DO POLITICAL PROTESTS MATTER? EVIDENCE FROM THE TEA PARTY MOVEMENT*

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Abstract

Can protests *cause* political change, or are they merely symptoms of underlying shifts in policy preferences? This paper studies the effect of the Tea Party movement in the United States, which rose to prominence through a series of rallies across the country on April 15, Tax Day, 2009. To identify the causal effect of protests, we use an instrumental variables approach that exploits variation in rainfall on the day of the coordinated rallies. Weather on Tax Day robustly predicts rally attendance and the subsequent local strength of the movement as measured by donations, media coverage, social networking activity, and later events. We show that larger rallies cause an increase in turnout in favor of the Republicans in the 2010 Congressional elections, and increase the likelihood that incumbent Democratic representatives retire. Incumbent policymaking is affected as well: representatives respond to large protests in their district by voting more conservatively in Congress. Finally, the estimates imply significant multiplier effects: for every protester, Republican votes increase by seven to fourteen votes. Together our results show that protests can build political movements that ultimately affect policy, and they suggest that it is unlikely that these effects arise solely through the standard channel of private-information revelation.

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I Introduction

How does political change come about? While freedom of speech and assembly are central pillars of democracy, recognized as intrinsically valuable, it is unclear how effective exercising these freedoms is in bringing about change. Although there are numerous historical episodes where political change has been associated with, or been preceded by, political protests and demonstrations, such as the French Revolution, the civil rights movement in the 1960s, and the recent Arab Spring manifestations, it is unclear to what extent these protests *caused* the change. Since protests are likely to occur during episodes when political beliefs in society change, it is difficult to disentangle whether protests cause political change, or simply reflect unobservable belief changes. Empirical evidence of the causal effects of protests therefore remain scarce. In fact, to our knowledge, there is no empirical work quantifying the causal effects of protests on subsequent political behavior by citizens and politicians: it is an open question to what extent political protests cause political change, and, if they do, what the mechanisms are. This paper sheds light on these issues.

We investigate the impact of the Tea Party movement protests in the United States on policymaking and citizen political behavior. The Tea Party movement is a conservative-libertarian political movement in the United States that has organized protests and supported candidates for elected office since 2009. This setting is a well-suited testing ground for hypotheses regarding the effectiveness of political protests. The movement propagates an agenda that is systematically to the right of the status quo, which makes the measurement of policy outcome changes in the direction desired by the movement relatively straightforward. In addition, the largest protests in the early stage of the movement were the nation-wide 2009 Tax Day Rallies. As this date was pre-set, it allows us to test whether the size of the protests on the day affected subsequent political outcomes.

The main empirical challenge in estimating the impact of protests is that unobservable political preferences are likely to determine both policy and the number of protesters. A naive regression

of policy on protest size is therefore unlikely to reflect a causal effect. We address this problem by exploiting absence of rainfall during the day of the protest. The idea is simple. People are more likely to participate in the (outdoor) protests if the weather is nice, compared to when it rains. Nice weather on the protest day therefore leads to large protests in counties and congressional districts. Conditional on the likelihood of rain, since rainfall is a random event, whether it rains on the protest day is arguably uncorrelated with other determinants of policy and voting behavior. Under the assumption that absence of rainfall affects policy and voting behavior only through the number of protesters, this allows us to estimate the impact of protest size using an instrumental variables approach.

We use data from multiple sources to create two cross-sectional datasets. One dataset is at the county level and one is at the congressional district level. First, we collect daily data on rainfall between 1980-2010. We use this to estimate the likelihood of rain and create rainfall measures, both at the county level and at the district level. Second, we collect three different measures of protest size at the county level. Third, to measure the strength of the movement, we use county-level data on Tea Party membership, political campaign contributions, attendance at town hall meetings, and the number of protesters at subsequent protests. Fourth, we collect a dataset of media coverage of the movement by local newspapers. Fifth, we collect data on election outcomes at the county level and the district level. Finally, to measure the impact on policymaking in U.S. Congress, we use roll call ratings from the American Conservative Union.

The main results show that political protests affect policymaking and voting behavior.[1] For policymaking, we find that incumbent representatives vote more conservatively when there are large protests in their district. The estimates indicate that ACU ratings in districts with smaller rallies due to rain are lower by 7 to 11 points, corresponding to approximately two additional conservative

[1] All of these results are local, at the county or congressional district level (they also hold at the MSA level). We abstract from general-equilibrium effects such as potential redistribution of resources by party committees.

votes in one year out of a total 24 rated votes. Incumbent Democrats are less likely to run for reelection in the 2010 midterm elections. A rain-free rally in the district decreases the likelihood that a Democratic incumbent runs for reelection. For citizen voting behavior, we show that large protests increase turnout, primarily favoring Republican candidates. The Tea Party protests therefore seem to cause a conservative shift in terms of policymaking, both directly and through the selection of politicians in elections.

We find evidence of significant multiplier effects. In particular, our baseline estimate shows that every Tea Party protester increases the number of Republican votes by 15 votes. Our most conservative estimate lowers the multiplier to 7.

In assessing the mechanisms through which protests affect policy, we find that protests increases the strength of the movement. In particular, we find that a temporary positive shock in protest size causes a *persistent* increase in the number of active movement members. Larger Tax Day protests also increase monetary contributions to the movement, where the effect is increasing over time. Beyond that, we show that protests cause subsequent protests, as larger Tax Day protests lead to higher townhall meeting turnout during the following summer and larger Tax Day protests in the following year. This is mirrored by the impact on media coverage, as protest size in 2009 does not only cause more media coverage during the 2009 protests, but also in the following year. Together, these results are consistent with larger political protests creating a stronger political movement that is able to push its policy agenda more effectively come election time, which ultimately affects both incumbent behavior and election outcomes.

Our results relate to the large body of empirical and theoretical work that has attempted to explain which factors drive political participation. Most empirical work on why people vote has identified simple correlations between political activism and citizen characteristics (see e.g. Blaise 2000 for a review), whereas theoretical work has generally suggested that a sense of civic duty or con-

sumption value drives political involvement (Downs 1957, Riker and Ordeshook 1968). However, these results leave the question of why protests would matter as instruments for political change unanswered. Other theoretical contributions, some from the sociological tradition, that attempt to answer this question tend to focus on social dynamics within groups and networks of citizens, and their (potentially unintended) influence on individuals' desire to attain certain political goals (Coate and Conlin, 2004; Zuckerman 2005; Feddersen and Sandroni, 2006).

The standard theoretical framework in economics of how protests affect policy is rooted more firmly in a rational-choice framework and emphasizes the roles that information plays. Lohmann (1993, 1994a) models the role of visible political activism in revealing private information to the public at large and to policymakers, and in signaling the costs and benefits of participating per se (1994b). We provide evidence suggesting that this mechanism is unlikely to fully explain our results. First, it is unclear why weather-driven variation in protest size should provide a signal about underlying beliefs or preferences, if weather on the protest day is orthogonal to beliefs and preferences. Second, even if policy responds to protest size because it provides information about beliefs or preferences, differences across districts with and without rainfall on the protest day should decrease as additional information arrives. We find no evidence of the effects on incumbent behavior decreasing over time. In fact, the effects on policy in 2010 are slightly larger than the effects in 2009. Our results are therefore difficult to reconcile with the standard framework. Instead, since the effects are very much local, they suggest that it is personal interaction within small groups of citizens that serves as a crucial channel for the transmission of new political views and that leads to increases in political activism, in line with Zuckerman's (2005) "social logic of politics" and the shaping of a new social context that motivates citizens to "call folk, hustle, [and] outwork [their] foe" (Texans for John Cornyn, 2008). In our discussion we argue that Lohmann's information-driven model of the effectiveness of political activism cannot fully explain our results, and that social networks, mobilization and/or habit formation are key missing elements that must be incor-

porated into a full model of political protests.

The remainder of the paper is structured as follows. In Section II we provide background information on the Tea Party movement and the data we use. In Section III we present the estimation framework and our empirical results. In Section IV we discuss and interpret our findings before we conclude.

II The Tea Party Movement

Tea Party Goals and Organization. The 1773 Boston Tea Party has been a potent symbol for American anti-tax activists over the past few decades, and its iconic value has regularly been exploited for protests and fundraisers (e.g. Holmes 1991, Levenson 2007). More recently, starting in early 2009 (McGrath 2010; see also Figure 1 for the evolution of Tea Part web searches over search volume), a broader political movement has coalesced under the Tea Party banner. The movement's supporters have come together in a loose coalition of national umbrella organizations that vary in their degree of centralization and their ideological focus. Their first large showing of activism took place on April 15, 2009 (Tax Day), when they held a large number of rallies all over the United States.

[Insert Figure 1 about here]

Though the movement is unified by opposition to the Democrat-dominated federal government and mostly supports Republican candidates for office, it is not explicitly partisan. Partly due to its decentralized and informal structure, there is limited agreement on its defining ideological and demographical characteristics. For example, while some students of the movement have characterized its members as overwhelmingly white, partisan Republicans with negative views of immigrants

and blacks, who are socially conservative and were politically active long before the movement started (Putnam 2011), others see it as a populist grassroots phenomenon that wants to limit the role of government (Rasmussen and Schoen 2010). The movement's leaders, on the other hand, see the movement as a demographically diverse, non-partisan push for smaller government and good governance (Palin 2011). Among these leaders are opinion makers such as talk radio host and former Fox New Channel host Glenn Beck, former Vice Presidential Candidate and Alaska Governor Palin, but also a range of national, state and local elected officials (Washington Post 2010). In July 2010, Tea Party sympathizers in Congress led by Rep. Michelle Bachmann in the House of Representatives started the Tea Party Caucus, which later also became an official congressional member organization in the Senate, there led by Sen. Jim DeMint. As of July 2011, 60 House members and 4 Senators had joined the Caucus.

The main organizations supporting the Tea Party movement are the non-profits Tea Party Patriots, Americans for Prosperity, FreedomWorks and Tea Party Express, and the for-profit Tea Party Nation. In this paper we study the effect of the 2009 Tax Day rallies organized by these and other groups on subsequent membership growth, on subsequent protests, on monetary contributions, and on political outcomes, both in elections and in the legislature.

Data. Three different sources allowed us to collect attendance estimates for "Tax Day" rallies held on April 15, 2009: Tea Party self-reports (SurgeUSA.org 2009), the New York Times (Silver 2009) and the Institute for Research and Education on Human Rights (IREHR 2010), a think tank in Missouri. Figure 2 shows the average of these estimates (where available) by location. We use data for April 15, 2010, rallies from EconomyPolitics (2010). We use data for attendance at summer 2009 townhall meetings from RecessRally (2009).

[Insert Figure 2 about here]

The data on precipitation we use to study exogenous variation in rally attendance come from the National Oceanic and Atmospheric Administration. Figure 3 shows which rallies were affected by rain and which were not. Here we count rallies on days with rainfall under 0.1 inch as non-rainy; higher precipitation levels are counted as rainy.

[Insert Figure 3 about here]

We use membership estimates for June 2010 for the non-profit Tea Party organizations Tea Party Patriots, Americans for Prosperity and FreedomWorks, discussed above, as well as two smaller organizations, 1776 Tea Party and ResistNet from the IREHR (2010). These five factions maintain their own social networking sites, with minimal privacy protections. The "members" included are typically the leadership of local chapters. The complete data from these sites has been collected on a daily basis since 2010 by the IREHR.

Information on contributions to Our Country Deserves Better PAC, the fund-raising wing of the Tea Party Express, for 2009 and 2010 was obtained from Federal Election Commission (FEC) campaign finance reports.

Our data on media coverage come from news articles from Newslibrary.com, which contains the archives of over 4,000 titles, but not those of large national newspapers such as the Wall Street Journal or the New York Times.[2] We collected information on all articles containing the phrase "Tea Party" from January 1, 2009 through June 20, 2010. To match these data to geographic regions, we used information on county-level circulation from the Audit Bureau of Circulations. This data set includes circulation figures for roughly the 750 largest newspapers. In the end, we

[2] As we are interested in local effects, these titles are not of particular interest to us in the first place.

were able to match the location data for 255 publications across 46 states.[3] Over this time period, these publications contained some 40,000 articles containing the term "Tea Party."

We map these different data sets to both the county and the congressional district level to create the two cross-sectional datasets that underlie our empirical analysis.[4] Control variables come from the U.S. Census Bureau and the American Community Survey.[5]

Our political outcomes are election results in the 2010 midterm elections for the House of Representatives, and congressional voting assessments. Election results are published by the FEC, while we use roll-call ratings for 2007-2010 from the American Conservative Union.

III Empirical Framework and Results

In this section we discuss our empirical estimates of the effect of Tea Party rally size on membership, monetary contributions, later protests, voting behavior by incumbents, and election results. The largest challenge in measuring the effectiveness of these protests, and of political activism in general, is that unobserved political beliefs are likely to be correlated with the size of protests and the pervasiveness of activism. It is, a priori, unclear in which direction the bias will go. On the one hand, there may be larger protests when and where the movement is stronger to begin with; on the other hand, organizers may choose to hold protests in areas with large numbers of swing voters and citizens that still need to be convinced of the movement's message.

How then can we asses the impact of a larger rally attendance? We investigate the Tea Party Tax Day Rallies held on April 15, 2009, but to estimate their effects we cannot simply assume that the variation in turnout is orthogonal to future developments in the same local area. Instead we rely

[3] We exclude publications with circulation below 15,000, as these turn out to be mostly trade journals. Among the highest-circulation papers still included are the Dallas Morning News, the San Diego Tribune, the Chicago Sun-Times, the Providence Journal and the Columbus Dispatch.

[4] While we have information on every congressional district, we cannot include all counties as some of them do not have weather stations that reported rainfall levels on April 15, 2009.

[5] Appendix Tables A.1 and A.2 contain summary statistics for both of these datasets.

on an instrumental-variables approach that exploits the fact (established below) that people are less likely to attend a rally if it rains. This allows us to estimate the causal impact of variation in rally attendance if we are willing to assume that rainfall on the rally day only affects the outcomes of interest, for example, roll call voting by the incumbent representative, through the size of the rally.[6] This identification restriction seems utterly plausible, but as supporting evidence Table 1 shows that the counties in which rallies where held that were plagued by rain are fairly similar in terms of population, racial composition of the population, past voting behavior and unemployment to those that hosted rainless rallies; what distinguishes them are merely the whims of Jupiter Pluvialis. Table 2 shows the other side of the coin: it provides an exogeneity check. The table shows the estimates produced by regressions of pre-rally values of outcome variables related to the results of the 2008 House and presidential elections on a dummy variable representing whether a rainy rally was held in a county, as well as a set of control variables. The rainy rally dummy does not contribute significantly to explaining the variation in these outcome variables in any of these cases.

[Insert Table 1 and 2 about here]

All of our tests follow the same basic pattern; most are carried out on the county level, but where necessary we study events at the congressional-district level.[7] The first stage of our estimation regresses the number of protesters in a county on a dummy variable that indicates whether there was a rainy rally, as in equation 1, where we include controls for the probability of rain in the county, population, racial make-up, median income, the unemployment rate, rural share of population and 2008 election results.

[6] Rainfall is also likely to make attending a rally less pleasant even for actual attendees, so we are, technically, measuring the effect of a combination of rally size and "quality."

[7] At the county level we use a rainfall cutoff of 0.1 inch to determine whether a rally was rainy or not; at the district level our sample size is smaller, and we use a more powerful (see Table 3), yet rainier 0.35 inch threshold.

Robust standard errors are clustered at the state level.

$$protesters_c = rainyrally_c\theta' + probrain_c\delta' + \mu_r + x_c\gamma' + \varepsilon_c \quad (1)$$

[Insert Table 3 about here]

.

Table 3 shows that rain lowers rally attendance by, roughly, 75 attendees. To make sure this difference is caused by rainfall, we produce the same estimate using data on rainfall on April 9, 11, 13, 15, 17, 19, and 21 for the period 1980-2010. The top left panel in Figure 4 shows that these placebo tests show no effect on attendance, precisely what one would expect if it is indeed rain on the day of the rally itself that drives low attendance, while Figure 5 shows that these results are not driven by small numbers of states or particular census divisions.[8]

[Insert Figure 4 and 5 about here]

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These first-stage results allow us to use rainfall as an instrument for rally attendance in the second stage of our estimation. This second stage consists of regressions along the lines of equation 2, where y represents a variety of outcomes of interest, and the controls we include are similar to

[8]Region-by-region and state-by-state Fama-MacBeth regressions show similar results.

those described above unless their exclusion is explicitly mentioned.

$$y_c = protesters_c\beta' + probrain_c\delta' + \mu_r + x_c\gamma' + \varepsilon_c \tag{2}$$

Tables 4 through 10 show our central results.[9]

Movement Outcomes. One of the primary mechanisms through which protests are thought to influence policy is by strengthening their associated political movements. Though Tea Party affiliation is largely unofficial, the number of social network profiles posted on the websites of the six main Tea Party factions is a good proxy for the number of activists involved in local Tea Party organizing. As discussed in the data section, the IREHR has been scraping data on the number of profiles posted since mid-2010, and they have supplied us with geocoded tallies for July 1 2010 and 2011. The total number of profiles posted on these sites nationwide was roughly 150,000 in 2010 and 300,000 in 2011.

[Insert Table 4 about here]

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In Table 4, we explore the relationship between rally attendance in 2009 and these subsequent membership proxies. Columns 1 and 2 look at the reduced form effect of rain on the date of the initial rally, conditional on the probability of rain and other covariates, and find that membership is significantly reduced. The estimates indicate that rain reduces the number of profiles posted in a

[9] Appendix Table A.3 shows our central results conditional on a rally taking place in the counties and congressional districts included in the sample.

county in 2010 by 7 to 9 (relative to a mean of 55). This pattern is also found in the IV estimates in Column 3, which indicate an increase in number of profiles per 100 attendees of about 10.

[Insert Table 5 about here]

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The effect of protest attendance on political contributions is similar. Table 5 presents the same regressions as the previous table, only now the dependent variable is contributions to Our Country Deserves Better PAC. The reduced form regressions in Columns 1 through 4 demonstrate that rain on the date of the rally reduced contributions from the county by $82 in 2009 and $316 in 2010. The IV results in Columns 5 through 8 show report the effects in dollars per "randomly" assigned attendee ($.50-$.99 in 2009 and $1.92-$3.84 in 2010), with a placebo test for 2009 reported in the top right panel of Figure 4. This evidence suggests that the initial rallies generate effects that last for extended periods of time.[10]

The same pattern is revealed in Table 6. During the summer of 2009, when the looming passage of the Affordable Health Care for America Act had attracted the ire of Tea Party activists, so-called "Recess Rallies" were organized at townhall events held by Congressmen in their home districts to pressure the Congressmen into opposing the health care bill. These rallies were influential in signaling opposition to the legislation. As Table 6 shows, larger rallies in 2009 cause larger turnout at the townhall meetings, with rain on Tax Day reducing the number of attendees by between 16 and 30 attendees, while making a (reported) townhall meeting 7.1% less likely.[11]

[10]This increase in monetary contributions may seem small, but the data we use are for only one specific Political Action Committee (PAC). The advantage of using this particular PAC is that it has no ties a particular officeholder or region, and that federal campaign finance legislation limits inidividual contributions to $5,000 per annum, which makes it unlikely that a few individual donors drive the results, as would be the case for many 527s.

[11]These figures are for townhall meetings that were held mainly in Democrat districts: we have attendance figure for

Finally, as Table 7 indicates, larger rallies in 2009 also led to larger rallies in 2010, with 30 to 60 additional attendees in 2010 for each 100 additional 2009 attendees.

[Insert Table 6 and 7 about here]

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Media Coverage. A natural channel through which the rallies may have had long-run effects is through increased local media coverage of the protests. To test this mechanism, we calculate weekly article totals for the Newslibrary sample of local newspapers that were matched to Audit Bureau geographic circulation information. For each paper, we calculate the average precipitation in the counties it serves weighted by each county's share of the paper's overall circulation. We define a dummy for whether or not that paper was located in an area where it rained on April 15, 2009, equal to whether or not the circulation-weighted precipitation exceeds our cutoff of .1 inch.

We then run cross-sectional regressions week-by-week at the paper level, where the dependent variable is a count of the number of articles containing the phrase "Tea Party" and the independent variable is the previously described measure of rain on Tax Day 2009. Figure 7 plots the time-series of the estimated coefficient and confidence intervals.

As expected, rain on April 15, 2009 had no significant effect on the level of media coverage prior to the Tax Day rallies, which is marked in red. On Tax Day itself, a rainy rally leads to a statistically significant decrease of one-article-a-week or about 20-25% of the mean level of coverage. The remainder of the figure tracks the effect of rain on April 15, 2009 on coverage in subsequent weeks.

28% of all districts represented by a Democrat, more or less evenly divided between districts with rainy and sunny Tax Day rallies, and for 6% of districts represented by Republicans.

For most of the sample, the measured effect is slightly negative (though close to zero) and statistically insignificant. This coefficient becomes significant for only four events. Interestingly, all four statistically significant dates correspond to important events for the Tea Party movement. A drop in coverage of a size similar to the Tax Day 2009 drop occurs on Tax Day 2010, when attendance, as we have seen elsewhere, was driven down by rainfall on Tax Day 2009. Smaller, but still statistically significant differentials were also found around July 4th, when there were many local events (Freedomworks, 2009), as well as around the 2009 off-year elections.

These effects are transitory and correspond to periods of local movement building. This suggests that the mechanism through which the rallies influenced policy was not the constant divulgence of new information, but rather through movement building and social interactions.

Policy Outcomes. Ultimately people care about political rallies and movements because they have the potential to change policy. Though the Tea Party umbrella encompasses many policy positions, in practice the vast majority of these positions are to the right of the median voter. Therefore we test whether exogenous movements in the size of Tea Party rallies across districts impacts the voting record of congressmen as evaluated by a group with similar political preferences. Each year the American Conservative Union assigns each congressman a score based on their votes in a select number of roll call votes in the house. This score, which ranges from zero to one hundred, measures the extent to which the votes accord with the preferences of the ACU, which we treat as a proxy for Tea Party preferences. In Table 8, we explore the effect of protest attendance on this measure of voting behavior. Since we do not have attendance levels at the district level, we only report reduced form results.

[Insert Table 8 about here]

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Columns 4 through 9 indicate that rain on the date of the rally had significant effects on voting records in 2009 and 2010, in spite of the fact that Columns 1 through 3 tell us that Representatives from rainy and non-rainy rally districts had similar voting records through 2008. The estimates indicate that scores in districts with smaller rallies due to rain were lower by 9 to 12 points, relative to a mean of 44. For comparison, this is about 15% of the difference between the average Democrat and the average Republican. Columns 8 and 9 split out this effect by year and find similar results across the two periods, though the estimates in 2010 are slightly larger. Again, these results do not suggest that the policy impact of the initial rallies fades over time. It is also important to note that these roll call changes take place before the congressional elections in 2010 replace individual House members. Thus, these results demonstrate that the politicians in office respond to the rallies and the perceived beliefs of their constituents. Of course, not every change in voting behavior has direct legislative effects, as many pieces of legislation would have passed or not regardless. The size of the effect we find is conceivably large enough to change actual policy outcomes. As an example we look at the vote on HR 3962, the Affordable Health Care for America Act. Column 9 in Table 8 shows the results of a linear probability estimate for the vote on this bill: a rainy protests lowers the probability of a nay vote by 8.7%. For illustration we consider the counterfactual where there had been no rain at all on Tax Day 2009. We match the actual outcome of the vote (220-215) to fix a probability threshold above which one votes "nay." We then raise the predicated probabilities for Congressmen in districts with rainy rallies by 8.7 percentage points to construct a counterfactual of sunny weather everywhere, and see that the outcome under this scenario becomes 217 ayes, 218 nays. Obviously, this result is only suggestive, as both the environment and the bill would undoubtedly have been different in the counterfactual world. Still the significant and sizable impact of Tax Day rain on this important and close House vote suggests that the prior roll call results may indicate substantive shifts in voting records rather than just symbolic changes.

[Insert Table 9 and 10 about here]

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Table 9 and 10 show that there is good reason to do so: a larger rally leads to more votes for Republicans as well as a larger Republican vote share, and seems to deter incumbent Democrats from standing for re-election. Incumbent Democrats are 4 to 7% less likely to be candidates again (column 1 through 3 in Table 10), while the marginal protester brings an additional 7 to 14 votes to the Republican camp (columns 2 and 3 in Table 9) and lowers the Democratic vote (albeit non-significantly) by 3 to 6 votes. Placebo tests for these results are reported in bottom panels of Figure 4.[12] Column 10 and 11 show the implications at the congressional-district level: good rally weather increases the difference between the number of Democratic and Republican votes by about 9,000, raising the Republican vote share by almost 3%.

IV Discussion and Conclusion

This paper provides novel evidence on the effects of political protests on policymaking and elections. The existing standard framework that analyzes how protest size affects voting behavior and policy was developed by Lohmann (1993, 1994a), as discussed in the introduction. We assess here whether this framework can sufficiently explain our main results, particularly those related to policymaking. In Lohmann's framework, protests affect policy through a Bayesian learning process. We present a simplified version of the model here. Specifically, when the distribution of policy preferences in society is unobservable and when protesting is costly, the number of protesters expressing their beliefs in favor of a policy change is a sufficient statistic describing the distribution

[12]This number of additional Republican votes generated may seem large at first glance, but it is important to realize that extra protesters lead to larger membership and higher contributions, and thereby create momentum reminiscent of the momentum created by the early voters in Knight and Schiff (2010), who find that early voters in Democratic primaries have "up to 20 times the influence of late voters in the selection of candidates."

of beliefs. When they observe a surprisingly large number of protesters, policymakers update their beliefs about preferences and the policy they choose to set.[13]

A Simple Learning Model. Suppose that there is a continuum of voters in a congressional district, where the population measure is normalized to one. Let $g_{c,t}$ be the policy position set by the incumbent in district c at time t. We can think of $g_{c,t}$ as corresponding to the left-right political spectrum on the real line, where a higher $g_{c,t}$ corresponds to more conservative roll call voting. Each voter i has single-peaked preferences in g and therefore a strictly preferred (bliss) policy. The distribution of voters' preferred policy in a district is $g_{i,c}\ f(\bar{g}_c, \sigma)$, where f the is normal probability density function. Since the distribution is symmetric, $\bar{g}_c$ is also the preferred policy of the median voter. There is uncertainty about the median voter so that $g_c = \theta + e_c$, where e_c is drawn from a normal distribution with mean zero and standard deviation σ_e and only θ is observable.

Incumbents set policy in order to maximize the likelihood to becoming reelected. To avoid an involved electoral competition model, suppose that it is always optimal for the incumbent to set policy $g_{c,t}$ equal to the median voter's preferred policy.[14] Since the distribution of voters' preferences is not directly observable, the incumbent in district c will set policy at time t based on his expectation of the median voter:

$$g_{c,t} = E_t[g_c|I_{c,t}] \tag{3}$$

Initially, the policy is $g_{c,0}$. Suppose that at time $t = 1$, before policy is set, voters can protest for a more conservative policy g_p, where $g_p > g_{c,0}$. We can think that some leader coordinates the

[13] We assume heterogeneous preferences among voters. Lohmann (1994a) uses heterogeneous beliefs with common preferences. For our purposes, the distinction is not important.

[14] Of course, the optimal policy for the incumbent could be based on the entire distribution. However, in the classical one-period Downsian electoral competition model with single-peaked preferences where political candidates can commit to a policy, the equilibrium policy of the two candidates is indeed the median voter's.

protests and exogenously sets the protester's policy g_p. Only voters with sufficiently conservative preferences will therefore prefer the proposed policy. Protesting is associated with some cost, q_c, for example because it is unpleasant to stand outdoors in bad weather, or because there is an opportunity cost. Given our empirical strategy, we focus on how weather affects the costs. Protesting in the rain is unpleasant, and so the cost of protesting is higher on a rainy day, q_r, than on a sunny day, q_s, so that $q_r > q_s$. For simplicity's sake, we assume that the cost is homogeneous among voters in a given district and that the weather is observable to voters and policymakers alike.

To avoid a complicated signaling game, we assume that people protest sincerely, because they like to express their political preferences. We make the natural assumption that the payoff from protesting, $h(g_{i,c})$, is strictly increasing in the benefit of the proposed policy, $h' > 0$.[15] There is, therefore, a cutoff value above which voters will protest and below which they will not, i.e., only those with sufficiently conservative preferences will protest:

$$h(g_i, c) > q_c \tag{4}$$

It follows that the number of protesters in a district, $p_c = Prob(h(g_i, c) > q_c)$, depends on the weather, $p_c(q_c)$. Similarly to in Lohmann's work p_c is a sufficient statistic for identifying the median voter. Incumbents will thus, in periods $t > 0$, update their beliefs and set policy conditional on the number of protesters in $t = 1$.

Now suppose there are N of these congressional districts. Define β_t as the mean difference between policy set in rainy and sunny districts. From (1), this difference will reflect the difference between incumbents' expectations of the median voter's bliss policy in the two types of districts,

[15] Even in a more sophisticated game with strategic protesting and collective action problems, such as in Lohmann (1994a), those with sufficiently conservative preferences are going to protest, as they will benefit from the policy change the most.

$$\beta_t = E[g_{c,t}(rain) - g_{c,t}(sun)] = E[g_c|rain] - E[g_c|sun] \tag{5}$$

Our key question is what this framework predicts for the reduced form effect of weather on policy, β_t. If weather and p_c are both perfectly observable to policymakers, it is obvious that policy should not differ across districts ($\beta_t = 0$). Policymakers will simply adjust the number of protesters for the weather effect. This simple case suggests that Bayesian learning is unlikely to drive our results. That said, it is, indeed, a simple example. Suppose, instead, that the quality of information through which protest size reflects underlying preferences depends on the weather. Weather could then affect incumbents' beliefs about voter preferences. A straightforward example is a situation in which policymakers get their information from newspapers, and newspapers only view large protests as newsworthy.[16] To formalize this, suppose that incumbents only observe p_c when it is sunny.[17] This implies that in sunny districts the median voter is revealed at $t = 1$, whereas in rainy districts uncertainty persists past t=1. In rainy districts the incumbent will then only fully discover the underlying preferences through independent information over time. The key implication is that in any time period $t > 0$, as long as additional information about voters' preferences continues to arrive (e.g. in the form of opinion polls or additional protests), the absolute difference in policy between the two types of districts should decrease.

We thus claim the following: if weather on the protest day only affects policy through learning, then any initial learning effect should decrease over time as additional information makes its way to the rainy districts:

[16] Another, slightly more complicated, mechanism could be that protesting is strategic instead of sincere, so that voters can signal their preferences by protesting. In a classic signaling model the difference between a pooling and separating equilibrium depends on the cost of taking action. Rain everywhere may then be necessary for there to be a separating equilibrium where protesting provides a signal.

[17] The same argument would hold if the incumbent only observes protest size if there is rain, or, more generally, when the precision of the signal depends on the weather.

$$|\beta_t| > |\beta_{t+1}| \tag{6}$$

However, when we investigate the effects on policy, we find no evidence that the effects decrease over time. The results in table 8 show that the effects in 2010 are, if anything, larger than the effects in 2009. It is thus unlikely that protest size only affects policymaking through the learning mechanism proposed by the standard framework.[18] Instead, this suggests that preferences in the voting population actually shifted differentially, so that the median voter position (g_c in this stylized example) became more conservative in sunny districts as compared to rainy districts.[19] The next section highlights some potential alternative mechanisms that would be consistent with such a shift.

Alternative Mechanisms. If Bayesian learning does not fully explain our results, a natural question is what does. One strand of literature that would be consistent with political beliefs actually shifting is the social interactions literature (e.g. Glaeser et al., 1996, 2003; Topa, 2001; Calvo and Jackson, 2004). The implication of this literature is that protesters may be affected by interactions with other protesters at the Tea Party rally, and non-protesters may be affected by interactions with protesters after the rally has taken place. For example, one mechanism could be that moderate independents are on the margin before the protests, but become persuaded by the Tea Party policy agenda at the protests. Convinced conservatives may feel energized when many people show, even if only because of nice weather, and become more passionate proselytizers. Furthermore, if political beliefs spread in social networks, protesters may persuade non-protesters. This would explain why a shift occurs in the voting population towards the conservative candidate, why there

[18] This framework also would also have difficulties explaining why monetary contributions would increase over time as a function of weather, since differential learning effects in rainy and sunny districts should also decrease over time.

[19] Note that when turnout is less than full, the median voter can shift to the right because of increased turnout among more conservative citizens. Therefore, this argument does not hinge on any individual's preferences actually being shifted.

is a multiplier above one, and why incumbents shift policy towards the right.

Another potential mechanism is that protests build a stronger political organization with the resources to support candidates in elections. The lobbying literature predicts that if a group of voters in society is politically organized, policy is more likely to be set according to this group's policy preferences (Baron, 1994; Grossman and Helpman, 1996; Persson and Tabellini, 2000). The main mechanism here is that candidates interested in maximizing the probability of winning an election will find it optimal to cater to the organized group, since otherwise the group will provide support to other candidates. That organizational strength affects voting behavior and policy platforms would be consistent with the increase in monetary contributions and Tea Party membership, since such variables are arguably good approximations of organizational strength.

Finally, the estimated persistence in political activism is consistent with habit formation models (Murphy and Shleifer, 2004; Mullainathan and Washington, 2009; Gerber et al., 2010). According to this literature, the act of protesting itself makes people more committed to the proposed policy agenda, and political attitudes shift as a result of having protested. Therefore, even if nice weather is the cause of increased participation, the act of having protested is sufficient to make individuals more committed. This would explain why we see that attendance in both town hall meetings and future protest increase when many people protest initially. This would not, however, explain why we estimate a multiplier above one. One could, of course, imagine that social interactions or lobbying interact with habit formation, which would explain both why we see such persistence and a multiplier effect on voting. Since the data does not allow us to fully separate between these potential alternative mechanisms, it would be helpful if further research pinpointed the precise mechanisms through which protests can affect voting behavior and policymaking.

Conclusion. We show that larger political protests both strengthen the movement they are meant to support, and help advance the political and policy agenda of the movement. We find that the

protests increase turnout in favor of the Republican Party in congressional elections, and decreases the likelihood that incumbent Democratic representatives run for reelection. Incumbent policy-making is also affected, as representatives respond to large protests in their district by voting more conservatively in Congress. In addition, we provide evidence that these effects are driven by a persistent increase in the movement's strength. Protests lead to subsequent protests, as well as an increase in membership, monetary contributions, and media coverage. Finally, the estimates imply significant multiplier effects: for every protester, Republican votes increase by seven to fourteen votes. Our results suggest that political activism does not derive its usefulness solely from the provision of information, but that the interactions produced at rallies and protests can affect citizens' social contexts in ways such that a movement for political change persists autonomously. This confirms the importance of social dynamics within networks of citizens for the realization of political change, and seems of relevance not only in the context of representative democracies, but also at the onset of revolutionary movements.

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Table 1. County-Level Summary Statistics

	All Counties			Rally Counties		
	Rain	No Rain	Difference	Rain	No Rain	Difference
Weather April 15, 2009						
Precipitation (hundredths of inches)	0.395	0.008	0.387***	0.401	0.009	0.392***
	(0.023)	(0.002)	(0.024)	(0.029)	(0.002)	(0.029)
Probability of Rain	0.285	0.203	0.082***	0.296	0.219	0.077***
	(0.018)	(0.019)	(0.022)	(0.015)	(0.020)	(0.022)
Election 2008						
Republican House Vote Share	0.503	0.517	-0.013	0.491	0.479	0.012
	(0.029)	(0.028)	(0.038)	(0.018)	(0.022)	(0.027)
Republican House Votes ('000)	21.014	15.739	5.275	53.617	54.486	-0.868
	(3.885)	(2.117)	(4.025)	(7.489)	(7.361)	(9.704)
Votes for Obama ('000)	42.911	40.847	2.064	47.443	46.934	0.510
	(1.453)	(1.647)	(1.953)	(1.248)	(1.560)	(1.828)
Tea Party Movement						
Tea Party Express Donations pre-Tax Day 2009 ('000)	0.024	0.017	0.007	0.071	0.071	-0.000
	(0.010)	(0.006)	(0.011)	(0.038)	(0.024)	(0.044)
Demographic Controls 2009						
Median Household Income	43,574	42,606	969	49,923	47,668	2,255
	(1,690)	(813)	(1,675)	(2,408)	(1,047)	(2,585)
Unemployment Rate (percent)	9.764	8.836	0.928	9.393	8.903	0.490
	(0.516)	(0.455)	(0.566)	(0.534)	(0.363)	(0.517)
Population	110,424	91,726	18,697	284,850	348,658	-63,808
	(20,938)	(16,445)	(24,981)	(39,712)	(64,796)	(74,224)
Rural Share of Population	0.569	0.607	-0.039	0.311	0.291	0.020
	(0.033)	(0.017)	(0.035)	(0.029)	(0.018)	(0.033)
African-American Population (percent)	11.051	8.527	2.524	10.768	10.313	0.455
	(2.703)	(1.990)	(2.789)	(1.697)	(1.491)	(1.869)
Number of observations	630	2,333		142	420	

The precipitation data come from the National Oceanic and Atmospheric Administration. Data on donations come from the Federal Election Commission (FEC). The demographic information comes from the U.S. Census Bureau and the American Community Survey and the election data comes from the FEC. Robust standard errors in parentheses, clustered at the state level. The columns *Differences* report *** 1% , ** 5% , * 10% significance.

Table 2. Exogeneity Check

Dependent Variable	Obama Vote Share 2008		Republican Vote Share 2008		Republican Votes 2008, '000		Democratic Votes 2008, '000		Rep-Dem Votes, 2008		Pre-Rally Tea Party Express, $ '000 $	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Rainy Protest	0.442	0.970	0.0195	0.0213	2.088	2.004	1.168	1.218	0.920	0.786	0.00349	0.00346
	(1.551)	(1.346)	(0.0299)	(0.0307)	(1.292)	(1.343)	(1.501)	(1.487)	(2.456)	(2.516)	(0.00960)	(0.00956)
Observations	2,962	2,962	2,962	2,962	2,962	2,962	2,962	2,962	2,962	2,962	2,962	2,962
R-squared	0.181	0.494	0.066	0.176	0.866	0.872	0.915	0.917	0.547	0.561	0.291	0.293
Baseline Controls	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Demographic Controls	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y
Dependent Variable Mean	41.284	41.284	0.513	0.513	16.866	16.866	20.438	20.438	-3.571	-3.571	0.018	0.018
P-value	0.777	0.475	0.517	0.491	0.113	0.142	0.441	0.417	0.710	0.756	0.718	0.719

Rainy Protest is a dummy variable equal to one if there was rain in the county on the rally day (April 15, 2009), and zero otherwise. All regressions include rain probability dummies, region fixed effects, and a second-order polynomial in the county population. Precipitation data come from the National Oceanic and Atmospheric Administration. Data on donations come from the Federal Election Commission (FEC). The demographic information comes from the U.S. Census Bureau and the American Community Survey and the election data comes from the FEC. Robust standard errors in parentheses, clustered at the state level. *** 1% , ** 5% , * 10% significance.

Table 3. The Effect of Rainy Protests on the Number of Protesters, 1st Stage

Dependent Variable	Protesters, '000								Protesters, % of pop.		log(Protestors)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Rainy Protest	-0.075***	-0.082***	-0.073***	-0.164***	-0.067***	-0.090***	-0.100***	-0.121***	-0.019*	-0.046**	-0.388**
	(0.026)	(0.021)	(0.019)	(0.046)	(0.021)	(0.028)	(0.028)	(0.038)	(0.011)	(0.022)	(0.192)
Rainy 14 Apr. 09			-0.034								
			(0.023)								
Rainy 16 Apr. 09			-0.015								
			(0.034)								
Observations	2,962	2,962	2,956	2,962	2,962	2,962	2,962	2,962	2,962	2,962	562
R-squared	0.417	0.429	0.429	0.420	0.428	0.428	0.428	0.428	0.052	0.041	0.250
Protesters Variable	Mean	Mean	Mean	Max	Mean	Mean	Mean	Mean	Mean	Max	Mean
Rain Threshold	10	10	10	10	5	25	35	Cont.	10	10	10
Election Controls	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Demographic Controls	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Dependent Variable Mean	0.151	0.151	0.151	0,277	0.151	0.151	0.151	0.151	0.07	0.146	5,34

Rainy Protest is a dummy variable equal to one if there was rain in the county on the rally day (April 15, 2009), and zero otherwise. All regressions include rain probability dummies, region fixed effects, a second-order polynomial in county population, Obama 2008 vote share, 2008 House Republican vote share, 2008 number of House Republican votes, and Tea Party Express donations before April 15, 2009. Demographic controls are log of household median income, unemployment rate, rural share of population, white population (percent), African-American population (percent), and Hispanic population (percent). Rain Threshold gives the cutoff for rainy versus not rainy in hundredths of an inch; column 8 uses a scaled continuous precipitation measure. Data on turnout at the protest rallies, *Protesters*, are collected from three different sources: Tea Party self-reports, the New York Times, and the Institute for Research and Education on Human Rights. *Mean* denotes the average across the three sources. *Max* is the highest reported attendance in any given location. Data on donations come from the Federal Election Commission (FEC). Precipitation data come from the National Oceanic and Atmospheric Administration. Demographic information comes from the U.S. Census Bureau and the American Community Survey, election data from the FEC. Robust standard errors in parentheses, clustered at the state level. *** 1% , ** 5% , * 10% significance.

Table 4. The Effect of Protests on Local Tea Party Organizers

Dependent Variable	Tea Party Organizers, '000			
	2010	2010	2010	2010
	RF	RF	2SLS	2SLS
	(1)	(2)	(3)	(4)
Protesters, '000			0.106***	0.053**
			(0.039)	(0.021)
Rainy Protest	-0.007**	-0.009***		
	(0.003)	(0.003)		
Observations	2,962	2,962	2,962	2,962
R-squared	0.887	0.888	-	-
Protesters Variable	Mean	Mean	Mean	Max
Demographic Controls	N	Y	Y	Y
Dependent Variable Mean	.055	0.055	0.055	0.055

Rainy Protest is a dummy variable equal to one if there was rain in the county on the rally day (April 15, 2009), and zero otherwise. All regressions include rain probability dummies, region fixed effects, a second-order polynomial in the county population, Obama 2008 vote share, 2008 House Republican vote share, 2008 number of House Republican votes, and total Tea Party Express donations before April 15, 2009. Demographic controls are log of household median income, unemployment rate, rural share of population, white population (percent), African-American population (percent), and Hispanic population (percent). Data on turnout at the protest rallies, *Protesters*, are collected from three different sources: Tea Party self-reports, the New York Times, and the Institute for Research and Education on Human Rights. *Mean* denotes the average across the three sources. *Max* is the highest reported attendance in any given location. Data on donations come from the Federal Election Commission (FEC). Precipitation data come from the National Oceanic and Atmospheric Administration. Demographic information comes from the U.S. Census Bureau and the American Community Survey, and election data come from the FEC. Robust standard errors in parentheses, clustered at the state level. *** 1% , ** 5% , * 10% significance.

Table 5. The Effect of Protests on Our Country Deserves Better PAC Contributions

Dependent Variable	Donations, $, '000							
	2009 RF (1)	2009 RF (2)	2010 RF (3)	2010 RF (4)	2009 2SLS (5)	2010 2SLS (6)	2009 2SLS (7)	2010 2SLS (8)
Protesters, '000					0.992**	3.835**	0.498**	1.924**
					(0.454)	(1.879)	(0.218)	(0.902)
Rainy Protest	-0.084**	-0.082**	-0.316**	-0.316**				
	(0.034)	(0.033)	(0.136)	(0.132)				
Observations	2,962	2,962	2,962	2,962	2,962	2,962	2,962	2,962
R-squared	0.737	0.742	0.718	0.722	-	-	-	-
Protesters Variable	Mean	Mean	Mean	Mean	Mean	Mean	Max	Max
Demographic Controls	N	Y	N	Y	Y	Y	Y	Y
Dependent Variable Mean	0.189	0.189	0.801	0.801	0.189	0.801	0.189	0.801

Rainy Protest is a dummy variable equal to one if there was rain in the county on the rally day (April 15, 2009), and zero otherwise. All regressions include rain probability dummies, region fixed effects, a second-order polynomial in the county population, Obama 2008 vote share, 2008 House Republican vote share, 2008 number of House Republican votes, and total Tea Party Express donations before April 15, 2009. Demographic controls are log of household median income, unemployment rate, rural share of population, white population (percent), African-American population (percent), and Hispanic population (percent). Data on turnout at the protest rallies, *Protesters,* are collected from three different sources: Tea Party self-reports, the New York Times, and the Institute for Research and Education on Human Rights. *Mean* denotes the average across the three sources. *Max* is the highest reported attendance in any given location. Data on donations come from the Federal Election Commission (FEC). Precipitation data come from the National Oceanic and Atmospheric Administration. Demographic information comes from the U.S. Census Bureau and the American Community Survey, and election data come from the FEC. Robust standard errors in parentheses, clustered at the state level. *** 1% , ** 5% , * 10% significance.

Table 6. Townhall Meetings

Dependent Variable	Turnout					Had a Townhall Meeting
	(1)	(2)	(3)	(4)	(5)	(6)
Rainy Protest in District '000	-0.016**	-0.017**	-0.019***	-0.023***	-0.031*	-0.071*
	(0.007)	(0.007)	(0.007)	(0.008)	(0.017)	(0.042)
Observations	435	435	435	435	435	435
R-squared	0.016	0.022	0.034	0.056	0.168	0.056
Roll Call Control	N	Y	Y	Y	Y	Y
Election Controls	N	N	Y	Y	Y	Y
Demographic Controls	N	N	N	Y	Y	Y
State Fixed Effects	N	N	N	N	Y	N
Dependent Variable Mean	0.022	0.022	0.022	0.022	0.022	0.110

Rainy Protest is a dummy variable equal to one if there was rain in the district on the rally day (April 15, 2009), and zero otherwise. All regressions include rain probability dummies, region fixed effects, a second-order polynomial in the district population, the 2008 Republican vote share in the House, the 2008 number of Republican votes in the House, rural population (percent), white population (percent), African-American population (percent), and Hispanic population (percent). The roll call control is a second-order polynomial in the 2007 American Conservative Union score. Data on *Turnout* at Townhall Meetings are taken from RecessRally.com. Roll call ratings for 2007 are from the American Conservative Union. Demographic information comes from the U.S. Census Bureau and election data come from the Federal Election Commission. Precipitation data come from the National Oceanic and Atmospheric Administration. Robust standard errors in parentheses, clustered at the state level. *** 1% , ** 5% , * 10% significance.

Table 7. The Effect of Protests on Later Protests

Dependent Variable	Protesters Tax Day 2010, '000				
	RF	RF	2SLS	2SLS	2SLS
	(1)	(2)	(3)	(4)	(5)
Protesters, '000			0.594**	0.570***	0.300***
			(0.235)	(0.220)	(0.104)
Rainy Protest 2009	-0.051*	-0.053**			
	(0.027)	(0.025)			
Observations	2,845	2,845	2,845	2,845	2,845
R-squared	0.086	0.092	-	-	-
Protesters Variables	Mean	Mean	Mean	Mean	Max
Demographic Controls	N	Y	N	Y	Y
Dependent Variable Mean	0.049	0.049	0.049	0.049	0.049

*Rainy Protest*is a dummy variable equal to one if there was rain in the county on the rally day (April 15, 2009), and zero otherwise. All regressions include rain probability dummies, region fixed effects, a second-order polynomial in the county population, Obama 2008 vote share, 2008 House Republican vote share, 2008 number of House Republican votes, total Tea Party Express donations before April 15, 2009, and a rain control for rain during the 2010 rally. Demographic controls are log of household median income, unemployment rate, rural share of population, Wwite population (percent), African-American population (percent), and Hispanic population (percent). Data on turnout at the protest rallies, *Protesters,* are collected from three different sources: Tea Party self-reports, the New York Times, and the Institute for Research and Education on Human Rights. *Mean* denotes the average across the three sources. *Max* is the highest reported attendance at any given location. Data on donations come from the Federal Election Commission (FEC). Precipitation data come from the National Oceanic and Atmospheric Administration. Demographic information comes from the U.S. Census Bureau and the American Community Survey, and election data come from the FEC. Robust standard errors in parentheses, clustered at the state level. *** 1% , ** 5% , * 10% significance.

Table 8. House Member Roll Call Voting

Dependent Variable	Conservative Voting, ACU Score									
	2008	2008	2008-07 Diff	2010-08 Diff	2010-08 Diff	2010-08 Diff	2010-08 Diff	2009	2010	HR 3962
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Rainy Protest in District	0.71	-3,66	0.84	-9.23**	-9.54**	-10.09**	-9.30*	-10.45***	-12.00**	-0.087**
	(1.43)	-6,3	(1.31)	(4.17)	(3.75)	(3.97)	(5.14)	(3.24)	(3.24)	(3.71)
Observations	435	435	435	435	435	435	435	435	435	435
R-squared	0.94	0,73	0.09	0.04	0.13	0.14	0.30	0.77	0.76	0.61
Roll Call Control	Y	N	N	N	Y	Y	Y	N	N	N
Election Controls	N	Y	N	N	Y	Y	Y	Y	Y	Y
Demographic Controls	Y	Y	Y	N	N	Y	Y	Y	Y	Y
State Fixed Effects	N	Y	N	N	N	N	Y	Y	Y	Y
Dependent Variable Mean	41,618	41,618	-1.294	-0.164	-0.164	-0.164	-0.164	41.14	41,454	0.494

Rainy Protest is a dummy variable equal to one if there was rain in the district on the rally day (April 15, 2009), and zero otherwise. All regressions include rain probability dummies, region fixed effects, and a second-order polynomial in congressional-district population. The election controls are 2008 House Republican vote share and 2008 number of House Republican votes. The roll call control is a second-order polynomial in the 2007 ACU score. The 2009 ACU score only includes votes after April 15. An "aye" vote on HR 3962 is recorded as 0, i.e., not rated as conservative by the ACU. Robust standard errors in parentheses, clustered at the state level. *** 1% , ** 5% , * 10% significance.

Table 9. The Effect of Protests on Voting, 2010 Mid-Term Elections

Dependent Variable	Republican Votes 2010, '000			Democratic Votes 2010, '000			Rep-Dem Votes, 2010	Rep-Dem Votes, 2010	Rep-Dem Votes, 2010	Rep-Dem Votes, 2010	Rep. Vote Share
	RF	2SLS	2SLS	RF	2SLS	2SLS	RF	2SLS	2SLS	RF	RF
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Number of Protesters, '000		13.901**	6.973**		-5.846	-2.933		19.747**	9.906**		
		(6.731)	(3.536)		(10.277)	(5.108)		(9.963)	(4.988)		
Rainy Protest	-1.145**			0.482			-1.627**			-9.104**	-0.027*
	(0.503)			(0.862)			(0.787)			(4.511)	(0.014)
Observations	2,962	2,962	2,962	2,962	2,962	2,962	2,962	2,962	2,962	435	435
R-squared	0.967	-	-	0.921	-	-	0.718	-	-	0.733	0.742
Unit of Analysis	County	County	County	County	County	County	County	County	County	District	District
Protesters Variable	Mean	Mean	Max	Mean	Mean	Max	Mean	Mean	Max	Mean	Mean
Demographic Controls	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Dependent Variable Mean	14.313	14.313	14.313	12.151	12.151	12.151	2.162	2.162	2.162	18.609	0.528

Rainy Protest is a dummy variable equal to one if there was rain in the county on the rally day (April 15, 2009), and zero otherwise. All regressions include rain probability dummies, region fixed effects, a second-order polynomial in the county population, the Obama 2008 vote share, the 2008 Republican vote share in the House, the 2008 number of Republican votes in the House, and the total Tea Party Express donations before April 15, 2009. Demographic controls are log of household median income, unemployment rate, rural share of population, White population (percent), African American population (percent), and Hispanic population (percent). The congressional district-level regressions include rain probability dummies, region fixed effects, a second-order polynomial in the district population, the 2008 Republican vote share in the House, the 2008 number of Republican votes in the House, rural population (percent), White population (percent), African American population (percent), and Hispanic population (percent). Data on turnout at the protest rallies, *Protesters,* are collected from three different sources: Tea Party self-reports, the New York Times, and the Institute for Research and Education on Human Rights. *Mean* denotes the average across the three sources. *Max* is the maximum attendance at any given location. Data on donations come from the Federal Election Commission (FEC). The precipitation data come from the National Oceanic and Atmospheric Administration. The demographic information comes from the U.S. Census Bureau and the American Community Survey and the election data comes from the FEC. Robust standard errors in parentheses, clustered at the state level. *** 1% , ** 5% , * 10% significance.

Table 10. Incumbent Candidacies

Dependent Variable	Incumbent Candidate Dummy					
	Retired Democrat			Retired Republican		
	(1)	(2)	(3)	(4)	(5)	(6)
Rainy Protest in District	-0.070**	-0.063**	-0.038*	0.042	0.043	0.044
	(0.027)	(0.024)	(0.021)	(0.053)	(0.053)	(0.059)
Observations	256	256	256	179	179	179
R-squared	0.029	0.049	0.109	0.142	0.147	0.172
Roll Call Control	N	Y	Y	N	Y	Y
Election Controls	N	Y	Y	N	Y	Y
Demographic Controls	N	N	Y	N	N	Y
Dependent Variable Mean	0.046	0.046	0.046	0.044	0.044	0.044

Rainy Protest Rainy Protest is a dummy variable equal to one if there was rain in the district on the rally day (April 15, 2009), and zero otherwise. All regressions include rain probability dummies, region fixed effects, and a second-order polynomial in the congressional district population. The election controls are 2008 House Republican vote share and 2008 number of House Republican votes. The roll call control is a second-order polynomial in the 2007 American Conservative Union score. Data on roll call ratings for 2007-2010 are from the American Conservative Union. Demographic information comes from the U.S. Census Bureau and election data come from the Federal Election Commission. Precipitation data come from the National Oceanic and Atmospheric Administration. Robust standard errors in parentheses, clustered at the state level. *** 1% , ** 5% , * 10% significance.

Appendix Table A.1 Summary Statistics

	Counties		
	Obs	Mean	S. D.
Weather April 15, 2009			
Precipitation (hundredths of inches)	2962	0.090	0.214
Probability of Rain	2962	0.220	0.121
Rainy Protest, rainfall above 0.05 inch	2962	0.262	0.439
Rainy Protest, rainfall above 0.10 inch	2962	0.213	0.409
Rainy Protest, rainfall above 0.25 inch	2962	0.128	0.335
Rainy Protest, rainfall above 0.35 inch	2962	0.085	0.279
Tea Party Protests April 15, 2009			
Protesters ('000), mean	2962	0.151	0.719
Protesters ('000), max	2962	0.277	1.246
Protesters (percentage of population), mean	2962	0.069	0.286
Protesters (percentage of population), max	2962	0.145	0.597
Tea Party Protests April 15, 2010			
Protesters ('000), mean	2962	0.049	0.587
Election 2008			
Republican House Vote Share	2962	0.513	0.223
Republican House Votes ('000)	2962	16.866	40.574
Votes for Obama ('000)	2962	41.284	13.762
Election 2010			
Republican House Votes ('000)	2962	143.134	34.554
Democratic House Votes ('000)	2962	12.151	45.170
Tea Party Movement			
Tea Party Express Donations pre-Tax Day 2009 ($ '000)	2962	0.018	0.162
Tea Party Express Donations post-Tax Day 2009 ($ '000)	2962	0.189	1.005
Tea Party Express Donations in 2010 ('000)	2962	0.801	3.976
Local Tea Party Organizers 2010 ('000)	2962	0.055	0.149
Demographic Controls 2009			
Median Household Income	2962	42,813.870	11,045.120
Unemployment Rate (percent)	2962	9.031	3.246
Population	2962	95,733.840	312,163.100
Rural Share of Population	2962	0.598	0.309
African-American Population (percent)	2962	9.066	14.268
Hispanic Population (percent)	2962	8.222	13.194

Data on turnout at the protest rallies are collected from three different sources: Tea Party self-reports, the New York Times, and the Institute for Research and Education on Human Rights. Mean denotes the average across the three sources. Max is the highest reported attendance in any given location. Data on donations come from the Federal Election Commission (FEC). Precipitation data come from the National Oceanic and Atmospheric Administration. Demographic information comes from the U.S. Census Bureau and the American Community Survey and election data come from the FEC.

Appendix Table A.2 Summary Statistics	Districts		
	Obs	Mean	S. D.
Weather April 15, 2009			
Probability of Rain	435	0.115	0.077
Rainy Protest (rainfall above 0.35 inch)	435	0.131	0.337
U.S. Representative Roll Call Voting			
Conservative Voting, ACU Score 2007	435	42.912	42.449
Conservative Voting, ACU Score 2008	435	41.618	40.126
Conservative Voting, ACU Score 2009	435	40.592	42.119
Conservative Voting, ACU Score 2010	435	41.454	44.133
Election 2008			
Republican House Vote Share	435	0.374	0.261
Republican House Votes ('000)	435	119.970	70.395
Election 2010			
Republican House Vote Share	435	0.508	0.192
Republican House Votes ('000)	435	102.834	46.926
Democratic House Votes ('000)	435	89.611	38.893
Incumbent Candidacies			
Retired Republican	179	0.044	0.207
Retired Democrat	256	0.046	0.211
Townhall Meetings			
Turnout ('000)	435	0.022	0.093
Had a Town Hall Meeting	435	0.110	0.313
Demographic Controls 2000			
Population	435	645,631.800	28,541.220
Rural Population (percent)	435	0.210	0.198
African-American Population (percent)	435	0.121	0.149
Hispanic Population (percent)	435	0.125	0.163

Precipitation data come from the National Oceanic and Atmospheric Administration. Attendance at Townhall meetings is taken from RecessRally.com and roll call ratings for 2007-2010 come from the American Conservative Union. The demographic information comes from the U.S. Census Bureau and the election data come from the Federal Election Commission.

Appendix Table A.3 Results Conditional on Having a Rally in the County

Dependent Variable	Tea Party Organizers 2010, '000	Donations 2009, $, '000	Protesters Tax Day 2010	Republican Votes 2010, '000	Democratic Votes 2010, '000	Rep-Dem Votes 2010	Tea Party Organizers 2010, '000	Donations 2009, $, '000	Protesters Tax Day 2010	Republican Votes 2010, '000	Democratic Votes 2010, '000	Rep-Dem Votes 2010
	RF	RF	RF	RF	RF	RF	2SLS	2SLS	2SLS	2SLS	2SLS	2SLS
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Protesters, '000							0.080***	0.820**	0.413	9.658*	-7.070	16.728*
							(0.031)	(0.378)	(0.285)	(5.107)	(9.368)	(9.215)
Rainy Protest	-0.022***	-0.234***	-0.116	-2.703**	1.979	-4.683*						
	(0.008)	(0.0832)	(0.0916)	(1.322)	(2.695)	(2.491)						
Observations	562	562	562	562	562	562	562	562	562	562	562	562
R-squared	0.907	0.776	0.109	0.968	0.930	0.759	-	-	-	-	-	-
Demographic Controls	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Dependent Variable Mean	0.184	0.760	0.229	45.732	43.708	2.024	0.184	0.760	0.229	45.732	43.708	2.024

Rainy Protest is a dummy variable equal to one if there was rain in the county on the rally day (April 15, 2009), and zero otherwise. All regressions include rain probability dummies, region fixed effects, a second-order polynomial in county population, Obama 2008 vote share, 2008 Republican House vote share, 2008 number of House Republican votes, and total Tea Party Express donations before April 15, 2009. Demographic controls are log of household median income, unemployment rate, rural share of population, white population (percent), African-American population (percent), and Hispanic population (percent). Data on turnout at the protest rallies, Protesters, are collected from three different sources: Tea Party self-reports, the New York Times, and the Institute for Research and Education on Human Rights. Data on donations come from the Federal Election Commission (FEC). Precipitation data come from the National Oceanic and Atmospheric Administration. Demographic information comes from the U.S. Census Bureau and the American Community Survey, and election data come from the FEC. Robust standard errors in parentheses, clustered at the state level. *** 1% , ** 5% , * 10% significance.

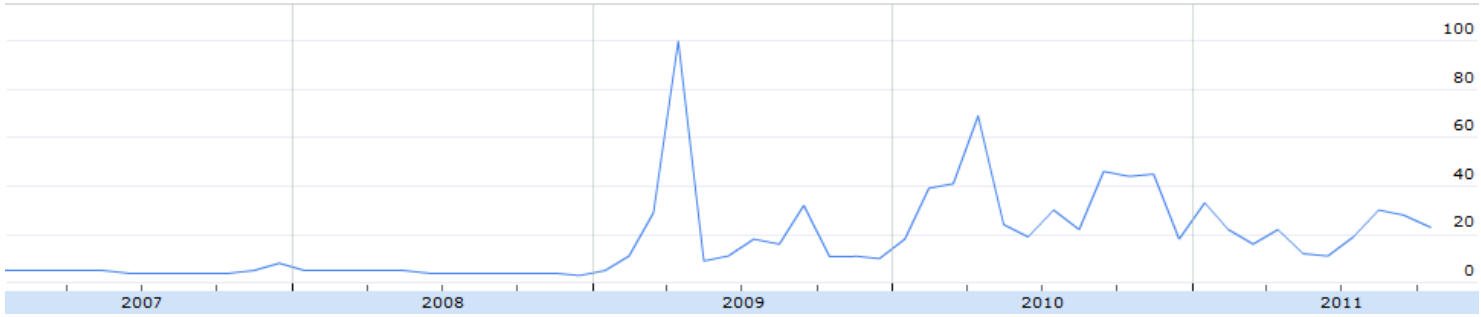

Figure 1. Web Search Level of Interest. This graph shows the evolution of the number of Google web searches for “Tea Party,” excluding “Boston Tea Party” searches, normalized by total web search volume and indexed to a peak search level of 100.

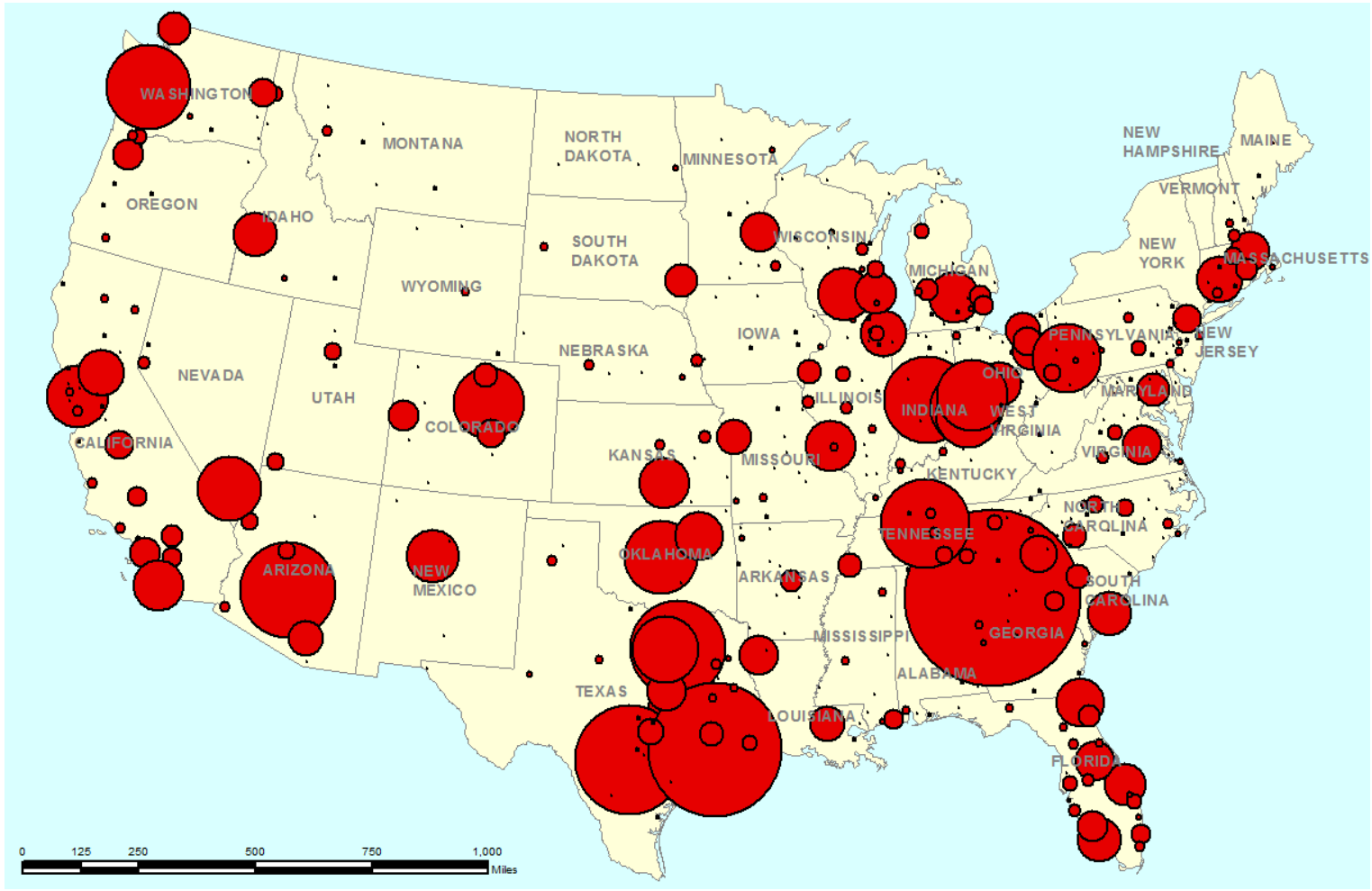

Figure 2. Tea Party Rallies on April 15, Tax Day, 2009. Total number of rallies is 581, with a mean attendance of 166 and a standard deviation of 1,004. Larger circles indicate higher rally attendance.

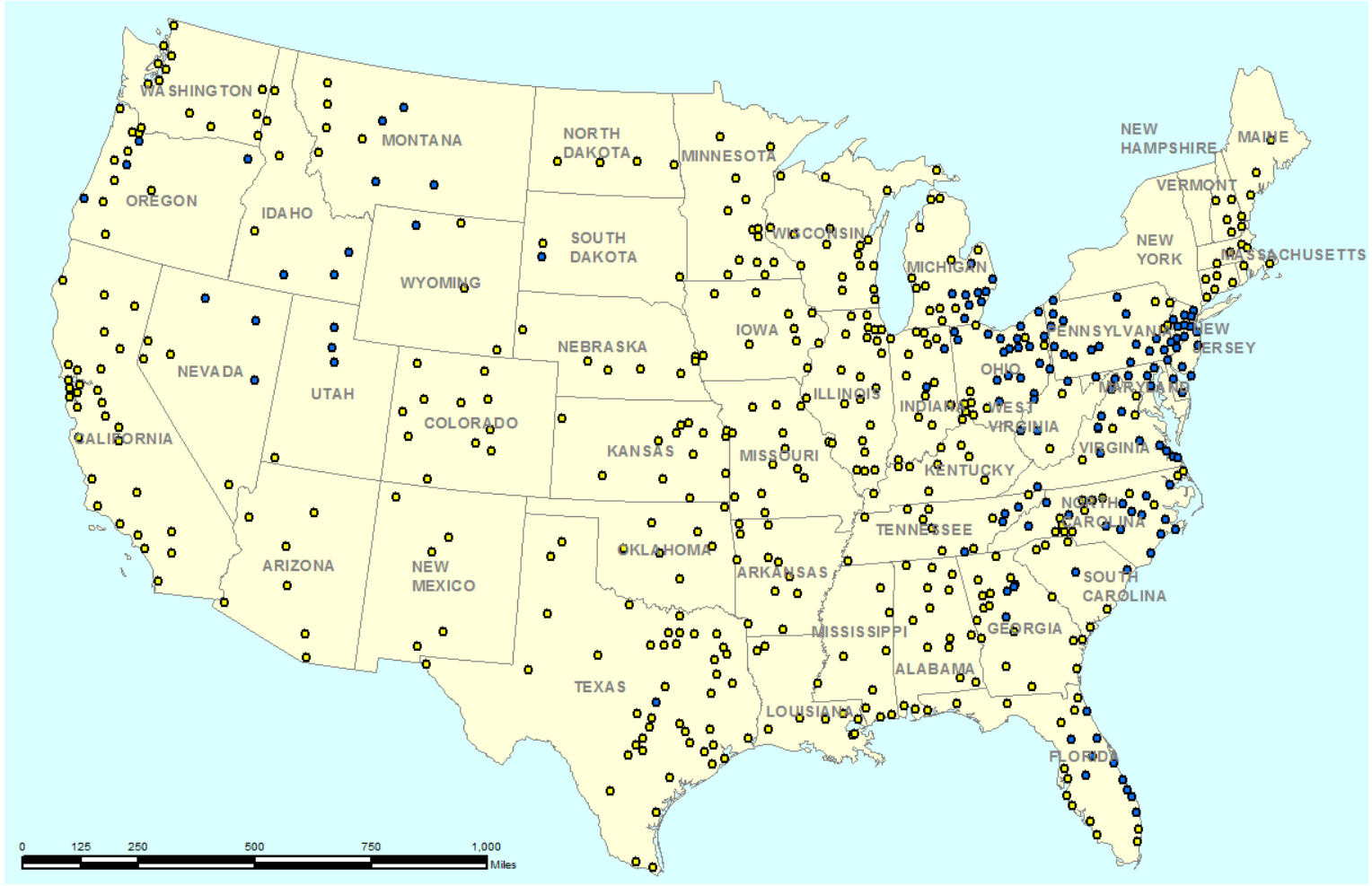

Figure 3. Tea Party Rallies on April 15, Tax Day, 2009. Total number of rallies is 581. Blue circles indicate rain, yellow circles indicate no rain.

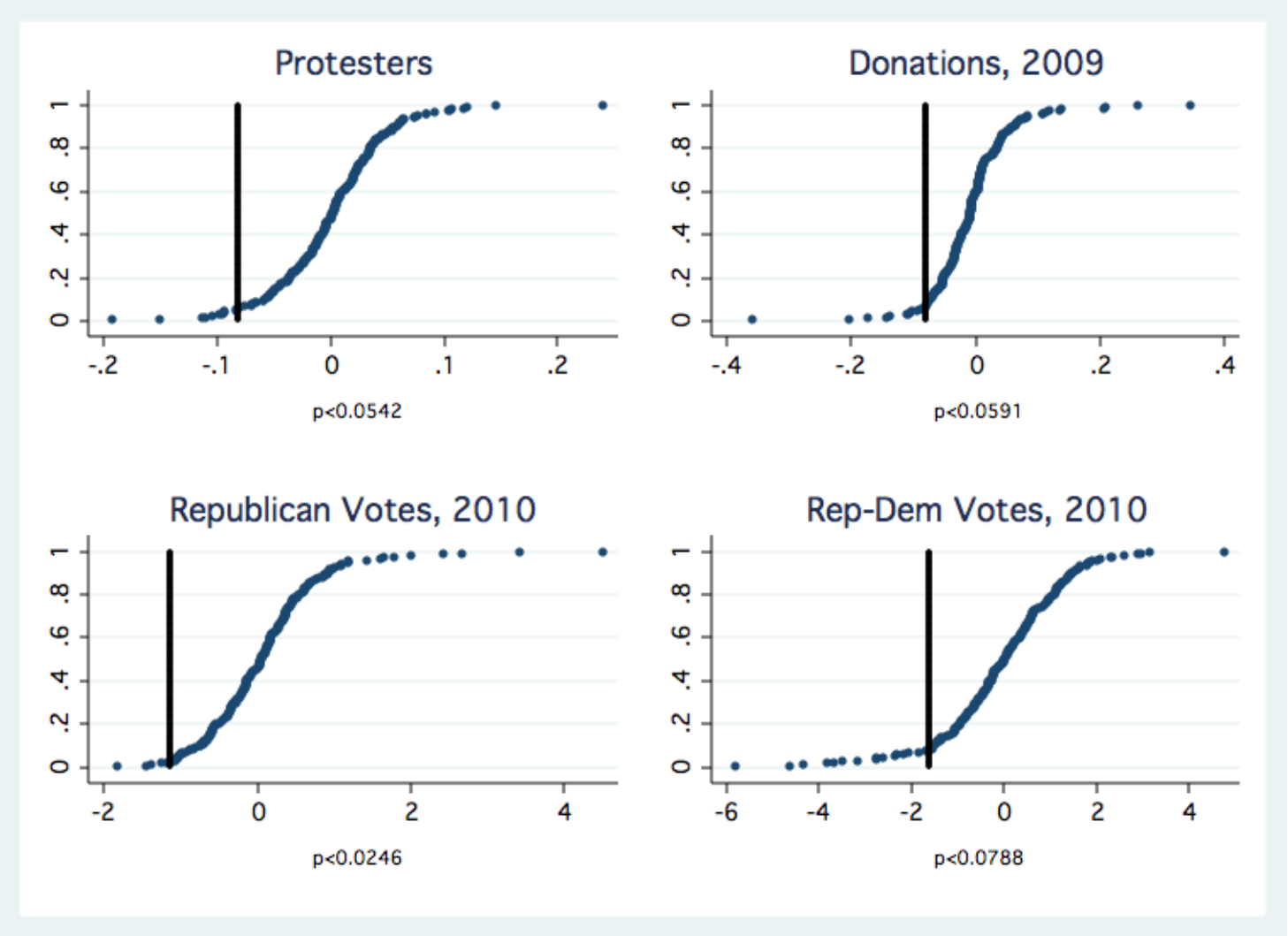

Figure 4. Thes graphs show the first-stage estimate of the impact of rain on rally size (top left), as well as the reduced-form estimate of the impact of rain on donations between April 15, 2009, and the end of the year (top right), the number of Republican votes (bottom left), and the difference between the number of Repubican and Democratic votes (bottom right), relative to the cumulative distribution function from the placebo dates: April 9, 11, 13, 15, 17, 19 and 21.

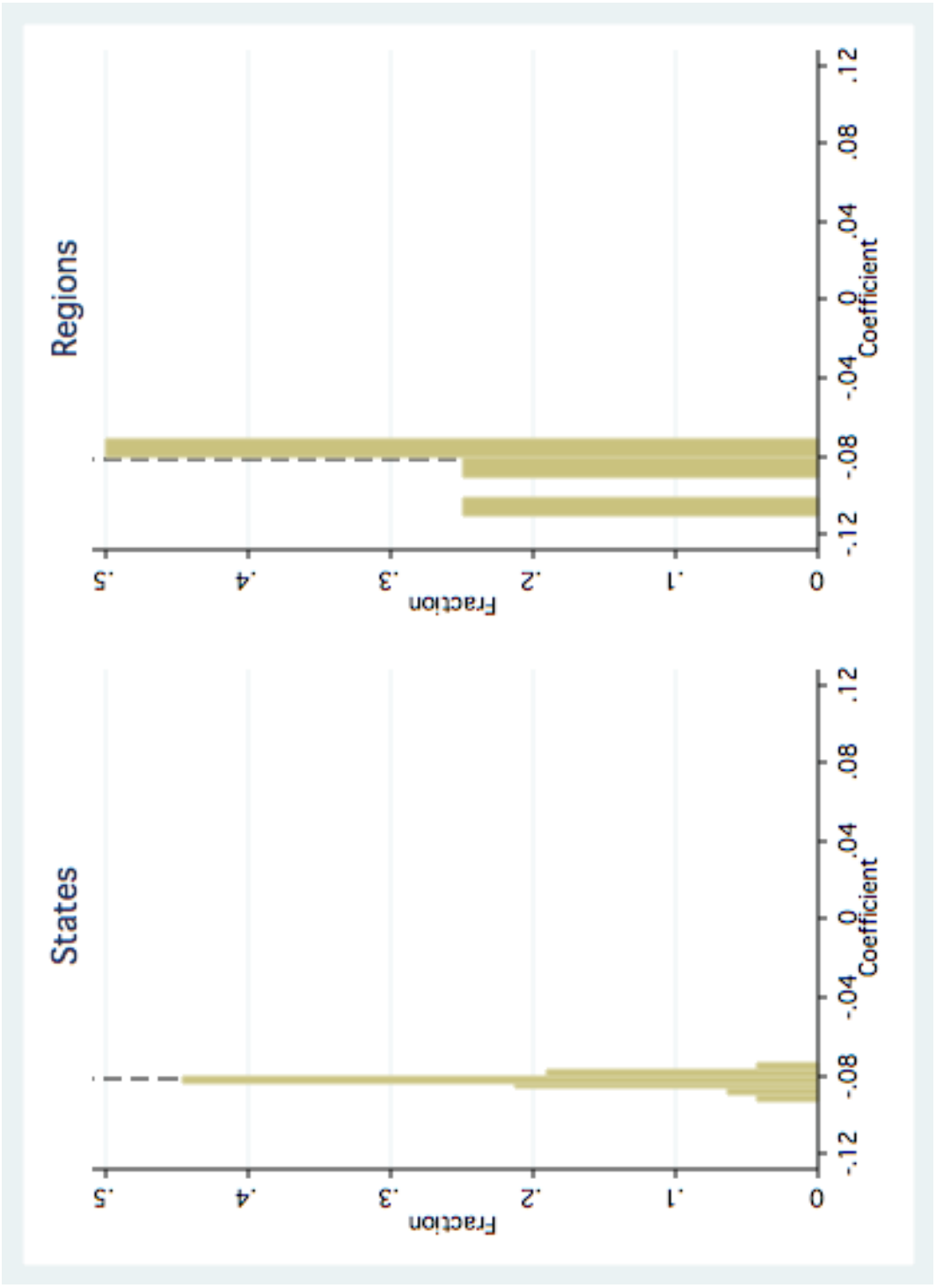

Figure 5. This histogram shows the distribution of first-stage estimates when states and regions are dropped one by one.

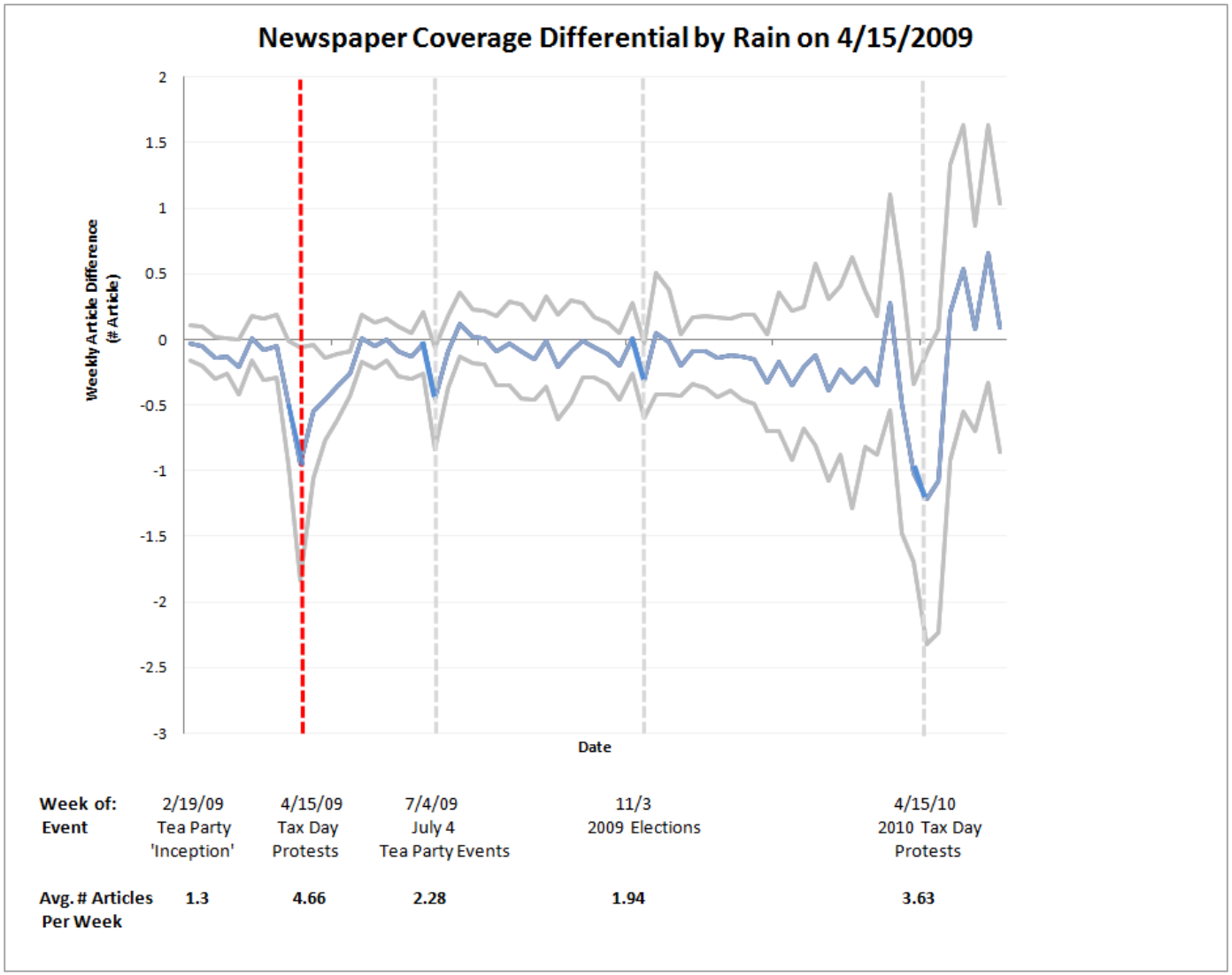

Figure 6. This graph shows the evolution of local media coverage generated by the Tea Party. Vertical red lines indicate April 15 2009 and April 15 2010.