Ohio
The Cecil Whig.	Elkton	Maryland	The Cadiz sentinel.	Cadiz	Ohio
Port Tobacco Times	Port Tobacco	Maryland	Maumee City express.	Maumee	Ohio
Hillsdale Whig standard.	Hillsdale	Michigan	Meigs County times.	Pomeroy	Ohio
Ypsilanti sentinel.	Ypsilanti	Michigan	The spirit of democracy.	Woodsfield	Ohio
Piney Woods planter.	Liberty	Mississippi	Portage sentinel.	Ravenna	Ohio
Liberty advocate.	Liberty	Mississippi	The Kalida venture.	Kalida	Ohio
Jeffersonian Democrat.	Kosciusko	Mississippi	Lower Sandusky freeman.	Lower Sandusky	Ohio
Kosciusko chronicle.	Kosciusko	Mississippi	The Ohio Democrat.	Dover	Ohio
Central register.	Kosciusko	Mississippi	The Democratic pioneer.	Upper Sandusky	Ohio
Attala register.	Kosciusko	Mississippi	The mountain sentinel.	Ebensburg	Pennsylvania
Mississippi Democrat.	Carrollton	Mississippi	The Columbia Democrat.	Bloomsburg	Pennsylvania
The Whig creed.	Carrollton	Mississippi	Lewistown gazette.	Lewistown	Pennsylvania
The Southern Pioneer	Carrollton	Mississippi	Jeffersonian Republican.	East Stroudsburg	Pennsylvania
The hornet.	Carrollton	Mississippi	Sunbury American.	Sunbury	Pennsylvania
Western statesman.	Carrollton	Mississippi	The Somerset herald.	Somerset	Pennsylvania
Southern patriot.	Houston	Mississippi	Lewisburg chronicle.	Lewisburg	Pennsylvania
Port-Gibson herald.	Port Gibson	Mississippi	The Abbeville banner.	Abbeville	South Carolina
The Port-Gibson correspondent.	Port Gibson	Mississippi	Farmers' gazette.	Cheraw	South Carolina
Whig Republican.	Lexington	Mississippi	Edgefield advertiser.	Edgefield	South Carolina
Lexington union.	Lexington	Mississippi	The Camden journal.	Camden	South Carolina
True Democrat.	Paulding	Mississippi	Keowee courier.	Walhalla	South Carolina
The Rodney telegraph.	Rodney	Mississippi	The Spartan.	Spartanburg	South Carolina
The organizer.	Oxford	Mississippi	The Sumter banner.	Sumter	South Carolina
The Democratic Whig.	Columbus	Mississippi	South Branch intelligencer.	Romney	Virginia
Columbus Democrat.	Columbus	Mississippi	Spirit of Jefferson.	Charles Town	Virginia
Southern Argus.	Columbus	Mississippi	The Middlebury galaxy.	Middlebury	Vermont
The Mississippi Creole.	Canton	Mississippi	The Caledonian.	St Johnsbury	Vermont
Holly Springs banner.	Holly Springs	Mississippi	Burlington free press.	Burlington	Vermont
The guard.	Holly Springs	Mississippi	Rutland herald.	Rutland	Vermont
Holly Springs gazette.	Holly Springs	Mississippi	Vermont watchman	Montpelier	Vermont
The weekly independent.	Aberdeen	Mississippi	and State journal.		
Southern tribune.	Aberdeen	Mississippi	Vermont phœnix.	Bellows Falls	Vermont
Macon intelligencer.	Macon	Mississippi	Windham County Democrat.	Brattleboro	Vermont
The Weekly register.	Panola	Mississippi	The spirit of the age.	Woodstock	Vermont
The Ripley advertiser.	Ripley	Mississippi	Wisconsin tribune.	Mineral Point	Wisconsin Territory
Woodville Republican.	Woodville	Mississippi			

Notes - The table lists the small-town newspapers in my sample that were used for the text analysis. The newspapers are obtained from the *Chronicling America* database.

Table A.4: Summary Statistics of Words Used for the Newspaper Text Analysis

		Frequency of Word			
Words	N (1)	Mean (2)	SD (3)	Min (4)	Max (5)
"Congress"	4,693	30.58	27.96	0	242
Presidents' Last Names	4,693	14.65	18.60	0	191
Town Name	4,693	82.18	75.14	0	520
County Name	4,693	59.20	72.29	0	748
State Name	4,693	61.68	58.53	0	475
European Country Names	4,693	28.45	28.10	0	349
"slavery"	4,693	7.891	15.79	0	300
"territor"	4,693	14.26	23.32	0	360
"vote"	4,693	36.96	33.71	0	354
"telegraph"	4,693	2.595	4.275	0	57

Notes - The table presents summary statistics of the words used in the newspaper text analysis. The newspapers are obtained from the *Chronicling America* database. The frequency of each word is based on my newspaper sample for the period 1840-1849. Presidents' Last Names consist of the last names of the U.S. presidents that were in office in each year. European country names consist of the following: "Britain," "United Kingdom," "France," "Austria," "Prussia," "Russia," "Italy," "Portugal," "Greece," "Belgium," "Switzerland," "Netherland," "Sweden," "Poland," and the word "Europe."

Table A.5: Access to Telegraphed News from Washington and Mentioning of "Telegraph" in Newspapers

	Outcome: ln("telegraph")			
	(1)	(2)	(3)	(4)
Eff. Dist. Washington (100 miles)	-0.118***	-0.0737***	-0.0712***	-0.106***
	(0.0126)	(0.0228)	(0.0238)	(0.0294)
Observations	4,693	4,693	4,693	4,693
R-squared	0.160	0.556	0.557	0.612
Newspaper FE		Yes	Yes	Yes
Month-by-year FE		Yes	Yes	Yes
Demographic controls			Yes	Yes
Newspaper-specific linear time trend				Yes

Notes - The table shows the estimated effects of access to telegraphed news from Washington on the mentioning of the word "telegraph" in my sample of newspapers from the 1840s. Each column represents the results from a separate OLS regression following equation (3), where each observation is a newspaper-year-month. The outcome variable is the natural log of the frequency of the word "telegraph." The explanatory variable is effective distance to Washington measured in hundred miles. Column 1 includes no controls. Column 2 adds newspaper fixed effects and month-by-year fixed effects. Column 3 adds county demographics including the natural log of population, the population share of whites, share of urban population, share of white males above 20 years old, and share of slaves. Column 4 adds newspaper-specific linear time trends. Standard errors are corrected for clustering at the newspaper location (town) level. *** p<0.01, ** p<0.05, * p<0.1

Table A.6: Access to Telegraphed News from Washington and News Coverage (Controlling for Newspaper-Specific Linear Time Trends)

	(1)	(2)	(3)	(4)
	Panel A. Mentioning of "Congress" and the Presidents' Last Names			
		ln(President	ln(President Name)	
	ln("Congress")	Name)	Pres. Year	Off Year
Eff. Dist. to Washington (100 miles)	-0.0883***	-0.0521	-0.170	-0.0796
	(0.0298)	(0.0494)	(0.119)	(0.0626)
Observations	4,693	4,693	1,371	3,318
R-squared	0.558	0.572	0.674	0.586
	Panel B. Mentioning of Local, State, and European Country Names			
	ln(Town Name)	ln(County Name)	ln(State Name)	ln(European Country Names)
Eff. Dist. to Washington (100 miles)	0.0516	-0.0210	-0.0152	0.0114
	(0.0458)	(0.0405)	(0.0401)	(0.0335)
Observations	4,693	4,693	4,693	4,693
R-squared	0.829	0.766	0.678	0.584
	Panel C. Mentioning of Issues of National Importance			
	ln("Slavery")	ln("Territor")	ln("Slavery"+ "Territor")	ln("Vote")
Eff. Dist. to Washington (100 miles)	-0.0907**	-0.103***	-0.100**	-0.0697***
	(0.0454)	(0.0358)	(0.0418)	(0.0258)
Observations	4,693	4,693	4,693	4,693
R-squared	0.573	0.633	0.625	0.559
Newspaper FE	Yes	Yes	Yes	Yes
Month-by-year FE	Yes	Yes	Yes	Yes
Demographic controls	Yes	Yes	Yes	Yes
Newspaper-specific linear trends	Yes	Yes	Yes	Yes

Notes - The table shows the estimates from Table 5 after controlling for newspaper-specific linear time trends in each regression. *** p<0.01, ** p<0.05, * p<0.1