# DISCUSSION PAPER SERIES

# The Electric Telegraph, News Coverage and Political Participation

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# ABSTRACT

# The Electric Telegraph, News Coverage and Political Participation*

Using newly digitized data on the growth of the telegraph network in America during 1840-1852, the paper studies the impacts of the electric telegraph on national elections. I use proximity to daily newspapers with telegraphic connections to Washington to generate plausibly exogenous variation in access to telegraphed news from Washington. I find that access to Washington news with less delay significantly increased voter turnout in national elections. For mechanisms, I provide evidence that newspapers facilitated the dissemination of national news to local areas. In addition, text analysis on more than a hundred small-town weekly newspapers from the 1840s 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. I find little evidence that access to telegraphed news from Washington affected party vote shares or Congressmen's roll call votes.

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# 1 Introduction

Newspapers play an important role in 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 electoral politics in 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.

Why would the timeliness of news matter for electoral outcomes, such as voter turnout? Theoretically, the effect could operate through both demand and supply channels. On the demand side, contemporary historical accounts suggest that readers preferred news with less delay, and that the telegraph made newspapers more attractive and increased their sales (Standage, 2009a).[1] On the supply side, the greater ease with obtaining national news via the

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[1]For instance, in 1851 Horace Greeley, the editor of the *New York Tribune*, claimed that "the quickest

telegraph and the higher value that readers attached to national news with less delay means that newspaper editors had incentives to cover more national news after the introduction of the telegraph. The greater demand for and supply of national news because of the telegraph would therefore increase the amount of national news consumed in the equilibrium by the public. This would lead to an electorate more informed of national politics, which may potentially increase political participation and affect outcomes in national elections.

To study the electoral impact of the telegraph empirically, 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., 2022) or one-off event such as the establishment of the transatlantic telegraph cable (Steinwender, 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 paper is the first to empirically study the political impacts of the telegraph using this systematic and detailed information on the expansion of the U.S. telegraph network.

My baseline 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-19th 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

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news is the one looked to"; contemporary journalists also observed that "to the press the electric telegraph is an invention of immense value...The press is enabled to lay [the news] fresh before the reader like a steak hot from the gridiron, instead of being cooled and rendered flavourless by a slow journey from a distant kitchen" (Standage, 2009a).

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 baseline 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. Gentzkow et al. (2011) provides evidence (albeit for the period 1869-1928) that local area population and income growth tend to be associated with decreases in voter turnout, which suggests that any bias from omitted variables is likely to work against finding a positive effect of access to the telegraph.

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 one standard deviation (about 260 miles) would increase presidential election turnout by approximately 3.2 percentage points (about 4.5% relative to the mean of the period). The estimated effect increases monotonically as effective distance to Washington decreases. While on average I do not find an effect on congressional election turnout, it turns out that this was largely because of the substantial disparity in ballot options between presidential and congressional elections in many places during the study period. In particular, in the mid-19th century, it was not uncommon for a party (whether a major or third party) to appear on the presidential election ballot in a specific place without also appearing on the congressional election ballot. Consequently, supporters of a particular party that was solely on the presidential ballot might have cast their vote for the president without voting for any congressional candidate. Indeed, I find that the estimated effects on congressional election turnout become statistically significant and much more similar to those on presidential elec-

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tion turnout once I focus on counties that did not have a major party or a leading third party missing from the ballot between presidential and congressional elections.

As robustness checks, 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. Furthermore, using newly digitized data on the number of newspapers across counties during 1840-1850, I show that access to telegraphed news was not correlated with changes in the number of newspapers, suggesting that the increase in turnout was not driven by an expansion of the number of newspapers. Moreover, the results also hold under a series of robustness checks, including controlling for railroad access or constructing alternative measures of access to telegraphed Washington news that take into account the historical overland, rail, and water transportation networks. These various checks further strengthen the causal interpretation of the results.

Despite the positive effect on voter turnout, I find little evidence that access to telegraphed news from Washington affected party vote shares in national elections, suggesting that the increase in turnout was shared between and similar for both parties. I also find no evidence that access to the telegraph affected Congressmen's roll call votes or the number of bills they introduced.

I then turn to examine the mechanisms underlying the effects on voter turnout. I find that the effect on 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 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 102 small-town weekly 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%. In contrast, I find no evidence that access to the telegraph affected local campaigning activities, as measured by campaign-related words in local newspapers. Taken together, the results suggest that the telegraph made newspapers less parochial and facilitated a national conversation on major issues, which possibly led to greater electoral participation. A participatory public is important for democracy, especially for a young and developing democracy like America in the 1840s. The results therefore suggest that the telegraph contributed to the burgeoning democracy of America in the mid-19th century.

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 public in the mid-19th century.

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 politics. 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., 2022) 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]

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

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[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. 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.

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, 2009b).

Samuel F. B. Morse and his associates obtained funding from Congress in 1843 and built the first telegraph line in America – an experimental line of about 40 miles between Washington and Baltimore. The line opened on May 24th, 1844, demonstrating the practicality of the telegraph with the famous message "What hath God wrought!" Morse believed that only the government should own and operate a technology as strategic as the telegraph and hoped to sell his system at a fair price to the American government. Congress, however, failed to see the full potential of the telegraph and refused to fund further extension of Washington-Baltimore line, which was sold to private investors in 1846 (Thompson, 1947).

Realizing the commercial potential of the telegraph, a number of private companies were soon formed to build telegraph lines across the country after 1844. The telegraph companies primarily built lines to connect major cities and commercial centers (Reid, 1886). To finance the construction of a line, the telegraph company building the line would issue shares of stocks to raise capital from prominent residents (usually local businessmen) along the route of the line; cities or towns from which sufficient stock subscriptions could be obtained were

included as stops on the line (Thompson, 1947).

To build the lines, telegraph companies typically followed and obtained their right of way from existing roads, such as public highways, stage routes, turnpikes, and railroads (Nonnenmacher, 2001).[3] The relatively low cost of building telegraph lines facilitated their rapid spread across the nation.[4] By 1848, there were 2,311 miles of telegraph lines in operation, which further increased to 12,000 miles by 1850, when the telegraph had grown into a national network connecting most major cities and many smaller towns across the US (Highton, 1852).[5] Newspapers, along with banks and corporations, were the biggest customers of the telegraph during this period (Thompson, 1947).

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).[6] 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 26th, 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

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[3]It was, however, not until the mid-1850s when railroad companies embraced the potential of the telegraph for directing trains and started to collaborate with telegraph companies widely (Thompson, 1947).

[4]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).

[5]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.

[6]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).

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 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., 2022) or one-off event such as the establishment of the transatlantic telegraph cable (Steinwender, 2018; Hoag, 2006).[7] For this study, I collect new data from several sources to measure the continuous growth of the U.S. telegraph network during 1844-1852.

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*

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[7]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.

*Telegraph Industry in the United States, 1832-1866* (Thompson, 1947) and *The Telegraph in America and Morse Memorial* (Reid, 1886). Thompson (1947)'s seminal work on the telegraph industry traces the history of the development of the telegraph network in the U.S. Thompson carefully searched through a wealth of source material, both printed and manuscript, and provides to my knowledge the most detailed studies of the early history of the telegraph industry.[8] In particular, the book provides detailed information on when and where a telegraph line opened for operation, including each line's opening date as well as the terminal and the intermediary stations on the line.[9] 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 both sources.[10] Using Thompson (1947) and Reid (1886), I digitize the continuous growth 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

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[8]The primary source material of Thompson's study consists of the collections of key figures in the early history of the telegraph industry, including but not limited to the O'Rielly collection at the New York Historical Society Library; the F. O. J. Smith collection at the Maine Historical Society Library in Portland; the Cornell papers in the custody of the Cornell University Library; the Alfred Vail papers in the Smithsonian Institution; and the Samuel F. B. Morse and the John D. Caton collections in the Library of Congress. In his review of Thompson (1947) in 1948, American economic historian Chester W. Wright wrote that "The known manuscript collections – notably those including the papers of Caton, Morse, O'Rielly, Smith, and Vail – have been exhaustively searched [. . .] and a mass of printed material has been used. Scrupulous care has been taken to provide both elaborate footnote references to all sources and pertinent comments." Wright (1948) further notes that Thompson's contribution "consists in filling in the voluminous details and verifying the whole record."

[9]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 historical newspapers from cities or towns on the line to identify a more precise date.

[10]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.

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 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 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 saw rapid growth of the telegraph network from a single line to a national network. To my knowledge, this is the first paper to empirically study the political impacts of the telegraph using systematic and detailed information on the expansion of the U.S. telegraph network during this period.

## 3.2 Elections, Newspapers, and Other Data

The baseline sample includes counties from all the states and territories in the US as of 1840.[11] To measure political participation, I obtain county-level data on voter turnout and party vote shares in presidential and congressional elections for the period 1840-1852 from ICPSR Study 8611 (Clubb et al., 2006). A county's voter turnout in an election is calculated as the total number of votes cast in the election divided by the number of white males 20 years and older in the election year linearly interpolated between census years (Clubb et al., 2006). In robustness checks, I also explore alternative ways to interpolate the

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[11]My sample does not include areas that were not part of the US states or territories as of 1840. Since California and Texas did not exist as a state or territory in 1840, they are not part of the sample.

intercensal voting population. 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.[12]

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.[13] Using this data set, I can identify the location (county) of all daily newspapers published in 1840. Figure A.1 shows the location of daily newspapers in 1840. Not surprisingly, daily newspapers appear to center around big cities. The 1840 *Census of Manufactures* also provides the number of periodicals published in each county as of 1840. In addition, I collect and digitize new data on the spatial distribution of US newspapers in 1850 from the *Catalogue of the Newspapers and Periodicals Published in the United States* (Kennedy, 1852), which allows me to calculate the change in the number of newspapers across counties during 1840-1850.

Furthermore, I obtain the historical GIS transportation network data from Atack (2016), which allows me to measure each county's access to the railroads, canals, and steamboat-navigated rivers for the period 1840-1852. Moreover, I use the DW-NOMINATE score data from Voteview.com to measure Congressmen ideology (Poole and Rosenthal, 2001) and use the ICPSR 3371 dataset (Swift et al., 2009) to measure the number of bills sponsored by

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[12]In robustness checks, I also try interpolating intercensal population log-linearly.

[13]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.

each Congressmen. Table A.1 provides summary statistics for all the variables used in the main analysis.

# 4  Empirical Strategy

My baseline empirical work aims 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-19<sup>th</sup> 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.[14]

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.[15] In robustness checks, I also construct alternative measures of

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[14]As detailed in Section 2, the high cost of using the telegraph during this period means that gathering news with the telegraph was a privilege exclusive to daily newspapers, which virtually were all 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).

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

access to telegraphed Washington news that take into account the historical overland, rail, and water transportation networks.

As an illustration, Figure 2 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. To illustrate the idea, Figure 3 maps the effective distance to Washington across counties during 1840-1852, showing a drastic decrease in effective distance to Washington across the country after 1844. In addition, Figure A.2 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 4 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;

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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.

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 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 4 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.[16]

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

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

where $y_{ct}$ 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 natural log of population and the shares of urban population, white population, white males above 20 years old, and slave population. $\eta_c$ are county fixed effects, which control for any time-invariant county characteristics such as geographic location. $\sigma_{st}$ 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.[17] In addition, the

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[16]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.

[17]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

inclusion of state-by-year fixed effects controls for the possibility that a state might be pivotal in the Electoral College. The variable of interest is the effective distance to Washington $EffectiveDist_{ct}$, which is measured in hundred miles. The *negative* of $\beta$ captures the effect of a 100-mile *reduction* in the effective distance to Washington on voter turnout. I weight the regression by the population of white males above 20 years old in 1840, which proxies for the size of the voting-eligible population.[18] Standard errors are corrected for clustering at the county level (Bertrand et al., 2004).

The identifying assumption of my baseline empirical strategy is that, conditional on the county and state-by-year fixed effects as well as the county socioeconomic controls, effective distance to Washington is not correlated with other unobserved variables that may also affect voter turnout. Because the telegraph companies primarily targeted places of commercial importance (Thompson, 1947), a natural concern is that access to the telegraph might be correlated with local population or income growth, which might also affect voter turnout. What goes against this concern, however, is the fact that the variation in a county's effective distance to Washington is primarily driven by telegraphic connections in *distant* locations, which is unlikely related to the county's own demand for the telegraph. In addition, Gentzkow et al. (2011) provides evidence (albeit for the period 1869-1928) that local population and income growth tend to be associated with *decreases* in voter turnout, which suggests that any bias from potentially omitted variables is likely to work against finding a positive effect of access to the telegraph. I also conduct a series of robustness checks, which strengthen identification further.

Another threat to identification is reverse causality: increase in local political participation and activism might increase the demand for the telegraph. To address this concern, I test for the presence of pre-trends to show that changes in the effective distance to Washington

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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).

[18]Weighting is suitable in the presence of unmodeled heterogeneity of effects by population size (Solon et al., 2015). Following the advice of Solon et al. (2015), I also show the results when using no weight in robustness checks.

are not correlated with preexisting trends in voter turnout.

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:

$$y_{ct} = \alpha + \sum_k \beta_k EffectiveDist_{ctk} + X_{ct}\delta + \eta_c + \sigma_{st} + \epsilon_{ct} \tag{2}$$

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, $\beta_k$, is to be interpreted relative to the excluded category. For instance, one can interpret $\beta_1$ 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 political outcomes, 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. Column 1 and 2 of Table 1 present the estimates based on equation (1) for presidential election turnout. Column 1 of the Table 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.

In contrast, columns 3 and 4 of Table 1 shows that the estimated turnout effects for House elections, with or without demographic controls, are small and statistically insignificant.[19] It is natural to wonder why the effects on House elections might be different from those on presidential elections. One possible explanation is that for many places during the study period, there could be substantial disparity in ballot options between presidential and congressional elections. In particular, in the mid-19th century, it was not uncommon for a party (whether a major or third party) to appear on the presidential election ballot in a specific place without also appearing on the congressional election ballot. Consequently, supporters of a particular party that was solely on the presidential ballot might have cast their vote for the president without voting for any congressional candidate.

To test this potential explanation, one ideally would need information on which parties appeared on the ballot in each county during my study period. To my knowledge, however, such data are not systematically available at the county level. I therefore inferred whether a party was missing from a county's House election ballot by comparing the county-level party vote shares between presidential and House elections based on the Clubb et al. (2006) dataset, which to my knowledge provides the most granular information on voting outcomes by party for my study period.

Specifically, I define a county as missing a major party (i.e., Democrat or Whig) in the House election if the major party received non-zero votes in the county's presidential election

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[19]I do not examine Senate elections, because congressional elections in the 19th century were only to elect members of the House of Representatives. 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. House elections in the mid-19th century were frequently held on different days as presidential elections (Dubin, 1998; Engstrom and Kernell, 2014). 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.

but zero vote in the House election. Likewise, I define a county as missing the leading third party (i.e., the Liberty Party or the Free Soil Party, depending on the year) in the House election if the third party received non-zero votes in the county's presidential election but zero vote in the House election.[20]

Columns 5 of Table 1 presents the estimated effects on House election turnout when I exclude the county-years in which a major party appeared solely on the presidential ballot but not on the House ballot, and I conduct an analogous exercise in column 6 of the Table for leading third parties. As seen in columns 5-6 of Table 1, the estimated effects on House election turnout become much more similar to those for the presidential elections. The finding supports the view that the initial difference in the results between presidential and House election turnout can be largely attributed to the variation in ballot options between presidential and House elections.

Figure 5 plots the estimated effects based on equation (2), which allows the estimates to vary flexibly by distance. The figure shows that overall the estimated effects on voter turnout increase monotonically as access to telegraphed news from Washington increases (or, equivalently, as effective distance to Washington decreases).[21]

One potential threat to identification is 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. Such pre-trends would also suggest the presence of reverse causality. To address this concern, I test for the presence of pre-trends by running long-difference

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[20]The findings from this exercise remain similar when I use alternative thresholds to define the variables, such as defining a county as missing a major party in the House election if the major party received at least 20 percent of the votes cast in the county's presidential election but 0 percent of the votes in the House election, and defining a county as missing the leading third party in the House election if the third party received at least 3 percent of the votes cast in the county's presidential election (which was approximately the mean of third party vote shares during the study period) but 0 percent of the votes in the House election.

[21]Results are similar and not sensitive to using alternative sets of distance dummies to measure the effective distance to Washington. For Panel B of the figure, which shows the House election estimates, I again focus on counties that did not have a major party or a leading third party missing from the ballot between presidential and House elections. Figure A.3 shows that the estimates for House election turnout are noisier and do not exhibit a clear pattern when including all counties in the sample, consistent with the evidence from columns 3-4 of Table 1.

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 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.[22] 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.

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[22]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.

## 5.2 Additional Robustness Checks for the Baseline Results

The number of US newspapers expanded rapidly during 1840-1850 (Dill, 1928; Blondheim, 1994). One could be concerned that the increasing availability of national news via the telegraph might have contributed to the expansion of the number of newspapers, which would make it harder to isolate the effect of the telegraph from the expansion of newspapers. To address this concern, I collect and digitize new data on the spatial distribution of US newspapers in 1850 from the *Catalogue of the Newspapers and Periodicals Published in the United States* (Kennedy, 1852)[23]. I then combine this new dataset on 1850 newspapers with the newspaper data from the 1840 Census to examine whether access to telegraphed news affected the number of newspapers during 1840-1850. Using a long-difference specification between 1840 and 1850, column 1 of Table 3 shows that there is not a strong association between the change in a county's effective distance to Washington and the change in the total number of newspapers in the county during 1840-1850. The coefficients are negative but statistically insignificant. I find similar evidence when looking at newspapers published with different frequencies (columns 2-4). The results therefore suggest that access to telegraphed news from Washington was unlikely to have affected the number of newspapers.[24]

To account for the spatial correlation of the error terms, I do robustness tests using alternative ways of adjusting for standard errors. Table A.2 shows that the estimates remain significant at 1 or 5 percent level when I cluster the standard errors at the state level or use

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[23]The *Catalogue of the Newspapers and Periodicals Published in the United States* (Kennedy, 1852) was compiled from the 1850 Census of Social Statistics and lists all the newspapers in the US in 1850, including the location (state, county, and township), publishing frequency, circulation, and party affiliation of each paper. I collected and digitized the newspaper data from *Catalogue* from the Rare Book Collection at the New York Public Library.

[24]Newspapers during this period were highly partisan (Gentzkow et al., 2006), and one may wonder whether access to telegraphed news from Washington might have affected the partisanship of newspapers. To explore this question, I manually searched through newspaper bibliographic information on *Chronicling America* as well as the newly digitized 1850 newspaper catalogue (Kennedy, 1852) to identify the party affiliations for the sample of newspapers that I use for text analysis in Section 6. Out of the 102 newspapers in my sample, I managed to identify the party affiliations of 98 papers, among which only two had a switch in party affiliation during the study period after the introduction of the telegraph. This finding is consistent with the idea that newspaper partisanship tended to be very stable during this period and was unlikely to have changed in response to the telegraph.

Conley (1999) standard errors with different distance cutoffs ranging between 50-400 miles.

I present additional robustness checks on the baseline results on presidential election turnout in Table 4. A potential concern is that the results might be confounded by access to the railroad. To address this concern, column 1 of Table 4 controls for distance to the nearest railroad and shows similar result, suggesting that rail access was unlikely a confounder.[25] In column 2, I show the result from an unweighted regression. The point estimate, while slightly smaller, remains statistically significant, suggesting that weighting does not change the main results. In column 3, I drop counties that had a daily newspaper in 1840. Daily newspapers in 1840 could only be found in the largest cities. The estimate remains similar and suggests that the result is not driven by major urban centers with dailies. Similarly, in column 4, I restrict the sample to counties with only rural population. The estimate stays similar, suggesting that the effect was not a uniquely urban phenomenon.

In column 5, I restrict the sample to counties that were more than 50 miles away from any telegraph lines by 1852. Counties far away from any telegraph lines in 1852, by which time the telegraph network had spanned the nation, were unlikely to have been targeted by the telegraph companies. The variation in the effective distance to Washington in such counties was primarily driven by *distant* cities' connection to the telegraph, which was unlikely related to local demand for the telegraph. As seen in column 5, the estimate remains robust and becomes somewhat larger in magnitude, suggesting that the effect was unlikely driven by unobserved local factors that might have increased both telegraph access and voter turnout.[26]

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. The result is robust and slightly larger in magnitude than the baseline estimate. Besides, in column 7, I drop counties with presidential election turnout below 20% and find similar estimates, suggesting that the result is not driven by

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[25]The estimate is also similar when I instead control for an indicator for having a railroad within 10 miles.
[26]The results are also robust to using alternative distance cutoffs, such as by restricting the sample to counties more than 20-40 miles away from any telegraph lines by 1852.

outlier counties with extremely low turnout.

To further address the issue of potential confounders, I check the results after controlling for a rich set of preexisting 1840 county characteristics interacted with year dummies, which would allow each local characteristic to have a differential effect over time.[27] Table A.3 shows that the results from this exercise stay substantially the same, further alleviating the concern about potential confounders. In addition, I follow a similar exercise in Hornbeck (2010) by exploiting only the variation from telegraphic connections further away from the county, which is even less likely to be affected by local factors. Specifically, when measuring a county's effective distance to Washington, I only use telegraphic connections by daily newspapers more than 100 miles away and ignore any connection by nearby dailies. Thus, the variation in effective distance to Washington would only come from telegraphic connections in faraway places. Table A.4 shows that the results are substantially the same when exploiting this arguably more exogenous source of variation in access to telegraphed Washington news. Besides, Table A.5 shows that the baseline results are qualitatively similar when controlling for the winners' margins of victory as a measure of electoral competition.

During the study period, House elections in several states were held on a statewide (at-large) basis instead of at the congressional district level.[28] Columns 1-2 of Table A.6 show that the baseline results on House election turnout are not sensitive to dropping the state-years with at-large House elections. Besides, five of the six New England states (with Connecticut being the exception) required a House candidate to receive a majority and not just a plurality of all votes cast in order to be elected (Dubin, 1998). In the absence of a majority winner, additional rounds of elections were held until a majority winner emerged. Columns 3-4 of Table A.6 show that the baseline results on House election turnout are similar

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[27]Specifically, I control for the interactions between each of the following 1840 county characteristics and year dummies: total population (in natural log), percent urban, percent white, percent slaves, percent illiterate white population above 20 years old, number of colleges, percent employed in commerce, percent employed in agriculture, percent employed in manufacturing, and capital in manufacturing (in natural log).

[28]Based on Dubin (1998), the following states held at-large House elections during the study period: Georgia, Missouri, New Jersey, Alabama, Mississippi, New Hampshire, and Rhode Island in 1840; Missouri, Mississippi, New Hampshire, and Iowa in 1844; California in 1848; California and Mississippi in 1852.

when dropping the five New England states that held such multi-round House elections from the sample.

In addition, the baseline sample size for congressional election is smaller primarily because congressional election turnout is missing (not reported) for some counties in the data. Table A.7 shows that the results are similar when I restrict the sample to the common subset of counties that reported both presidential and congressional election turnout.[29] Besides, I perform a robustness check by restricting the sample to a balanced panel of counties that are in the sample throughout the 1840-1852 period. As shown in Table A.8, the results from the balanced panel are robust and substantially the same as the baseline estimates.

Furthermore, voting population in the baseline was linearly interpolated for intercensal years. Table A.9 shows that the results are substantially the same if I instead use log-linear interpolation to obtain intercensal voting population. The contrasting results between presidential and congressional elections also suggest that the results are unlikely driven by the particular way that intercensal voting population was interpolated.

Moreover, Online Appendix B and Tables A.10-A.11 show that the results are similar when I construct alternative measures of access to telegraphed news from Washington based on GIS network analysis that takes into account the overland, rail, and water transportation networks during the study period.[30] Taken together, the series of robustness checks presented in this section further strengthen the causal interpretation of the results.

## 5.3   Heterogeneity of the Results by Preexisting Partisanship

Do the baseline effects depend on a county's preexisting partisanship? In this subsection, I explore heterogeneity of the results by preexisting partisanship. Specifically, I measure a

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[29]It is worth noting that for Table A.7, the presidential and House elections were not necessarily held concurrently. Indeed, House and presidential elections were frequently held months apart during the study period in many states (Dubin, 1998; Engstrom and Kernell, 2014).

[30]Specifically, using the historical GIS transportation network data, I run the origin-destination (OD) cost matrix analysis tool in ArcGIS Pro, minimizing the travel time from each county centroid to the nearest daily newspaper with telegraphed Washington news. I then use the predicted travel time and distance as alternative measures of access to telegraphed news from Washington. Online Appendix B provides the detailed steps of this exercise.

county's preexisting partisanship using its vote share for the Whig Party in 1840, the last election year before the introduction of the telegraph in 1844. I then interact measures of a county's preexisting Whig support with the effective distance to Washington to explore heterogeneity of the results. Table A.12 presents the findings. In columns 1 and 3 of the Table, I measure Whig support using a dummy variable that equals 1 if a county's 1840 Whig vote share was above median; in columns 2 and 4, the measure is a dummy variable that equals 1 if the county's 1840 Whig vote share was in the top quartile. As seen in Table A.12, the coefficients on all the interaction terms are small and statistically insignificant, suggesting that access to telegraphed news from Washington had no differential effect depending on a county's preexisting partisanship.[31]

## 5.4    Effects on Party Vote Shares and Roll Call Votes in Congress

Did the increase in voter turnout affect the margins of victory, and how did politicians respond to a more informed electorate? In this subsection, I explore the effects of access to telegraphed Washington news on party vote shares as well as on measures of Congressmen's ideology and behavior, including their positions on roll call votes and the number of bills they introduced.

Table 5 examines the effects on party vote shares. The outcomes are the vote shares for each party (Democrats and Whigs) in presidential elections (columns 1-2) and House elections (columns 3-4). As seen in Table 5, the coefficients are relatively small in magnitude and statistically insignificant, suggesting that access to telegraphed Washington news had little effect on vote shares. This finding is consistent with the idea that the telegraph itself was not partisan and that the increase in voter turnout was shared between and similar for both parties, which resulted in little change in the overall party vote shares. In addition, Table A.13 shows that, conditional on having both major parties on the ballot, effective distance to Washington is not correlated with the winner's margin of victory in presidential

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[31]The findings are similar if I measure partisanship with a continuous variable of the vote share.

or House elections.

Next, I explore the effects on politician ideology and behavior, focusing on the House representatives' positions on roll call votes and number of bills introduced during the 26th-32nd Congress that largely overlapped with my study period (1840-1852). Table A.14 examines the positions on roll call votes as measured by the DW-NOMINATE scores (Poole and Rosenthal, 2001).[32] I examine both the first and the second dimensions of the DW-NOMINATE scores as well as their absolute values (since the scores of the two parties have opposite signs) to allow for the possibility of ideological convergence or divergence between the two parties. Table A.14 indicates that the estimated coefficients are small and statistically insignificant, including when I control for both individual (Congressman) fixed effects and state-by-Congress fixed effects (columns 5-8) to examine within-Congressman change over time. The results therefore suggest that access to telegraphed news from Washington had little effect on Congressmen's ideology. In addition, using data from the ICPSR 3371 dataset (Swift et al., 2009), Table A.15 shows that access to telegraphed Washington news had little effect on the representatives' number of bills sponsored in Congress.

One possible explanation for the null effect on representatives' roll call votes and number of bills introduced is that the telegraph was unlikely to have affected the access to such information during this early period. Because the telegraph was still very expensive during my study period, news sent via the telegraph were usually kept brief. This means that telegraphed news from Washington would hardly contain detailed information such as the votes cast or the bills sponsored by each representative; detailed information like this, if transmitted, would still have to rely on the traditional methods such as postal services. Thus, the telegraph was unlikely to have increased the ease for the constituency to observe and monitor their representatives during this early period, giving politicians little incentive

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[32]Developed by Keith Poole and Howard Rosenthal, DW-NOMINATE scores measure Congressmen's ideological positions based on their roll call votes and have two dimensions. The first dimension is the traditional liberal-conservative spectrum on economic matters, while the second dimension measures attitudes on cross-cutting, salient issues of the day, which would be slavery for my study period (Poole and Rosenthal, 2001)

to alter their behavior or ideology.

# 6   Mechanisms

The evidence so far shows that access to telegraphed news from Washington increased voter turnout in national elections. In this section, I explore the mechanisms underlying this result. I first provide evidence that a potential mechanism is the provision of information through newspapers. I then conduct text analysis on a sample of historical 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. Both theoretical models and empirical evidence from the more recent period show that 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 as of 1840 based on the 1840 *Census of Manufactures*.[33] 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 6 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 presiden-

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

tial 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 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 6 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 6 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-19th 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

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in a county to have an interactive effect with access to telegraphed news from Washington.

Column 3 of Table 6 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 6 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 historical 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 full-text data for the mid-19th century.[34] *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

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

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.

I scraped *Chronicling America*'s website to obtain all digitized newspapers published between January 1, 1840 and December 31, 1849.[35] 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.[36] After removing the few big-city newspapers, I obtain a sample of 102 small-town newspapers from 17 states. All the newspapers in my sample are four pages in size and published weekly. Appendix Table A.16 lists the newspapers in my sample, and Figure A.4 maps the locations of the newspapers.

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.[37] Despite the limitation, to my knowledge

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[35]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.

[36]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.

[37]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

*Chronicling America* holds the largest collection of digitized newspaper full-text data for my period of study, which are crucial for my subsequent text analysis.

### 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.[38] 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. Similarly, I use the frequency of the last names of the U.S. presidents in the 1840s to measure the coverage of presidential news.[39]

To check whether frequencies of words provide a reasonable measure of news coverage, I plot the monthly average frequencies of words in my newspaper sample over time in Figure 6. Panel A of Figure 6 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

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21%) come from Mississippi newspapers, the results are qualitatively similar if I drop Mississippi newspapers from the analysis.

[38]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.

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

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 6 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 6 suggests that the frequency of words does provide a meaningful measure of news coverage.

Besides news related to 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, state-specific names (e.g., state capital and governor names), and European country names. Moreover, I have measured coverage of major national issues during the 1840s. The arguably most prominent national issues of the 1840s include the sectional divisions involving slavery, the annexation of Texas, tariff issues, and the war with Mexico (1846-1848). I therefore focus on the frequency of the following keywords: "slavery," "texas", "annex," "tariff," and "mexic."[40] Table A.17 provides summary statistics of all the words used in the paper to measure news topics.

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[40]I use the word "slavery" instead of the root word "slave" to avoid confusing the issue of slavery with advertisements involving slaves. In subsequent analysis, I also consider other words and phrases related to slavery, such as "abolition" and "free soil." The frequency of the root "annex" captures variants of the word, such as "annex" and "annexation." Similarly, "mexic" captures variants such as "mexico" and "mexican".

### 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). $\eta_i$ are newspaper fixed effects, which control for any time-invariant newspaper characteristics such as geographic location, local culture, and editor preferences for news topics. $\sigma_t$ are month-by-year fixed effects, which control for common shocks to all newspapers, such as national elections and breakout of other national events.[41] 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 interest is the effective distance to Washington $EffectiveDist_{it}$, which is my measure of access to telegraphed news from Washington and is defined similarly 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 $t$.[42] 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 $\beta$ captures the effect of a 100-mile *reduction* in the effective distance to Washington on coverage

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[41]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.

[42]Again, this is because small-town newspapers in the mid-19th 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.

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.18 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 7 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 similar (at about 5.6%) for the mentioning of the presidents' last names. Kernell and Jacobson (1987) find that in the mid-19th century presidential news dominated national news coverage during presidential election years but 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 = 0.109), although the coefficient still has the

same sign and suggests an economically meaningful effect.

In addition, columns 5 and 6 of Panel A consider the mentioning of presidential candidates' names during presidential election years. In column 5, I examine the mentioning of the last names of the presidential candidates from the two major parties and the leading third party in each election year. In column 6, I further include the mentioning of the last names of the vice-presidential candidates. Across the two columns, I find that a reduction in effective distance to Washington by 100 miles increased the mentioning of candidates' names by about 10-12%. Taken as a whole, Panel A of Table 7 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 7 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 4%. 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.

Columns 3-5 of Panel B examine the coverage of state-specific news, as measured by the mentioning of state, state capital, and governor names. The estimated effects on the mentioning of state-specific names are all small and statistically insignificant, suggesting that access to telegraphed news from Washington had little impact on news coverage of the state.

In column 6, I turn to the coverage of European news. European news was scarce during the mid-19<sup>th</sup> 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 6 that the estimated effect on the mentioning of European country names is small in magnitude and statistically indistinguishable from zero.

Panel C of Table 7 examines keywords measuring major national issues during the 1840s, including "slavery," "texas," "annex," "tariff," and "mexic." Column 1 shows that a 100-mile reduction in the effective distance to Washington increased the mentioning of "slavery" by approximately 10%.[43] Similarly, I find in column 2 that a 100-mile reduction in the effective distance to Washington is associated with a statistically significant increase in the mentioning of "Texas" by about 6%. The coefficients for other national keywords (columns 2-5) are of the same signs and meaningful magnitudes, although they are not statistically significant at conventional levels, possibly because the sample size is not large enough to detect relatively smaller effects. Lastly, column 4 of the panel shows a positive effect on the mentioning of the word "vote," suggesting that access to telegraphed news from Washington likely increased the provision of voting-related information, which might also have contributed to voter turnout.

Overall, Table 7 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. The greater access to national political news could have informed and engaged the public, contributing to turnout in national elections.

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[43]Table A.19 examines other words and phrases related to slavery, including "free soil," "abolition," "wilmot proviso," "liberty party," and "plantation" and also splits the sample into Northern and Southern newspapers. Overall, I find consistent evidence that access to telegraphed Washington news increased coverage of slavery and that the effect was driven by newspapers in the North.

### 6.2.4 Robustness Checks for the Newspaper Text Analysis

In this subsection, I perform several robustness checks for the newspaper text analysis. While about 20 percent of my data on historical newspapers comes from Mississippi, Table A.20 shows that the results remain qualitatively similar when dropping the Mississippi papers from the analysis. I also test the robustness of the results to including regional dummies interacted with period fixed effects. As seen in Table A.21, the results stay substantially the same when I control for a North-South region dummy interacted with year-month dummies. In Table A.22, I control for Census region dummies interacted with year-month dummies. Given there are only about 100 newspapers from 16 states in my sample, this is a more demanding specification as the region-by-year-month fixed effects would absorb much of the variation used for identification. Not surprisingly, as shown in Table A.22, the results are less precisely estimated, but they are qualitatively similar overall. For example, column 3 of Panel A shows that access to telegraphed news from Washington is still associated with an increase in the mentioning of presidents' names by a similar magnitude in presidential election years, although the effect is not statistically significant at the conventional level (p-value=0.118). Overall, controlling for regional fixed effects interacted with period dummies, while demanding, does not change the main conclusion of the newspaper text analysis. Finally, Table A.23 shows that the results controlling for newspaper-specific linear time trends are broadly similar.

## 6.3 Local Campaigning as a Potential Channel

Another potential channel is that access to the telegraph and Washington news might have increased the amount of grass-roots campaigning in an area, which was both an extensive and intensive activity. To explore this potential channel, I examine news articles and advertisements on local political rallies in my sample of 1840s newspapers and identify keywords that were frequently associated with such articles, including "rally", "meeting", "speech", "orator", "gathering", "invite", and "assembl*". Table A.24 investigates the occurrence of

these campaign-related keywords during presidential election years and shows that access to telegraphed Washington news had little effect on newspaper mentioning of these words, either individually (columns 1-7) or combined (column 8).[44] Similarly, Table A.25 shows that a town's direct connection to the electric telegraph also had little effect on the mentioning of the campaign-related words.[45] Taken together, the results suggest that local grass-roots campaigning was unlikely a channel for the increase in voter turnout.

# 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 national elections. There is, however, little evidence of an effect on party vote shares or on politician ideology and behavior. 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 from about 100 historical 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

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[44]The results are qualitatively similar if I also include the midterm election years.

[45]In this exercise, I also control for the total number of words in newspapers, because I find that a town's *direct* connection to the telegraph is associated with a statistically significant increase in the total number of words in local newspapers. This is consistent with the idea that a town's direct connection to the telegraph might be endogenous to local socioeconomic changes (e.g., growth) that might also affect the amount of news provided by newspapers. In contrast, I do not find such a relationship between the effective distance to Washington and the total number of words in newspapers.

telegraph made newspapers less parochial, facilitated a national conversation on important issues, and increased political participation in antebellum America.

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Figure 1: Growth of Telegraph Lines, 1844-1852
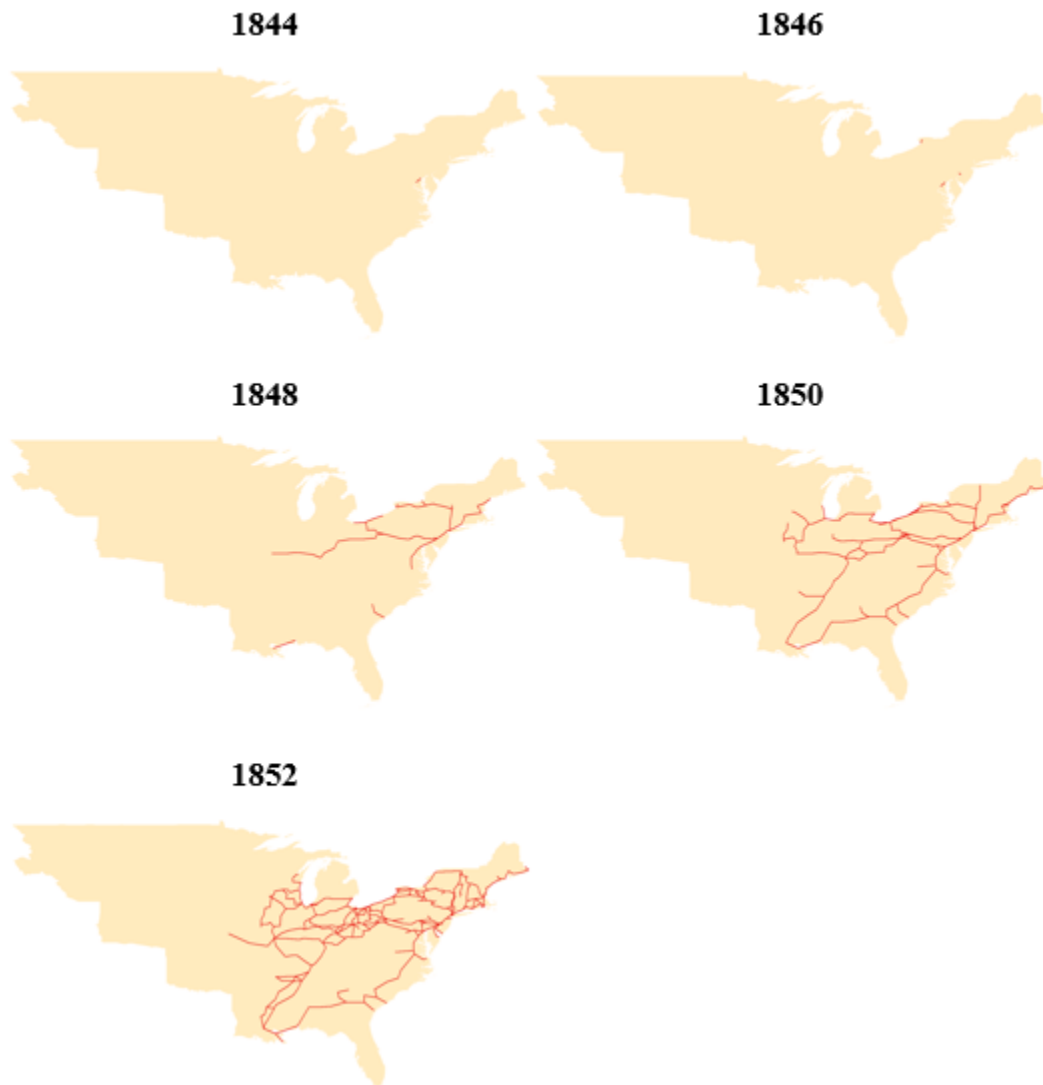
Figure 2: Daily Newspapers with the Latest News from Washington, 1840-1852



**1840-1844**

**1848**

**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 1.

Figure 3: Effective Distance (Miles) to Washington, 1840-1852

**1840-1844**



**1848**
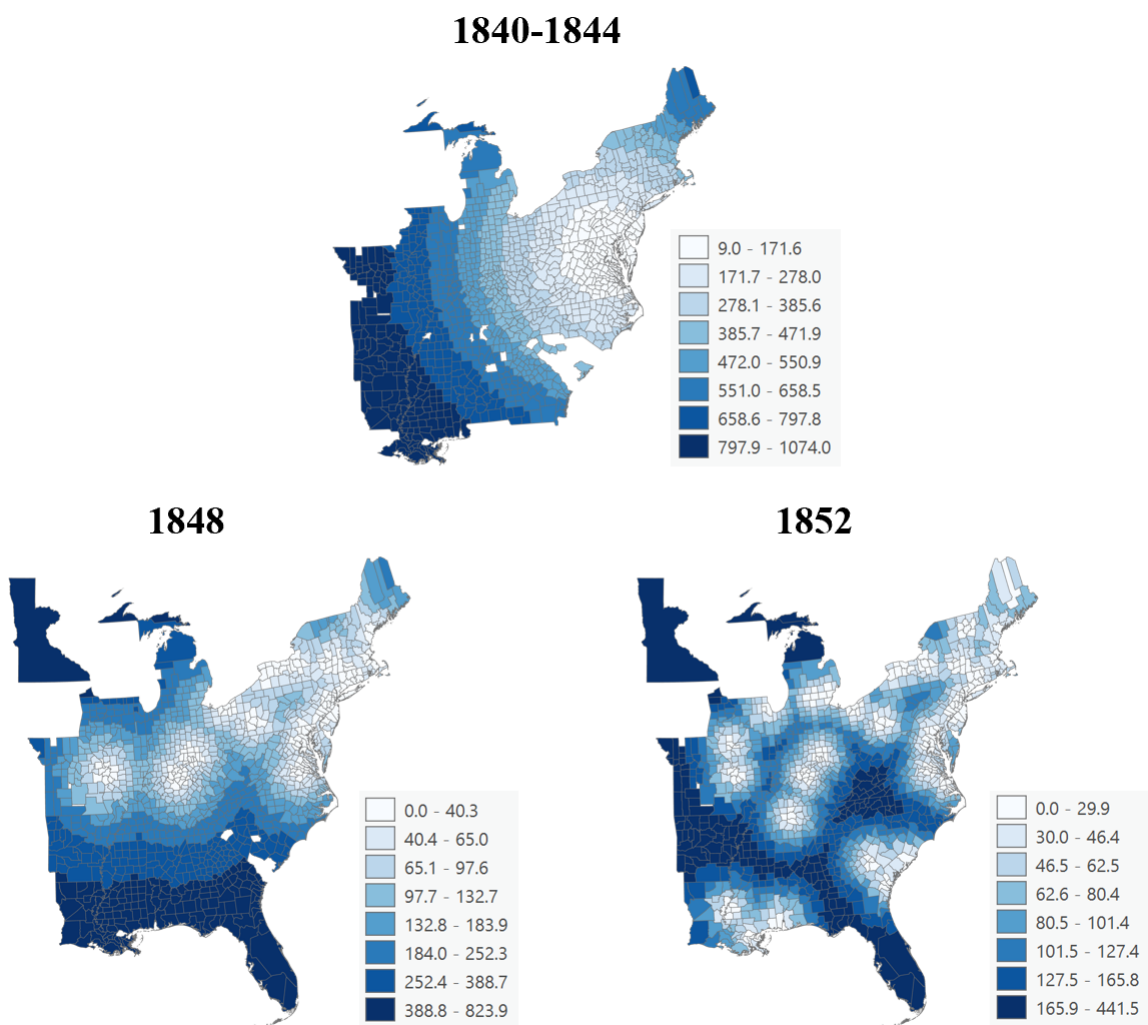
**1852**



*Notes* - The figure shows the effective distance (in miles) to Washington across counties during 1840-1852. It is measured as the actual distance to Washington during 1840-1844 and the distance to the nearest daily newspaper with telegraphic connection to Washington after 1844.

Figure 4: Delay of Washington News and Effective Distance to Washington
— Evidence from the Newspaper *The Boon's Lick Times*
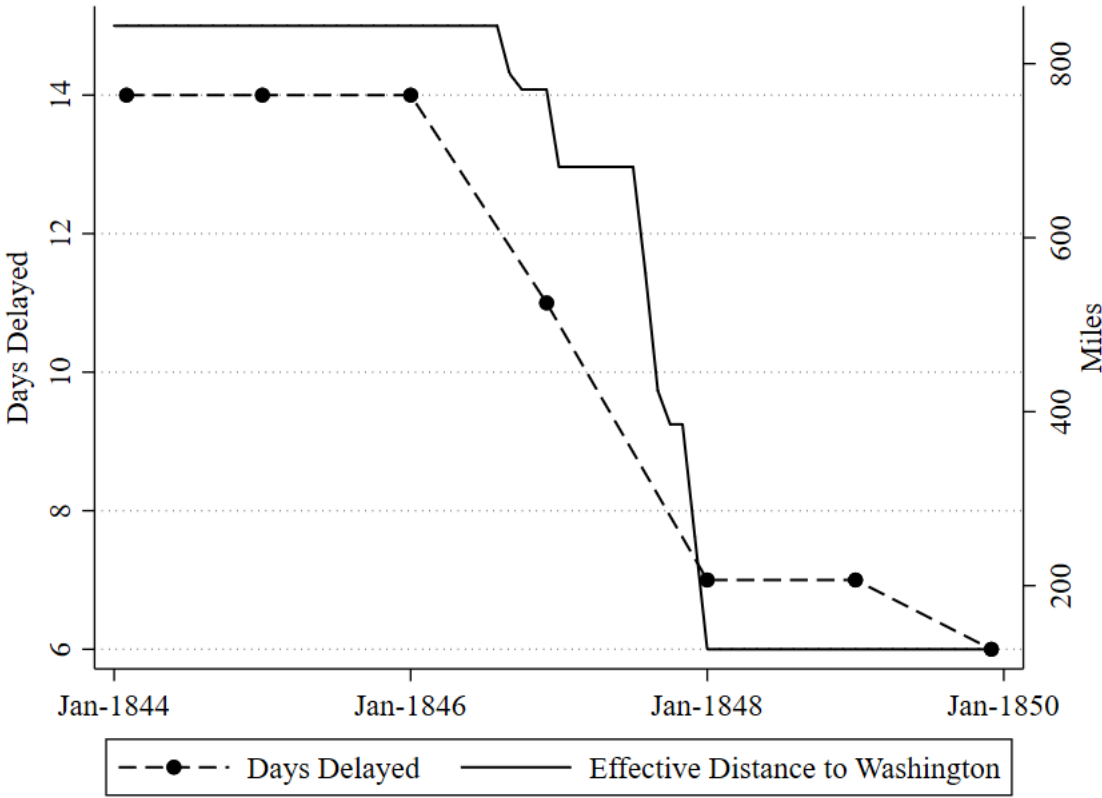
*Notes* - The figure shows the delay of Washington news and the effective distance to Washington during 1844-1850 for the newspaper *The Boon's Lick Times*, which was published in Fayette, Missouri, a small town 120 miles outside of St. Louis. The dashed line plots the minimum number of days delayed 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 5: The Effects of Telegraphed News from Washington on Voter Turnout
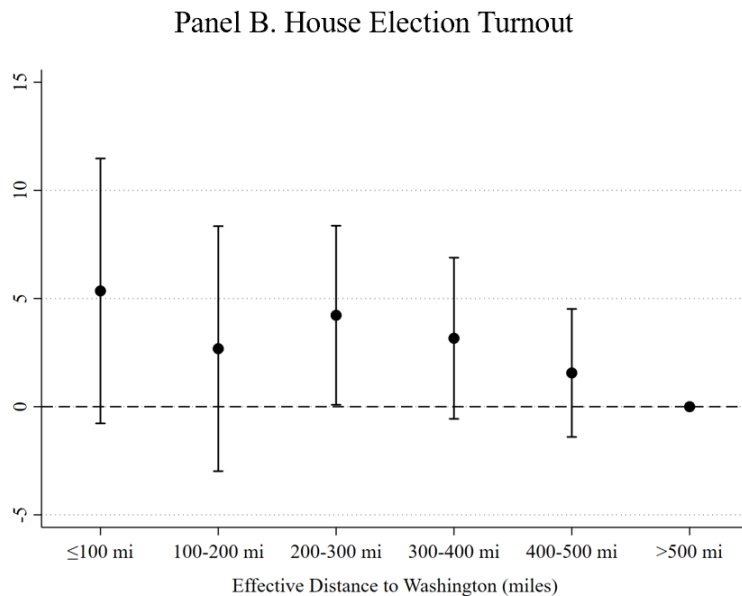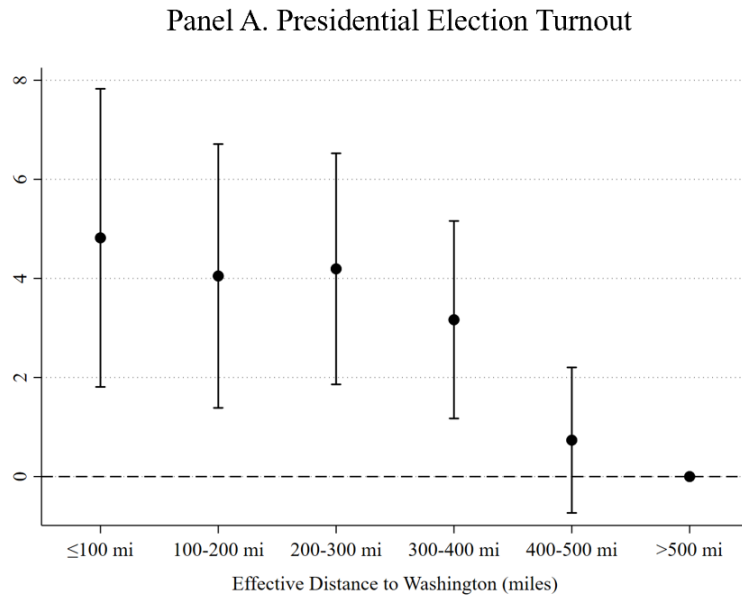
## Panel A. Presidential Election Turnout



## Panel B. House Election 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 sample of Panel A includes all counties, while Panel B focuses on counties that did not miss a major party or a leading third party from the ballot between presidential and House elections. 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.

Figure 6: Monthly Frequencies of Keywords in Newspapers, 1840-1849



A. Presidents' Last Names

B. "Congress"

C. "Telegraph"
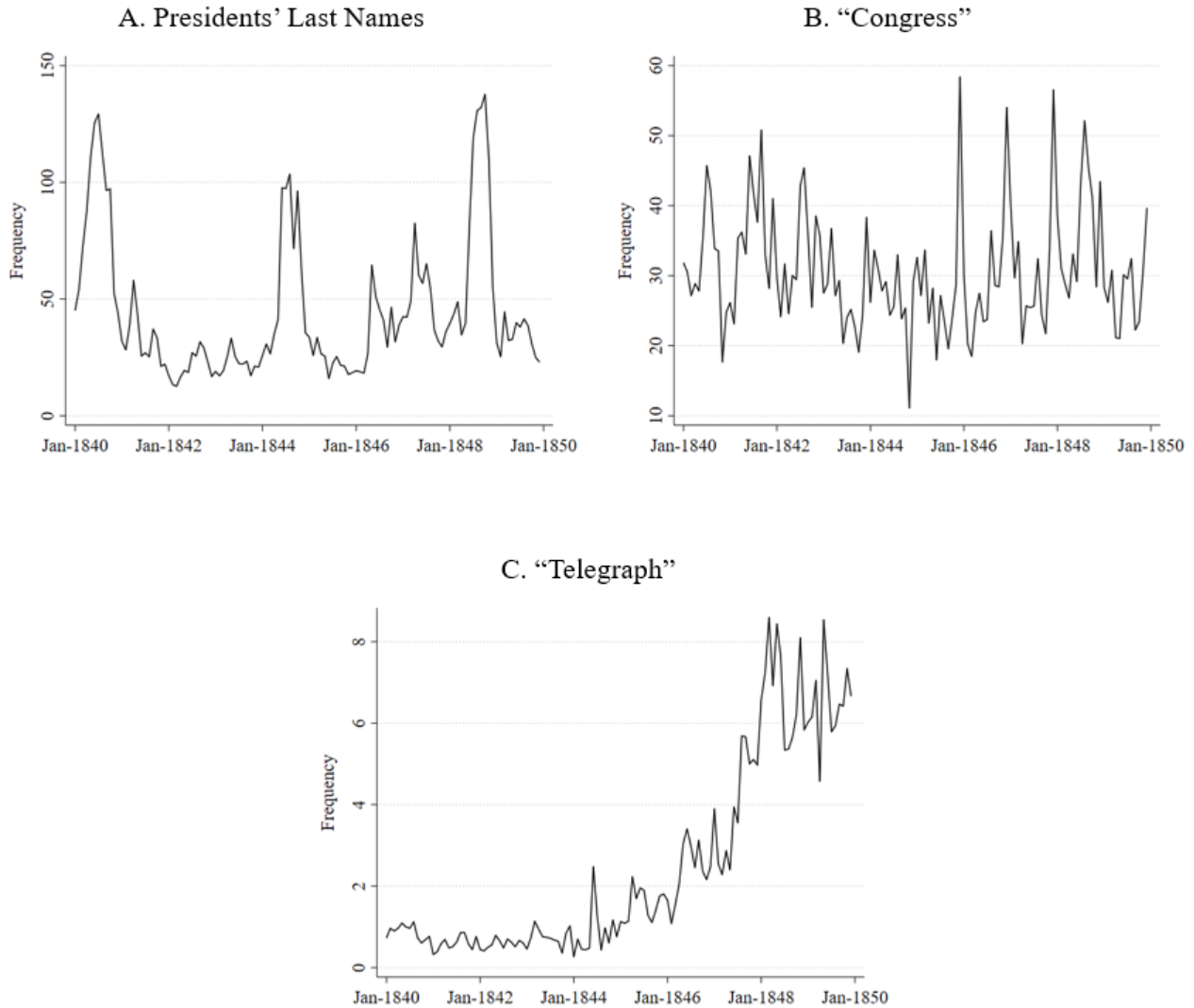
*Notes* - The figure shows the monthly average frequencies of the following words based on my newspaper sample for the period 1840-1849. Panel A shows the frequency of the last names of the U.S. Presidents during the 1840s, which equals the sum of the frequencies of "Van Buren," "Harrison," "Tyler," "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 1: Access to Telegraphed News from Washington and Voter Turnout, 1840-1852

| | Outcome: Voter Turnout | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| | Presidential Election | | House Election | | | |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Eff. Dist. to Washington | -1.159*** | -1.224*** | 0.0176 | -0.104 | -1.380*** | -1.309* |
| (100 miles) | (0.421) | (0.345) | (0.614) | (0.548) | (0.491) | (0.694) |
| Observations | 4,659 | 4,659 | 3,892 | 3,892 | 3,290 | 3,192 |
| R-squared | 0.918 | 0.925 | 0.826 | 0.834 | 0.881 | 0.843 |
| County FE | Yes | Yes | Yes | Yes | Yes | Yes |
| State-by-Year FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Demographic controls | | Yes | | Yes | Yes | Yes |
| No missing major party | | | | | Yes | |
| No missing third party | | | | | | Yes |
| Mean of Dep. Var. | 69.78 | 69.78 | 68.09 | 68.09 | 70.02 | 68.64 |
| Std. Dev. of Dep. Var. | 15.71 | 15.71 | 16.55 | 16.55 | 15.33 | 17.25 |

*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 columns 1-2 and House election turnout in columns 3-6. 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. Columns 2 and 4-6 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. Column 5 drops the county-years in which a major party appeared solely on the presidential ballot but not on the House ballot. Similarly, column 6 drops the county-years in which a leading third party appeared solely on the presidential ballot but not on the House ballot. 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 in Voter Turnout

| | Outcome: Change in Pres. Turnout | | |
|---|---|---|---|
| | $\Delta$ Turnout, 1844-52 (1) | $\Delta$ Turnout, 1840-44 (2) | $\Delta$ Turnout, 1844-52 (3) |
| $\Delta$ Eff. Dist. Washington, 1844-52 | -1.539*** (0.441) | -0.0363 (0.359) | -1.658*** (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: Access to Telegraphed Washington News and Number of Newspapers, 1840-1850

| | Outcome: Δ Number of Newspapers, 1840-50 | | | |
| --- | --- | --- | --- | --- |
| | Total (1) | Dailies (2) | Weeklies (3) | Semi-/Tri-weeklies (4) |
| Δ Eff. Dist. to Washington, 1840-50 | -0.0613 (0.0689) | -0.0481 (0.0435) | -0.0201 (0.0698) | 0.00711 (0.0158) |
| Observations | 1,162 | 1,170 | 1,163 | 1,171 |
| R-squared | 0.228 | 0.048 | 0.226 | 0.030 |
| State dummies | Yes | Yes | Yes | Yes |
| Demographic controls | Yes | Yes | Yes | Yes |
| Mean of Dep. Var. | 0.363 | 0.0827 | 0.266 | 0.0137 |
| Std. Dev. of Dep. Var. | 2.346 | 0.815 | 2.203 | 0.521 |

*Notes* - The table estimates the relationship between the effective distance to Washington and the number of newspapers using a long-difference specification during 1840-1850. 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 1840 and 1850. The outcome variables are the changes in the number of newspapers (of various publishing frequencies) in the county during 1840-1850. Column 1 examines the change in the total number of newspapers, while columns 2-4 respectively examine the changes in the number of dailies, weeklies, and semi- or tri-weeklies. Each regression controls for state dummies and 1840 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 county level. *** p<0.01, ** p<0.05, * p<0.1

Table 4: Robustness Checks for Baseline Result

| | 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) | Drop counties with very low turnout (7) |
| Eff. Dist. to Washington (100 miles) | -1.222*** (0.345) | -0.754** (0.333) | -0.946*** (0.333) | -0.925*** (0.346) | -1.880*** (0.634) | -1.388*** (0.384) | -1.366*** (0.329) |
| Observations | 4,659 | 4,659 | 4,458 | 4,271 | 1,006 | 3,158 | 4,625 |
| R-squared | 0.925 | 0.855 | 0.885 | 0.868 | 0.868 | 0.941 | 0.922 |
| County FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| State-by-Year FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Demographic controls | Yes | 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. Column 7 drops counties with presidential election turnout below 20%. 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 5: Access to Telegraphed News from Washington and Party Vote Shares, 1840-1852

| | Outcome: Party Vote Shares | | | |
| | Presidential Elections | | House Elections | |
| | Dem. | Whig | Dem. | Whig |
| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| Eff. Dist. to Washington | -0.400 | 0.412 | -0.424 | 0.360 |
| (100 miles) | (0.322) | (0.274) | (0.790) | (1.069) |
| | | | | |
| Observations | 4,654 | 4,654 | 3,886 | 3,886 |
| R-squared | 0.934 | 0.914 | 0.765 | 0.741 |
| County FE | Yes | Yes | Yes | Yes |
| State-by-Year FE | Yes | Yes | Yes | Yes |
| Demographic controls | Yes | Yes | Yes | Yes |
| Mean of Dep. Var. | 49.79 | 47.55 | 49.23 | 44.53 |
| Std. Dev. of Dep. Var. | 14.98 | 14.85 | 22.25 | 21.62 |

*Notes* - The table shows the estimated effects of access to telegraphed news from Washington on party vote shares (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 the vote shares for the Democratic Party and the Whig Party in presidential elections (columns 1 and 2) and in House elections (columns 3 and 4). 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 6: 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 with the county's number of newspapers in 1840. In column 3, the interaction is with 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 7: Access to Telegraphed News from Washington and News Coverage

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| Panel A. | | Mentioning of "Congress" and Presidents' & Presidential Candidates' Last Names | | | | |
| | | | | | ln(Pres. Cand. Name) | |
| | | ln(President | ln(Pres. Name) | | P. Cand | P. & V.P. |
| | ln("Congress") | Name) | Pres. Year | Off Year | Only | Cand |
| Eff. Dist. to Washington | -0.0501* | -0.0562** | -0.125*** | -0.0576 | -0.123*** | -0.0989** |
| (100 miles) | (0.0277) | (0.0276) | (0.0469) | (0.0355) | (0.0439) | (0.0389) |
| Observations | 4,882 | 4,882 | 1,427 | 3,451 | 1,427 | 1,427 |
| R-squared | 0.466 | 0.507 | 0.563 | 0.519 | 0.621 | 0.633 |

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| Panel B. | | Mentioning of Local, State-Specific, and European Nation Names | | | | |
| | ln(Town | ln(County | ln(State Cap- | ln(State | ln(Governor | ln(European |
| | Name) | Name) | ital Name) | Name) | Name) | Nation Name) |
| Eff. Dist. to Washington | 0.0441* | -0.00650 | 0.0217 | -0.0208 | -0.0115 | 0.00509 |
| (100 miles) | (0.0258) | (0.0266) | (0.0262) | (0.0234) | (0.0209) | (0.0312) |
| Observations | 4,882 | 4,882 | 4,882 | 4,882 | 4,882 | 4,882 |
| R-squared | 0.787 | 0.713 | 0.665 | 0.615 | 0.574 | 0.489 |

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| Panel C. | | Mentioning of Issues of National Importance | | | | |
| | ln("Slavery") | ln("Texas") | ln("Annex") | ln("Tariff") | ln("Mexic") | ln("Vote") |
| Eff. Dist. to Washington | -0.102*** | -0.0598* | -0.0396 | -0.0377 | -0.0110 | -0.0405* |
| (100 miles) | (0.0361) | (0.0304) | (0.0279) | (0.0280) | (0.0275) | (0.0225) |
| Observations | 4,882 | 4,882 | 4,882 | 4,882 | 4,882 | 4,882 |
| R-squared | 0.632 | 0.592 | 0.607 | 0.516 | 0.739 | 0.492 |
| Newspaper FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Month-by-year FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Demographic controls | Yes | Yes | 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," the presidents' last names, as well as the last names of presidential candidates from the two major parties and the leading third party. Columns 3 and 4 of Panel A examine the mentioning of the presidents' last names separately in presidential election years and off-years. Columns 5 and 6 of Panel A focus on presidential election years only and examine the mentioning of presidential candidates' last names (column 5) as well as that plus the mentioning of vice presidential candidates' last names (column 6). Panel B examines the mentioning of the newspaper's town, county, and state-specific names (i.e., state capital, state, and governor names), as well as European nation names. Panel C examines the mentioning of the words related to the key national issues of the day. 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 A: Supplemental Figures and Tables

Figure A.1: Locations of Daily Newspapers in 1840
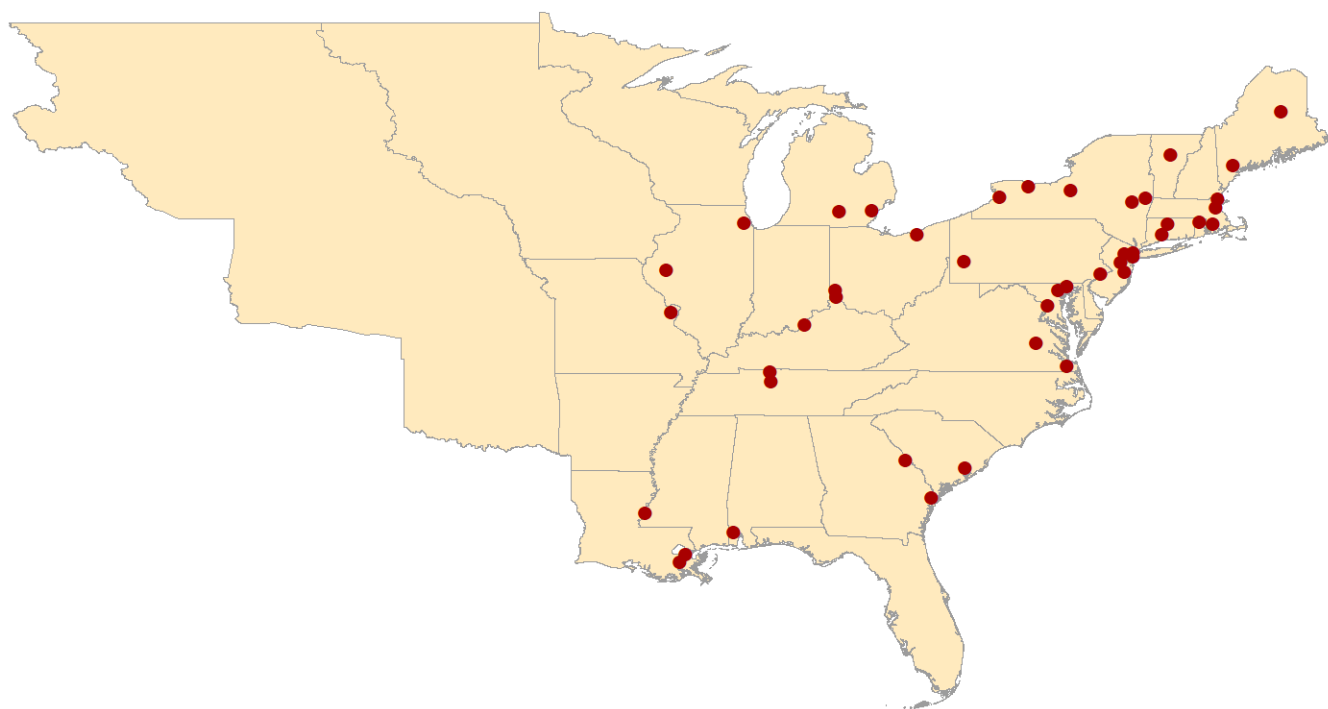


*Notes* - This figure maps the locations (county centroids) of daily newspapers in 1840. The locations of daily newspapers come from the 1840 *Census of Manufactures*.

Figure A.2: Average Effective Distance to Washington, 1840-1852
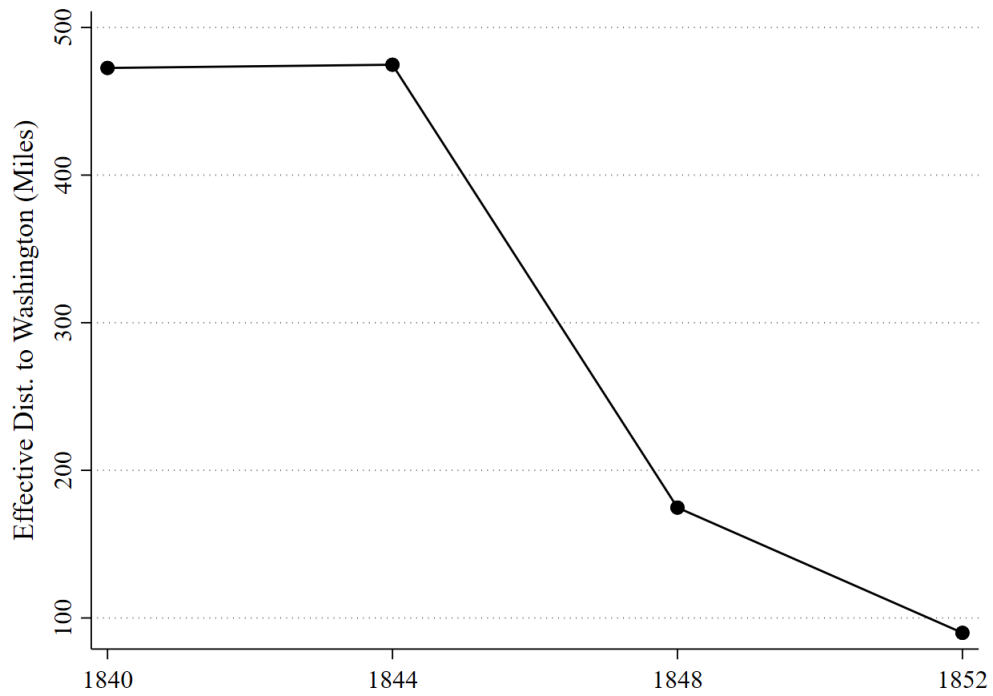


*Notes -* The figure shows the average effective distance to Washington (in miles) across counties in each presidential election year during the period 1840-1852.

Figure A.3: Effective Distance to Washington and House Election Turnout
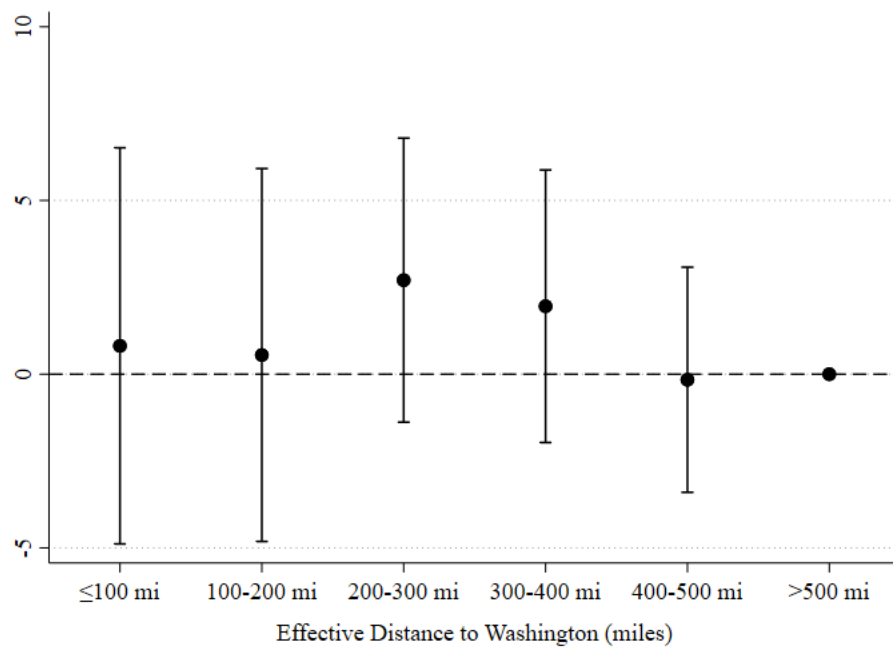


*Notes* - The figure shows the estimated effects of access to telegraphed news from Washington on House election turnout during 1840-1852. It follows the same specification as in Panel B of Figure 5 except the sample also includes the county-years in which a major party or a leading third party appeared on the ballot only in the presidential but not in the House election.

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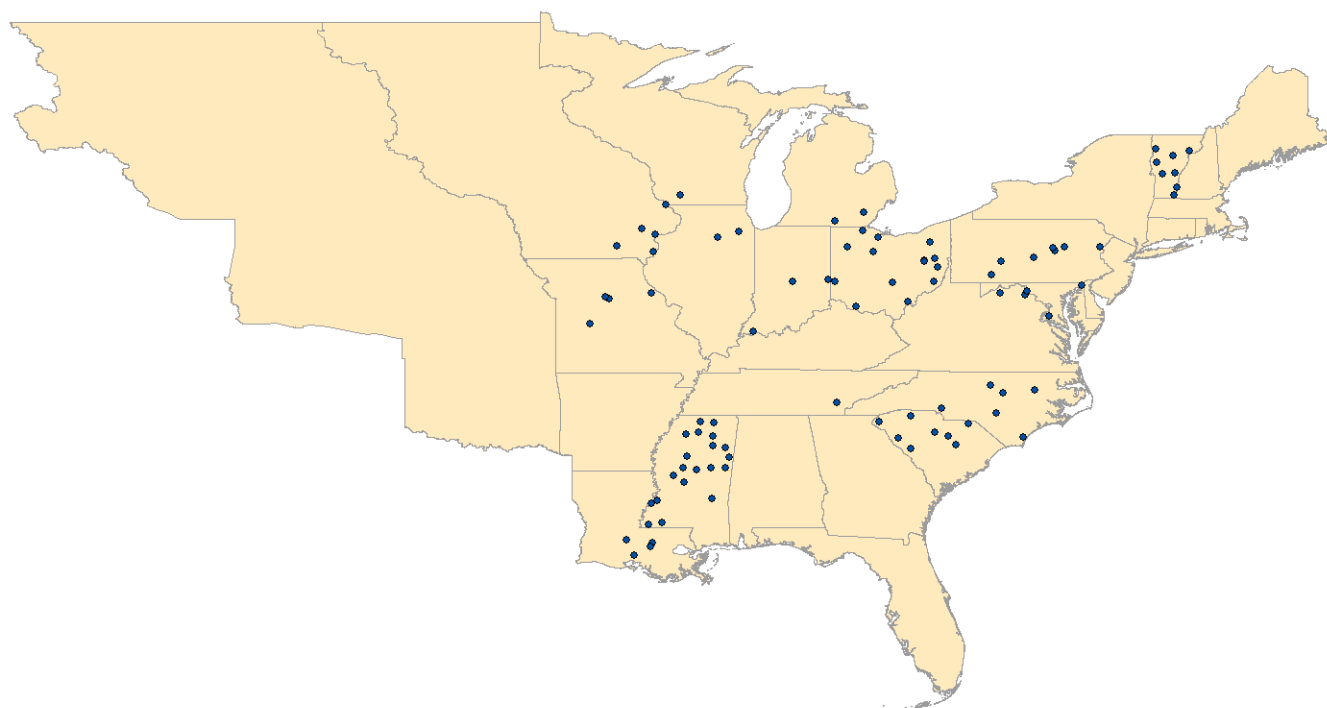


*Notes* - This figure maps the locations (towns) of the small-town newspapers in my sample. The newspapers are obtained from the *Chronicling America* database.

Table A.1: Summary Statistics of Voting Analysis

|  | (1) N | (2) Mean | (3) SD | (4) Min | (5) Max |
|---|---|---|---|---|---|
| **Panel A. County-level variables** | | | | | |
| Presidential election turnout | 4,659 | 69.78 | 15.71 | 0 | 99.97 |
| House election turnout | 3,892 | 68.09 | 16.55 | 0 | 99.51 |
| % Votes for Democrats (Pres.) | 4,654 | 49.79 | 14.98 | 0.700 | 100 |
| % Votes for Whigs (Pres.) | 4,654 | 47.55 | 14.85 | 0 | 99.30 |
| % Votes for Democrats (House) | 3,886 | 49.23 | 22.25 | 0 | 104.8 |
| % Votes for Whig (House) | 3,886 | 44.53 | 21.62 | 0 | 100 |
| Effective dist. to Washington (100 miles) | 4,659 | 2.986 | 2.586 | 0 | 10.74 |
| Total population | 4,659 | 16,474 | 23,443 | 561 | 575,171 |
| % Urban | 4,659 | 3.861 | 12.82 | 0 | 100 |
| % White | 4,659 | 80.72 | 22.10 | 8.975 | 100 |
| % White males above 20 years old | 4,659 | 18.52 | 5.697 | 3.424 | 47.13 |
| % Slaves | 4,659 | 17.72 | 21.50 | 0 | 90.94 |
| Had newspaper in 1840 | 4,659 | 0.369 | 0.483 | 0 | 1 |
| Number of newspapers in 1840 | 4,595 | 1.168 | 3.176 | 0 | 68 |
| Had periodical in 1840 | 4,659 | 0.0653 | 0.247 | 0 | 1 |
| $\Delta$ number of newspapers, 1840-50 | 1,162 | 0.363 | 2.346 | -7 | 52.05 |
| $\Delta$ number of dailies, 1840-50 | 1,170 | 0.0827 | 0.815 | -18 | 8 |
| $\Delta$ number of weeklies, 1840-50 | 1,163 | 0.266 | 2.203 | -7 | 48.03 |
| $\Delta$ number of semi-/tri-weeklies, 1840-50 | 1,171 | 0.0137 | 0.521 | -6 | 8 |
| **Panel B. Congressman-level variables** | | | | | |
| DW-Nominate score ($1^{st}$ dimension) | 1,643 | -0.0626 | 0.351 | -1.063 | 0.965 |
| DW-Nominate score ($2^{nd}$ dimension) | 1,643 | 0.000657 | 0.533 | -1.273 | 1.227 |
| Number of bills sponsored | 1,603 | 1.847 | 4.972 | 0 | 110 |

*Notes* - The table shows the summary statistics of the variables used in my main analysis. 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 to Alternative Ways of Adjusting Standard Errors

| | Cluster at | Outcome: Presidential Election Turnout | | | | | |
| | | Conley S.E. with different distance cutoffs | | | | | |
| | state level | 50 miles | 100 miles | 200 miles | 300 miles | 400 miles |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Eff. Dist. to Washington | -1.224** | -1.224*** | -1.224*** | -1.224*** | -1.224*** | -1.224*** |
| (100 miles) | (0.573) | (0.415) | (0.435) | (0.383) | (0.340) | (0.390) |

*Notes* - The table shows the baseline estimates (column 2 of Table 1) based on alternative ways of adjusting for standard errors. Column 1 shows the estimate when I cluster the standard errors at the state level, while columns 2-6 apply Conley (1999) standard errors with different distance cutoffs. *** p<0.01, ** p<0.05, * p<0.1

Table A.3: Controlling for 1840 County Characteristics Interacted with Year Dummies

|  | (1) | (2) |
|  | Outcome: Voter Turntout | |
|  | Presidential Election | House Election |
| Eff. Dist. to Washington | -1.053*** | -0.00365 |
| (100 miles) | (0.404) | (0.597) |
| Observations | 4,498 | 3,756 |
| R-squared | 0.923 | 0.837 |
| County FE | Yes | Yes |
| State-by-Year FE | Yes | Yes |
| 1840 County Characteristics × Year Dummies | Yes | Yes |
| Mean of Dep. Var. | 69.99 | 68.06 |
| Std. Dev. of Dep. Var. | 15.56 | 16.49 |

*Notes* - The table shows the robustness of the baseline results to controlling for preexisting county characteristics interacted with year dummies. Specifically, I control for each of the following 1840 county characteristics interacted with year dummies: total population (in natural log), percent urban, percent white, percent slaves, percent illiterate white population above 20 years old, number of colleges, percent employed in commerce, percent employed in agriculture, percent employed in manufacturing, and capital in manufacturing (in natural log). Each regression also controls for county fixed effects and state-by-year fixed effects and 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.4: Constructing Effective Distance to Washington Using Telegraphic Connections
More Than 100 Miles Away

| | Outcome: Voter Turnout | | | |
| --- | --- | --- | --- | --- |
| | Presidential Election | | House Election | |
| | (1) | (2) | (3) | (4) |
| Eff. Dist. to Washington | -1.013*** | -0.847*** | 0.148 | 0.276 |
| (100 miles) | (0.357) | (0.289) | (0.540) | (0.525) |
| Observations | 4,400 | 4,400 | 3,737 | 3,737 |
| R-squared | 0.908 | 0.916 | 0.818 | 0.829 |
| County FE | Yes | Yes | Yes | Yes |
| State-by-Year FE | Yes | Yes | Yes | Yes |
| Demographic controls | No | Yes | No | Yes |
| Mean of Dep. Var. | 70.01 | 70.01 | 68.41 | 68.41 |
| Std. Dev. of Dep. Var. | 15.54 | 15.54 | 16.30 | 16.30 |

*Notes -* The table shows the robustness of the baseline results when exploiting only the variation from telegraphic connections more than 100 miles away from the county. Specifically, when measuring a county's effective distance to Washington, I only use telegraphic connections by daily newspapers more than 100 miles away and ignore any connection by nearby dailies. The specifications follow those in Table 1, except here the effective distance to Washington is constructed based on telegraphic connections by daily newspapers further away. *** p<0.01, ** p<0.05, * p<0.1

Table A.5: Effects Controlling for the Winners' Margins of Victory

| | Outcome: Voter Turnout | | | |
| | Presidential Election | | House Election | |
| | (1) | (2) | (3) | (4) |
| Eff. Dist. to Washington | -1.204*** | -1.244*** | -0.438 | -0.596 |
| (100 miles) | (0.421) | (0.344) | (0.605) | (0.543) |
| | | | | |
| Observations | 4,648 | 4,648 | 3,858 | 3,858 |
| R-squared | 0.918 | 0.926 | 0.855 | 0.864 |
| 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 | 68.22 | 68.22 |
| Std. Dev. of Dep. Var. | 15.69 | 15.69 | 16.42 | 16.42 |

*Notes -* The table shows the robustness of the baseline results when controlling for the winners' margins of victory in elections. The specifications follow those in Table 1, except here I also control for the county-level winner's electoral margin of victory. *** p<0.01, ** p<0.05, * p<0.1

Table A.6: Taking into Account Special House Election Rules

| | Outcome: House Election Turnout | | | |
| | Drop at-large elections | | Drop multi-round elections | |
| | (1) | (2) | (3) | (4) |
| Eff. Dist. to Washington | 0.0802 | -0.0718 | 0.399 | 0.0985 |
| (100 miles) | (0.638) | (0.566) | (0.607) | (0.565) |
| | | | | |
| Observations | 3,459 | 3,459 | 3,784 | 3,784 |
| R-squared | 0.828 | 0.837 | 0.800 | 0.807 |
| County FE | Yes | Yes | Yes | Yes |
| State-by-Year FE | Yes | Yes | Yes | Yes |
| Demographic controls | | Yes | | Yes |
| Mean of Dep. Var. | 67.06 | 67.06 | 68.65 | 68.65 |
| Std. Dev. of Dep. Var. | 16.30 | 16.30 | 16.15 | 16.15 |

*Notes* - The table shows the estimated effects on House election turnout when taking into account special House election rules during the study period. The specifications follow those in Table 1 examining House election turnout, except here columns 1-2 drop the state-years which held House elections on a statewide (at-large) basis instead of at the congressional district level, and columns 3-4 drop the five New England states that held multi-round House elections. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table A.7: Robustness to Using the Same Sample of Counties for Presidential and Congressional Election Turnout

| | Outcome: Voter Turnout | | | |
| | Presidential Election | | House Election | |
| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| Eff. Dist. to Washington | -1.365*** | -1.456*** | 0.0247 | -0.0999 |
| (100 miles) | (0.446) | (0.380) | (0.619) | (0.552) |
| | | | | |
| Observations | 3,742 | 3,742 | 3,742 | 3,742 |
| R-squared | 0.924 | 0.931 | 0.831 | 0.840 |
| County FE | Yes | Yes | Yes | Yes |
| State-by-Year FE | Yes | Yes | Yes | Yes |
| Demographic controls | No | Yes | No | Yes |
| Mean of Dep. Var. | 71.72 | 71.72 | 67.96 | 67.96 |
| Std. Dev. of Dep. Var. | 15.03 | 15.03 | 16.32 | 16.32 |

*Notes* - The table shows the robustness of the baseline results to restricting the sample to the common subset of counties that reported both presidential and congressional election turnout. The specifications follow those in Table 1, except here the sample only consists of counties that have non-missing values for both presidential and congressional election turnout. *** p<0.01, ** p<0.05, * p<0.1

Table A.8: Robustness to Using a Balanced Panel of Counties

| | Outcome: Voter Turnout | | | |
| | Presidential Election | | House Election | |
| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| Eff. Dist. to Washington | -1.320*** | -1.397*** | -0.511 | -0.578 |
| (100 miles) | (0.410) | (0.327) | (0.680) | (0.604) |
| | | | | |
| Observations | 4,280 | 4,280 | 2,656 | 2,656 |
| R-squared | 0.926 | 0.934 | 0.825 | 0.836 |
| County FE | Yes | Yes | Yes | Yes |
| State-by-Year FE | Yes | Yes | Yes | Yes |
| Demographic controls | No | Yes | No | Yes |
| Mean of Dep. Var. | 69.97 | 69.97 | 68.24 | 68.24 |
| Std. Dev. of Dep. Var. | 15.26 | 15.26 | 16 | 16 |

*Notes -* The table shows the robustness of the baseline results to using a balanced panel of counties. The specifications follow those in Table 1, except here the sample only consists of counties that are observed in every presidential election year during the study period (1840-1852). *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table A.9: Robustness to Interpolating Intercensal Voting Population Log-Linearly

|  | Outcome: Voter Turnout | | | |
|  | Presidential Election | | House Election | |
|  | (1) | (2) | (3) | (4) |
| Eff. Dist. to Washington | -1.147*** | -1.182*** | -0.00205 | -0.0929 |
| (100 miles) | (0.431) | (0.351) | (0.621) | (0.554) |
| Observations | 4,629 | 4,629 | 3,865 | 3,865 |
| R-squared | 0.917 | 0.924 | 0.824 | 0.832 |
| County FE | Yes | Yes | Yes | Yes |
| State-by-Year FE | Yes | Yes | Yes | Yes |
| Demographic controls | Yes | Yes | Yes | Yes |
| Mean of Dep. Var. | 70.64 | 70.64 | 69 | 69 |
| Std. Dev. of Dep. Var. | 15.70 | 15.70 | 16.64 | 16.64 |

*Notes* - The table shows the robustness of the baseline results to interpolating the intercensal voting population log-linearly. The specifications follow those in Table 1, except here the voting population used to calculate voter turnout is interpolated log-linearly (instead of linearly) between Census years. *** p<0.01, ** p<0.05, * p<0.1

Table A.10: Access to Telegraphed News from Washington (Based on Effective Travel Time) and Voter Turnout, 1840-1852

| | Outcome: Voter Turnout | | | |
| | Presidential Election | | House Election | |
| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| Effective Travel Time to | -0.0960*** | -0.102*** | 0.0652 | 0.0475 |
| Washington (Hours) | (0.0289) | (0.0226) | (0.0449) | (0.0437) |
| | | | | |
| Observations | 4,636 | 4,636 | 3,890 | 3,890 |
| R-squared | 0.919 | 0.926 | 0.826 | 0.835 |
| County FE | Yes | Yes | Yes | Yes |
| State-by-Year FE | Yes | Yes | Yes | Yes |
| Demographic controls | No | Yes | No | Yes |
| Mean of Dep. Var. | 69.89 | 69.89 | 68.10 | 68.10 |
| Std. Dev. of Dep. Var. | 15.60 | 15.60 | 16.54 | 16.54 |

*Notes -* The table shows the estimated effects of access to telegraphed news from Washington (based on effective travel time) on voter 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 variables are presidential election turnout in column 1 and 2 and House election turnout in column 3 and 4. The explanatory variable is the effective travel time to Washington, which is the estimated travel time (in hours) to the nearest daily newspaper with telegraphic connection to Washington taking into account the road, railroad and river transportation networks during the study period. Online Appendix B provides details on the construction of the effective travel time. 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 A.11: Access to Telegraphed News from Washington (Based on Effective Travel Distance) and Voter Turnout, 1840-1852

| | Outcome: Voter Turnout | | | |
| --- | --- | --- | --- | --- |
| | Presidential Election | | House Election | |
| | (1) | (2) | (3) | (4) |
| Effective Travel Distance to Washington (100 miles) | -0.833*** (0.281) | -0.927*** (0.217) | 0.336 (0.429) | 0.249 (0.406) |
| Observations | 4,636 | 4,636 | 3,890 | 3,890 |
| R-squared | 0.919 | 0.926 | 0.826 | 0.835 |
| County FE | Yes | Yes | Yes | Yes |
| State-by-Year FE | Yes | Yes | Yes | Yes |
| Demographic controls | No | Yes | No | Yes |
| Mean of Dep. Var. | 69.89 | 69.89 | 68.10 | 68.10 |
| Std. Dev. of Dep. Var. | 15.60 | 15.60 | 16.54 | 16.54 |

*Notes* - The table shows the estimated effects of access to telegraphed news from Washington (based on effective travel distance) on voter turnout 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 the effective travel distance to Washington, which is the estimated travel distance (in 100 miles) to the nearest daily newspaper with telegraphic connection to Washington taking into account the road, railroad and river transportation networks during the study period. Online Appendix B provides details on the construction of the effective travel distance. 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 A.12: Heterogeneous Effects on Voter Turnout by 1840 Whig Vote Share

| | Outcome: Voter Turnout | | | |
| | Presidential Election | | House Election | |
| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| Eff. Dist. to Washington (100 miles) | -1.249*** | -1.385*** | -0.101 | -0.178 |
| | (0.345) | (0.332) | (0.548) | (0.539) |
| Eff. Dist. to Washington | -0.156 | | -0.0148 | |
| × 1840 Whig vote share above median | (0.137) | | (0.170) | |
| Eff. Dist. to Washington | | 0.0822 | | 0.199 |
| × 1840 Whig vote share above 75th percentile | | (0.126) | | (0.222) |
| | | | | |
| Observations | 4,532 | 4,532 | 3,721 | 3,721 |
| R-squared | 0.929 | 0.929 | 0.837 | 0.837 |
| County FE | Yes | Yes | Yes | Yes |
| State-by-Year FE | Yes | Yes | Yes | Yes |
| Demographic controls | Yes | Yes | Yes | Yes |
| Mean of Dep. Var. | 70.02 | 70.02 | 68.34 | 68.34 |
| Std. Dev. of Dep. Var. | 15.53 | 15.53 | 16.24 | 16.24 |

*Notes* - The table explores the heterogeneity in the baseline effects on voter turnout by the county's 1840 Whig vote share. Each column represents the results from a separate OLS regression, where each observation is a county-year. The outcome variables are presidential election turnout in columns 1 and 2 and House election turnout in columns 3 and 4. The main explanatory variable is the effective distance to Washington measured in hundred miles. In columns 1 and 3, effective distance to Washington is interacted with a dummy variable that equals 1 if the county's 1840 Whig vote share was above median; in columns 2 and 4, the interaction is with a dummy variable that equals 1 if the county's 1840 Whig vote share was in the top quartile. 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 A.13: Effects on the Winners' Margins of Victory

| | Outcome: Winner's Margin of Victory | | | |
| --- | --- | --- | --- | --- |
| | Presidential Election | | House Election | |
| | (1) | (2) | (3) | (4) |
| Eff. Dist. to Washington | 0.100 | 0.122 | -0.0431 | -0.276 |
| (100 miles) | (0.577) | (0.494) | (0.828) | (0.808) |
| | | | | |
| Observations | 4,645 | 4,645 | 3,230 | 3,230 |
| R-squared | 0.826 | 0.830 | 0.692 | 0.693 |
| County FE | Yes | Yes | Yes | Yes |
| State-by-Year FE | Yes | Yes | Yes | Yes |
| Demographic controls | | Yes | | Yes |
| Mean of Dep. Var. | 21.48 | 21.48 | 21.63 | 21.63 |
| Std. Dev. of Dep. Var. | 19.19 | 19.19 | 21.23 | 21.23 |

*Notes* - The table shows the effect of access to telegraphed Washington news on the winners' margins of victory in elections, conditional on having both major parties on the ballot. The specifications follow those in Table 1, except here the outcome is the winner's margin of victory in each county, and the sample consists of county-years that had both major parties on the ballot. *** p<0.01, ** p<0.05, * p<0.1

Table A.14: Access to Telegraphed News from Washington and Congressmen Ideology, 26th-32nd Congress

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|---|---|---|---|---|---|---|---|---|
| | Outcome: DW-Nominate Scores (Standardized) of the House Representative | | | | | | | |
| | 1st dim. | 2nd dim. | \|1st dim.\| | \|2nd dim.\| | 1st dim. | 2nd dim. | \|1st dim.\| | \|2nd dim.\| |
| Eff. Dist. to Washington | -0.0321 | -0.00946 | -0.0338 | 0.134 | 0.00251 | -0.0121 | 0.0127 | 0.0452 |
| (100 miles) | (0.0229) | (0.0659) | (0.0853) | (0.0909) | (0.0180) | (0.0336) | (0.0230) | (0.0301) |
| Observations | 1,643 | 1,643 | 1,643 | 1,643 | 1,008 | 1,008 | 1,008 | 1,008 |
| R-squared | 0.893 | 0.773 | 0.320 | 0.272 | 0.998 | 0.991 | 0.994 | 0.979 |
| Party FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| State-by-Congress FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Individual FE | | | | | Yes | Yes | Yes | Yes |

Table A.15: Access to Telegraphed News from Washington and Number of Bills Congressmen Sponsored, 26th-32rd Congress

|  | Outcome: Number of Bills Sponsored | |
|---|---|---|
|  | (1) | (2) |
| Eff. Dist. to Washington | 0.168 | -0.0860 |
| (100 miles) | (0.294) | (0.682) |
| Observations | 1,603 | 969 |
| R-squared | 0.080 | 0.593 |
| Party FE | Yes | Yes |
| State-by-Congress FE | Yes | Yes |
| Individual FE |  | Yes |
| Mean of Dep. Var. | 1.847 | 2.544 |
| Std. Dev. of Dep. Var. | 4.972 | 6.130 |

*Notes* - The table shows the estimated effects of access to telegraphed news from Washington on House representatives' number of bills sponsored during the 26th-32rd Congress. Each column represents the results from a separate OLS regression, where each observation is a House representative in a Congress. The outcome variable is the number of bills sponsored by a House representative in a given Congress. The explanatory variable is effective distance to Washington, which is the distance (in hundred miles) from the centroid of each congressional district to the nearest daily newspaper with the latest Washington news. Each regression controls for party fixed effects and state-by-Congress fixed effects. Columns 2 further controls for individual (Congressman) fixed effects. Standard errors are corrected for clustering at the state level. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table A.16: List of the Small-Town Newspapers in My Sample and Their Locations

| Title | Place | State | Title | Place | State |
|---|---|---|---|---|---|
| The Illinois free trader. | Ottawa | Illinois | The Yazoo Democrat. | Yazoo | Mississippi |
| Juliet signal. | Juliet | Illinois | The Yazoo City Whig. | Yazoo | Mississippi |
| Indiana State sentinel. | Indianapolis | Indiana | Saturday morning visitor. | Warsaw | Missouri |
| The Evansville journal. | Evansville | Indiana | Boon's Lick times. | Glasgow | Missouri |
| Richmond palladium. | Richmond | Indiana | Salt River journal. | Bowling Green | Missouri |
| Burlington hawk-eye. | Burlington | Iowa Territory | The North-Carolinian. | Fayetteville | North Carolina |
| Iowa territorial gazette | Burlington | Iowa Territory | Tarboro' press. | Tarboro | North Carolina |
| and advertiser. | | | The Charlotte journal. | Charlotte | North Carolina |
| Weekly miners' express. | Dubuque | Iowa Territory | Wilmington journal. | Wilmington | North Carolina |
| Iowa capitol reporter. | Iowa City | Iowa Territory | The Hillsborough recorder. | Hillsboro | North Carolina |
| Bloomington herald. | Bloomington | Iowa Territory | The North-Carolina standard. | Raleigh | North Carolina |
| Baton-Rouge gazette. | Baton Rouge | Louisiana | Democratic standard. | Georgetown | Ohio |
| The Planters' banner. | New Iberia | Louisiana | Carroll free press. | Carrollton | Ohio |
| Southern sentinel. | Plaquemine | Louisiana | The Lancaster gazette. | Lancaster | Ohio |
| The St. Landry whig. | Opelousas | Louisiana | The Cadiz sentinel. | Cadiz | Ohio |
| The Cecil Whig. | Elkton | Maryland | Maumee City express. | Maumee | Ohio |
| Port Tobacco Times | Port Tobacco | Maryland | Meigs County times. | Pomeroy | Ohio |
| Hillsdale Whig standard. | Hillsdale | Michigan | The spirit of democracy. | Woodsfield | Ohio |
| Ypsilanti sentinel. | Ypsilanti | Michigan | Portage sentinel. | Ravenna | Ohio |
| Piney Woods planter. | Liberty | Mississippi | The Kalida venture. | Kalida | Ohio |
| Liberty advocate. | Liberty | Mississippi | Lower Sandusky freeman. | Lower Sandusky | Ohio |
| Jeffersonian Democrat. | Kosciusko | Mississippi | The Ohio Democrat. | Dover | Ohio |
| Kosciusko chronicle. | Kosciusko | Mississippi | Anti-slavery bugle | Carrollton | 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 | The voice of freedom. | Rutland | Vermont |
| Woodville Republican. | Woodville | Mississippi | Green-Mountain freeman. | Montpelier | Vermont |
| Louisville messenger. | Louisville | Mississippi | Wisconsin tribune. | Mineral Point | Wisconsin Territory |

*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.17: Summary Statistics of Word Frequency for the Newspaper Text Analysis

|  | N | Mean | SD | Min | Max |
|---|---|---|---|---|---|
|  | (1) | (2) | (3) | (4) | (5) |
| "Congress" | 4,882 | 30.81 | 27.89 | 0 | 242 |
| Presidents' last names | 4,882 | 14.48 | 18.49 | 0 | 191 |
| Presidential candidates' last names | 1,429 | 99.19 | 103.4 | 0 | 785 |
| Pres. & Vice Pres. candidates' last names | 1,429 | 114.4 | 117.8 | 0 | 884 |
| Town name | 4,882 | 80.40 | 74.49 | 0 | 520 |
| County name | 4,882 | 58.05 | 71.29 | 0 | 748 |
| State capital name | 4,882 | 20.46 | 37.12 | 0 | 313 |
| State name | 4,882 | 61.07 | 57.61 | 0 | 475 |
| Governor name | 4,882 | 21.58 | 24.05 | 0 | 214 |
| European country names | 4,882 | 28.87 | 28.16 | 0 | 349 |
| "slavery" | 4,882 | 13.78 | 39.10 | 0 | 435 |
| "texas" | 4,882 | 13.93 | 23.40 | 0 | 410 |
| "annex" | 4,882 | 7.706 | 13.01 | 0 | 198 |
| "tariff" | 4,882 | 9.770 | 15.97 | 0 | 281 |
| "mexic" | 4,882 | 34.42 | 52.88 | 0 | 559 |
| "vote" | 4,882 | 37.86 | 34.14 | 0 | 354 |
| "telegraph" | 4,882 | 2.664 | 4.290 | 0 | 57 |
| "abolition" | 4,882 | 5.868 | 12.75 | 0 | 218 |
| "free soil" | 4,882 | 1.209 | 6.084 | 0 | 166 |
| "liberty party" | 4,882 | 0.771 | 4.396 | 0 | 87 |
| "wilmot proviso" | 4,882 | 0.856 | 3.354 | 0 | 75 |
| "plantation" | 4,882 | 3.331 | 6.249 | 0 | 59 |
| "rally" | 1,429 | 2.159 | 2.418 | 0 | 23 |
| "meeting" | 1,429 | 23.83 | 22.02 | 0 | 179 |
| "speech" | 1,429 | 14.47 | 13.47 | 0 | 99 |
| "orator" | 1,429 | 2.761 | 4.298 | 0 | 100 |
| "gathering" | 1,429 | 1.327 | 1.787 | 0 | 14 |
| "invite" | 1,429 | 10.30 | 9.618 | 0 | 65 |
| "assembl" | 1,429 | 10.78 | 11.26 | 0 | 143 |
| Campaign-related words combined | 1,429 | 65.63 | 48.11 | 0 | 348 |

*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. Presidential candidates' last names include all presidential candidates from the two major parties (Whigs and Democrats) and the leading third party in each presidential election year during 1840-1848. Pres. & Vice Pres. candidates' last names further include the last names of the vice presidential candidates in election years. 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." Campaign-related words combined is the sum of the following words: "rally," "meeting," "speech," "orator," "gathering," "invite," and "assembl".

Table A.18: Access to Telegraphed Washington News and Newspaper Mentioning of "Telegraph"

| | Outcome: ln("telegraph") | | | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Eff. Dist. to Washington | -0.122*** | -0.0785*** | -0.0760*** | -0.115*** |
| (100 miles) | (0.0125) | (0.0231) | (0.0243) | (0.0307) |
| Observations | 4,882 | 4,882 | 4,882 | 4,882 |
| R-squared | 0.165 | 0.554 | 0.555 | 0.608 |
| 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.19: Access to Telegraphed News from Washington and Mentioning of Words Related to Slavery in Newspapers

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| | | | ln("Free | ln("Liberty | ln("Wilmot | |
| | ln("Slavery") | ln("Abolition") | Soil") | Party") | Proviso") | ln("Plantation") |
| | Panel A. Sample: All Newspapers in Sample | | | | | |
| Eff. Dist. to Washington | -0.102*** | -0.0773*** | -0.0162 | -0.0173 | -0.0542 | -0.0351 |
| (100 miles) | (0.0361) | (0.0269) | (0.0241) | (0.0134) | (0.0369) | (0.0257) |
| Observations | 4,882 | 4,882 | 4,882 | 4,882 | 4,882 | 4,882 |
| R-squared | 0.632 | 0.462 | 0.701 | 0.641 | 0.573 | 0.594 |
| | Panel B. Sample: Northern Newspapers | | | | | |
| Eff. Dist. to Washington | -0.137** | -0.109** | -0.0220 | -0.0404 | -0.115*** | -0.0227 |
| (100 miles) | (0.0519) | (0.0436) | (0.0374) | (0.0256) | (0.0203) | (0.0247) |
| Observations | 2,780 | 2,780 | 2,780 | 2,780 | 2,780 | 2,780 |
| R-squared | 0.686 | 0.493 | 0.731 | 0.645 | 0.575 | 0.292 |
| | Panel C. Sample: Southern Newspapers | | | | | |
| Eff. Dist. to Washington | -0.0278 | -0.00211 | 0.00342 | 0.000662 | 0.0169 | -0.0232 |
| (100 miles) | (0.0592) | (0.0430) | (0.0338) | (0.00350) | (0.0739) | (0.0495) |
| Observations | 2,102 | 2,102 | 2,102 | 2,102 | 2,102 | 2,102 |
| R-squared | 0.548 | 0.516 | 0.687 | 0.127 | 0.626 | 0.541 |
| Newspaper FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Month-by-year FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Demographic controls | Yes | Yes | 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 slavery. 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 related to slavery, all measured in natural logs. Panel A includes all newspapers in my baseline analysis. Panels B focuses on the sample of newspapers from the North, while Panel C focuses on newspapers from the South. 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

Table A.20: Robustness of the Newspaper Text Analysis to Dropping Mississippi Newspapers from the Sample

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| Panel A. | | | Mentioning of "Congress" and Presidents' & Presidential Candidates' Last Names | | | |
| | | | | | ln(Pres. Cand. Name) | |
| | | ln(President | ln(Pres. Name) | | P. Cand | P. & V.P. |
| | ln("Congress") | Name) | Pres. Year | Off Year | Only | Cand |
| Eff. Dist. To Washington | -0.0398 | -0.0640* | -0.120** | -0.0495 | -0.113** | -0.0874* |
| (100 miles) | (0.0352) | (0.0326) | (0.0530) | (0.0396) | (0.0512) | (0.0449) |
| Observations | 3,912 | 3,912 | 1,173 | 2,737 | 1,173 | 1,173 |
| R-squared | 0.484 | 0.495 | 0.552 | 0.500 | 0.624 | 0.635 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Panel B. | | | Mentioning of Local, State-Specific, and European Nation Names | | | |
| | ln(Town | ln(County | ln(State Cap- | ln(State | ln(Governor | ln(European |
| | Name) | Name) | ital Name) | Name) | Name) | Nation Name) |
| Eff. Dist. To Washington | 0.0821** | 0.0274 | 0.0636* | 0.00209 | 0.00579 | 0.0220 |
| (100 miles) | (0.0332) | (0.0330) | (0.0377) | (0.0295) | (0.0260) | (0.0386) |
| Observations | 3,912 | 3,912 | 3,912 | 3,912 | 3,912 | 3,912 |
| R-squared | 0.810 | 0.733 | 0.700 | 0.662 | 0.616 | 0.492 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Panel C. | | | Mentioning of Issues of National Importance | | | |
| | ln("Slavery") | ln("Texas") | ln("Annex") | ln("Tariff") | ln("Mexic") | ln("Vote") |
| Eff. Dist. To Washington | -0.0854* | -0.0636* | -0.0283 | -0.0293 | -0.0117 | -0.0289 |
| (100 miles) | (0.0433) | (0.0362) | (0.0331) | (0.0358) | (0.0339) | (0.0274) |
| Observations | 3,912 | 3,912 | 3,912 | 3,912 | 3,912 | 3,912 |
| R-squared | 0.637 | 0.610 | 0.608 | 0.534 | 0.745 | 0.506 |
| Newspaper FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Month-by-year FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Demographic controls | Yes | Yes | Yes | Yes | Yes | Yes |

*Notes* - The table shows the estimates from Table 7 after dropping all newspapers in my sample from Mississippi. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table A.21: Robustness of the Newspaper Text Analysis to Controlling for North-South Region Dummies Interacted with Year-Month Fixed Effects

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| Panel A. | | Mentioning of "Congress" and Presidents' & Presidential Candidates' Last Names | | | | |
| | | | | | ln(Pres. Cand. Name) | |
| | | ln(President | ln(Pres. Name) | | P. Cand | P. & V.P. |
| | ln("Congress") | Name) | Pres. Year | Off Year | Only | Cand |
| Eff. Dist. To Washington | -0.0497 | -0.0567** | -0.142** | -0.0510 | -0.158*** | -0.133** |
| (100 miles) | (0.0306) | (0.0284) | (0.0556) | (0.0362) | (0.0591) | (0.0524) |
| Observations | 4,882 | 4,882 | 1,427 | 3,451 | 1,427 | 1,427 |
| R-squared | 0.487 | 0.523 | 0.577 | 0.536 | 0.643 | 0.653 |
| Panel B. | | Mentioning of Local, State-Specific, and European Nation Names | | | | |
| | ln(Town Name) | ln(County Name) | ln(State Capital Name) | ln(State Name) | ln(Governor Name) | ln(European Nation Name) |
| Eff. Dist. To Washington | 0.0325 | -0.00533 | 0.00629 | -0.0290 | -0.0296 | 0.00782 |
| (100 miles) | (0.0292) | (0.0272) | (0.0289) | (0.0255) | (0.0202) | (0.0308) |
| Observations | 4,882 | 4,882 | 4,882 | 4,882 | 4,882 | 4,882 |
| R-squared | 0.794 | 0.722 | 0.678 | 0.630 | 0.594 | 0.503 |
| Panel C. | | Mentioning of Issues of National Importance | | | | |
| | ln("Slavery") | ln("Texas") | ln("Annex") | ln("Tariff") | ln("Mexic") | ln("Vote") |
| Eff. Dist. To Washington | -0.100*** | -0.0482* | -0.0333 | -0.0183 | -0.000381 | -0.0341 |
| (100 miles) | (0.0346) | (0.0283) | (0.0270) | (0.0290) | (0.0294) | (0.0220) |
| Observations | 4,882 | 4,882 | 4,882 | 4,882 | 4,882 | 4,882 |
| R-squared | 0.654 | 0.608 | 0.621 | 0.536 | 0.748 | 0.509 |
| Newspaper FE | Yes | Yes | Yes | Yes | Yes | Yes |
| North/South × Month-by-year FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Demographic controls | Yes | Yes | Yes | Yes | Yes | Yes |

*Notes* - The table shows the estimates from Table 7 after controlling for the interaction between a North-South region dummy and year-month fixed effects. *** p<0.01, ** p<0.05, * p<0.1

Table A.22: Robustness of the Newspaper Text Analysis to Controlling for Census Region Dummies Interacted with Year-Month Fixed Effects

| Panel A. | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| | Mentioning of "Congress" and Presidents' & Presidential Candidates' Last Names | | | | | |

| | | | | | ln(Pres. Cand. Name) | |
|---|---|---|---|---|---|---|
| | | ln(President | ln(Pres. Name) | | P. Cand | P. & V.P. |
| | ln("Congress") | Name) | Pres. Year | Off Year | Only | Cand |
| Eff. Dist. To Washington | -0.0110 | 0.0121 | -0.115 | 0.0433 | -0.116 | -0.0985 |
| (100 miles) | (0.0523) | (0.0319) | (0.0728) | (0.0426) | (0.0814) | (0.0736) |
| Observations | 4,882 | 4,882 | 1,427 | 3,451 | 1,427 | 1,427 |
| R-squared | 0.523 | 0.560 | 0.606 | 0.574 | 0.675 | 0.684 |

| Panel B. | Mentioning of Local, State-Specific, and European Nation Names | | | | | |
|---|---|---|---|---|---|---|
| | ln(Town Name) | ln(County Name) | ln(State Capital Name) | ln(State Name) | ln(Governor Name) | ln(European Nation Name) |
| Eff. Dist. To Washington | 0.0581 | 0.0489 | 0.0115 | -0.00668 | -0.00462 | 0.0392 |
| (100 miles) | (0.0522) | (0.0440) | (0.0471) | (0.0396) | (0.0324) | (0.0450) |
| Observations | 4,882 | 4,882 | 4,882 | 4,882 | 4,882 | 4,882 |
| R-squared | 0.815 | 0.742 | 0.707 | 0.664 | 0.647 | 0.531 |

| Panel C. | Mentioning of Issues of National Importance | | | | | |
|---|---|---|---|---|---|---|
| | ln("Slavery") | ln("Texas") | ln("Annex") | ln("Tariff") | ln("Mexic") | ln("Vote") |
| Eff. Dist. To Washington | -0.0772* | -0.0340 | -0.0259 | 0.0262 | 0.0216 | 0.0256 |
| (100 miles) | (0.0453) | (0.0405) | (0.0423) | (0.0400) | (0.0492) | (0.0355) |
| Observations | 4,882 | 4,882 | 4,882 | 4,882 | 4,882 | 4,882 |
| R-squared | 0.683 | 0.633 | 0.646 | 0.579 | 0.766 | 0.554 |
| Newspaper FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Region × Month-by-year FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Demographic controls | Yes | Yes | Yes | Yes | Yes | Yes |

*Notes* - The table shows the estimates from Table 7 after controlling for the interactions between Census region dummies (indicators for the Northeast, Midwest, Southeast, and South Central regions) and year-month fixed effects. *** p<0.01, ** p<0.05, * p<0.1

Table A.23: Robustness of the Newspaper Text Analysis to Controlling for Newspaper-Specific Linear Trends

| Panel A. | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| | | Mentioning of "Congress" and Presidents' & Presidential Candidates' Last Names | | | | |
| | | | | | ln(Pres. Cand. Name) | |
| | | ln(President | ln(Pres. Name) | | P. Cand | P. & V.P. |
| | ln("Congress") | Name) | Pres. Year | Off Year | Only | Cand |
| Eff. Dist. To Washington | -0.0920*** | -0.0477 | -0.176 | -0.0756 | -0.0655 | -0.0395 |
| (100 miles) | (0.0279) | (0.0446) | (0.118) | (0.0564) | (0.100) | (0.0867) |
| Observations | 4,882 | 4,882 | 1,427 | 3,451 | 1,427 | 1,427 |
| R-squared | 0.557 | 0.567 | 0.668 | 0.581 | 0.728 | 0.737 |

| Panel B. | | Mentioning of Local, State-Specific, and European Nation Names | | | | |
|---|---|---|---|---|---|---|
| | ln(Town Name) | ln(County Name) | ln(State Capital Name) | ln(State Name) | ln(Governor Name) | ln(European Nation Name) |
| Eff. Dist. To Washington | 0.0400 | -0.0276 | 0.0283 | -0.0214 | -0.0253 | 0.000401 |
| (100 miles) | (0.0436) | (0.0378) | (0.0517) | (0.0375) | (0.0351) | (0.0321) |
| Observations | 4,882 | 4,882 | 4,882 | 4,882 | 4,882 | 4,882 |
| R-squared | 0.838 | 0.772 | 0.719 | 0.672 | 0.624 | 0.584 |

| Panel C. | | Mentioning of Issues of National Importance | | | | |
|---|---|---|---|---|---|---|
| | ln("Slavery") | ln("Texas") | ln("Annex") | ln("Tariff") | ln("Mexic") | ln("Vote") |
| Eff. Dist. To Washington | -0.106** | -0.0841** | -0.0553* | -0.0593 | -0.0448 | -0.0779*** |
| (100 miles) | (0.0461) | (0.0395) | (0.0284) | (0.0383) | (0.0347) | (0.0253) |
| Observations | 4,882 | 4,882 | 4,882 | 4,882 | 4,882 | 4,882 |
| R-squared | 0.672 | 0.636 | 0.645 | 0.570 | 0.768 | 0.564 |
| Newspaper FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Month-by-year FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Demographic controls | Yes | Yes | Yes | Yes | Yes | Yes |
| Newspaper-specific linear trend | Yes | Yes | Yes | Yes | Yes | Yes |

*Notes* - The table shows the estimates from Table 7 after controlling for newspaper-specific linear trends in each regression. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table A.24: Access to Telegraphed News from Washington and Mentioning of Campaign-Related Words

| | (1)<br>ln("Rally") | (2)<br>ln("Meeting") | (3)<br>ln("Speech") | (4)<br>ln("Orator") | (5)<br>ln("Gathering") | (6)<br>ln("Invite") | (7)<br>ln("Assembl") | (8)<br>ln(Combined) |
|---|---|---|---|---|---|---|---|---|
| Eff. Dist. to Washington | -0.0236 | -0.0280 | -0.0261 | -0.0242 | -0.00321 | 0.0732* | -0.00746 | -0.00363 |
| (100 miles) | (0.0324) | (0.0311) | (0.0413) | (0.0363) | (0.0208) | (0.0392) | (0.0566) | (0.0342) |
| | | | | | | | | |
| Observations | 1,427 | 1,427 | 1,427 | 1,427 | 1,427 | 1,427 | 1,427 | 1,427 |
| R-squared | 0.291 | 0.589 | 0.581 | 0.309 | 0.344 | 0.587 | 0.517 | 0.617 |
| Newspaper FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Month-by-year FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Demographic controls | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |

*Notes* - The table shows the estimated effects of access to telegraphed Washington news on the mentioning of words related to local campaigning activities in my sample of newspapers during presidential election years. The regressions follow the same specification as in Table 7. *** p<0.01, ** p<0.05, * p<0.1

Table A.25: Direct Access to the Telegraph and Mentioning of Campaign-Related Words

| | (1) ln("Rally") | (2) ln("Meeting") | (3) ln("Speech") | (4) ln("Orator") | (5) ln("Gathering") | (6) ln("Invite") | (7) ln("Assembl") | (8) ln(Combined) |
|---|---|---|---|---|---|---|---|---|
| Telegraph connection | 0.0371 | 0.116 | -0.161 | -0.155 | -0.0863 | 0.273* | -0.0754 | 0.00825 |
| | (0.145) | (0.175) | (0.193) | (0.215) | (0.102) | (0.161) | (0.209) | (0.158) |
| Observations | 1,427 | 1,427 | 1,427 | 1,427 | 1,427 | 1,427 | 1,427 | 1,427 |
| R-squared | 0.345 | 0.722 | 0.700 | 0.375 | 0.393 | 0.687 | 0.615 | 0.821 |
| Newspaper FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Month-by-year FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Demographic controls | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Ln(total word count) | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |

*Notes -* The table shows the estimated effects of a town's direct connection to the telegraph on the mentioning of words related to local campaigning activities in my sample of newspapers during presidential election years. The explanatory variable is a dummy variable that becomes 1 once the newspaper's town was connected to the telegraph and 0 otherwise. Each regression controls for newspaper fixed effects, month-by-year fixed effects, county demographic controls as in Table 7, and the natural log of the total number of words in newspapers. Standard errors are corrected for clustering at the newspaper location (town) level. *** p<0.01, ** p<0.05, * p<0.1

# Appendix B:

# Constructing Alternative Measures of Access to Telegraphed Washington News based on Historical Transportation Networks

In this section, I construct alternative measures of access to telegraphed news from Washington based on GIS network analysis that takes into account the overland, rail, and water transportation networks available during the study period. I then test the robustness of the results when I use these alternative measures of access to telegraphed Washington news as the explanatory variables.

To implement this exercise, I take the following steps. First, I obtain GIS datasets on the historical transportation networks during my study period. Specifically, GIS shapefiles on railroads, canals and steamboat-navigated rivers during the period 1840-1852 are obtained from Atack (2015, 2016, 2017). One caveat is that GIS shapefiles for roads or turnpikes are not available for this early period. To proxy the road network, I connect each county centroid with the 5 nearest other county centroids within a 50-mile radius; the results, however, are not sensitive to using alternative numbers or distance cutoffs to proxy the road network.[46] I then integrate the shapefiles for the different transportation modes into one single GIS network dataset in ArcGIS Pro.

Next, I collect information on the travel speeds of the various modes of transportation during the 1840s, including those of stagecoaches, railroads, and steamboats. Based on *The Historical Statistics of the United States* (Carter et al., 2006), in 1845, the typical speed of steamboats was 9 miles per hour (average of upstream and downstream speeds) and that of railroad transportation was about 27 miles per hour. While Carter et al. (2006) does not

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[46]I chose to connect county centroids with its 5 nearest neighbors within a 50-mile radius to balance considerations for reality and for the feasibility of the network analysis, as direct road connections are more likely to exist between nearby counties while too few connections would break the network structure and prevent the subsequent GIS network analysis.

include information for the speed of stagecoaches, various sources suggest that the typical speed of stagecoaches during this period was about 8-9 miles per hour.[47] I use the speeds of the different transportation modes (9 miles per hour for steamboat-navigated rivers, 27 miles per hour for railroads, and 8 miles per hour for roads) as input parameters for the subsequent GIS network analysis.

Finally, combining the GIS network dataset and the travel speed information, I run the origin-destination (OD) cost matrix analysis tool in ArcGIS Pro, minimizing the travel time from each county centroid to the nearest daily newspaper with telegraphed Washington news in each election year during 1840-1852.[48] The predicted travel time and travel distance based on this procedure, which I call the effective travel time and the effective travel distance to Washington, are what I use as alternative measures of access to telegraphed Washington news (instead of the baseline straight-line distance measure).

Table A.10 shows the results on voter turnout when I use the predicted travel time to measure access to telegraphed news from Washington. Columns 1-2 show that a reduction in the effective travel time to Washington by 10 hours is associated with an increase in presidential election turnout by about 1 percentage point. Columns 3-4 show that there is no such effect on House elections on average, consistent with the baseline finding.

Similarly, Table A.11 shows the results on voter turnout when I use the predicted travel distance to measure access to telegraphed news from Washington. Columns 1-2 show that a reduction in the effective travel distance to Washington by 100 miles is associated with an increase in presidential election turnout by about 0.9 percentage point, which is very similar to the baseline estimate (1.2 percentage points). Columns 3-4 show that the effects on House elections are small and statistically insignificant on average, again consistent with the baseline finding.

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[47]For example, see https://www.teachushistory.org/detocqueville-visit-united-states/articles/historical-background-traveling-early-19th-century

[48]Specifically, the origin-destination (OD) cost matrix solver finds and measures the least-cost paths along the network from multiple origins to multiple destinations. The best path on the network is discovered for each origin-destination pair, and the travel times and travel distances are stored as attributes of the output lines.

In short, the evidence presented here suggests that the results are not sensitive to using alternative travel time and distance measures of access to telegraphed news that take into account the historical transportation networks.