The Press, Petitions and Populism: Newspapers and political change in the United States (1870-1920)

Jori Korpershoek

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> "This is a time of organization. Great results are produced only by that." - Elihu Root (1904)

1 Introduction

At the opening of the new office of the House of Representatives in 1906, President Theodore Roosevelt remarked upon the literal growth of the Federal government. "This growth in the need for the housing of the government is but a proof [of how the] sphere of action of the national government has grown." Between the end of the Civil War and his presidency, Washington went from a "government out of sight" (see e.g. Balogh 2009), marred by corruption and inaction, to a more professionally run organization that actively intervened in the economy and regulated social life. This change in governance if often attributed to what Roosevelt would dedicate most of his speech to: the media. Whereas before the Civil War, journalists were often little more than mouth pieces on the payroll of the two major political parties, by the early 20th century, newspapers were independent businesses, which reported on political wheeling, dealing and scandals to sell papers.[1] This change in journalism is often attributed with fundamentally changing politics. For example, Gentzkow, Glaeser, and Goldin (2006) argue that it "seems a reasonable hypothesis that the rise of the informative press was one of the reasons why the corruption of the Gilded Age [1870-1896] was sharply reduced during the subsequent Progressive Era [1898-1912]." But many empirical studies of the impact of the media, like Gentzkow, Shapiro, and Sinkinson (2011), find no effects on political outcomes like vote share or incumbency advantage. Does this mean newspapers had little effect on politics, or does it mean they fundamentally altered citizens' expectations and demands of their representatives, politicians responding to these demands and giving citizens little reason to change their vote?

This paper investigates the political effects of newspapers by investigating their impact on citizen activism, specifically looking at how the rise of the daily newspaper between 1870 and 1924 affected citizen's petitioning behavior. Using a staggered differences-in-differences design around the entry timing of the first newspaper in a particular county, I show that the entry of the first newspaper is associated with a 30% rise in petitions, both in absolute numbers and per capita. Citizens thus more actively expressed their demands to politicians. I then explore heterogeneity in both topics and time, showing that the petitions caused by newspapers move together with the Congressional agenda.

1. In this speech, he made an analogy to the"Man with the Muck Rake," implying journalists were *too* focussed on uncovering dirt rather than praising the good deeds of politicians. Journalists would soon wear the term "muckraker" as a badge of honor.

To contextualize the empirical results, I present a two-period political accountability model with asymmetric information. This model helps to clarify which type of equilibrium adjustment can be studied by looking at petitions rather than other political outcomes like vote share. The main point of the model is to investigate the informational asymmetries necessary to generate an increase in petitioning after newspaper entry, how actions and beliefs change in response to newspaper entry, and the types of policies for which we should expect a response. Theoretically, the effect is driven by policies where voters initially ignorant about policy outcomes - such that they cannot write a credible petition without a newspaper informing them - and politicians being ignorant of local public opinion - so that they can claim plausible deniability and vote in line with their own preferences if they do not receive a petition. The introduction of a newspaper makes it possible for citizens to write a more effective petition, which changes the politician's beliefs about local public opinion and (potentially) affects their behavior. In this way, the model connects newspaper entry to observable changes in political behavior of both voters and politicians.

The theoretical settings mirrors the informational environment voters and politicians faced in the time period under study. On the side of voters, and unlike today, voters had few alternatives to newspapers. The introduction of a daily newspaper is thus likely to make a big impact on the information the average citizen has. Second, this was a time before public opinion was routinely measured. So without petitions, politicians could plausibly claim to be ignorant of local public opinion. And indeed, in the absence of specific pressure from citizens, politicians were happy to "wave the bloody shirt" and divide the electorate along sectarian lines instead of passing substantive policy (see e.g. Calhoun 2010). But when pressure was applied, Congress would pass important legislation on anti-trust policy, economic regulation and civil service reform. This paper takes one step towards showing that this pressure and the resulting voting behavior was caused by changes in media markets.

The rest of the paper proceeds as follows. First, I will explain the political and institutional context. Second, I present my empirical strategy and present early results. Finally, I conduct a case study in which I explore mechanisms (under construction).

2 Context and literature review

The impact of changes in media markets in the 19th and early 20th century on political behavior and outcomes is multi-faceted. Many of these aspects have already been explored in existing work. There is a rich descriptive and historical literature that describes how changes in newspaper and media markets coincide with changes in the dynamics of American politics. This goes from broad, narrative accounts - see e.g. Gentzkow, Glaeser, and Goldin (2006), Hofstadter (1960), and Goodwin (2013) - to case studies of how individual stories or scandals changed specific practices - see e.g. Daly (2012) on how more objective reporting by the New York Times threw sand of the gears of New York City's corrupt political machine and Dyck, Moss, and Zingales (2013) on how reporting on corruption in the Senate lead to support for electoral reform. However, a lot of causal and empirical evidence does not find direct evidence for this. For example, Perlman and Schuster (2016) find increases in third party voting after the expansion of rural delivery of newspapers, but their identification strategy only allows them

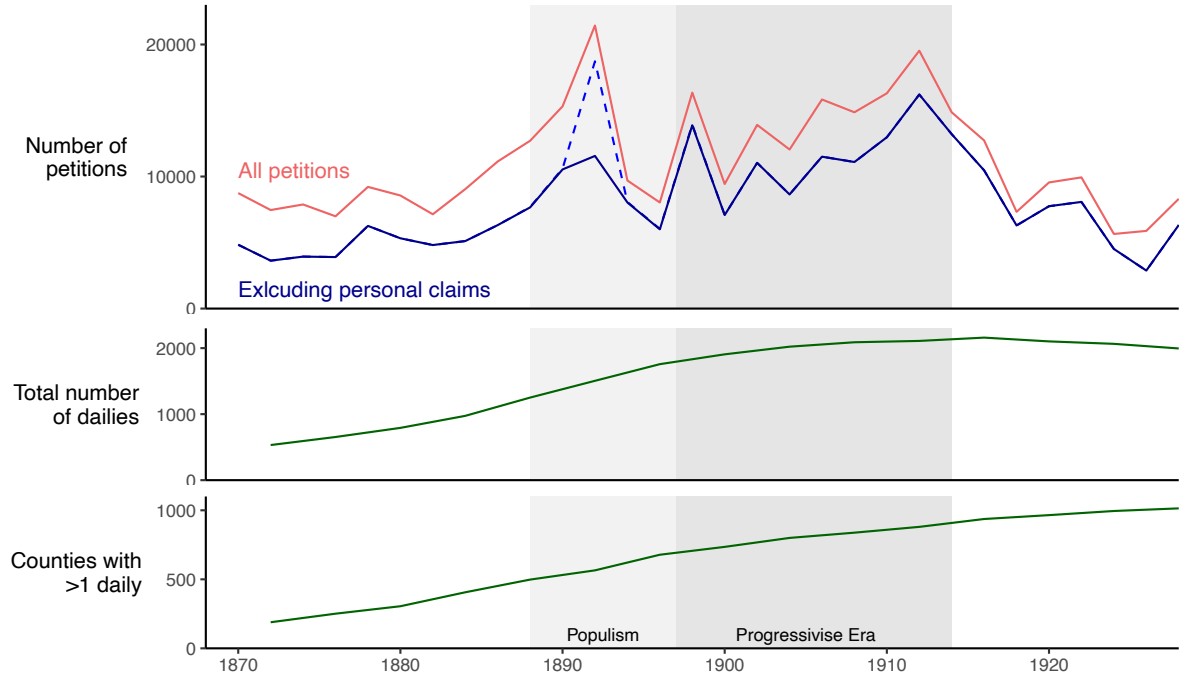

Figure 1: Trends in petitioning, as well as changes in American newspaper markets. The dotted blue line are petitions about a major controversy in the lead up to the Chicago World's Fair, whether or not it would be open on Sunday. Ignoring this peak, there is a clear rise in the number of petitions between 1870 and 1914, after which there is a stark decline.

to exploit variation after 1902, when many of the changes explored in the descriptive literature had already been put in motion. In a well known result, the introduction of the daily newspaper is associated with an increase in turnout, but no clear effects on measurable political outcomes (Gentzkow, Shapiro, and Sinkinson 2011) - see also Figure **??** in Appendix **??**. For example, counties get a newspaper, they an increase in turnout in Presidential elections relative to similar counties that do not have a newspaper yet, but no clear effects on political outcomes like vote share or political competitiveness.[2]. This result is consistent with two different stories. The first, is one in which politicians adapt their behavior to the new reality of being covered by the media, giving voters no reason to change their vote. And second, newspapers not affecting the political equilibrium at all, with neither voters nor politicians changing their behavior.

In the rest of this section, I make the case that looking at petitioning behavior as an outcome can help differentiate between these two different cases. First, I explain what petitions are and who received them. Second, I sketch the political environment, exploring the specific context in which these petitions were being sent. Third, I explore changes in American media markets during this time period and introduce a model which explains what type of equilibrium behavior can be captured by looking at the response of petitioning behavior to newspaper entry.

2. Figure **??** re-estimates the findings of the original paper using a modern estimator that allows for treatment effect heterogeneity and finds that the results are broadly the same as in the original paper

Petitions

One of the hallmarks of democracy is citizens' ability to shape political outcomes through participation in the political process. Voting is the most prominent and most studied form of participation, but the "voice of the people [as recorded by electoral outcomes] is but an echo" reflecting the equilibrium behavior and selection of politicians as well as citizen's preferences (p. 2, Key 1966). There are many other ways in which citizens and groups make their voices heard - often more explicitly - through, for example, protests, lobbying and, the focus of this paper, petitioning. What is distinguishes these forms of participation is that they provide specific information to politicians about citizens' opinions and preferences. Whereas a vote can be cast for many different reasons that go unrecorded in the ballot box, a petition includes a specific demand on a particular issue. This also means the media is especially important for these types of participation: an effective petition requires specific information about politics and policy, coordination between like minded citizens and the ability to keep the politician accountable (see e.g. Campante, Durante, and Tesei (2022)).

In the 19th and early 20th century, petitioning was one of the most important ways in which citizens could participate in the political process. The First Amendment protects not just the right to free speech, but also the right "to petition the Government for a redress of grievances" (U.S. Const. amend. I). This meant all people, including those without the right to vote, could petition Congress and expect that his petition would get a response and be recorded in the Congressional record. And people made use of this right: in the period between 1870 and 1930, Congress received over 300.000 petitions. They an important component of Congressional politics: "Petitions dominated the life and work of early Anglo-American legislatures. (...) [The] House of Representatives from its earliest days of operation would develop a set of procedures for receiving, debating, and referring petitions. These petitions—and the responses to them—were carefully recorded in docket books" (p. 63, see also ch. 2-5, Carpenter 2021). Members were then obliged to enter them into the Congressional record, where the date of entry, information about the organizers, the name of the recipient, a short summary of the demand and the action taken by Congress - e.g. being referred to a committee or to be tabled - was recorded.

The "redress of grievances" covered a wide variety of petitions. They can be classified into three broad categories, examples of which are shown in Table 1. First, around 30% cover personal grievances or complaints against the government. The most common example of this can be seen in the first row: a petition by a Civil War veteran who have been denied their pension by a local official and complain to their Member of Congress. Second, around 65% of pensions are citizens conveying their opinion to their Representative. This was either done by unorganized citizens, row two, but also by civil society organizations, row three. Finally, around 5% of petitions fall in a miscellaneous category, like intergovernmental lobbying, as can be seen in row 4. The second, and largest, category is of interest here: petitions as an expression of public opinion. These types of petitions have long long been a valuable resource for historians and political scientists working on a wide variety of topics, from slavery to indigenous rights and female suffrage. They also correlate with voting behavior of Members of Congress in other important policy areas, including Civil Service Reform (Theriault 2003) and anecdotally helped put pressure on representatives to vote for railroad regulation (Procter 1962).

Date	Petitioner(s)	Recipient	Petition
21-05-1874	David A. Flipping	Mr. J. Sener (VA, 1st)	"[F]or a pension"
05-01-1892	Citizens of Fayette County, Iowa	Mr. Butler (IA, 4th)	"[I]n favor of the passage of the Butterworth [anti-option trading] bill"
03-02-1898	Chamber of Commerce of Minneapolis, Minn.	Mr. Eddy (MN, 7th)	"[U]rging the passage of the anti-[ticket]scalping bill"
19-02-1872	The city government of Erie, Pennsylvania	*Missing*	"[A]sking for the erection of Government buildings at Erie for United States courts, post-office, etc"

Table 1: Examples of different petitions. The cell for recipient contains their name, as well as the Congressional district they represent. E.g. Mr. J. Sener represents Virginia's First Congressional District.

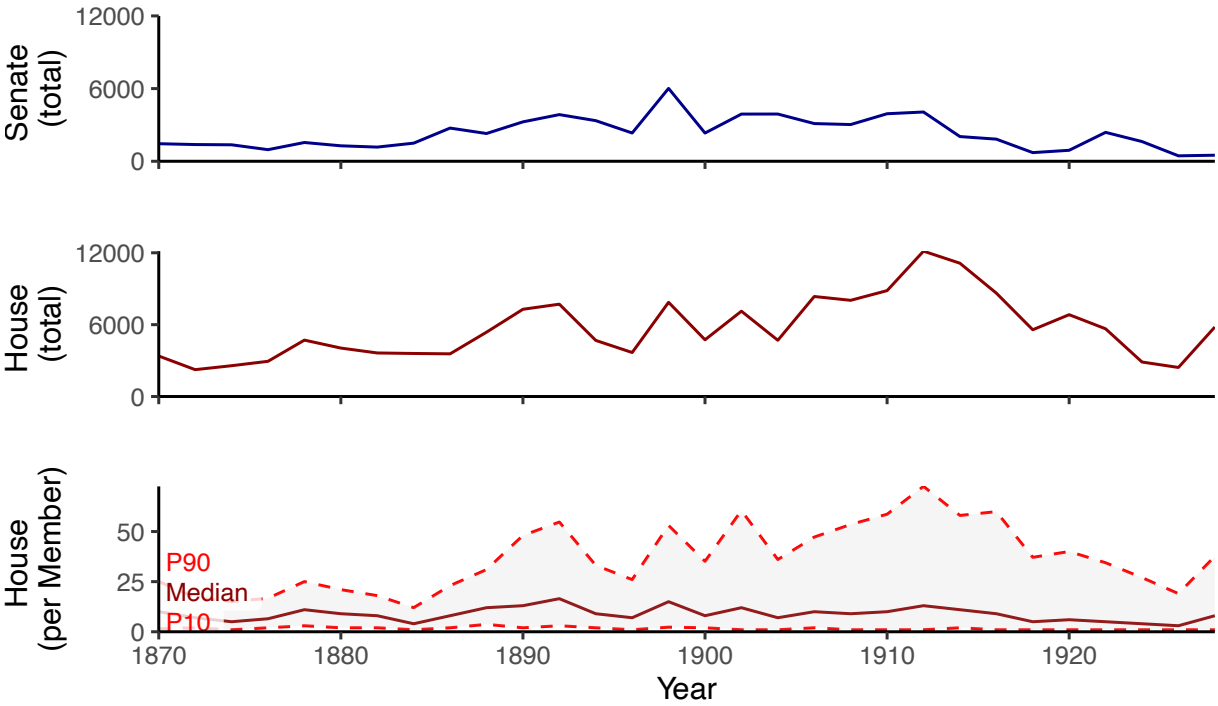

Figure 2: Trends in petitioning in the Senate, House and the distribution of petitions per Member of the House. These exclude petitions that are personal complaints, like those asking for a pension.

Between 1870 and 1910, there were big shifts in both the number as well as the types of petitions people sent to Congress.[3] The top graph in Figure 1 shows general trends in petitioning, both for all petitions and the subset of policy relevant petitions. Congress received around 8,000 petitions per session in the early 1870s, with around 50% of these being individual complaints against the government, mainly concerning complaints from veterans about not receiving a Civil War pension. In the early 1910s, the number of petitions was almost 20,000 per session, with

3. In the lead up to the Civil War (1861-1865), there had been a large petitioning campaign concerning the end of the slavery (ch. 6, 10, 14, Carpenter 2021). After the war, with the issue of slavery off of the Congressional agenda, petitioning cratered, but increased again over the next fifty years.

more than 80% of these concerning public policy.[4] As can be seen in Figure 2, the level of petitioning to the House was higher, but petitioning to both chambers of Congress increased. Most of the growth in the House was for members who were already receiving petitions, with the median seeing little movement and trends in the 90th percentile closely mirroring overall trends in the House.

Figure 1 also reveals that although there was a general upward trend, this trend fluctuates. This is explained in part by the nature of petitions: as will be discussed in more detail below, they often react to what is either on the political or the media agenda, so the number of petitions depends on whether citizens care about the topics discussed in Congress and the media. A clear, but somewhat frivolous, example of this are the petitions indicates by the dashed blue line, which are petitions reacting to a very specific event: the announcement that the World's Fair would be open on Sunday. But many petitions would be about more what today are considered more substantial, issues. The next paragraphs explore the general political environment and the types of issues which Congress dealt with during the late 19th and early 20th century.

Economic and political context

The fundamental problem of governance in the second half of the 19th century in the United States was the growing mismatch between the economy - which was increasingly interconnected and national in nature - political institutions - designed for the "broad dispersion of particularistic benefits downward to [specific individuals and] localities" (Skowronek 1982, p. 39). Secular economic forces which favored economies of scale, like industrialization, urbanization and immigration collided with a political system designed when most Americans lived in rural "island communities" (Wiebe 1967). For businesses and special interests, this was a natural "time of organization." One example of this were the railroads. These businesses were enabled by technological innovation, connected the nation and were, at least in the eyes of many consumers, able to leverage their market power in order to price discriminate, offering lower rates and rebates to other large corporations. They also leveraged their political clout and bribes to secure land grants, financing and an easy regulatory environment (White 2003).[5] Other industries, including oil, steel and jute[6] saw the rise of conglomerates, trusts and cartels. These organizations did not just have market power, but also used everything at their disposal, from lobbying to bribes, to keep policy makers on their side (see e.g. White 2017). This put citizens at a clear disadvantage in the policy making process, leading to the general feeling that the political game was stacked in favor of large corporations and other organized interests.[7]

There were many areas in which reformers of different stripes felt like reform was necessary, but were opposed by narrows interests. This ranged from civil service reform - in the late 19th

4. Although not the focus of this paper, focussing on the rise of petitioning during the late 19th century, Figure **??** also reveals the fall of petitioning at the start of World War I. Two reasons are the achievements of the Progressive Era slowing the demand for reform, as well as a disillusionment with the Federal government following American entry into World War I.

5. One of the most famous examples of such bribes, known as the Credit Mobilier scandal, were exposed by the first successful, cheap daily: *The New York Sun*.

6. A form of fibre, turned into bags and used to transport agricultural goods like cotton, and for this reason, very important for Southern farmers.

7. This view is well captured by the Puck cartoon "The Bosses of the Senate:" in this cartoon, monopolists are free to barge into the Senate and hover over "their" senators, with the public's entrance firmly nailed shut.

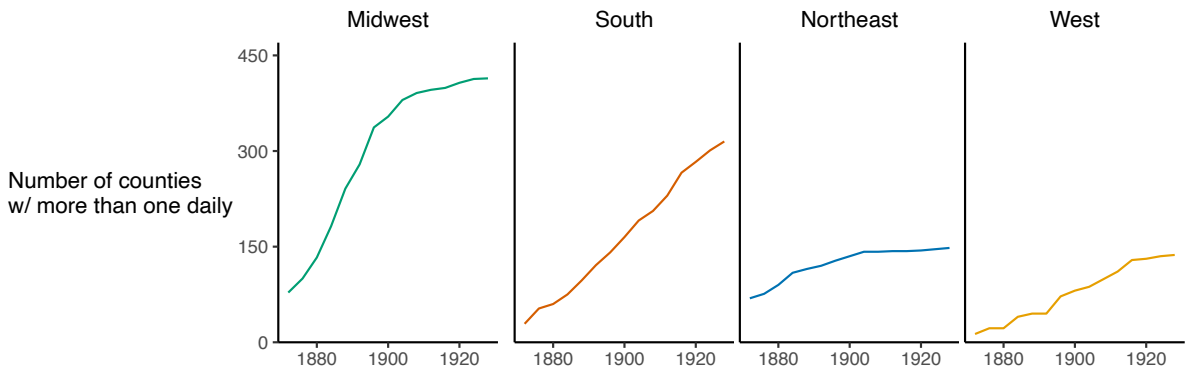

Figure 3: Number of counties with at least one daily, split by state region.

century, the civil service was still completely made up of political hires rather than professional bureaucrats, to economic reform - to curb the political, if not political power of large corporations and other forms of regulation, including the setting of safety standards in the workplace and for food and drugs. But building a durable coalition around reform proved difficult: because deep cleavages in society and sectional divides different groups who had the same material interests, like economic reform, voted for different parties in different parts of the country(Sanders 1999; Skocpol 1995; Bensel 1987; Gerstle 2017). Republicans increasingly dominated the North, which had rallied around the Republic in the Civil War. The only exceptions were some major cities, which were captured by Democratic political machines. The Democratic party on the other hand took over the South, increasing their power by limiting the franchise of African-Americans. Because of the partisan loyalties generated by the Civil War, in many elections there was little substantive campaigning: Republicans would "wave the bloody shirt" while Democrats would claim to be be the "party of the fathers" and the protector of states' rights (Calhoun 2010). In most elections, voters fell more or less fell in line.

Despite these difficulties that stood in the way of reform, the Federal government did start to flex its muscles during these years and became a lot more active in managing American life. It went from a "government out of sight" which mainly influenced life behind the scenes, to one granting itself many of the tasks still associated with the federal government today (Balogh 2009). This ranges from the power to intervene in the national economy (the Interstate Commerce Act, 1887 and the Sherman Antitrust Act, 1890), to making active migration policy (Chinese Exclusion Acts, 1892 and 1892, and the Geary Act, 1902), setting of standards and quality control of consumer products (the Food and Drug Act, 1904) to the active involvement in monetary policy (the Federal Reserve Act, 1913), all implemented by a more professional bureaucracy rather than through pure patronage (the Pendleton Act, 1872). Although reformers would have undoubtedly wanted more - and sometimes different - reforms, this time period in many ways laid the foundation of the more centralized, modern American state.

Newspapers

At the same time these political changes were happening, there were also fundamental changes in American newspaper markets. Although there had been weekly, monthly and quarterly papers

before, this was the first time Americans could consume news on a daily basis. Figure 3 shows this spread of the daily newspaper, by plotting the number of counties with at least one daily. There we see an increase in each region. The growth is most pronounced in the Midwest and the South. There are also temporal differences: the Midwest sees most growth between 1870 and 1900 and levels off after. The increase in the South is more continuous.

Newspapers at the start of the 19th century, so prior to the period under study, were markedly different from newspapers we know today. They published infrequently, either weekly or monthly, and were just one of the many products that an individual printer sold. The main costs involved were the purchase of a (hand-)press and paper to print the news on (Schudson 1978). Then two important changes happened that made the production of newspapers radically cheaper. First, there were technological developments in printing technology that made it cheaper and easier to mass print products. Second, whereas cheap paper used to be made out of old rags, this is when the technology to turn wood into paper was invented.

These technological changes occurred alongside, and were enabled by, changes in the way newspapers were funded. In the early 19th century, newspapers "were financed by political parties, factions of parties, or candidates for office who dictated editorial policy and sometimes wrote the editorials personally" (p. 15). Even if the press was not directly owned by a political party, its funding would still often come from patronage, with government officials awarding printing jobs to supportive newspapers. For example, until 1875, Federal law mandated that all laws were printed in at least two newspapers per state. These contracts were often given to editors that had supported the politician's that won office (Katz 1966). The same happened at the state and the local level: "printing contracts from the sheriff, for instance, were important, for they could constitute half of a weekly newspaper's annual income" (Baldasty 1992, p. 22). After the Civil War, patronage did not keep pace with the costs of running anything but a small newspaper(p. 43-44). At the same time, the fact that mass production became cheaper allowed for a new type of newspaper. One aimed at a large market, where "a newspaper sold a product to a general readership and sold the readership to advertisers" (Schudson 1978, p. 25). This fundamentally changed what newspapers were. "Early newspapers had been one-man bands: one man acted as printer, advertising agent, editor, and reporter" (p. 65). Now the journalist, doing actual reporting, became an important part of the business. The spread of the telegraph in the 1860s also made it possible to relay actual national and international news (Wang 2020).

These changes together meant that the business of running a newspaper fundamentally changed. In the decades after the Civil War, the daily took the United States by storm. Starting at the coasts, it spread al throughout the United States in the years after. These were commercial enterprises that had the goal of reaching as many eyeballs as possible. Of course, that does not mean they were not political. In fact, newspapers often still carried political affiliations. As becomes clear from Figure 6, this often reflected the partisan balance in a region, with the North being dominated by Republican newspapers and the South by Democratic newspapers. There is evidence that newspapers were less likely to cover scandals of the politicians they were affiliated with. But rather than reflecting the wishes of elected politicians, this now reflected market demand.

The analysis below will use this variation, of the spread of the daily newspaper to medium

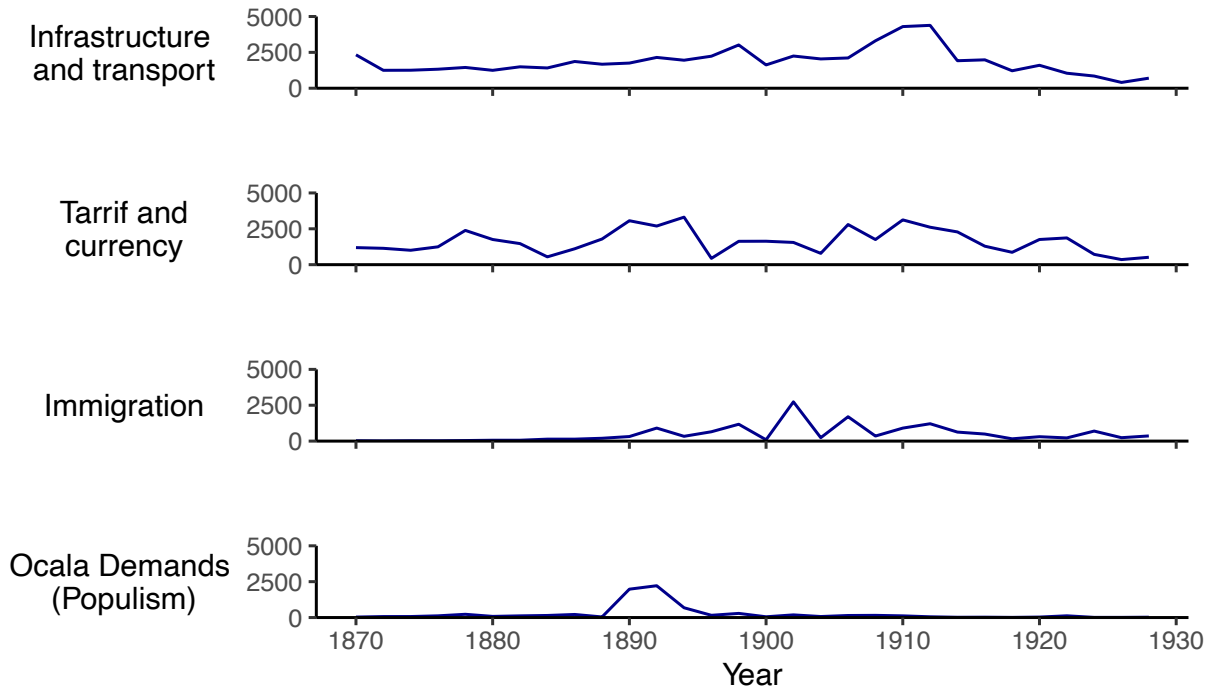

Figure 4: Trends in petitioning in different topics. Some policy areas are always active - like those relating to the railroads. Others follow the Congressional legislative cycle - like those on economic issues. Other areas see strong increases after big events - like immigration after the assassination of President McKinley by the son of immigrants.

sized cities and counties, to investigate the effect of the media on politics. It is important to stress that this does not pick up on changes in urban markets, many of which are an important part of narratives about how the media affects politics.[8] It was big newspapers in Chicago (and New York City) that created the business model of the newspaper as we know it today (Smythe 2003), but that was the product of competition, not first entry. Although these shifts in big cities undoubtedly had important repercussions, the variation I leverage below is not that of the big city, but that of the moderately sized county.

Newspapers, politics and the petitions

What is the problem that petitions solve, and how do newspapers help in the organization of petitions? One clear role they have is to inform politicians about what issues are important to their constituents. This was especially important before there were other ways in which to learn about local opinion: as for example argued by Carpenter (2021, p. 478): in "a world before systematized public opinion polls emerged, anxious politicians and party elites saw in petitions a distinctive indicator of emerging public sentiment." This is also how politicians appealed to them in speeches. For example, during the introduction of the Interstate Commerce Act in

8. An oft cited example of early investigative journalism was the *New York Times*, which in 1871 exposed the financial corruption of Boss Tweed, leading to the (temporary) political downfall of the Democratic political machine headquartered in Tammany Hall (Golway 2014). But New York had its first daily in 1793, almost a hundred years before the start of the panel. The "muckraking" of this era is often associated with *McClure's*, also headquartered in New York. It was responsible for investigating corruption in other big cities, the Senate and exposing the inner workings and political influence of Standard Oil (Dyck, Moss, and Zingales 2013; Goodwin 2013). But it was a magazine, not a daily newspaper, and aimed at readers in big cities.

1877, petitions were used to support the claim "that both public opinion and the best interests of the country appeal to Congress to perform the great public duty of passing such a law" (Procter 1962). But based on historical accounts, politicians in this time period were not purely motivated by pleasing their constituents. Often, the opposite was true. In that case politicians prefer not learning local public opinion, giving them the freedom to make their own decisions and still plausibly claim that they are acting in the public's interest.

In Appendix A, I present a model which clarifies what effects are being captured by looking at petitions as an outcome in a setting where politicians have different preferences than their constituents. The role of this model is to clarify what is being captured by looking as petitions rather than other outcomes, like vote share. In the model, politicians are motivated by being in office, by pleasing their constituents and by private rents. The latter two forces push the politician in different directions: voting to please their constituents means reducing their own private rents. Politicians differ in how large their private rents are. Citizens vote to express their partisanship and to select politicians who are aligned with their interests. The key assumption concerns the information voters and politicians have: for newspapers to generate an increase in petitioning in equilibrium, voters need to be initially ignorant about the exact returns to policy, such that they are not sure what they should from their politician without a newspaper, and politicians need to be ignorant of local public opinion, such that without a petition, the politician plausibly claim ignorance of local public opinion and against his constituent's interests.

In the model, petitions thus capture some of the equilibrium effect of newspaper entry on the political equilibrium, but only for a subset of policies and choices. Two important categories it excludes are large scale corruption - then just having the newspaper is enough, the politician does not have to receive a petition to know that a corruption scandal will hurt his reputation - and local, private benefits - a veteran appealing to Congress to change a decision about his pension does not need a newspaper to inform him how much he would benefit if he received his pension. This leaves petitions on complex policies with uncertain, dispersed benefits, like railroad regulation and some of the major acts discussed above, as the main place we should see the effect.

In equilibrium, petitions convince politicians to vote for policies their constituents like because of two forces. First, because they convey information. For politicians with low bias, who are not sure whether to vote for the policy or not, learning that your constituents like the policy is enough to vote for it. Second, there is a subset of policies for which petitions contain an electoral threat. Vote on the policy how we ask you to vote in this petition, or you will lose our seat. These are policies which have an intermediate value for voters. For policies they care less about, they will never vote the politician out of office. For policies they care a lot about, they will always vote the politician out of office if the politician votes against their wishes. For policies in the middle, the politician's seat is safe without a petition, but they stand to lose if they get a petition and vote against their electorate's wishes. For both forces, information is vital. First, information voters have about the policy, and second about how many votes the politician will lose if they vote against the policy. But petitions can only convey information if voters have this information, for which they need the newspaper.

During the Gilded Age, anecdotal evidence suggests that petitions helped improve both the

selection and incentives of politicians. For example, after the initial introduction of railroad legislation, more and more politicians received petitions supporting reform. Now, "a number of congressmen who had opposed railroad regulation or who had been apathetic to it were having to answer to their constituents for their attitude" (Procter 1962). Pendleton's Civil Service Reform did not gain momentum"until 39 members lost their seats in the 1882 midterm election that [Congress] recognized the intensity of the public's disdain for the spoils system" (Theriault 2003). During the final vote, receiving a petition correlates highly with voting behavior: "members who received two or more petitions almost unanimously voted to pass the Pendleton bill."

A petition then forms a yardstick against which to measure the behavior of the politician. But whether such a yardstick is available is available differs throughout time, or in terms of the model, depends on the realization of the state of the world. Some of these are from within the political system - Reagan and Pendleton's bills formed such yardsticks - sometimes from outside actors - the Omaha platform presented by the forerunners of the Populist party is such an example. The effect of newspapers on petitioning is thus likely to differ through time - there needs to be something to petition about - and space - how important a particular policy is likely to differ between different sets of constituents.

3 Data and empirical strategy

For identification, I rely on staggered difference-in-differences. In my main specification, this means comparing changes in outcomes of counties that have just gotten their newspaper with changes in similar counties that do not have a newspaper yet (the 'not-yet-treated') to account for unobserved trends. Before discussing the empirical strategy in more detail, I describe the general features of the data. I also use this discussion to motivate the empirical approach and to place the results in context.

Data

For the data, I rely on two main sources of information. For newspapers, I rely on Gentzkow, Shapiro, and Sinkinson (2011). This dataset contains information about every daily newspaper published in the United States between 1868 and 2004 in every presidential year, including information about partisan affiliation. For the petitions data I use the Congressional Petitions Database (Blackhawk et al. 2021). This database contains information about each petition that was ever received by Congress (1789-1946). For the time period of interest, I then use Natural Language Processing to match each petition to the county or counties of origin, as well as the politician that receives it. Blackhawk et al. (2021) already classify each petition into broad topics, but for important events, like specific bills and political movements and controversies, I create a more granular classification scheme. For additional information, like demographic and economic data, I rely on the United States Census.

Census and unit of analysis

For demographic data, I rely on the United States census, as digitized by Haines, Research, and Social (2010). Throughout the paper, the unit of analysis is the county. Because county

boundaries change over time, I project all variables onto 1990 county boundaries using the method developed in Eckert et al. (2020). For all years in between, I extrapolate variables using natural splines.[9]

Extrapolating data between census years raises a potential concern of "bad controls" or post-treatment bias: for example, if a newspaper enters a county in 1876, then the population in that county is estimated using data from 1870 and 1880. This would be a problem if newspaper entry changes population growth.[10] However, figure 7 shows no change in trends around newspaper entry in any of the four census regions. All major results in the paper are shown with and without demographic controls, as well as in absolute and per capita terms, and the results between these approaches are largely consistent. This indicates this form of post-treatment bias does not appear to be a problem.

Newspapers

For my main estimates, I use staggered differences-in-differences compares counties that get their first newspaper with counties that do not yet have a newspaper. This builds on existing work that used two-way-fixed effects to investigate the effect of newspaper entry on outcomes - including Gentzkow, Shapiro, and Sinkinson (2011), but see also e.g. Cagé (2020) - while allowing the effect of newspapers to not just affect the level of the outcome of interest, but also the trend. Gentzkow, Shapiro, and Sinkinson (2011) study the same setting, but they find that newspapers lead to an increase in turnout but leave the average vote share of the parties unaffected. Re-estimating these results with the estimator from Callaway and Sant'Anna (2021) rather than two-way-fixed-effects finds broadly the same results. These findings are consistent with little political effect of the newspaper, but also with equilibrium adjustments in information and beliefs of voters and politicians responding to these forces. In this paper, I rely on petitions as a means of measuring these adjustments, focusing on the effect of the first newspaper. For the first newspaper, the effect is expected to be largest and the identification assumptions are clearest. For an extensive description of the origins of the data, I refer to Gentzkow, Shapiro, and Sinkinson (2014). The main source for information are different newspaper catalogues. The inclusion criterion is that a newspaper publishes at least four times a week. The dataset also contains information about other characteristics, including partisan affiliation and suggested advertising rates. Most of these newspapers were city newspapers. The city is recorded, as well as the county within which it publishes, using 1990 county boundaries to allow for a consistent geographic entities.

My main unit of analysis are counties that have just gotten their first newspaper. In the next few paragraphs, I describe how many of these counties there are what they look like in terms of observable characteristics. This is useful for three reasons. First, it clarifies what variation is being used for the identification of the result, which informs the interpretation of the result and clarifies what impacts of the newspaper are and are not captured by looking at this variation.

9. This is roughly the same approach as Gentzkow, Shapiro, and Sinkinson (2011) take. My estimates of e.g. population correlate strongly with, but are not identical to theirs.

10. Although the data is not consistently available, it is one reason why using extrapolated literacy rates might be a bad control: it is commonly argument that people learned to read in order to read newspapers (p. 36-39 Schudson 1978).

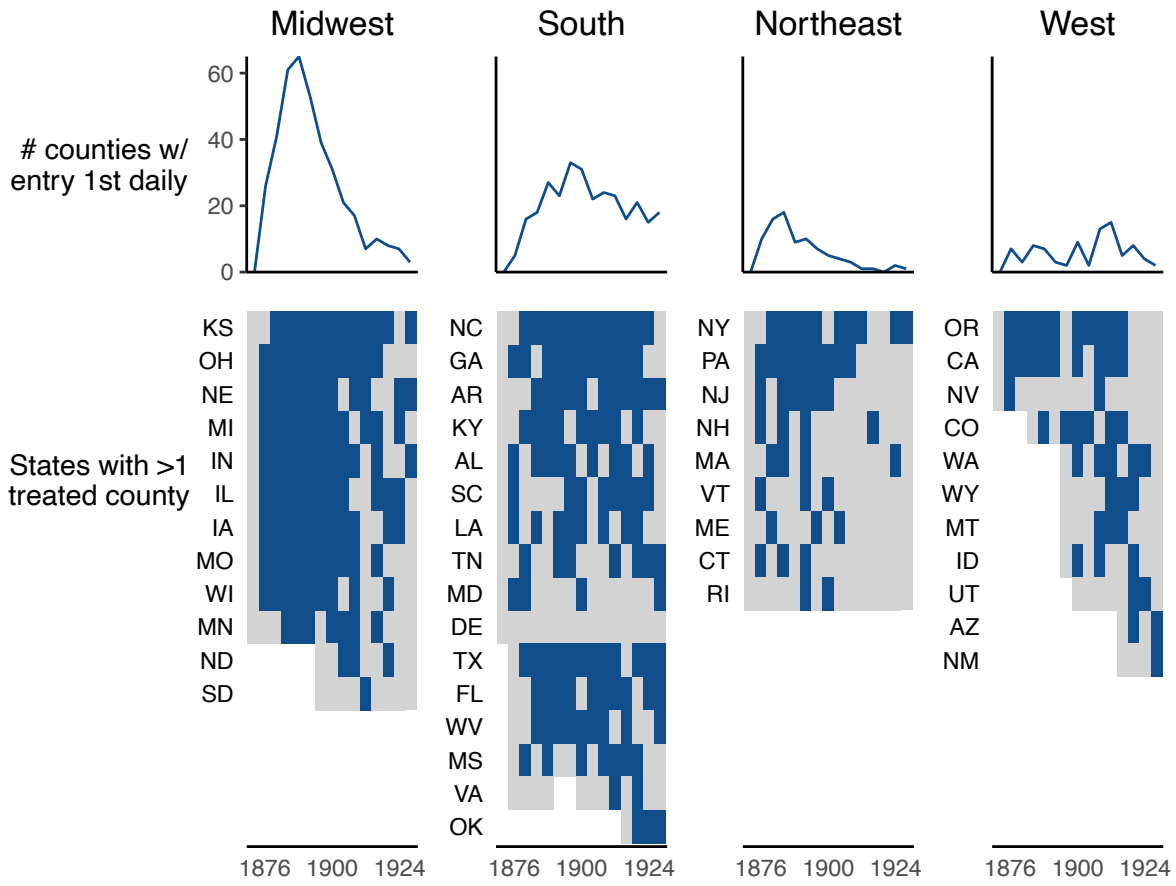

Figure 5: Trends in entry of a first newspaper in a county, shown per region. Blue blocks indicate a state has at least one county that gets its first newspaper, grey indicates that this number is zero. White blocks are years with no observations, e.g. because a state is not yet admitted to the Union.

Second, it helps inform and motivate the identification strategy.

Beginning with the raw numbers of newspaper entries. Figure 5 shows the variation in when and where counties get their first daily newspaper, split by region of the United States. There are substantial differences between regions. Most observations are in the Midwest, followed by the South, the Northeast and the West. There is also variation in the timing: the Midwest sees an early explosion of local newspaper markets, where most entry happens before 1900, while the entry in the South slowly increases and then levels off. The Northeast is already very urbanized in this time-period, with daily newspapers already being relatively common. The few units observed here are thus latecomers. Finally, there is substantial variation at the state level, with states like Kansas seeing newspaper entry almost every period, while entry in New Mexico is observed exactly once.

These newspapers by and large reflect overall patterns of regional partisanship. Figure 6 breaks the first newspapers in a county down by Partisan affiliation. This reveals stark regional differences that reveal the differences in partisanship between the regions. The overwhelming majority of entries by Republican newspapers happens in the Midwest, whereas the South barely has any. The picture for Democratic newspapers is reversed, although it is not as stark: between

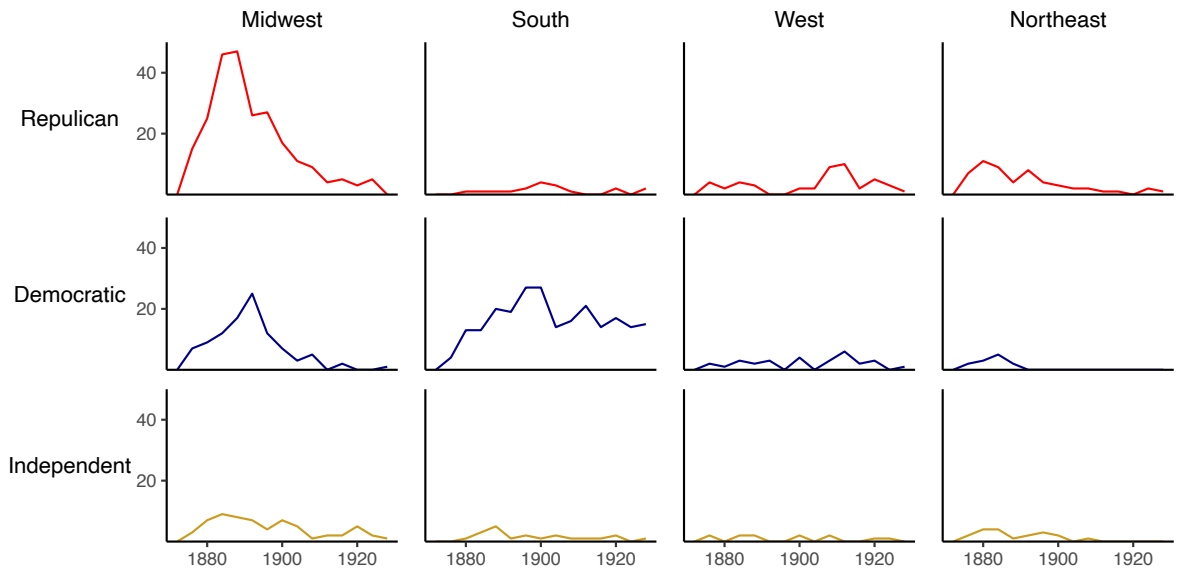

Figure 6: The partisan affiliation of the first daily, per region. Most first dailies in the Midwest are Republican, essentially all in the South are Democratic. Very few first newspapers are Independent.

1880 and 1900 there is a substantial number of Democratic newspapers entering Midwestern markets. But after 1900, almost every single county for who the first newspaper is Democratic is in the South. Finally, the number of first newspapers that are Independent is small throughout the sample.

Although newspapers are reflective of the overall political landscape in the regions, along economic and demographic lines, they are undergoing important changes. Some of these can be seen in Figure 7, where county characteristics like the total population, percentage urban population and the percentage white population are plotted relative to the entry of the first daily newspaper. This reveals that counties are growing, that they are becoming more urban, but that there are no major trends in the ethic make-up of a county. In terms of trends, there appears to be no stark regional differences, nor differences pre- and post- newspaper entry. This strengthens the case for using difference-in-differences. There are important differences in levels between regions however. Counties in the Northeast are on average a lot larger and more urbanized when they get their first daily. This reflects both systematic differences in population density, as well as in government organization. Counties in many Northeastern states are relatively large administrative units, whereas in other parts of the United States they are the lowest level of government. The final thing that stands out is that counties in the South are systematically less white, reflecting the history and abolition of slavery.

If newspaper entry is caused by viability of a newspaper, then what is relevant is not the total population, but the potential addressable market size for a newspaper. A useful refinement would be to look at the total literate, adult population. However, literacy statistics are missing for 1880 and 1890, the decades when most newspaper entry happens. Furthermore, the number of female adults are only reliably recorded at the county level after the introduction of female suffrage in 1920. This leaves the adult male population over 21 as the most reliable, consistent

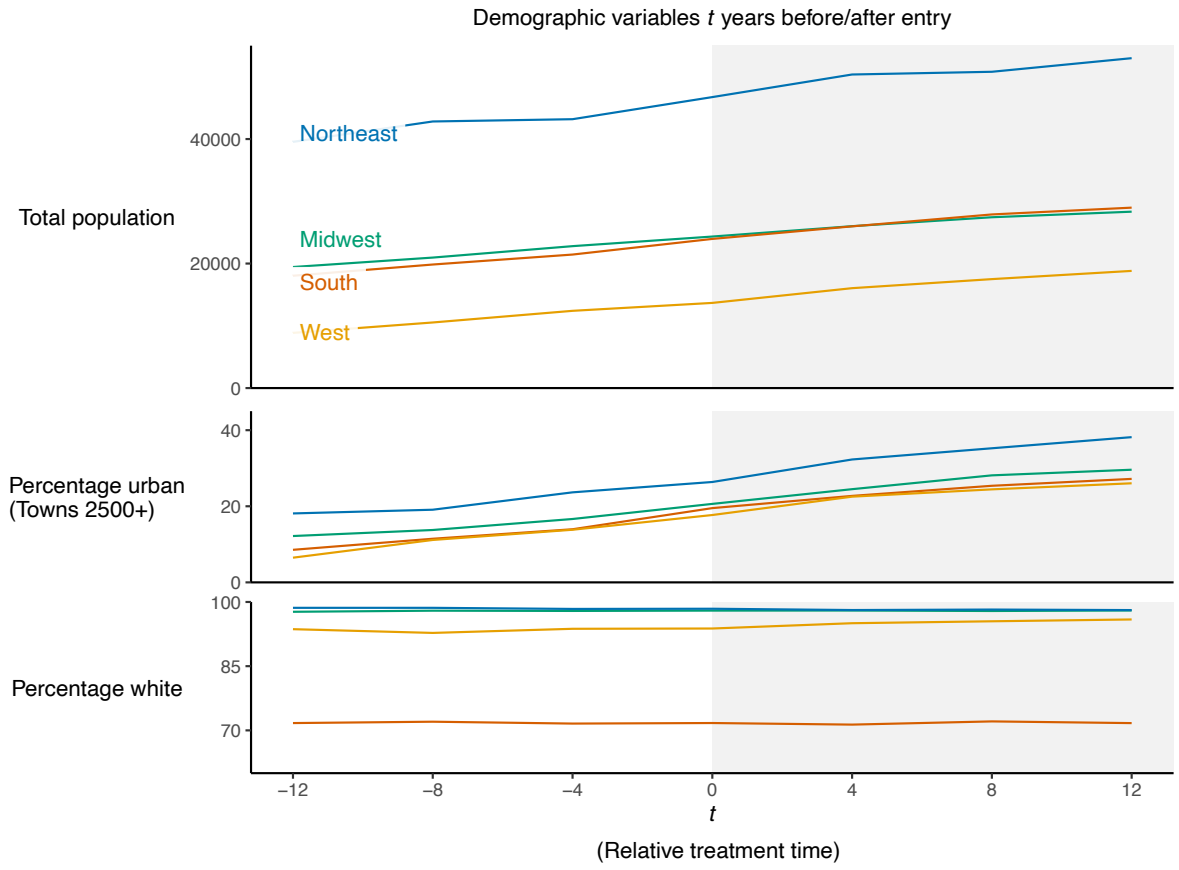

Figure 7: Trends in demographic variables around newspaper entry. The trend lines are similar between regions, but the levels differ a lot between regions.

proxy for the addressable market. This is not meant to reflect market size exactly, but to correlate with it. The adult male population is displayed in Figure 8, in two ways. First, I show the average number of males over 21 relative to treatment time. This graph looks very similar to the developments in population, although obviously at lower levels. The number of adult males is growing around newspaper entry, but at roughly the same rate before and after. Second, I show how the number of adult males at the time of newspaper entry varies over the sample. These are relatively constant, although these are less stable when the sample size drops towards the end of the panel. This is most apparent for the Northeast post 1900.

This graph informs the identification strategy in three ways. First, it informs the modeling strategy, specifically by accounting for differences in population levels upon newspaper entry. In the specification below, county fixed effects will absorb these fixed differences in the roles of counties in different states. However, to adjust for differential trends based on observable characteristics, I use propensity score matching. Since different regions appear to have different population thresholds at which newspaper entry is viable - in other words, a county in the Midwest with 7500 adult males is likely to have a newspaper already, a county in the Northeast is not - I model the population as having a differential effect on the likelihood of being treated depending on the region.

Second, for the coherence of interpretation. What is encouraging for a coherent interpretation

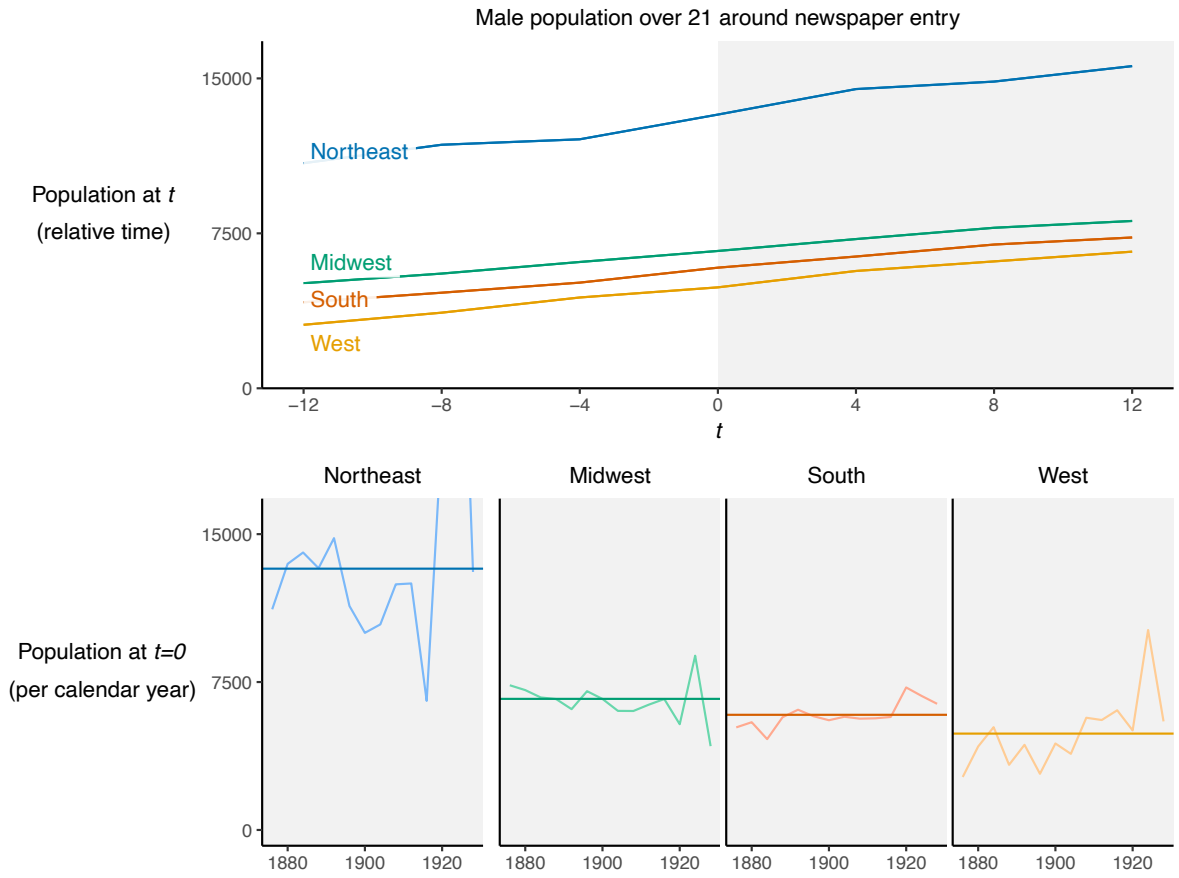

Figure 8: Males over 21 in a county upon newspaper entry. Plotted both in relative treatment time - so in the years leading up to and after newspaper entry - and absolute time - the average number of adult men in counties that get their first newspaper in a particular year.

of such time-varying treatment effects is that although there are systematic differences in the levels at which counties get a newspaper, the level is relatively stable throughout time. This means that, at least in terms of population, counties that just got treated are comparable in terms of observable characteristics across time. If we think of the effect as a conditional or local average treatment effect, this means we are conditioning on the same population numbers and market entry conditions.[11] If the market size needed to sustain a newspaper were to fluctuate a lot over time, this might raise the worry that it is other changes, like sudden local shifts in interest in politics, that determine newspaper entry. The fact that it is stable gives credence to the identification strategy, that it is predominantly market size, and other, correlated shocks, that determine entry.

Third, it informs the local nature of the effect. The overall average number of citizens in a county upon entry is around 12.000. Leveraging newspaper entry is thus not informative about big city dynamics. New York already had more than a million inhabitants in 1880, Philadelphia more than 800.000 and Chicago more than half a million. After the Civil War, these cities

11. In big cities, there were big changes in entry conditions, with barriers going up. Because existing newspapers were so large, new competitors had to compete at scale. In 1868, the *New York Sun* was bought for $175.000. By the end of the century, the cost of entering the market would be closer to a million. In counties, entry conditions seem remarkably constant in comparison

already had thriving newspaper markets, with many competitors with different business models. In contrast, the average county that sees its first daily in this time period is county containing a small, growing town. Industrializing and urbanizing, but not yet a big city. Getting a daily newspaper is part of the transition of going from an "island community" to being part of the interconnected, national economy (Wiebe 1967).

Petitions

For petitions data, I rely on Blackhawk et al. (2021). Table 1 shows some of the basic characteristic of each entry in the petitions database. The database already links each petition to a state and a topic, using a slightly modified coding scheme from Poole and Rosenthal (2000).

I build on this dataset in several ways. First, and most importantly, I geo-locate the petitions. For the majority of petitions, it is possible to locate them to a specific town, city or county. These are then linked to the fixed county boundaries at which the census and newspaper data is available. The main analysis is conducted on the petitions which can be specifically located. Petitions for location data is only available at higher level of aggregation, like the Congressional district or - more commonly - the state, the petition is assigned to each county in that unit. When relevant, the analysis is replicated with this location assignment.

Second, although the number of signees is not available, I do investigate whether petitions are sent by either organizations or large groups of people. Here I rely on a combination of hand coding, using generic search terms associated with organizations, like "association" and "church," as well as the major civil society organizations listed in Skocpol, Ganz, and Munson (2000), which include organizations like the Grand Army of the Republic, an association group for Unionist veterans, the American Temperance Society, a lobby group for the limiting and prohibition of alcohol sales, and the Patrons of Husbandry (also known as the Grange), an association of farmers which played a large role in the Populist movement.

Finally, I link all politicians to their unique ICPSR ID, which allows me to link petitions to their district, party, voting history and other Congressional behavior.

Empirical strategy

There has been a lot of progress and the development of several different staggered differences-in-differences estimators, which allow for heterogeneity in effects (see Roth et al. (2023) and Arkhangelsky and Imbens (2023)). In this paper, I rely on Callaway and Sant'Anna (2021). This estimates a 'group-time' average treatment effect. This starts by defining groups based on when treatment starts. For example, all counties that get a newspaper in 1888 are one group. Then, for each time period that this group is treated, a treatment effect is calculated by comparing outcome for that group to all counties that do not have a newspaper yet. For example, take the group that gets a newspaper in 1888. The treatment effect of having a newspaper in 1888 is estimated by comparing outcomes in 1884 and 1888 (the first difference) and then subtracting a time fixed effect, estimated using counties that do not yet have a newspaper in 1888 (the second difference). The same procedure is then repeated in 1892, 1896 and so on, ensuring that only not-yet-treated counties are used to estimate the time fixed effect - so removing counties that get a newspaper in those years from the control group. This has the dual advantage of making

sensible comparisons between a well defined treatment and control group, while also allowing for the estimation of dynamic and time-varying effects.

The basic estimating equation - without controls, which will be discussed below - is then:

$$Y^t = \alpha_1^{g,t} + \alpha_2^{g,t} \cdot G_g + \alpha_3^{g,t} \cdot 1\{T = t\} + \beta^{g,t} \cdot (G_g \times 1\{T = t\}) + \varepsilon^{g,t}$$

This is very similar to the standard differences-in-difference equation, with outcomes Y being modeled as depending on a intercept, a group fixed-effect that allows for initial differences in levels between treatment and control groups, a time fixed-effect that absorbs secular time trend and a treatment effect. However, the Callaway and Sant'Anna (2021) estimator extends this in two ways. Note that the treatment effect is indexed by g and t, meaning that a different treatment effect is estimated for each group in each time period that it is treated. Second, by using an appropriate set of dummies, it ensures that only not-yet-treated units are used to estimate the time fixed effect. Concretely, in Y^t is the outcome of interest in period t. In most cases, this will be a measure of petitioning behavior, like the number of petitions in a county in year t. $\alpha_2^{g,t} \cdot G_g$ is a group fixed effect, as defined in the paragraph above, while $\alpha_3^{g,t} \cdot 1\{T = t\}$ is a time fixed effect. $G_g \times 1\{T = t\}$ is a dummy that is 1 if a county has a newspaper and 0 otherwise. The parameter of interest is $\beta^{g,t}$, for $g \geq t$. If a county gets a newspaper at time g, then $\beta^{g,t}$ estimates the effect of having a newspaper for that group g in every time period t post treatment.[12]

These group-time estimates can then be used as building blocks for aggregate estimates of interest. What makes the Callaway and Sant'Anna (2021) approach attractive is that it can easily be used to explore treatment effect heterogeneity. Two ways in which I will use this is by aggregating individual $\beta^{g,t}$ estimates to explore dynamic effects and by estimating time varying treatment effects, using (a relevant subset of) groups that are treated in a particular time period.

It is important to be careful when adjusting for other pre-treatment variables for two reasons. First, because the equation is estimated separately for group and each period, the degrees of freedom for any particular period are limited. Second, because, in the words of Nick Huntington-Klein nothing "just works" in difference-in-differences (Huntington-Klein 2023). The aim of controls in the difference-in-difference setting is adjusting for differential trends in outcomes - petitioning behavior - between the treatment group - those counties that have just gotten their newspaper - and the control group - those who do not yet have a newspaper (Caetano et al. 2022). In my main specification, I do thus by using inverse probability weighting, using state dummies and pre-treatment population levels as controls.[13] This allows trends to differ by state and places more weight in the control group on counties with population levels that make them likely to have a newspaper soon. To account for differences in population levels between regions, I interact population with region dummies. As I described above, counties in the Northeast

12. Newspapers should not have an effect before they start publication. Given the set-up, this means that $\beta^{g,t},\ g < t$ should be zero.

13. Ideally I would also use dummies for each Congressional district, meaning comparisons are made between counties in the same electoral district with a similar number of inhabitants. This would mean estimating many more parameters however. This was already difficult in the two-way fixed effects framework (see the discussion in Gentzkow, Shapiro, and Sinkinson (Section VI 2011)), and is infeasible with news estimators without adding additional assumptions, like priors on the distribution of these fixed effects. Such methodological advances are left to a future project.

are systematically larger in terms of population size when they get their first newspaper than in the rest of the United States (see Figure 8). 'Naively' adjusting for population would give these counties a high probability of being treated decades before they get their first newspaper. The interaction means the comparison is made with counties with similar population size in the same region.

Sample selection

For my main estimates, I restrict the sample in two ways. First, in line with Gentzkow, Shapiro, and Sinkinson (2011), I focus on counties that have permanent entry, in other words, I exclude counties that get a newspaper and then lose it. This means that counties never see a reversal in treatment status, consistent with the assumptions made in Callaway and Sant'Anna (2021). By focussing on permanent entry, I also remove counties that see entry as a 'commercial mistake' or as driven by purely incidental, time-specific factors. Second, I focus on counties that consist out of a single market. This is around 75% of the sample. In essence, this means focussing on counties that exist out of a single town and excludes (geographically extensive) counties with multiple towns.

Focussing on counties that contain only one market is useful for two reasons. One, newspapers entry is predicted by conditions in the local newspaper market, usually a town, not by conditions in the whole county. For example, in general, population levels are predictive of newspaper entry. But a newspaper is more likely to enter in a county that has a single town of 10.000 people, than in a county that has four isolated towns of 2.500 people, even if at the county level these seem identical. By focussing on counties that only contain one media market, entry is easier to predict. This makes estimates more precise. Two, it makes per capita results more similar and thus interpretable across counties. For example, imagine a county with one town of 10.000 people that sees newspaper entry has an increase of 2 additional petitions per 10.000 heads. Contrast this with a county with two towns of 10.000 people, only one of which sees newspaper entry. Even if the treatment effect at the town level is the same, so an increase of 2 petitions per 10.000 people, at the county level this will look like an increase of only half that because it is at the county level, not the town level, that outcomes are measured. By focussing on counties with a single market, it makes outcomes between counties more comparable. The fact still remains that counties in the Northeast are larger, so per capita outcomes are still not entirely consistent between regions. I rely on both absolute and relative, per capita measures when appropriate. Despite the potential problems with per capita measures, their results are usually consistent with the absolute results.

All main results are reproduced in the Appendix using the full sample, so including counties that lose their newspaper and counties with more than one market. When including counties that lose their newspaper, short-run effects are similar to the main estimates, but long-run effects are smaller. This makes sense, since newspapers are unlikely to have large long-run effects after they go out of business. Including counties with multiple markets makes results noisier when using population controls and makes per capita results smaller, though positive. **TODO:** Add these figures.

4 Results

In the following section, I investigate the effect of newspaper entry on petitioning behavior. I do this in three steps. First, I show the average dynamic effect. These are substantial: relative to a baseline of around 6 petitions per presidential administration, counties that get their first newspaper increase their petitions by around 1.8 petitions. Then I investigate two sources of heterogeneity. First, I show that which topics people petition on changes substantially over time and correlates with the Congressional agenda. Second, I show that there is a lot of heterogeneity between regions. Specifically, the main effect is driven largely by the Midwest, while effects in the South are minimal. I argue that this difference between regions is likely driven by differences in political competitiveness.

Average dynamic outcomes

Figure 9 shows the event study graph of the main outcomes, split between four different plots for two different models and two different outcomes. It aggregates all the separate group-time estimates, normalizing treatment time to 0. Reading the graph from left to right then shows the difference between treated and not-yet treated groups prior to treatment - in red - and post-treatment - in blue. The first row shows changes in the number of petitions at the county level in absolute terms. The second row shows it per 10.000 adult men.[14] I use two main specifications, shown on the left and right.

The column on the left displays results from a model that includes state dummies. Adding state dummies relaxes the parallel trends assumption, meaning it no longer imposes unconditional parallel trends, but that trends are parallel between counties with and without newspapers *in the same state*. Counties in the same state share a state government, are represented by the same Senators and since presidential elections are winner take-all at the state level, are part of the same electoral contest, all of which influence petitioning behavior. The state fixed effect is meant to absorb this trend. The column on the right shows results from a model that adjusts for trends that differ between states and between population levels. These population levels are interacted with region-dummies, to allow for systematic differences between county populations between regions (see Figure 8). Instead of comparing all counties in a state to each other, this places more weight on counties in the control group that look like they will have a newspaper soon based on population levels.

Both in terms of absolute numbers as well as qualitative patterns, the four graphs are remarkably consistent. Prior to newspaper entry, counties that will get their newspaper at time 0 and those that will get it later look very similar. After treatment, which starts at $t = 0$, there is a divergence in outcomes. Counties that have just gotten their newspaper see more petitioning both in absolute numbers as well as per 10.000 adult men. There is some indication of dynamic effects, with the effect being largest in the third presidential term after treatment in three out of four specifications. But these dynamic differences are small. In Figure **??** in the Appendix I show that in the long run, estimating the effect from 20 years before until 20 years after, the effect is even larger. However, the longer the window around newspaper entry, the likelier

14. As explained above, this is the most consistent measure of adult population available.

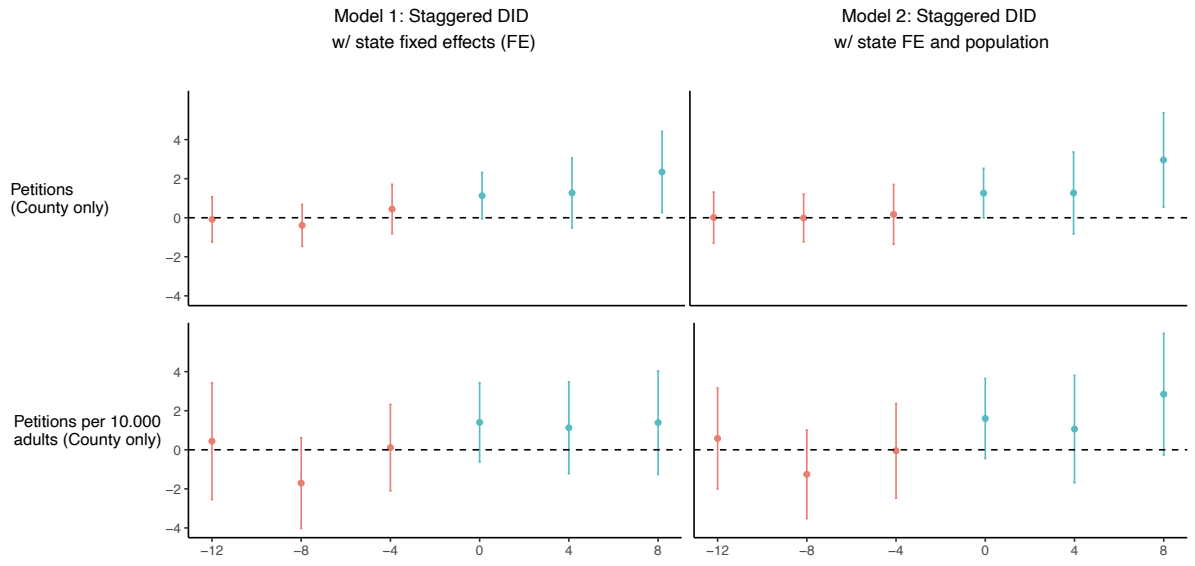

Figure 9: Average treatment effect on the treated, for the total number of petitions and the number of petitions per 10.000 adult men. The column on the left includes dummies for each state as controls. The column on the right includes state dummies and adjusts for population interacted with region.

there are other systematic differences between the treatment and the control group than just the newspaper.

Table **??** summarizes the average treatment effect over the first 12 years post treatment - essentially the average of the three post-treatment estimates plotted in Figure 9 - as well as their 95% confidence interval under the null hypothesis of newspapers have no effect. The left column shows the estimates of model 1, allowing for state specific trends, the right column of model 2, allowing for state and population specific trends. As can be seen in the first row, depending on the model choice, the increase in the number of petitions from counties that just get a newspaper relative to those that do not have a newspaper yet is between 1.5 and 1.8 petitions per presidential term. In the presidential term before treatment, the average number of petitions is 6 petitions. This is 25 to 30 percentage point increase. The second row reveals that the change in per capita outcomes is remarkably similar and reinforces the idea that changes are driven by the newspaper, not a correlated change in population size. In fact, the estimated treatment effect is very similar, if slightly noisier, with an average increase of about 1.3 to 1.8 additional petitions per 10.000 adult men per presidential term. The similarity between the numbers is explained by the fact that 10.000 is around the average number of adult males that a county has upon entry.

This effect is almost completely driven by the intensive margin, so the total number of petitions from a county, not by the intensive margin, whether or not citizens petition at all. The average probability that there is at least one petition from a county does go up by around 0%, with the 95% confidence interval ranging from around -5 to 5%. As can be seen in Figure **??** in Appendix **??**, this is about the same order of magnitude as the noise prior to treatment. Furthermore, since not all petitions can be linked to a county, I repeat the analysis after assigning all state-wide petitions to each county in the state. This finding rules out that the increase in

	Average dynamic effect of newspaper entry			
	Single market counties		Full sample	
	(1)	(2)	(1)	(2)
Petitions per county	1.58	1.83	1.80	1.44
	[0.60, 2.56]	[0.61, 3.05]	[0.60, 3.00]	[-0.35, 3.23]
Petitions per 10.000 males	1.31	1.84	1.03	1.14
	[-0.26, 2.88]	[0.14, 3.53]	[-0.70, 2.75]	[-0.81, 3.10]
Probability of any petition	0.00	0.01	-0.01	0.02
	[-0.05, 0.04]	[-0.05, 0.07]	[-0.05, 0.03]	[-0.03, 0.07]
Number of counties	420	420	580	580
Years	14	14	14	14
Type of ATT aggregation	Dynamic	Dynamic	Dynamic	Dynamic
Included post-treatment years	12	12	12	12
Estimation method	IPW	IPW	IPW	IPW
State Dummies	✓	✓	✓	✓
Population:Region		✓		✓

petitioning from specific counties is driven by a shift from signing on to state wide petitions to organizing your own. If anything, the opposite appears to be the case: states where counties get newspapers see an increase in both county specific and state-wide petitions. The increase in state-wide petitions is larger than the increase in county specific petitions in absolute terms. This is in part because by assigning petitions to each county, the total number of petitions is inflated. This also increases measurement error and thus the standard error of the estimates. In relative terms, compared to baseline, the increase in state-wide petitions is around 10 percentage points, compared to 20-30% for county specific petitions.

The increase in petitioning is consistent with the main mechanism proposed in the theory section, that newspapers enable the expression of a latent demand for policy change. The fact that this is driven by additional petitions, rather than by an increase in the probability that there is a petition from a county, indicates it is not driven by a discovery that citizens can petition, but rather by a change in the type and number of petitions citizens send in. In the following subsection, I explore the types of topics that drive this increase in petitioning. But first, I explore a few further implications of the theoretical framework.

First, in the model, petitions are most effective when they do not just convey information, but also when they contain an electoral threat. For most of the period under consideration, the House was directly elected, while the Senate was appointed by the individual state governments. This means that, broadly speaking, only the informational channel is at work in the Senate, while the electoral channels are also at work in the House.[15] This is born out by the data. Of the total increase of 1.8 additional petitions per Presidential term, around one out of three go

15. Of course, Senators were appointed in their respective states, which gave some level of electoral control. For most years under consideration, this would be done by the individual state governments. By the end, parties in some states had adopted partisan primaries to nominate Senators. In both cases, there is some level of electoral threat.

	Effect of newspaper entry		
	Audience	Collective Action	Content
Petitions to the House	1.28		
	[0.47, 2.09]		
Petitions to the Senate	0.55		
	[-0.13, 1.23]		
Petitions tied to an organization		1.03	
		[0.37, 1.70]	
Petitions not tied to an organization		0.79	
		[-0.09, 1.68]	
Probability of a petition from an organization		0.03	
		[-0.03, 0.09]	
Personal claim			-0.01
			[-0.07, 0.05]
Number of counties	420	420	420
Years	14	14	14
Type of ATT aggregation	Dynamic	Dynamic	Dynamic
Included post-treatment years	12	12	12
Estimation method	IPW	IPW	IPW
State Dummies	✓	✓	✓
Population:Region	✓	✓	✓

to the Senate, and around one out of three to the House.[16] Table **??** and Figure **??** in Appendix **??** show these complete results.

Second, there is evidence that the number of petitions did not just increase, but that individual petitions also became more likely to be organized by or representing larger groups, not just unorganized individuals. The United States in the 19th century is often referred to as a "nation of organizers" (Skocpol, Ganz, and Munson 2000), with many citizens being members of different kinds of local associations.[17]. The clearest example of this includes churches and local political parties of course. But there were also many other local associations, many of which were vehicles for petitioning. This includes relative a-political fraternal organizations which felt the need to speak out on particular issues, like the local chapters of the "Knights of Odd Fellows" (whose combined membership would account for more than 1% of the population between 1840 and 1950) who petitioned for "restriction of immigration" in the early 1900s.[18]. But also organizations that would more actively engage in politics, like the Grange pressing

16. Analysis of how the effect evolves over time reveals is that it is not the case that the introduction of direct elections in the Senate lead to an increase in the effect size. This is in part because in the 1910s, petitioning was already falling out of favor. For an alternative argument, about direct elections making petitioning redundant because it improved selection, see Schneer (2016).

17. De Tocqueville (2003) of course contains the most famous version of this argument, although his writing concerns the pre-Civil War era

18. One of the oldest and largest fraternal organizations, the Free Masons, were not particularly active petitioners during this time period. Their name only pops up in a handful of petitions, including when a local chapter in West Virginia asked for "compensation for the seizure and occupation of their lodge-room by United States troops in 1861")

for the protection of rural and agricultural interests (good for more than 7.000 petitions) or the Grand Army of the Republic (over 6.000 petitions) lobbying for higher pensions and other special benefits for veterans. Finally, there were groups organized around a particular cause, like temperance and suffrage societies. Most petitions do not record the exact number of signatures on a petition - recall for example that in the Congressional Record, many petitions are recorded as having been sent in by "individuals" from a particular town or county, without mentioning how many of these individuals there are. However, when sent in by a civil society organization, this field will often mention it. Using lists of popular organizations (as found in Skocpol, Ganz, and Munson (2000)), combined with a search for umbrella terms that indicate that a petition is sent in by a collective of citizens, make it possible to determine which petitions were sent in by these groups.

Re-running the analysis laid out above, but using not the number of petitions but the number of petitions sent in by an organization as the outcome, reveals that in the years after newspaper entry, petitions are indeed more likely to name an organization. In both absolute and per capita terms, the number of petitions that name an organization goes up by around 1 petition per Congressional term. See Figure **??** in the Appendix for the event study plot. This is around half of the total average effect. At this point in time, it is not possible to distinguish whether this increased is driven by new petitions being organized by associations, or associations signing on to petitions that would have happened anyway.

One interpretation of this finding is that newspapers allow for the more effective organization of petitions, in which petitions represent the revealed preferences of a larger group of citizens and are this potentially more likely to persuade the politician. An alternative explanation of this spike in petitioning by organizations is that newspaper entry correlates with a change in civic engagement,[19] which would imply that the treatment as defined here is some kind of bundled treatment which includes both newspaper entry and a spike in organizations. Although I cannot rule this out, there are three reasons why I think this is not the case. First, as argued above, counties need a relatively stable number of citizens in order to sustain a newspaper. It is unlikely that this is the exact same number as is necessary to create these associations. Second, there are no signs that the number of petitions by organizations is increasing before the entry of the newspaper: this is at least an indication that newspaper entry does not mechanically follow the creation of these organizations (see Figure **??**). Third, there is only a small, temporary and very noisy increase in the *probability* that there is at least one organization which petitions (see Figure **??**). This indicates that petitioning by organizations is not new phenomenon in these counties, and that was this is picking up is a change along the extensive margin, with organizations either organizing new or existing petitions gaining wider traction.

Third, the increase in petitions is not driven by petitions asking for pensions, relief or other personal requests. These are petitions about issues which do not require much information nor coordination, so no newspaper. Looking at individual requests only - so including requesting a pension, but excluding demanding the passage of a general pension bill - I find that the average treatment effect for these types of petitions is between 0.04 and 0.01 petitions. This is relative to a baseline of 1 before newspaper entry. So both in absolute numbers and relative to the

19. For example, if newspapers enter because citizens are more engaged

baseline, the increase is negligible. This means that the treatment effect found above is driven by policy relevant petitions, about general bills and legislation, not by personal claims against the government.

To conclude, newspaper entry is thus associated with a substantial increase in petitions. This is driven by the intensive margin, so how many petitions are organized in a county, rather than the extensive margin, whether there are any petitions from a county at all. The majority of these petitions go to the House, whose members are directly elected, rather than the Senate, who, for most of the sample, are not. These petitions are also more likely to list groups or associations among their signatories, implying that the number of people who sign on increases. Finally, the increase in petitioning is not driven by people making individual claims against the government. Then what do citizens petition about? In the following section, I explore heterogeneity of the effect over time, focussing on how the topics people petition on correlate with the Congressional agenda.

Temporal heterogeneity

The former results are just the average number of petitions. Although interesting, these averages hide a lot of vital variation. As also stressed by the theory section, political activism is not a mechanical outcome of having a newspaper, it is mediated by the choice to petition, which in turn depends on whether there is an issue to petition about. This means that we should expect differences over time, both in terms of the number of petitions, but also the topics that generate petitions.

Figure 10 shows the average treatment effect estimated per time period, using the model which includes adjustment for state and population specific trends. The top graph includes both county specific and state-wide petitions, the bottom graph are only petitions that can be linked to a specific county. What stands out are two things. First, all average estimates, apart from the one for 1888 in the second figure, are positive. Even if the confidence interval of most estimates include negative effects, the fact that the average effect is almost always estimated to be positive is encouraging. Theoretically, the sign of the effect of newspaper entry on petitioning is positive. The second thing that stands out is that the effect size seems to differ substantially over time. Specifically, in many periods it is small or close to zero. Then, when the Populist movement takes off, there is a small bump in 1892, although this is more pronounced in absolute than per capita numbers.[20] During the Progressive Era there is a sustained increase however, with the average effect rising to around 5 petitions per presidential term - almost three times the average effect. At the end of the Progressive era, the average effect declines again.

What this heterogeneity through time reveals is that the effect of newspaper entry is not mechanical: it depends on what newspapers can report about and how people are reacting to what is being reported. This is revealed by investigating what topics are driving the main effect, by not looking at aggregate effects but at the specific topics citizens petition about. In the following paragraphs, I investigate how the effect changes over time for specific topics. Here I use the broadest classification of topics as labelled by Blackhawk et al. (2021), making

20. It would have been plausible for this bump to reflect petitioning on the specific issues laid out in Ocala demands. This does not appear to be the case. There is an increase in petitions about these demands, but this change is not explained by looking at places that have just gotten their first newspaper.

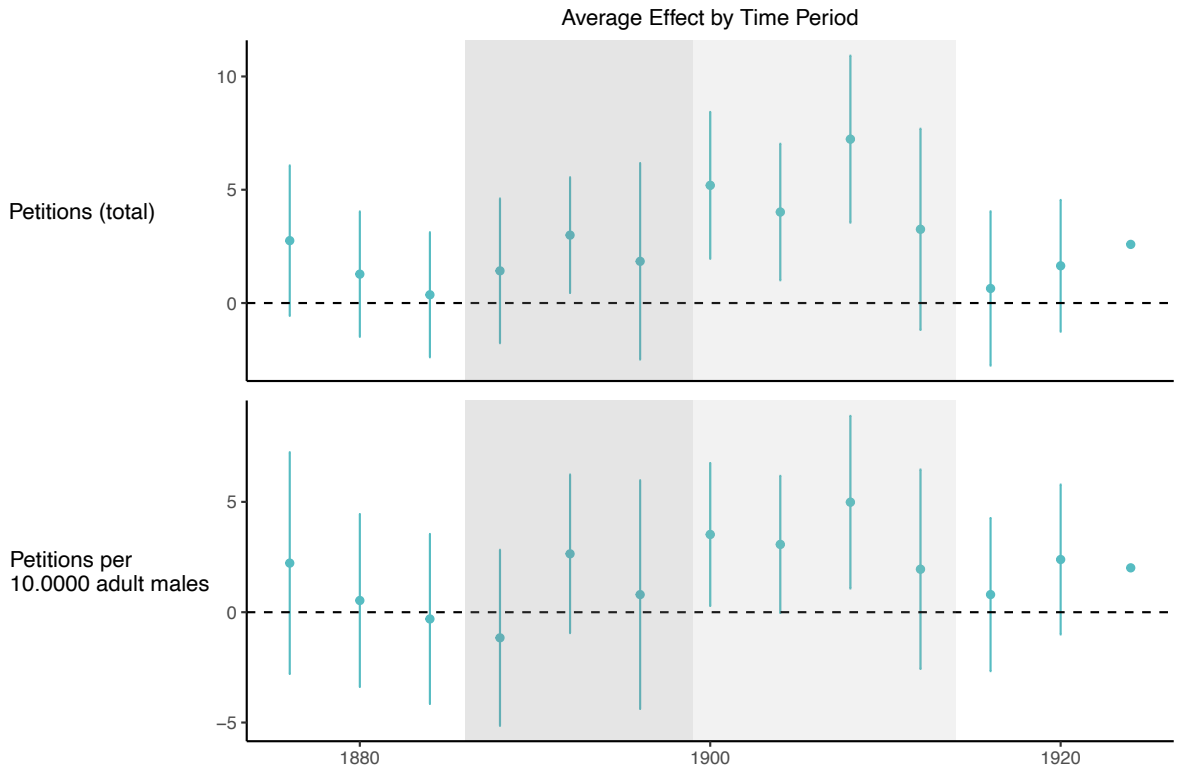

Figure 10: The average treatment effect of having a newspaper plotted for each year, aggregating the effect for each group that has a newspaper in that year.

some adjustments to ease the presentation of the findings.[21] The effect on some topics is close to zero. These graphs are included in the Appendix, but include topics like "Congressional organization," topics on which citizens rarely petition.(**To do:** Include these graphs) Although the estimates for individual topics are noisy, the results still indicate that petitioning behavior correlates with issues on the Congressional agenda and the passage of landmark bills. This shows that newspaper entry did not just cause an increase in petitioning, but that these petitions were also topical.

Figure 11 shows trends the average treatment effect of newspapers on petitioning for the three topics that have the largest average treatment effect: Infrastructure and transport, civic and social issues and pension reform.

The largest effect size of newspaper entry is found for petitions about infrastructure and transport, a topic which mainly concerns different forms of railroad regulation as well as issues concerning the postal system. These topics are always prominent, but see minor uptick during early debates about rural free delivery in the 1890s (about extending the reach of the postal system beyond towns and cities), but really take off during the first decade of the 20th century, when there are big debates about price fixing and other monopolistic practices by railroad companies. This ends with a large campaign concerning the passage of the Mann–Elkins Act,

21. Specifically, I aggregate the "Checks and balances" and "Civic and social issues" categories, since the petitions largely concern the same topics, although by different methods. E.g., a common petition in social and civic issues demands "temperance legislation." A common theme in "Checks and balances" are petitions asking for a constitutional amendment for "temperance." Similarly, the categories "Military" and "Foreign affairs" have large overlap."

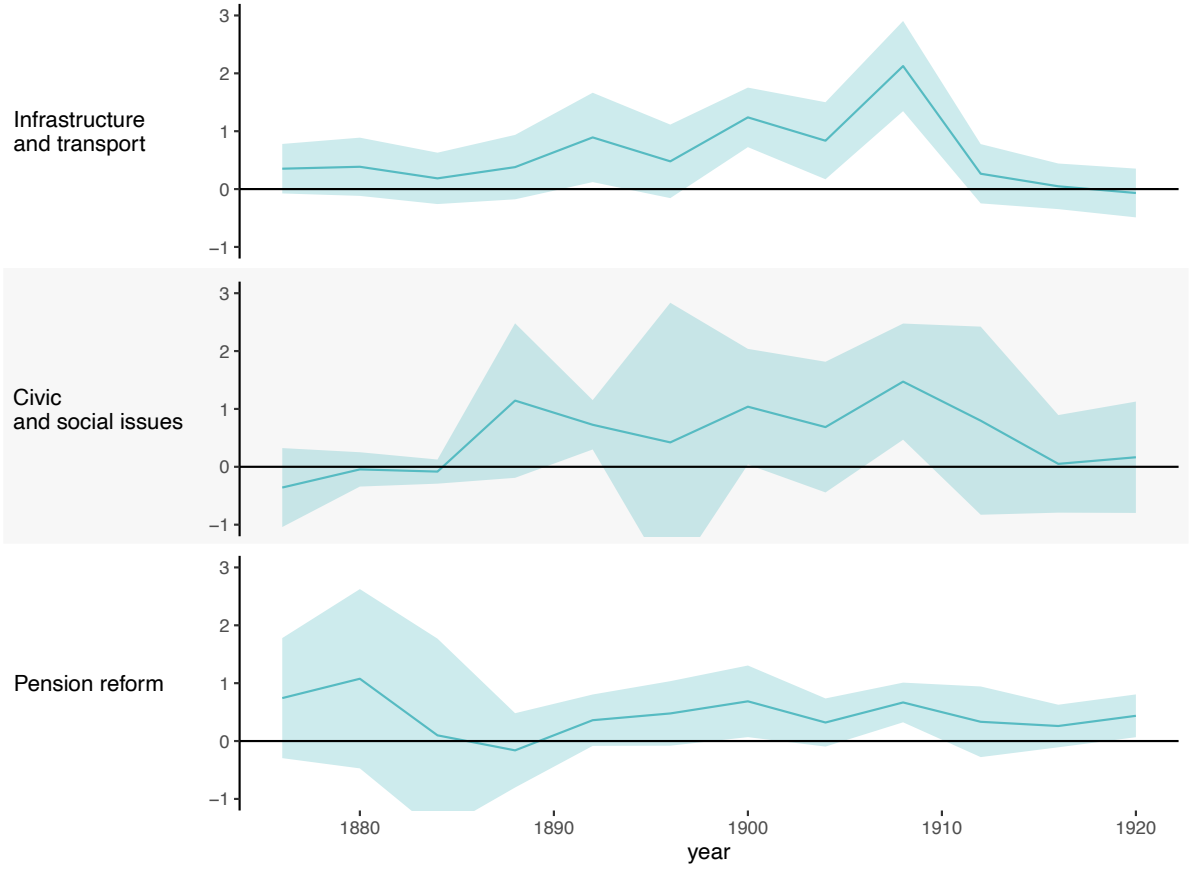

Figure 11: The average treatment effect of newspaper entry and the 95% confidence interval plotted for the three topics that on average generate most petitions: infrastructure and railroad related issues, civic and social issues - like temperance and female suffrage - and pension reform.

which was passed in 1910 and expanded the purview of the Interstate Commerce Commission over telegraphs and phone-lines, as well as giving them more power over railroad rates.

The effect of newspaper entry on petitions about civil and social issues is a lot noisier, but seems to take off in the 1880s. Investigating the text of the petitions reveals that they largely concern three important social debates at the time. This starts with a debate concerning polygamy as Utah prepared for statehood.[22] A second important debate was the one about prohibition and temperance. Although the sale of alcohol would not become illegal until 1920, this movement made inroads and eventually lead to the Webb-Kenyon Act in 1913, which gave the Interstate Commerce Commission the power to regulate alcohol shipments between wet and dry states. This act alone generated thousands of petitions. Finally, this is also when the suffragette movement starts its push for the extension of the franchise to women, which eventually resulted in the passage of the 19th amendment in the late 1910s.

Finally, the effect of newspaper entry on demands for pension reform and expansion. Note that these are not individuals asking for pensions, but rather concern pension laws at large. During this time period, it was one of the largest expenses of the federal government as well

22. Polygamy had already been made illegal in 1882 with the Edmunds Act and the Mormon Church largely abandoned polygamy by 1890 in order to ease the path to statehood for Utah, but in the years leading up to Utah's entry to the union activists wanted to go further and make polygamy not just illegal but unconstitutional.

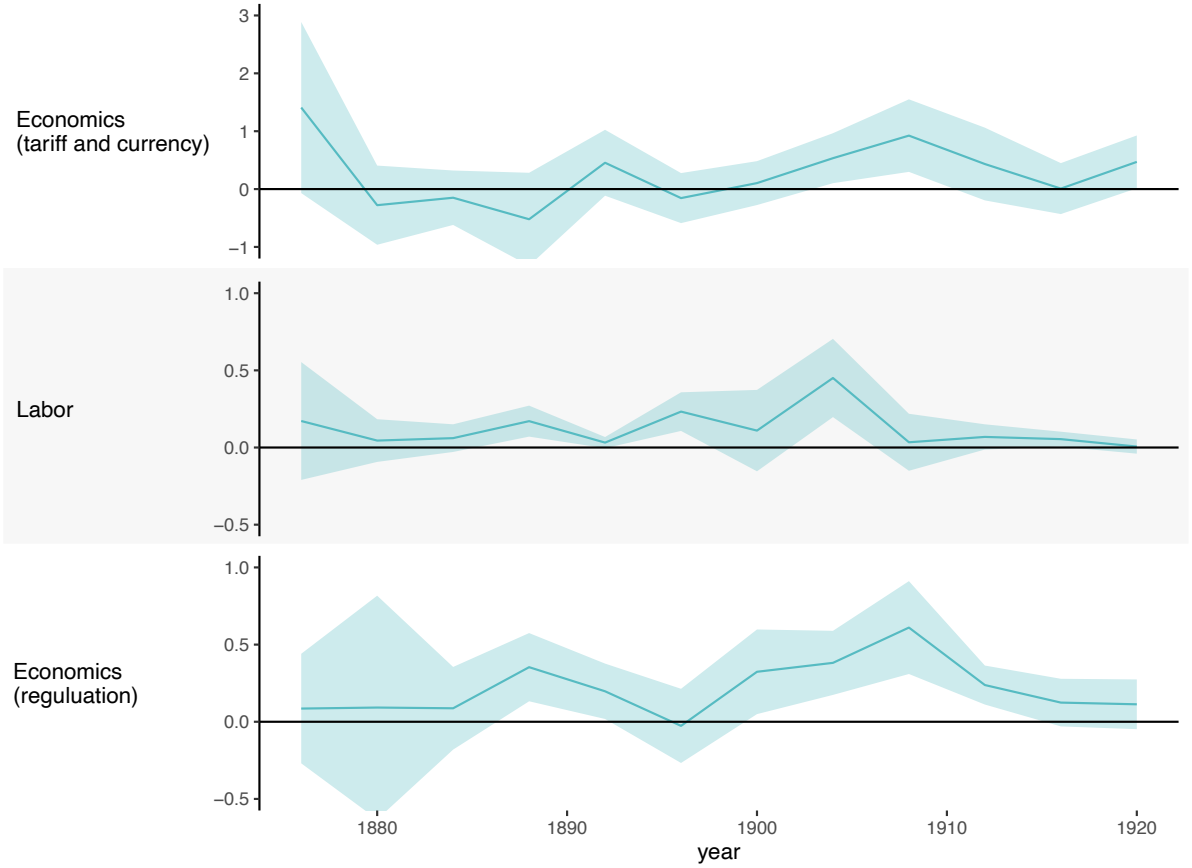

Figure 12: The average treatment effect of newspaper entry and the 95% confidence interval plotted for three major topics: economic policy - including the tariff and debates about monetary policy, labor issues and economic regulation and anti-trust.

as an important political cleavage: veterans largely lived in the North and Republicans saw pensions as a way to keep their hold on power in the North. Although not precisely estimated, there is a big uptick in the late 1880s, during debates over the Arrears of Pension Act, which gave veterans a right to a pension from the date that they applied for a pension, but from the date that they were discharged. Although the effect size is markedly smaller in later decades, pension reform would be back on the Congressional agenda in the 1890s - when the requirements for applying for a military pension were relaxed - and the 1900s and 1910s - when there was a big push for all federal employees to get a pension.

Figure 12 shows trends in petitioning in three topics that see less persistent petitioning, but where the effect size is still sizable in years or decades when major reforms is being discussed. Whether this is tariff reform under Taft starting in 1908, the fight for unions - including exemption of labor unions from anti-trust legislation, legislated in 1914 - and the (related) struggle to strengthen regulation of food stuffs and the strengthening of anti-trust legislation for companies.

Finally, Figure 13 shows the effect of newspaper entry for three topics that in most periods get very few petitions, but where there are spikes in the effect spikes when the topic becomes salient. For immigration, this spike is driven largely by anti-immigration petitions that follow the assassination of President McKinley by the son of immigrants. For military and foreign affairs,

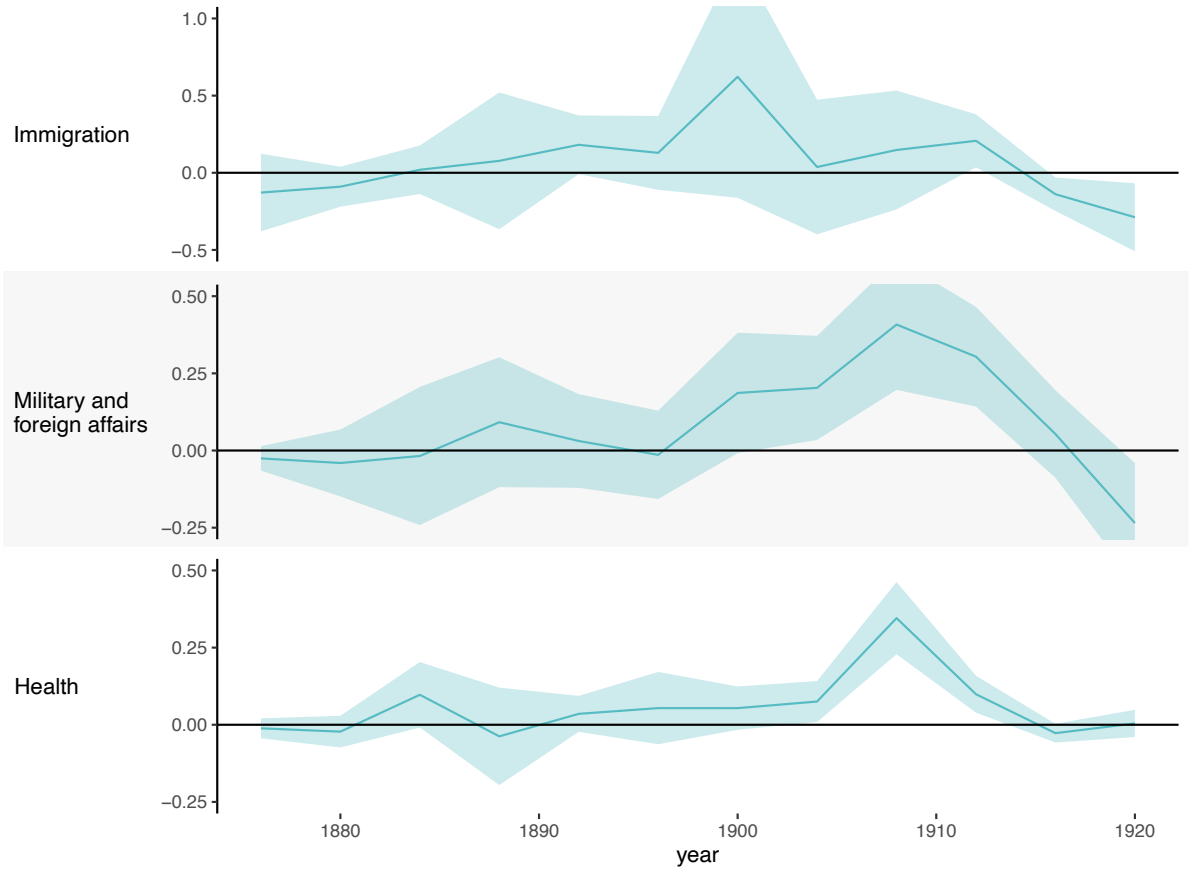

Figure 13: The average treatment effect of newspaper entry and the 95% confidence interval plotted for three topics which see little petitioning apart from during specific events: immigration, military and foreign policy and health policy.

the peak is driven by two events, one exogenous to the political process and one endogenous. Petitioning picks up during the Taft administration, as he seeks to pass bills that strengthen the bond with France and England. But the peak continuous as citizens weigh in with their stance on military preparedness as World War I breaks out in Europe. Finally, the peak in petitioning about Health is driven by a petitioning campaign concerning a reform of the public health system.

With the current research design, it is not possible to disentangle whether petitions put items on the Congressional agenda, or whether these petitions changed the votes of Members of Congress. As discussed earlier, on specific - and important - bills there is a correlation between receiving a petition to vote for a bill and voting for the eventual bill (see e.g. Theriault (2003)). What is also clear from the graphs above is that counties with newspapers are not just more likely to petition, but are also more likely to petition that are top on the Congressional agenda. This does not prove that citizens' influence over the political process increased because of the rise of the daily newspaper, but it is suggestive evidence that it did.

What this also points to is that the average dynamic effect reflects not just a mechanical increase in citizen activism, but represents an aggregation of an interaction between newspaper entry, the type of events that happen that newspapers can report on, and whether or not activists

are willing to bear the cost of organizing a petition on those topics. In some cases the issues newspapers can report on are endogenous to the political system and reflect the build up of social pressure over time. An example of which might be railroad reform, as also detailed qualitatively in Procter (1962), where the constant stream of petitions is argued to have fueled reform. In other cases, exemplified by the topics in Figure 13, there are exogenous events like wars or assassinations, the impact of which on petitioning behavior is strengthened by the presence of newspapers. This is akin to recent papers which find that newspapers can act as mediators for the local effect of national social movements, including Tojerow, Lagios, and Méon (2024) and Beach and Hanlon (2023). Newspapers can only have this effect conditional on the national movement happening. They can also only have an effect on local activism when citizens believe that this will pay off. In the next section, I show that this was not uniformly true in the United States of the Gilded Age and Progressive Era.

Spatial heterogeneity

	Average dynamic effect of newspaper entry			
	Midwest	South	West	Northeast
Petitions per county	2.38	0.09	1.66	-4.36
	[0.55, 4.22]	[-0.60, 0.79]	[-1.08, 4.40]	[-10.03, 1.32]
Petitions per 10.000 men	2.77	0.30	1.53	-9.14
	[0.30, 5.23]	[-1.37, 1.97]	[-4.44, 7.50]	[-16.01, -2.27]
Number of counties	202	147	37	34
Years	14	14	14	13
Type of ATT aggregation	Dynamic	Dynamic	Dynamic	Dynamic
Included post-treatment years	12	12	12	12
Estimation method	IPW	IPW	IPW	IPW
State Dummies	✓	✓	✓	✓
Population:Region	✓	✓	✓	✓

During the Gilded Age, there were major regional differences in political environment and competitiveness between regions. The next step is to investigate whether this also has implications for the effect of newspaper entry on political activism: as argued before, political competitiveness makes petitioning less effective and thus less likely. Do note that estimating these effects is harder than estimating the main effect, especially in the West and Northeast. In fact, due to the small number of new newspapers after 1920 in the Northeast, for that region's estimates I drop all years after 1920. Table 2 summarizes the average effect of newspaper entry per region, analogously to Table **??**, these show the average effect of newspaper entry in the first 12 years after entry, but with the model estimated separately for each of the four major regions in the United States. First, it should be reemphasized that the number of first newspapers in the West and Northeast is relatively small, and thus the standard errors and the confidence intervals for the estimated effects for those regions are large too. The estimated effect of newspapers is

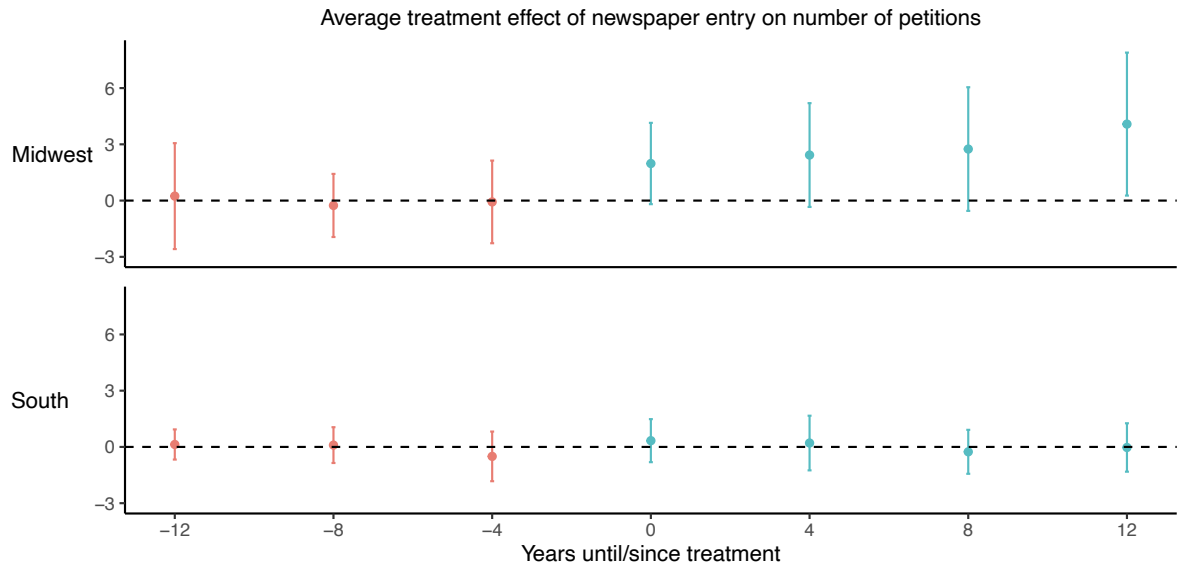

Figure 14: The effect of newspaper entry on petitions in the Midwest and the South. The effect in the South is practically zero, the average effects for the United States are almost completely driven by the Midwest.

positive but a little smaller in the West than in the average effect found before. In the Northeast the estimated effects are even negative, although very noisy.

Second, in the two regions where the number of entrants is large, the Midwest and the South, there are large differences between the two. This is clear from the estimates in Table 2, but made most apparent by looking at their respective event study graphs in **??**. The graph of the Midwest looks very similar to the one for the overall effect, with slightly larger estimates and standard errors than the effect estimated on the whole sample. The effect is the South on the other hand is estimated to be zero or close to it. And not just on average: for every period after newspaper entry, the estimated effect is close to zero.

Why could this be the case? Although the South has less of a petitioning culture than the North and Midwest - see e.g. (Carpenter 2021) - it was not true that petitions were unknown in the South, or that Southerners had no grievances to petition about. Take for example railroad reform: as discussed above, this originated in the South with Texas Representative John Reagan, who appealed to petitions extensively in his rhetoric. The success of populists in the South - organizationally if not politically - also indicates there was demand for reform and dissatisfaction with incumbent politicians. It is also not the case that newspapers had no effect on political participation at all: in an Appendix I show that when looking at turnout in elections, effect sizes in the South and Midwest are similar. So newspapers were associated with higher turnout, but not with more direct forms of activism.

A tentative hypothesis to explain this is that the electoral threat in the South was simply weaker and one of the channels that made petitioning effective was thus shut down. Although Republicans in the Midwest were also a dominant factor, like Democrats were in the South, there was always the potential for competition, whether this was in the form of third parties - from the Greenbacks to the Populists in the late 19th century - or intra-party competition - note

Average effect of newspaper entry in the:	Total	Per 10.000 adult men
Midwest	2.38	2.77
	[0.49, 4.28]	[0.35, 5.18]
South	0.09	0.30
	[-0.65, 0.84]	[-1.30, 1.90]
West	1.66	1.53
	[-1.16, 4.48]	[-4.25, 7.31]
Northeast	-4.36	-9.14
	[-10.11, 1.39]	[-15.80, -2.48]

Table 2: Model 1 adjusts for state specific trends. Model 2 adjusts for state specific trends and population levels by region. This is the treatment effect averaged for the first 12 years after newspaper entry.

that the Progressives were successful in taking over the Wisconsin Republican Party in the early 20th century. In the South on the other hand, Democrats had more of a political monopoly. They could defuse any electoral threat by claiming to the only party that would uphold the status quo of segregation.

5 Conclusion

In this paper I have argued that newspapers had an important effect on citizen's activism, with newspapers enabling citizens to organize petitions which makes their latent demand for policy change visible.

In the empirical section, I showed that the effect of newspaper entry on petitioning is substantial, leading to an increase of around 1.8 petitions per presidential term in absolute terms, with a similar increase in petitions per 10.000 adult men. Most of these petitions go to the House, rather than the Senate. I then show that there is substantial heterogeneity in terms of topic over time, and that spikes in petitioning behavior on particular topics roughly coincide with important policy debates in Congress. This means that the newspapers are not just making people petition more, but also on topics that are politically relevant. Finally, I show that in the two regions where I have most observations, the West and the South, the effect is almost completely driven by the Midwest. The effect in the South is seemingly minimal, which I argue is the case not due to a lack of a demand for change, but rather that a lack of political competition meant that trying to achieve this change was often not worth the effort.

This paper has established the newspapers lead to an increase in expressed demand for policy change. In follow-up work, I intend to investigate the supply side, trying to understand whether these petitions also changed the behavior of politicians.

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Appendices

A Formal Model

The aim of this model is to clarify the relationship between newspaper entry and petitioning behavior, and to understand the characteristics of the policies affected. Vital is that both citizens and politicians face uncertainty. Citizens should be initially uncertain about the quality of the policy - otherwise news plays no role. Politicians need to be uncertain about local public opinion - otherwise petitions play no role. The effectiveness of a petition depends on the forces in play: whether it simply conveys information about local public opinion, or whether the petition contains an electoral threat: ignore it and the politician will lose their seat.

Model set-up

This is a two period political accountability model, where time is indexed by $t \in \{1, 2\}$. At the start of Period 1, there is an incumbent in office. Their main decision is whether or not to implement a policy. Politician are biased towards the status quo, while voters always want the policy to pass. The exact returns to the policy are initially unknown to both politicians and voters and depend on the general quality of the policy and on local circumstance.

Value of the policy

For voters, the value of the policy is $a_t \cdot x_t$ in both periods, while the status quo has a value of 0. To focus on Period 1 choices, I assume that the is uncertainty about the value of the policy in Period 1, but that it is fixed at $a_2 \cdot x_2 = 1/2$ in Period 2.[23] In Period 1, the value of the policy is $a_1 \cdot x_1$, where $x_1 \sim U[0, 1]$ and $a_1 \sim U[0, \bar{a}]$, $\bar{a} \in [0, 1]$. a_1 and x_1 are independent. Let x_1 capture the national quality of the policy, while a_1 captures its local impact. Since both are positive and the status quo has a value of zero, it is always better for the reform to be passed. An example of this is railroad reform: there is general agreement among voters that reform would be beneficial, but there is uncertainty about (1) the general quality of the reform up in Congress this period, (2) how local voters will be affected by this piece of policy.

Newspaper

I assume that politicians always observe x_1. The role of the newspaper is to inform citizens about the value of the policy. Denote $m \in \{\emptyset, x_1\}$ as the content of the newspaper article, where $m = \emptyset$ denotes the newspaper has nothing to report and $m = x_1$ denotes that they report on the state of the word. Let $P(m = x_1) = \gamma$. I interpret an increase in γ as the introduction of a newspaper.

Furthermore, from the reporting in the newspaper voters can also deduce the local consequences a_1. Politicians never directly observe a_1, but they use the petitioning decision of citizens

23. Making citizens uncertain about Period 2's state of the world would not change anything. If politicians are uncertain about the state of the world in period 2, the forces in model remain the same, but pay-offs become non-linear in the politician's type, increasing the complexity of the model with little gain.

to make an inference about it. This is consistent with the politician reading the newspaper, but not observing exactly how his voters react to the news.

Politicians

Politicians are motivated by office rents r, by policy pay-offs and by their bias b, where $b \sim U[0,1]$. This captures that in this era, most politicians were corrupt, but differed in their level of corruption. Denote the bias of the incumbent as b_I. This is known to the incumbent, not voters. A challenger is randomly drawn from the pool of politicians, denote their bias as b_C. Voters make an inference about both, using Bayes' rule and the relevant information they have.

In each period t, the politician decides whether to implement the policy ($v_t = 1$) or not ($v_t = 0$). The pay-off for the politician is $V_t(v_t = 1) = r + a_t \cdot x_t$ if they pass the policy and $V_t(v = 0) = r + b$ if they do not. This means that the higher their bias, the more likely they are to vote against the policy - and thus against what voters want. The utility function of the incumbent politician is:

$$V(v_1, v_2) = V_1(v_1) + \delta \; V_2(v_2) \cdot \mathbb{1}_E$$

Where $\mathbb{1}_E$ is an indicator function that is 1 if the politician is re-elected and 0 if they are not.

Citizens

There is a unit mass of citizens indexed by i, who make two choices. First, if the activist comes knocking on their door, they choose whether or not to sign the petition. Second, after observing the politician's vote - and whether the politician followed the demands of the petition or not, they decide whether to vote for the challenger or the incumbent.

Starting with the second choice, when citizens vote, they do so for two reasons. To express their individual partisanship, $\lambda_i \sim U[\underline{\lambda}, \bar{\lambda}]$, and to vote for good politicians, those with a low bias who are more likely to vote for the policy in period 2. This captures that in principle all voters want to elect politicians who will vote in favor of the policy, but that citizens in the North prefer Republicans and those in the South Democrats. Ignoring the specific party labels, utility for voting for the incumbent and challenger are:

$$U_i(\lambda_i) = \begin{cases} -b_I & \text{When voting for the incumbent} \\ -b_C + \lambda_i & \text{When voting for the challenger} \end{cases}$$

Below I will make an assumption that implies that $E[\lambda_i] < 0$, meaning the average citizen is biased towards the incumbent. This is consistent with a Republican being in office in the North and a Democrat in the South. When voting, citizens make a rational inference about the bias of the incumbent and the challenger.

Before they go to the voting booth, and before the politician makes the policy choice, the activist might ask citizens to sign a petition. I assume that signing the petition is costless and that the costs of organizing the petition are borne by the activist, detailed below. All citizens want the policy to pass and the politician knows this. What role do petitions play? To convey

how much citizens want the policy to pass - and how they will react if the politician votes against it. Signing the petition is a conditional threat: a citizen signs the petition if, were the incumbent to receive the petition and ignore it, the citizen will vote for the challenger. This means they sign the petition if:

$$-E[b_I|\text{The petition and } v=0] < -E[b_C] + \lambda_i$$

The activist

The activist cares about maximizing the probability that the policy is passed that period. Let $\sigma \in [0,1]$ denote the mass of voters that signed the petition and $\sigma = \emptyset$ that the activist chose not to petition and there were no signatures. Organizing a petition costs c. Their utility is:

$$U_A = \begin{cases} P(v=1|\text{A petition with } \sigma \text{ signatures}) - c & \text{If the activist organizes a petition} \\ P(v=1|\text{No petition } (\sigma = \emptyset)) & \text{If they do not} \end{cases}$$

Like citizens, the activist is initially uncertain about $a_1 \cdot x_1$ and learns about it from the newspaper.[24]

Timing

Period 1

1. The state of the world $a_1 \cdot x_1$ realizes. The incumbent politician learns their bias b_I and observes x_1. Citizens learn their ideological leanings λ_i.
2. With probability γ, the newspaper reports x_1 to citizens and the activist. They infer a_1 from this report.
3. The activist decides whether or not to organize a petition. Citizens sign the petition if they would vote for the challenger if the incumbent were to vote against the policy.
4. The politician observes the outcomes from the petitioning decision and updates their beliefs about local preferences and decides whether or not to vote for the bill.
5. Voters observe the politician's voting choice. They update their beliefs about b_I.
6. There is an election.

Period 2

1. The state of the world $a_2 \cdot x_2 = 1/2$ realizes. If a challenger is elected, they learn their bias b_C.
2. The politician decides whether or not to vote for the policy.
3. Outcomes materialize.

24. An alternative assumption is that the activist knows $a_1 \cdot x_1$, but cannot credibly communicate it.

Equilibrium concept

I solve the game for a Perfect Bayesian Equilibrium in which:

- Politicians optimally choose v_1 and v_2, given the petitioning decision of the activist, the beliefs of citizens their electoral choices. They form rational expectations about $a_1 \cdot x_1$, using their knowledge about x_1, the petitioning decision of activists, and, if there is a petition, the mass of signatories σ.
- The activist chooses whether or not to organize a petition, given rational expectations about the politician's reaction to the petition, using the newspaper report, x_1, local public opinion a_1 and the anticipated mass of support.
- Citizens optimally choose who to vote for, given their partisan attachment, their rational expectations of b_I and b_C, based the newspaper report, the mass of support for the petition and the politician's reaction to the petition. They sign the petition if, given their rational expectations of the politician's type, they will vote for the challenger if the incumbent votes against the policy.

Solution

I solve the game by backward induction wherever possible.

Period 2

In Period 2, the politician is the only player who makes a decision. Because there is no uncertainty and $a_2 \cdot x_2 = \frac{1}{2}$, they vote for the policy if $b < \frac{1}{2}$. This means voters have an interest in selecting politicians with a low bias.

The expected utility of being in office in the second period for the politician is:

$$V_2(b) = \begin{cases} r + b & \text{If } b > 1/2 \\ r + \frac{1}{2} & \text{If } b < 1/2 \end{cases}$$

To simplify the analysis, I impose that the marginal politician affected by the petition has a bias higher than 1/2. This reduces the number of cases to be analyzed.[25] It means that the cost of a petition is sufficiently high that when a petition is organized, it carries enough weight to persuade even politicians with above average bias.

Assumption 1. *Parameter restrictions.* $c > \frac{1}{2}\frac{1-\underline{a}}{1+\underline{a}}$

Period 1

Election

Voters decide whether or not to re-elect the politician. Any voter i votes for the challenger if:

$$-E[b_I|v, \sigma, m] > -E[b_C] + \lambda_i$$

25. It also means that voters' behavior is consistent. Given the set-up, voters have no motivation to reduce the bias of the politician below 1/2.

The challenger is a random draw from the pool of politicians, their expected bias is 1/2. For the incumbent, voters have more information: they can observe the vote, the newspaper report m and how they reacted to the petitioning decision. Suppose that politicians follow a cut-off rule in which politicians with a small bias vote for the policy and those with a large bias do not. Then there is a type b^* who is indifferent, with the indifferent type being a function of the petition σ and the newspaper report. Then equilibrium beliefs about b_I are:

$$E[b_I|v,\sigma,m] = \begin{cases} \frac{1}{2}b^* & \text{If } v=0 \\ \frac{1}{2}\big(1+b^*\big) & \text{If } v=1 \end{cases}$$

Define Φ as the vote share of the incumbent, which is a function of the beliefs about the incumbent given their policy decision:

$$\Phi(b_I) = \frac{\frac{1}{2} - E[b_I|v,\sigma,m] - \underline{\lambda}}{\bar{\lambda} - \underline{\lambda}} \tag{1}$$

If this is larger than a half the politician is re-elected. This is deterministic. I assume that there is an incumbency advantage, such that if both politicians are of the same expected bias, the incumbent is re-elected, but that there is a limit to this advantage.

Assumption 2. *(Limited) Incumbency advantage:*

$$E[\lambda] \in \left[-\frac{2c}{1-\underline{a}}, -\frac{1}{2}\frac{1}{\delta}\big(\underline{a} + \delta\ r\big)\right]$$

Assumption 2 implies that $E[\lambda] < 0$, such that the average voter leans toward the incumbent. The lower bound imposes that the incumbency advantage is strong enough that for the lowest x_1 and a_1 that generate a petition, the politician is always re-elected, even if they vote against the policy. The upper bound imposes that if citizens know that $x_1 = 1$, the politician always loses their seat if they vote against the policy, independent of the petition. This assumption guarantees an interior solution.

Policy decision

In Period 1, the politicians decides whether or not to implement the policy. He does this given the beliefs this will induce. When making the policy decision, politicians have three pieces of information. First, they directly observe x_1. Second, they observe whether or not the newspaper reported $m = x_1$ to voters. Third, they can use the petition, or the absence of one, to make an inference about a_1. When there is a petition, they observe the mass of signatories $\sigma(a_1)$. As I will show below, this function is invertible and can be used to determine a_1. When the newspaper reports the state of the world, but there is no petition, they can use this to make an inference about a_1. They vote for the policy if the following conditions holds:

$$r + E[a_1|\sigma,m]\cdot x_1 + \delta\ V_2(x_2)\cdot \mathbb{1}_E(v=1) > r + b + \delta\ V_2(x_2)\cdot \mathbb{1}_E(v=0)$$

The politician's utility depends on their policy choice in two ways. It affects the utility they get while they're in office in Period 1 as well as whether they get re-elected in Period 2. Because

re-election is deterministic, politicians are certain about the electoral consequences of voting for or against the policy. Depending on the consequences, they vote for the policy if:

$$\begin{aligned} r + E[a_1 x_1] > r + b \qquad & \text{If the incumbent is always re-elected} \\ r + E[a_1 x_1] + \delta\ V_2(b) > r + b \qquad & \text{If the incumbent is re-elected only if } v = 1 \end{aligned}$$

This means there are two potential indifferent types, depending on the forces at work:

$$b^* = \begin{cases} E(a_1|\sigma, m) \cdot x_1 & \text{If the politician is always re-elected} \\ \frac{1}{1-\delta}\Big(E(a_1|\sigma, m) \cdot x_1 + \delta\ r\Big) & \text{If the politician is re-elected only if } v = 1 \end{cases}$$

Both of which are increasing in beliefs about how the policy will impact local voters ($E(a_1|\sigma, m)$) and the quality of national policy x_1, but it increases more strongly if the politician will lose their seat if they vote against the policy.

Petitioning

Finally, activists have to decide whether or not to petition. They do this to convince politicians to vote for the policy. They base their choice on the content of the newspaper report and the local reaction.

With probability $1 - \gamma$, the newspaper does not report the state of the world. In that case citizens learn neither a_1 or x_1. The politician already knows the expectation of both. Since the petition cannot contain new information and it is costly to organize, the activist does not organize a petition. The fact that petitions need to convey new information in order to be worth organizing also helps clarify when newspaper entry will not have an effect on petitioning.

Lemma 1. *Newspapers only have an effect on petitioning behavior if citizens are initially uninformed about the state of the world and if politicians cannot observe local public opinion.*

In this model, newspaper entry will not affect petitions on policies where (1) citizens do not need a newspaper to learn about the state of the world - like personal complaints against the government - and (2) policy decisions where politicians can perfectly predict how citizens will react to the news report - for example, politicians do not need a petition to learn that citizens do not like it when they steal public funds.

What if there is a newspaper report? With probability γ, the newspaper reports the state of the world ($m = x_1$), citizens learn x_1 and form their local opinion a_1. In that case, what information does a petition contain? Citizen i sign the petition if they would vote for the challenger if the politician votes against the policy:

$$\lambda_i - \frac{1}{2} > -E[b_I | m = x_1,\ v = 0,\ \sigma(a_1)]$$

And the total support for the petition is:

$$\sigma(a_1) = \frac{\frac{1}{2} - E[b_I | m = x_1,\ v = 0,\ \sigma(a_1)] - \underline{\lambda}}{\bar{\lambda} - \underline{\lambda}}$$

Conditional on citizens learning a_1 (and there being a petition) this is increasing in a_1 - the stronger local public opinion, the more people are willing to change their vote - and thus invertible. This means that politicians can use the support for the petition to infer a_1.

The activist organize the petition when it convinces a sufficient number of types of politician to vote for the policy. Suppose that activists follow a cut-off strategy, where when public opinion is weak ($a < a^*$) they do not organize a petition and when it is strong, they do ($a > a^*$). This means that when the activist observes realization a^*, they should be indifferent between petitioning and not petitioning. The way the model is set up, $P(v = 1) = b^*$, so the indifference condition of the activist is:

$$b^*(a^* \cdot x_1) - c = b^*(E[a_1 \cdot x_1 | \sigma = \emptyset, m = x_1])$$

What is key then is how many types are convinced by the revelation of information, the difference between b^* with a petition and without one. What matters for the politician is (1) information they have about local policy and (2) whether they will win re-election.

$$\begin{aligned}
a^* \cdot x_1 - c &= E(a_1 | \sigma = \emptyset, m = x_1) \cdot x_1 && \text{If the politician is always re-elected} \\
\frac{1}{1-\delta}\Big(a^* \cdot x_1 + \delta\ r\Big) - c &= E(a_1 | \sigma = \emptyset, m = x_1) \cdot x_1 && \text{If the politician is ousted if } \sigma \neq \emptyset \text{ and } v = 0. \\
\frac{1}{1-\delta}\Big(a^* \cdot x_1\Big) - c &= \frac{1}{1-\delta}\Big(E(a_1 | \sigma = \emptyset, m = x_1) \cdot x_1\Big) && \text{If the politician is ousted if } v = 0
\end{aligned} \tag{2}$$

It turns out there are two important forces at work. First, since politicians (although to different extents) care about doing good for the public, positive information about a_1 will change their mind. Second, the implicit electoral threat that petitions contain: if, because of the petition, the politician learns that local public opinion is so strong that they will lose their job if they vote against the policy, they have more reason to vote for it.

Proposition 1. *Given Assumption 1 and 2, the behavior and beliefs of politicians, citizens and the activist as described above, the equilibrium probability of a petition is:*

$$P(\sigma \neq \emptyset) = \gamma \cdot \frac{\big(\underline{a} - a^*(x_1)\big)}{1 - \underline{a}}$$

Where:

$$a^*(x_1) = \begin{cases}
1 & \text{If } x_1 < \frac{2c}{1-\underline{a}} \\
(x_1)^{-1}(2c + \underline{a}x_1) & \text{If } x_1 > \frac{2c}{1-\underline{a}} \text{ and the incumbent is always re-elected} \\
\big((1+\delta)x_1\big)^{-1}\big((1-\delta)(2c + \underline{a}x_1) - 2\delta r\big) & \text{If they are ousted only if there is a petition and } v = 0. \\
(x_1)^{-1}\big((1-\delta)2c + \underline{a}x_1\big) & \text{If they are always ousted if } v = 0
\end{cases}$$

And where if $x_1 \in [0, -\frac{1}{\underline{a}}(E[\lambda] + 1/2)]$, the politician is always re-elected, if $x_1 \in [-\frac{1}{\underline{a}}(E[\lambda] + 1/2), -\frac{1}{2}\frac{1}{\underline{a}}(2\ E[\lambda] + c + \delta r)]$ the politician is ousted only if there is a petition and $v = 0$, and if

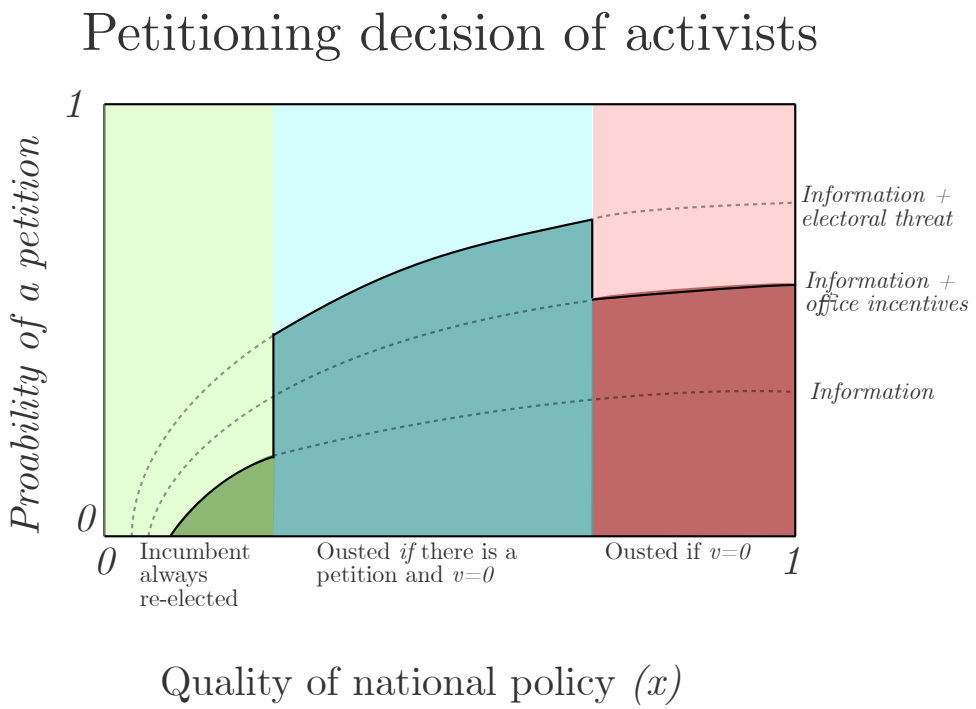

Figure 15: The probability of a petitioning decision conditional ass a function of the quality of national public policy. The probability of a petition is highest for intermediate values of x_1.

$x_1 \in [-\frac{1}{2}\frac{1}{\underline{a}}(2\ E[\lambda] + c + \delta r), 1]$ *the politician is always ousted if they vote against the policy.*[26]

Proof. a^* is derived by solving the indifference conditions in Equation 2. Assumption 1 guarantees that at $x_1 = \frac{2}{1-\underline{a}}$, $b^* > 1/2$. Assumption 2 guarantees that $\Phi\big(a_1 = a^*, x_1 = \frac{2}{1-\underline{a}}\big) > 1/2$ (such that after receiving petition for the lowest value of $a_1 \cdot x_1$, the politician is always re-elected) and that $\Phi\big(a_1 = \underline{a}, x_1 = 1\big) < 1/2$ (such that for $x_1 = 1$, the politician is always ousted if $v = 0$, independent of the petition), such that all solutions are internal. □

In this model, the effect of increasing γ, interpreted as getting a local newspaper, is straightforward. Because local citizens are more likely to be informed, they now have information that could be conveyed through a petition, thus giving the activist more reason to organize one. But whether there is a petition crucially depends on what the newspaper reports that time period (x_1) and the local reaction (a_1).

Proposition 2. *Conditional on a news report, the probability of a petition (1) is (weakly) increasing in local public opinion (a_1), (2) (weakly) increasing in the uncertainty of the politician about local public opinion (a lower $\underline{a}$), (3) decreasing in incumbency advantage (incumbency advantage goes up if $E[\lambda]$ goes down) and (4) non-monotonic in the quality of national policy (x_1).*

Proof. (1) and (2) follow by inspection.

(3) Let $\underline{x}(E[\gamma]) = -\frac{1}{\underline{a}}(E[\lambda] + 1/2)$ be the threshold that separates the values of x_1 where the politician is always re-elected from the values where the politician is ousted if they receive

26. These thresholds might appear negative due to the minus sign, but recall at $E[\lambda] < 0$. Assumption 2 guarantees the thresholds are positive and below 1.

a petition and vote against the policy. Let $\bar{x}(E[\gamma]) = -\frac{1}{2}\frac{1}{\underline{a}}(2\ E[\lambda] + c + \delta r)$ define the threshold between being ousted if $v = 0$ and there is a petition and always being ousted if $v = 0$.

First, note that these thresholds decrease by the same amount if $E[\lambda]$ goes down. Second, define $F(x_1) = (x_1)^{-1}(2c + \underline{a}x_1)$, $G(x_1) = \big((1+\delta)x_1\big)^{-1}\big((1-\delta)(2c + \underline{a}x_1) - 2\delta r\big)$ and $H(x_1) = (x_1)^{-1}\big((1-\delta)2c + \underline{a}x_1\big)$ as the relevant functions of a^*. The net change in petitioning (conditional on the newspaper reporting) if $E[\lambda]$ decreases is then:

$$\frac{1}{1-\underline{a}}\Big(H(\bar{x}) - G(\bar{x}) - \big(F(\underline{x}) - G(\underline{x})\big)\Big)$$

Which I can show is negative. TBC.

(4) For the non-monotonic effect of x_1, it is easy to verify that as long as $a^* \neq 1$, the probability of a petition is increasing in x_1 within each case. The monotonicity must thus increase at the threshold between cases. It occurs at the threshold between the politician only being ousted if there is a petition and they vote against the policy (call this case 3), and when they always get ousted if they vote against the policy (call this case 4). Note that the denominator in case 3 is strictly bigger than in case 4: $(1+\delta)x_1 > x_1$. The numerator is strictly smaller. So at the boundary, a^* is smaller in case 3 than in case 4. Since a lower a^* means a higher probability of a petition, the probability of a petition thus goes down as x_1 goes from right below to right above $x_1 = -\frac{1}{2}\frac{1}{\underline{a}}(2\ E[\lambda] + c + \delta r)$. □

First, the fact that a petitioning is increasing in the strength of public opinion is intuitive. The stronger the local population feels about an issue, the more positive the information and the larger the potential threat to the incumbent's seat that is contained in the petition, thus the more likely a petition gets organized. Second, since petitions provide information, the weaker the information the politician has about local public opinion (so the smaller $\underline{a}$ is), the more information the petition can provide. This also increases the chance a petition gets organized. Third, a petition is most effective when the seat of the politician is on the line. The higher the incumbency advantage, the less likely that their job is on the line, so the fewer petitions.

Finally, the effect of the quality of national policy is non-monotonic, which can also be seen in Figure 15. The colors indicate the different consequences tied to not voting for the policy. For low quality national policy, the vote of politician does not impact their re-election chances. For intermediate values, shown in blue, the incumbent loses their seat if get a petition they vote no, but keep it when they do not get a petition. In the red area, the politician always loses their job if they vote against the policy, independent of the petition. Notice that although generally the probability of a petition goes up as x_1 goes up, it jumps down when going from the blue to the red area. Why is there is non-linearity? Because petitions do not just provide information, they also alter the beliefs of voters and politicians. For intermediate values of x_1, a petition pushes a politician from believing that voters do not care enough about about this vote to put his seat at risk, to believing that he will lose his seat if he votes against it. This makes the petition very effective. For very high values of x_1, the politician might still be uncertain about exactly how much citizens care about the issue, but he already knows they care enough to throw him out of office. This means that for very high values of x_1, a petition still gives a politician additional reasons to vote for the policy, but a petition can never put their job on the line. This captures

the intuition that for issues on which it is very obvious which way the politician should vote, there is less need to petition than on issues where the majority of voters could go either way.