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Do Political Protests Matter? Evidence from the Tea Party Movement

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

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December 17, 2012

Abstract

Can protests cause political change, or are they merely symptoms of underlying shifts in policy preferences? We address this question by studying the Tea Party movement in the United States, which rose to prominence through coordinated rallies across the country on Tax Day, April 15, 2009. We exploit variation in rainfall on the day of these rallies as an exogenous source of variation in attendance. We show that good weather at this initial, coordinating event had significant consequences for the subsequent local strength of the movement, increased public support for Tea Party positions, and led to more Republican votes in the 2010 midterm elections. Policymaking was also affected, as incumbents responded to large protests in their district by voting more conservatively in Congress. Our estimates suggest significant multiplier effects: an additional protester increased the number of Republican votes by a factor well above one. Together our results show that protests can build political movements that ultimately affect policymaking, and that these effects arise from influencing political views rather than solely through the revelation of existing political preferences.

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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 the exercise of these freedoms is in bringing about change. Though there are numerous historical episodes where political change has been associated with or preceded by political demonstrations, such as the French Revolution, the Civil Rights movement, and the recent Arab Spring, it is unclear to what extent these protests *caused* the change. Protests are likely to occur alongside other changes in society, and it is difficult to disentangle whether they cause political change or simply reflect unobservable changes in preferences and beliefs. Empirical evidence of the causal effects of protests is scarce. In fact, to our knowledge, there is almost no empirical work quantifying the causal effects of protests on subsequent political outcomes. It is an open question to what extent political protests cause political change, and this paper sheds light on these issues.

More specifically, 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 and one of the few such settings on which extensive data are available. The movement propagates an agenda that is systematically to the right of the status quo, which makes the measurement of policy 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 preset, it allows us to test whether the size of the protests on Tax 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 variation in rainfall during the day of the protest. The idea is simple: people are more likely to participate in protests if the weather is nice compared to when it rains. Nice weather on the protest day therefore leads to larger protests in certain places. Conditional on the likelihood of rain, rainfall is a random event, and whether it rains on the protest day is arguably uncorrelated with other factors that affect economic, or in the present case, political outcomes. 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. Even when relaxing this assumption, our estimates demonstrate the overall importance of these initial coordinating events on the movement's success.

We use data from a large number of sources to measure the influence of the Tax Day protests on the Tea Party. The importance of the initial protests on local movement strength is evident in outcomes as diverse as participation in Tea Party online social networks, political action committee contributions, the number of protesters at subsequent protests, media coverage in local newspapers, and survey measures of local political beliefs. We show that these political protests and the movements they built affected policymaking and voting behavior as well. Incumbent representatives vote more conservatively following large protests in their district, and a rain-free rally in the district increases the likelihood that a Democratic incumbent retires. Larger protests increase turnout in the 2010 elections, primarily favoring Republican candidates. We find evidence of sizable effects. In particular, our baseline estimate shows that every Tea Party protester corresponds to a 14 vote increase in the number of Republican votes. Our most conservative estimate lowers that number to 7. The Tea Party protests therefore seem to cause a shift to the right in terms of policymaking, both directly and through the selection of politicians in elections.

In assessing the mechanisms through which protests affect policy, we find that our results are not consistent with a simple information-revelation model of political demonstrations and movements.

The fact that an exogenous and observable shock to the cost of demonstrating has a persistent affect on local activism suggests that the protests operate by enabling social interactions and altering political preferences. In particular, we find that a temporary positive shock in rally 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 impact subsequent protests, as larger Tax Day rallies drive larger Tax Day protests in the following year. Finally, we provide survey evidence showing that the protests increased support in the general population in favor of the political views promoted by the Tea Party movement, such as the opposition to raising the income taxes of high earners. Together, these results are consistent with larger political protests creating a stronger political movement that is able to more effectively persuade the populace about its policy agenda come election time, which ultimately affects both incumbent behavior and election outcomes.

In addition to providing exogenous variation in rally outcomes, variation in rainfall can be used to assess the statistical significance of these results. In the paper, we compare the effect of rainfall on the true date of the rally to the distribution of placebo estimates of rainfall on other days. We find that none of the placebo dates 1980-2008 produces a cumulative effect as large as the effect estimated for Tax Day 2009. This finding, when combined with numerous additional robustness checks, demonstrates the reliability and significance of the results.

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). A limited number of papers have assessed the causes and consequences of political protests. An early contribution is Cicchetti et al.'s (1971) analysis of the November 1969 mobilization in Washington to end the Vietnam War using a travel-cost method to measure the willingness of participants to express their political views. More recent studies using individual-level data from West Germany (Finkel and Opp 1991; Finkel and Muller 1998) show that political party identification, dissatisfaction with public good provision, a belief that group action can be successful, and a belief in the importance of your own participation is correlated with the choice to participate. While these papers inform us about determinants of political activism, there is little research on the causal impact of political protests. One exception is Collins and Margo's (2004, 2007) work on the effects of the riots following the assassination of Martin Luther King Jr. on income, labor, and housing market outcomes for African-Americans. Similar in spirit to this paper, they exploit rain during the month of April 1968 as an instrument for riot severity. In this respect, we also connect to Madestam and Yanagizawa-Drott's (2011) use of daily rainfall to generate variation in outdoor participation on Fourth of July to study the impact of celebrating Independence Day.

Theoretical work has generally suggested that a sense of civic duty or consumption value drives political involvement (Downs 1957; Riker and Ordeshook 1968; Coate and Conlin 2004; Feddersen and Sandroni 2006). Political theorists rationalizing why people protest highlight explanations based on the importance of peer pressure within smaller political groups, often led by political entrepreneurs who provide selective incentives to protesters (McCarthy and Zald 1977; Uhlaner 1989; Oberschall 1994), on people's (unrealistic) perception that that they can be politically influential (Opp 1989), and on bandwagon effects where the cost of participation decreases in the number of people who attend (Kuran 1989).¹ However, these results leave the question of why protests would matter as instruments for political change unanswered.

One attempt to answer this question focuses on social dynamics within groups and networks of citizens, and their (potentially unintended) influence on individuals' desire to attain certain political goals (Zuckerman 2005). Another influential strand of papers, written by Lohmann (1993, 1994a, 1994b), emphasizes the role of information.² Lohmann (1993, 1994a) models the role of visible

¹In particular, Kuran shows how the turnout of extremists sets of a cascade of events that attracts more moderate participants later on.

²See also Bueno de Mesquita (2010) for an information model where a revolutionary vanguard engages in public

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 Lohmann's 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 incorporated into a full model of political protests. This argument is broadly consistent with the qualitative evidence presented by Skocpol and Williamson (2011). In their study of the Tea Party movement, based on interviews with activists and an extensive analysis of their (on-line) activity, they emphasize the role rallies played in shaping the movement: "From interviews and tracking local Tea Parties in public sources, we have learned that these groups were often launched by sets of organizers who did not know one another personally before they met in rallies or other protest settings" (Skocpol and Williamson 2011: 93). These local groups then helped sustain the momentum of the movement through regular meetings and grassviolence to mobilize the protesters.

roots organizing, often but not always facilitated by individual members' previous experience in other social institutions (Skocpol and Williamson 2011: 37-44), which could be seen as analogous to the value of preexisting institutions to the Civil Rights Movement in its heyday (McAdam 1985). We argue that it is through this mechanism, and not solely through the revelation of privately held, pre-existing, policy views per se, that initial rally turnout affected political and policy outcomes for the rest of the election cycle. It is, arguably, personal interaction that is the most effective campaign instrument of all (Green and Gerber 2008).³

The remainder of the paper is structured as follows. In Section II we provide background information on the Tea Party movement. Section III contains a discussion of the data we use. In Section IV we present the estimation framework and in Section V our empirical results. Section VI assesses the robustness of the analysis. In Section VII we discuss and interpret our findings before we conclude.

II The Tea Party Movement

II.A. 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 fund-raisers (e.g. Holmes 1991, Levenson 2007). More recently, starting in early 2009, a broader political movement coalesced under the Tea Party banner (McGrath 2010; see also Figure 2 for the evolution of Tea Party web searches relative to total search volume). The movement's supporters have come together in a loose coalition of national umbrella organizations that vary in their degree of centralization and ideological focus.⁴ Though the movement is unified by opposition to the Democrat-dominated fed-

³This is consistent with the finding of Bailey et al. (2011) that higher numbers of Tea Party activists in a given region correlate with more conservative electoral outcomes and Congressional voting patterns.

⁴The main organizations supporting the Tea Party movement are the non-profits Tea Party Express, Tea Party Patriots, Americans for Prosperity, FreedomWorks, and the for-profit Tea Party Nation. Among its 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, former House Majority Leader and FreedomWorks chairman Dick Armey, but also a range of national,

eral government and mostly supports Republican candidates for office, it is not explicitly partisan. For example, while some scholars have characterized the Tea Party's membership 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 an independent, populist grassroots phenomenon that wants to limit the role of government (Rasmussen and Schoen 2010). That said, there is broad consensus that the emanations of their endorsements and exaltations constitute a penumbra desire to shift policy "to the right," in an across-the-board conservative direction (see e.g. Skocpol and Williamson 2011).⁵

II.B. Tea Party Activism

The outbreak of the 2008 financial crisis triggered a substantial policy response from both the outgoing Bush administration and the incoming Obama administration. The Emergency Economic Stabilization Act of 2008 and the American Recovery and Reinvestment Act of 2009, in particular, involved extensive public resources in an effort to stabilize the U.S. economy, but also mobilized resistance on the political right. When CNBC Business News editor Rick Santelli delivered a televised and rapidly popularized attack on the U.S. government's plans to refinance mortgages and called for a "Chicago Tea Party," he inspired several, relatively small, local protests that took place in February 2009. As a broader protest movement started to take shape in the form of online and real-life "Tea Party" groups, plans for larger coordinated protests culminated in the first large national showing of activism on April 15, 2009 (Tax Day), when the groups held a large number of rallies across the United States.

state and local elected officials (Washington Post 2010) including Republican Congressmen Michelle Bachmann (Minnesota 6th District) and Allen West (Florida 22nd District), Senators Mike Lee (Utah) and Jim DeMint (South Carolina) and Governor Nikki Haley (South Carolina).

⁵For example, Tea Party Express, perhaps the best known of the Tea Party groups, claim to stand for six main principles: (1) Reduce the size and intrusiveness of government; (2) Stop raising our taxes; (3) Cease out-of-control spending; (4) No more bailouts; (5) Repeal Obamacare; and (6) Bring back American prosperity. http://www.teapartyexpress.org/mission. Available November 15, 2012.

[Insert Figure 1 about here]

There were approximately 440,000-810,000 individuals protesting nation-wide on Tax Day 2009 (for the data sources, see Section III). Figure 1 shows that more than 500 rallies took place across the United States. These rallies can be seen as the true starting point of the national Tea Party movement, as evidenced, for example, by the fact that it was the moment when most of the Tea Party activists interviewed in Skocpol and Williamson (2011) "got involved for the first time". Data from Google Insights over the period 2007-2011 on the intensity of web searches of the term "Tea Party" largely support this as well. These data are presented in Figure 2, and shows that such web searches became much more common around the time of the rallies in April of 2009. In this paper, we study the effect of these rallies on subsequent movement strength, on political beliefs in the population, and on political outcomes, both in elections and in the legislature.

[Insert Figure 2 about here]

After these initial protests, much of the organizational effort of the different Tea Party groups shifted focus away from public protests to fundraising and the construction of a more localized social-movement infrastructure (Skocpol and Williamson, 2011), and to direct engagement with the institutionalized political process. In the remainder of our paper, we study the importance of the 2009 Tax Day rallies to the effectiveness of these efforts in the year and a half that followed, up to the 2010 midterm elections. On the organizational side, we analyze the recruitment of volunteers by local Tea Party groups in different locales, turnout at the 2010 Tax Day rallies, the fundraising provess of Tea Party Express' Political Action Committee, Our Party Deserves Better PAC, and

changes in local political preferences. On the more directly policy-focused side, we assess the consequences that the 2009 rallies had for local politicians' decisions to retire, for election results, and for the votes cast by incumbent members of the House of Representatives.

III Data and Summary Statistics

To construct our dataset we extract information from a number of sources in order to collect data on rainfall, Tax Day rally attendance, Tea Party activism, media coverage, political beliefs, voting outcomes, and policymaking. The following subsections present these sources and how they are matched. Details on the data and how the variables are constructed can be found in the Data Appendix.

III.A. Rainfall Data

Information on precipitation comes from the National Oceanic and Atmospheric Administration and contains data from approximately 12,000 weather stations over the period 1980-2010. We construct our rainfall measure by aggregating the weather station data to the appropriate geographic level (county or congressional district) and then extract the mean daily rainfall (in inches). In our baseline measure, days with rainfall below 0.10 inches count as non-rainy; higher precipitation levels are defined as rainy.⁶ Based on historical weather observations for the period 1980-2008, we also create a measure of the probability that a county or congressional district will experience at least 0.10 inches of rain on a given day in April.⁷

III.B. Rally Attendance, Movement, and PAC Contributions Data

⁶A priori, it is unclear whether the deterring effect of bad weather is linear, convex, or concave in precipitation. We use the dummy specification primarily because of the simplicity in interpreting the estimates. In Section VI we show that the results are robust to the way rainfall is defined.

 $^{^{7}}$ We take the fraction of historical days that were rainy as defined by the 0.1 inch threshold. As rain across adjacent days tends to be positively correlated, we restrict our data to April 1, 7, 15, 21, and 30 to ensure that we use independent and identically distributed draws. In the end, this procedure yields 140 past realizations for estimating the rainfall probability. The results are not sensitive to the set of historical days we use. For example, the findings are robust to employing only April 15, or all days in April.

Three different sources allowed us to collect attendance estimates for the Tax Day rallies held on April 15, 2009: the 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 1 depicts a map of the 542 reported rallies that we have in our dataset. In the analysis, turnout is aggregated by county. As the sources sometimes differ in the number of attendees, we use the mean across all three as well as the maximum reported. While the mean is a reasonable approximation if the measurement error is classical, our estimates could be biased if discrepancies in the reports lead to a measurement error that is non classical.⁸ If less attended rallies occur in counties with small populations, and these events are more likely to be neglected, the measurement error would be correlated with population size. Our data show that the likelihood that one source fails to report a rally in a county when the other two do report declines in the county population. In addition, the within-county cross-source variance in turnout is decreasing in population size.⁹ To alleviate the concern of systematic misreporting, we therefore present estimates using both the mean and the maximum attendance across the three sources. We also report population-weighted per capita estimates to account for any population-driven variance. Overall, the mean and maximum suggest that approximately 440,000-810,000 individuals protested nation-wide on Tax Day 2009.

To measure local Tea Party activism, we use data from IREHR on the number of social network profiles posted on the websites of the five main Tea Party non-profit organizations and from Federal Election Commission campaign finance reports on donations to Tea Party Express. Our dataset includes the total number of profiles of the following factions: Tea Party Patriots, Americans for Prosperity and FreedomWorks, discussed above, as well as two smaller organizations, 1776 Tea Party and ResistNet. These groups maintain their own social networking sites, with minimal pri-

⁸A simple OLS regression of election outcomes on rally size results in attenuation bias if there is classical measurement error. In the appendix, we show that the OLS estimates are indeed smaller in magnitude than the instrumental variable estimates.

⁹See Figure A1 for these discrepancies in reported rally size.

vacy protections, allowing the IREHR to collect data on a daily basis since 2010. The "members" included are typically the leadership of local chapters. Though Tea Party affiliation is largely unofficial, these online profiles, much like donations to Tea Party Express, serve as reasonable proxies for the number of activists involved in local Tea Party organizing. The total number of profiles posted on these sites nationwide was approximately 150,000 in 2010. In addition to the membership measures we also gauge local Tea Party activism by including attendance data for 2010 Tax Day rallies from EconomyPolitics (2010).

Information on financial contributions in 2009 and 2010 to Our Country Deserves Better PAC, the fund-raising wing of the Tea Party Express, was obtained from the Federal Election Commission campaign finance reports. As the data is available at the individual donation level, we aggregate the information to the county level. The advantage of using this particular PAC is that it has no ties to a particular officeholder or region, and that federal campaign finance legislation limits individual contributions to \$5,000 per annum. It therefore provides a reasonable measure of grassroots support of the national Tea Party movement.

III.C. Media Coverage

To measure local media coverage of the protests we use news articles from the NewsLibrary database matched with the Audit Bureau of Circulations county-level circulation data. Newslibrary.com archives over 4,000 titles, but not those of large national newspapers such as the Wall Street Journal or the New York Times. We collected information on all articles from newspapers with circulation over 15,000 containing the phrase "Tea Party" from January 1, 2009 through June 20, 2010 and merged these data to geographic regions using the county-level circulation information. In the end, we were able to find location data for 255 publications across 46 states. To decide whether the area covered by a newspaper was rainy or not on a given day, we use the circulation-weighted amount of precipitation (and, as we do throughout, a cutoff of 0.10 inches). Over this

time period, these publications contained some 40,000 articles including the term "Tea Party."

III.D. Political Beliefs

To study whether the rallies affected public support for the Tea Party movement as well as political beliefs more broadly, we use the Evaluations of Government and Society Study from the American National Election Studies (ANES). Interviews were conducted in October 2010, weeks before the midterm election, and include a set of questions about the Tea Party and political opinions associated with the movement's leaders. The data also contain socio-demographic variables, voting behavior in the 2008 election, and each respondent's reported likelihood of voting in the 2010 midterm election. We have information for a total of 42 states at the congressional district level that we match with rainfall, census, and survey data.¹⁰

III.E. Election, Policy-making, and Demographic Data

Our political outcomes include election results in the 2010 midterm elections for the House of Representatives, the decisions of incumbent congressmen to retire prior to the 2010 midterms, and congressional voting assessments. To control for past electoral outcomes we use county- and congressional district-level data for the U.S. House of Representatives elections in 2006 and 2008 and the 2008 presidential election. The election data come from David Leip's Atlas of U.S. Presidential Elections. Information on incumbent congressmen's decision not to seek reelection was obtained from Wikipedia, while the ideological bent of congressional voting records is measured using yearly roll-call ratings from the American Conservative Union. Finally, socio-demographic county- and district-level data (income, population, race, immigrants, and unemployment) come from the 2000 and 2010 Census and the 2009 American Community Survey.

Table 1 presents summary statistics for our county-level pre-rally variables.¹¹ It shows that the

¹⁰The ANES lack county identifiers, barring an analysis at the county level.

¹¹There are 2,758 counties in our sample. We lose some counties because of a combination of lack of data on precipitation, demographics, and election outcomes.

counties that were plagued by rain are fairly similar in terms of past voting behavior, past donations to the Tea Party Express PAC, population, racial composition of the population, and unemployment compared to the rainless counties. Appendix Tables A1.a, A1.b, and A1.c contain descriptive statistics at the county, district, and individual respondent level for the precipitation measures and our outcome variables.

[Insert Table 1 about here]

IV Empirical Framework

The main challenge in measuring the effectiveness of these protests, and of political activism in general, is that unobserved political beliefs or a culture of activism are likely to be correlated with both the number of protesters and other political behavior such as voting.

How then do we assess the impact of 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 on an 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, voting for the Republicans in the 2010 mid-term elections, through rally attendance. This exclusion restriction seems plausible, though a valid concern is that bad weather may make a rally less pleasant for actual attendees, which itself energizes the attendees and the consequent movement less. We would then be measuring the effect of a combination of rally size and rally impact per attendee as determined, among other things, by the likelihood of new social ties forming.

A similar concern is that weather directly, rather than through the number of attendees, affects the likelihood that mass media cover the protests. If there is such a direct effect and media coverage of political protests affects voting behavior and policy-making, then the exclusion restriction would be violated. With these potential caveats in mind, we nevertheless believe it is useful to scale the effects of weather by rally attendance in order to get a quantitative measure of the importance of the Tea Party protests. We also present reduced form effects of protest day rainfall for all outcomes, where the exclusion restriction is not a necessary identifying assumption for our interpretations. These results demonstrate the overall importance of the demonstrations for future outcomes.

IV.A. Specifications and Hypotheses

To estimate the effect of the protests, we first investigate whether rainfall decreases attendance by regressing the number of protesters in a county on a dummy variable that indicates whether there was significant rain in the county. Specifically, we estimate the following equation:

$$Protesters_{c} = Rainy \, Rally_{c}\theta' + Probability \, of \, Rain_{c}\delta' + \mu_{r} + x_{c}\gamma' + \varepsilon_{c}, \tag{1}$$

where *Protesters* is a measure of rally attendance in county c, *Rainy Rally* is a dummy equal to one if there was rain in the county on the day of the rally (April 15, 2009), *Probability of Rain* is a set of dummies controlling for the likelihood of rain on the day of the protest, μ captures four U.S. Census region fixed effects, and x is a vector of pre-determined county covariates. In order to exploit weather variation across counties with similar baseline likelihoods of rainfall on the protest day, we control for the rain probability flexibly. Specifically, we include dummy variables corresponding to the deciles in the historical rain probability distribution. Since rainfall is likely to decrease attendance at the rallies, we expect $\theta < 0.^{12}$

Our baseline specification includes a set of pre-determined county controls. This inclusion is not

¹²As described in the data section, we use the average rally attendance from the three sources.

necessary for our identification strategy if rainfall is uncorrelated with other determinants of political outcomes, but will have the benefit of reducing residual variation and thus improve the precision of our estimates.¹³ The standard set of covariates include flexible controls for population size (decile dummies) and other demographic controls: log of population density, log of median income, the unemployment rate, the increase in unemployment between 2005-09, the share of white population, the share of black population, the share of Hispanic population (the omitted category consists of other races and ethnicities), and the share of immigrant population (in 2000). We also include election covariates: the county vote share for Barack Obama in the 2008 Presidential election and outcomes from the two preceding U.S. House of Representatives elections (the Republican Party vote share, the number of votes for the Republican Party in total or per capita, the number of votes for the Democratic Party in total or per capita, and turnout in total or per capita). Since the true functional form relating rainfall to attendance and later political outcomes is unknown, we present regressions with outcomes both in levels and per capita, where the per capita regressions are population weighted.¹⁴ For regressions in levels (per capita), we include election controls in levels (per capita) to match the outcome variables. The Appendix contains a detailed description of how the variables are defined and constructed.

¹³In Section VI we investigate the sensitivity of the estimates to the set of control variables and fixed effects. In general, the results are qualitatively and quantitatively similar. As described in the data section, we use the latest possible values (mostly from 2009), unless otherwise stated.

¹⁴Dickens (1990) demonstrates that population-weighting in geographically grouped data is only desirable when group sizes are small enough that the variance of the average of individuals is larger than the variance of the group component. For county-level observations group sizes are frequently quite small. More than 10% of the counties in our data have fewer than 5,000 residents, meaning that the individual error component in per capita election and (especially) Tea Party movement outcomes is large. While population-weighting can induce heteroskedasticity, a test recommended by Dickens to gauge this effect (i.e. regressing the squared residuals from the WLS attendance regression on population size) returns a small and statistically insignificant result. Additionally, measurement error is likely to be more problematic in small counties. For example, the gap between the largest and smallest rally attendance estimate in per capita terms declines with population size, and that relationship is statistically significant (see Appendix Figure A.1). Thus population weighting, or alternately a minimum population filter, is the correct approach and improves the precision of the per-capita specifications. Nevertheless, to demonstrate the robustness of our results, we include unweighted specifications for key outcomes in Appendix Table A.10. These tests similarly find that rain on April 15, 2009 negatively affected attendance and Tea Party outcomes.

Finally, we cluster the standard errors at the state level in all regressions.¹⁵

We then examine whether the protests affected the strength of the Tea Party movement and voting behavior, by using rainfall as a proxy for protest effectiveness in the second stage of our estimation:

$$y_c = Rainy \, Rally_c \kappa' + Probability \, of \, Rain_c \delta' + \mu_r + x_c \gamma' + \varepsilon_c, \tag{2}$$

where *y* is a variety of post-rally outcomes.

A limitation of these estimates is that it may be hard to interpret the size of κ , the coefficient on our rainfall dummy. We therefore also produce estimates that provide a per attendee scaling of the weather effect on later outcomes:

$$y_c = Predicted Protesters_c \lambda' + Probability of Rain_c \delta' + \mu_r + x_c \gamma' + \varepsilon_c,$$
 (3)

where y again represents a variety of post-rally outcomes. Now, rainfall may affect political outcomes through other channels than solely the number of attendees (e.g., if bad weather deters journalists from attending and cover the protests, which in turn hampers the local Tea Party movement's ability to promote or pursue its conservative agenda). If that is the case, λ cannot be strictly interpreted as the "causal" effect of protest size under identical weather conditions.¹⁶ If rainfall affects outcomes only through the size of the rally, we can give a strict causal interpretation to λ , which would be a consistent instrumental-variable estimator of the causal effect an additional protester on outcomes. If protests have heterogeneous effects on outcomes, we will identify the local average treatment effect (LATE) on counties where attendance is sensitive to whether it rains.

¹⁵Figure 3 depicts the residual variation in rainfall that identifies the model. As can be seen in the figure, there is variation within the various regions of the country. Clustering at the state level allows for arbitrary within-state correlation and assumes that there is no cross-state correlation. If there is substantial spatial correlation, this assumption may be too strong. In the robustness section, we show that inference is robust to alternative methods.

¹⁶According to Holland (1986), there can be "no causation without manipulation." In our case, the manipulation in attendance is the result of random weather shocks. In our concluding discussion we interpret the estimates as being driven by a change in the costs of protesting.

For example, if attendance by relative moderates is lower under worse weather conditions and has a larger spillover effect on other individuals, the LATE would be larger than the average effect.

As described in the data section, for a given county we use mean rally attendance from three reporting sources. In several cases the sources differ in the reported number of attendees, which indicates that there is measurement error. Using the mean is reasonable if the measurement error for a source is classical, since we will get unbiased estimates. Alternatively, these differences may be non-classical due to under-reporting, as one or two sources occasionally fail to report a rally that seems to in fact have taken place. To address this possibility, we also report estimates using the maximum reported attendance across the three sources. With this framework in mind, our main hypothesis is that the protests strengthened the consequent Tea Party movement and had a positive impact on votes for the Republican Party, $\lambda > 0$.

A natural channel through which the rallies may have had long-run effects is through increased local media coverage of the protests. Media coverage of a political movement can potentially serve as a device for spreading information about a movement's policy agenda, which in turn may energize and grow the movement, or persuade voters and policy-makers. To test this mechanism, we estimate the effects of weather on the protest day on local newspapers' coverage of the Tea Party movement by calculating weekly article totals for the Newslibrary sample of local newspapers that were matched to the Audit Bureau's 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 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. By estimating week-by-week effects using an equation analogous to equation 2, we can test whether rainfall affects media coverage immediately after the rallies, as well as whether there is an

effect on later events that were important to the Tea Party movement.¹⁷

To assess whether the protests increased support for the movement and its political views, we use the ANES survey data on political beliefs. District identifiers for survey participants are matched with district rainfall, which enables us to estimate a specification that is essentially identical to equation 2, using respondent outcomes, covariates, district rain probability and population size decile dummies, log population density, and region fixed effects:

$$y_i = Rainy \, Rally_i \beta' + Probability \, of \, Rain_i \delta' + x_i \gamma' + x_d \theta' + \varepsilon_i, \tag{4}$$

The covariates on socio-demographics are age, education, race, income, unemployment status, rural, and foreign-born status. Pre-determined election covariates, from 2008, are dummies indicating whether the respondent voted for the Republican Party in the election for the House of Representatives.¹⁸

Finally, political protests can affect not only election outcomes, but also policymaking. The Tea Party movement, generally speaking, pushed for more conservative policies. To investigate whether the Tea Party protests were successful in achieving this goal, we estimate the reduced-form relation-ship between rain during the protests and later policy-making outcomes in congressional districts, where the outcome variable is a measure of conservative roll-call votes as provided by the American Conservative Union (ACU), or a dummy variable indicating whether the incumbent congressman decided to retire prior to the 2010 midterm election. The scores measure the percentage of the scored votes that accord with the ACU position and are scaled from 0 (most liberal) to 100 (most conservative). As the ACU scores are available for every year, we estimate separate cross-sectional

¹⁷As we do not have election and demographic data at the newspaper level, the media regressions are estimated without these covariates. Since the unit of observation is different from counties, we also do not scale the effects by rally size.

¹⁸Since we do not have rally attendance at the district level, we are unable to scale the weather effect by attendees.

regressions for 2009 and 2010 along the lines of equation 2:19

$$y_d = Rainy \, Rally_d \beta' + Probability \, of \, Rain_d \delta' + \mu_r + x_d \gamma' + \varepsilon_d, \tag{5}$$

where we include the same set of demographic and election controls employed in the countylevel regressions. In addition, we also account for the past two years of ACU scores (decile dummies) and the identity of the victorious party in the last two elections (dummy variables identifying whether the past two elections were won by the Democrats, Republicans or a combination of the two).²⁰ We use equation 5 to test the hypothesis that the Tea Party protests affected policymaking in a conservative direction through roll-call voting by incumbent congressmen, or through selection of politicians by differentially affecting Republican and Democratic incumbents' likelihood of retirement. Our hypothesized underlying mechanism for this effect is that a lack of rain increased protest attendance (equation 1), which strengthened the Tea Party movement and shifted the electorate towards more conservative policies (equations 2-4), which policy-makers ultimately responded to for re-election purposes (equation 5, $\beta < 0$).²¹

IV.B. Exogeneity Check

A key identifying assumption is that rainfall in equation 1 is uncorrelated with other determinants of political outcomes. As shown in Table 1 above, rainy and non-rainy counties are quite similar on average. To more carefully address potential concerns regarding our identifying assumption in equations 1-5, we present exogeneity checks at both the county and the district level. Table 2.a shows the estimates produced by regressing pre-rally values of outcome variables on a dummy variable representing whether it rained on Tax Day 2009. The dependent variables used include

¹⁹In later sections, we discuss how the dynamics provide useful information about the underlying mechanisms.

²⁰As the ACU score distribution is bi-modal with Democrats and Republicans clustered around different means, a change from one party to the other can have a large impact making our estimates imprecise. We increase precision by including controls for such shifts in the past to capture prior differences across districts that account for the switching.

²¹In the final section we present a simple conceptual framework for why rainfall would have reduced-form effects on policy-making, and how leading alternative mechanisms would be difficult to reconcile with such effects.

the results of the 2008 House and presidential elections, as well as pre-rally donations to Tea Party Express. The regressors are identical to equation 1, with the exception that the 2008 political covariates are omitted and instead constitute the outcome variables. Table 2.a shows that the rainfall dummy in our specification is not significantly correlated with any of the pre-rally political outcomes.

Table 2.b presents the district-level estimates for the regression equivalent of equation 5 for the American Conservative Union's roll-call scores in years before the rally, where covariates analogous to the those in equation 5 are included for roll-call scores and election outcomes in preceding years. The rain dummies do not contribute significantly to explaining the variation in roll-call scores in any of these cases. Together, Tables 2.a and 2.b lend credibility to our identification strategy.

[Insert Table 2.a and 2.b about here]

Tables 3 through 8 contain our central results, which we are now ready to explore.

V Results

V.A. The Effect of Rainfall on Rally Attendance

Table 3 presents the estimates of equation 1. It shows that rainfall during the day of the protests decreased attendance at the Tea Party Tax Day rallies. Columns 1-4 estimate the effects in levels, where the dependent variable is measured in thousands of protesters. The estimate in column 1 uses the mean attendance across the reporting sources, and implies that rainfall decreased attendance by 96 protesters (t = 4.25) on average. Given a sample mean of 160 protesters, rainfall decreases rally size by approximately 60 percent. To address the possibility of measurement error

and under-reporting, which may lead us to overestimate the importance of rally size (see section IV.A.), column 2 estimates the effect using the highest reported attendance across the three sources. The estimate indicates that bad weather decreased attendance by 190 protesters (t = 3.71), or, analogously, a 65 percent reduction in rally size. Column 3 further shows there is a significant relationship when we instead use the precipitation amount (hundreds of inches), and column 4 shows that rainfall decreases attendance when the equation is estimated on the sample of 542 counties for which there was a reported rally.²² Columns 5-8 present results for analogous specifications where the outcome variable is scaled by population size, and show a similar pattern of highly significant coefficients. The estimates in column 5 imply that rainfall on the day of the rally decreased the share of the county population protesting by 0.082 percentage points (t=3.98), and the upper bound estimate using the highest reported number of attendees in column 6 implies a 0.17 percentage point (t=3.69) deterrent effect of bad weather.²³ Finally, when the dependent variable is scaled in logs, we find that rainfall decreases the rally size by approximately 60 percent (0.473 log points, column 9), which is consistent with the previous results.²⁴

[Insert Table 3 about here]

²²Conditioning the sample will introduce a bias if rainfall decreases the likelihood that there is a rally, so this estimate should be interpreted with caution. In fact, precipitation is negatively correlated with the likelihood of having a reported rally (results not shown for brevity). Nevertheless, we present the estimated coefficient for the interested reader.

²³In Appendix Table A8, we investigate whether the "complier" counties, i.e. counties where the protest size responds to rainfall, are counties of a particular political leaning. We do so by dividing counties into categories reflecting whether they are Republican leaning, Democratic leaning, or swing counties in the 2010 midterm election, based on the predicted Republican vote share from previous elections and socio-demographics. We show that weather has an effect on protest size in all three types of counties, which is useful to keep in mind when interpreting the effects of the protests on other outcomes presented below.

²⁴Since the natural logarithm is undefined at zero, this regression is estimated on the sample of reported rallies. Also, to be consistent across specifications the election covariates are measured in logs (see section IV), which reduces the sample further by excluding observations where there were zero votes for a party in the preceding elections (i.e., uncontested races). The point estimate is, however, very similar whether the election covariates are measured per capita or completely dropped.

V.B. Movement Outcomes

One of the primary mechanisms through which protests are thought to influence policy is by strengthening their associated political movements. Historically, it has been difficult to obtain data on this type of activity, but the Tea Party's online-era birth allows us to measure local activism along some dimensions. For example, though Tea Party affiliation is largely informal, the number of social network profiles posted on the websites of the five 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 and it has provided us with geocoded tallies as of July 1, 2010. In addition, we use information on numbers of donors to Tea Party Express. Table 4 shows that lack of rain during the 2009 Tax Day rallies caused more local organizers; column 1 implies non-rainy counties on average have 11 more organizers compared to rainy counties (significant at the one percent level), or approximately an increase of 19% from a sample mean of 57. When estimated as a percentage of population (the dependent variable is between 0 and 100 percentage points), the coefficient in column 2 implies that a lack of rain leads to 0.0077 percentage points lower share of the population self-declaring to be local Tea Party organizers. When making the additional assumption that the effects are driven by larger attendance at the rally, the 2SLS estimates of equation 3 imply that 100 additional protesters lead to 5.7-11.3 additional local organizers on average (columns 3 and 4). Alternatively, a one percentage point increase in the number of protesters caused a 0.045-0.093 percentage point increase in the share of the local population joining the Tea Party movement as self-proclaimed organizers (columns 5 and 6). While the absolute magnitudes are modest, relative to overall activity measured by these social networking sites, the effect of Tax Day rain is substantial. The overall impact of Tax Day rain on participation may be considerably larger if unmeasured involvement is similarly effected.

We provide further evidence that protests can function as a device to build a movement and have a persistent effect on future activism, by estimating whether they increased participation in the Tax

Day rallies the following year (i.e., on April 15, 2010).²⁵ Columns 7 and 8 of Table 4 show that a lack of rain during the 2009 rallies indeed led to higher attendance during the 2010 rallies; a rain-free rally in 2009 caused 73 more attendees in 2010 (column 7, significant at the one percent level), or, alternatively, a 0.065 percentage points higher share of the population (significant at the five percent level). This is a non-trivial effect, since the average number of attendees in 2010 was 69 protesters, which implies that lack of rain in 2009 approximately doubled the size of the protests locally the following year.²⁶ Scaled by attendees, the 2SLS estimates in columns 9 and 10 indicate that 100 additional protesters in 2009 caused an additional 38.5-76.0 protesters in 2010.²⁷ Thus, Table 4 lends credence to the idea that protests can facilitate the building of a movement, and that protests beget protests.

[Insert Table 4 about here]

V.C. Monetary Contributions

The strength of a political movement can partly be assessed by the willingness of its supporters to contribute in monetary terms. Table 5 presents the effect of rain on the day of the rally on contributions to one of the key Tea Party Political Action Committees (Our Country Deserves

²⁵In a previous version of the paper we also studied a small number of anti-Affordable Care Act townhall meeting protests held during the summer of 2010. However, these findings proved sensitive to the construction of the rain measure, and we are not confident enough in those results to claim that turnout at these protests was higher in districts where it rained on Tax Day 2009.

²⁶This effect is quite large, but partly comes from the fact that attendance in 2010 was lower across the board than in 2009 (average of 1,601). One explanation for this decline in rally attendance is provided by Skocpol and Williamson (2011: 85): "Following the big DC rally in September 2009, more of the same seemed "anticlimactic," explains Lynchburg Tea Partier *John Patterson*.

²⁷Since we lack data to identify which individuals that attend the protests, it is unclear to what extent it is the same individuals that show up at the protests the following year, or whether the initial protests lead to new protesters.

Better PAC). The reduced-form regressions in Columns 1 through 6 demonstrate that lack of rain on the date of the rally significantly reduced contributions from the individuals residing in the county. The estimates on the rain dummy in columns 1 and 2 are for 2009 post-rally contributions, and imply that good weather caused approximately a \$76 increase, or a 0.00032 U.S. dollar per capita increase (significant at the ten and five percent level, respectively). Columns 3 and 4 provide further evidence that the protests had a persistent and strong effect on support for the movement, as rain-free rallies lead to a \$286 increase in 2010 contributions (\$0.0011 per capita).²⁸ Given the sample means, they correspond to a 38 percent increase in 2009 contributions and 33 percent increase in 2010. Columns 5-10 estimate the effect on the sum across the two years. The scaled results in columns 7 and 8 indicate that an additional 100 protesters increased contributions by \$190-375, or, alternatively, that a one percentage point increase in the population protesting lead to \$0.8-1.7 increase in per capita contributions.²⁹ Together with the effects presented in Table 4, our results show that political rallies can trigger both growth of and support for a movement as individuals volunteer as organizers and contribute monetarily, and that such effects can last for extended periods of time.

[Insert Table 5 about here]

V.D. Media Coverage

²⁸Since we are interested in how the protests and the movement affected the 2010 midterm elections, the 2010 data contain contributions up to the November elections.

²⁹This increase in monetary contributions may seem small in absolute terms, but the data we use are for only one specific PAC. As mentioned above, the advantage of using this particular PAC is that it has no ties to a particular officeholder or region. Federal campaign finance legislation also limits individual 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. Again, if contributions to other affiliated groups are similarly affected, the total monetary impact could be substantial.

An additional mechanism through which protests can create support for a movement and further its policy agenda is media coverage. That is, if mass media report on the protests and the policies promoted by the protesters, the movement may itself be energized, or get the attention of the general population and, ultimately, policy-makers. Figure 4 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 per week and newspaper or about 20-25% of the mean level of coverage. We interpret this effect as resulting from media finding it worthwhile to cover and report on a protest if it is sufficiently large, rather than small and insignificant (or, of course, non-existent). The remainder of the figure tracks the effect of rain on April 15, 2009 on coverage in subsequent weeks. 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. This is consistent with the idea that media report on political activism once it is sufficiently substantial in magnitude. 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. This means that even though there is no clear constant increase in media coverage of the movement in rain-free areas, we cannot exclude that some of the effects we find are reinforced by spikes in media coverage around key protest dates.

[Insert Figure 4 about here]

V.E. Political Beliefs

As mentioned in Section II, the protesters commonly displayed discontent with the state of affairs in the country, and the movement was broadly promoting a conservative-libertarian political agenda. Table 6 presents survey evidence showing that the protests increased popular support for the movement, and that the local population adopted political opinions typically expressed by the protesters and the Tea Party's leaders.³⁰

[Insert Table 6 about here]

Respondents in non-rainy districts are approximately 6 percentage points more likely to express strong support for the Tea Party movement (column 1). From a sample mean of 12.0 percent, this corresponds to approximately a 45 percent increase in the number of Tea Party supporters a year and a half later. Good weather also produced more favorable views towards former Alaska Governor Sarah Palin (column 2), who was one of the movement's most outspoken leaders in 2010.³¹ According to the estimates, the discontent expressed by the protesters spilled over to the local population, as 26 percent more individuals in non-rainy districts report they feel outraged about the way things are going in the country (column 3 shows a 4.6 percentage point increase). There is also evidence that the protesters' and movement's small-government, largely libertarian and anti-Obama views spilled over to the population: respondents are 5.8 percentage points more likely to oppose raising taxes on incomes above \$250,000 (column 4), 6.5 percentage points more likely to believe that Americans have less freedom compared to 2008 (column 5), and 4.6 percentage points

 $^{^{30}}$ All regressions include demographic controls. The results are robust to the exclusion of the controls, with similar point estimates, and significance at least at the same levels (results not shown for brevity). As attendance data is not available at the district level, we do not scale these estimates.

³¹For example, she participated as a speaker in the rallies organized throughout the country as a part of the Tea Party Express Bus Tours of 2009 and 2010. She was, of course, also the Republican Vice-Presidential candidate in 2008.

more likely to have unfavorable feelings towards President Obama (column 6). Following Kling et al. (2004) we also derive the average effect across all outcomes.³² Column 7 presents the average belief effect of rally rainfall on the family of political beliefs and shows that rain reduced preferences in line with the Tea Party's agenda by 0.13 standard deviations, on average (significant at the one percent level). Finally, column 8 provides evidence suggesting that the protests (and consequent growth of the Tea Party movement) not only affected beliefs in a conservative direction, but also faciliated mobilization of voters. When asked to assess the percentage likelihood that the respondent will vote in the midterm elections, individuals living in non-rainy districts report a 6.7 percentage point higher likelihood of turning out.³³ Next, we investigate how the Tea Party protests affected actual voting behavior during the 2010 midterm elections.

V.F. Election Outcomes

Were the Tea Party protests effective? One of the key goals for any movement is to convince the general population of the desirability of its policy agenda. We assess the effectiveness, or success, of the Tea Party protests by estimating how they affected voting in the 2010 U.S. House elections. Table 7 provides evidence that the rallies led to more votes for Republicans as well as a larger Republican vote share. Columns 1 and 2 present the reduced-form effects, which show that counties that lacked rain during the protests saw 1,370 additional Republican votes on average, or a 1.04 percentage points larger share of the population voting for the Republican Party in the county. Scaling the effect by the number of protesters, columns 3-6 suggest that 100 additional protesters led to 720-1,420 additional Republican votes, or, alternatively, that a ten basis point increase in the population protesting increased the share of the population voting for the Republican Party by 0.6-1.2 percentage points (significant at the one percent level). Columns 7-12 show that there is little

 $^{^{32}}$ Kling et al. consider the measure of average effect size τ over the family of K outcomes in which each effect of rainfall (in our case) is normalized by the comparison non-rainfall district's standard deviation of the outcome. See Section VI for an extensive discussion of how we construct the average-effect measure for our study.

³³The survey was conducted approximately two weeks before election day.

evidence that the protests affected votes for the Democratic Party, which suggests that the Tea Party protests, together with the consequent increase in media coverage and the support of the movement, affected turnout in favor of the Republican Party. Since the marginal protester brings an additional 7 to 14 votes to the Republican camp, these estimates provide additional evidence indicating that political protests have large spillover effects on non-protesters.³⁴ Columns 13-16 estimate the electoral advantage for the Republican Party, where the outcome variable is the Republican vote share. The effects are non-trivial, implying that lack of rain increased the Republican vote share by 1.55 percentage points (significant at the five percent level), and that a 0.1 percentage point increase in the share of the population protesting led to a 0.9-1.8 percentage points increase in the Republican vote share. ³⁵ Column 16 shows the implications at the congressional-district level: good rally weather raises the Republican vote share by almost 2%.³⁶ In other words, our results show that the Tea Party protests were highly effective in getting voters out and bringing electoral success to Republicans in the 2010 House of Representatives election.

[Insert Table 7 about here]

³⁴The 95 percent confidence interval also rejects the null hypothesis that the coefficient is equal to 1 (i.e., that there are no multiplier effects). We provide a discussion below as to how such spillover effects may arise. Also, the 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, higher contributions, and more conservative beliefs locally, thereby creating momentum reminiscent of the momentum caused 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."

³⁵In Appendix Table A9, we compare the scaling estimates to the OLS estimates. In general, the OLS estimates are smaller in magnitude. This may be due to several reasons. First, as described in the data section and depicted in Figure A1, there is non-trivial measurement error in the reported rally size. This can lead to attenuation bias that the scaling estimates are not subject to, since measurement error is purged in these estimate. Also, as the measurement error is likely to be non-classical and driven by under-reporting for small counties, population weighting partly addresses this. Unweighted regressions result in even larger 2SLS estimates, shown in Appendix Table A9, since more weight is put on smaller counties with under-reported rally size. Second, under the exclusion restriction and heterogeneous effects, the scaling estimate captures the local average treatment effect. This may be larger than the average effect of protest size. One reason for this may be that weather also affects attendance in counties with many potential swing voters that are more easily swayed to vote for the Republican Party (see Appendix Table A8). Finally, as mentioned in section IV, rainfall may affect voting behavior not only through the size of the protests, but also by directly increasing media coverage of the protests, which in turn has an effect on voting behavior.

³⁶As the rally size data is at the county level, we do not scale the effects in terms of per-rally attendees.

Assessing the nation-wide impact of the Tea Party protests based on our estimates is a difficult task. First, there could be spillover effects that we are not able to capture within our regression framework. Also, the scaled estimates using rainfall as an instrument will capture the local average treatment effect, which may differ from the average effect of protesters, or the effect under identical weather conditions. Finally, if the functional form is miss-specified or the exclusion restriction of equation 2 is violated, the estimates would misrepresent the true average causal effect. With these caveats in mind, we do a simple back-of-the-envelope calculation assessing the nation-wide impact of the Tea Party protests, using the most conservative estimates of equation 2. According to our data across all 542 reported rallies, there were an approximate 440,000-810,000 individuals protesting nation-wide on Tax Day 2009. When we use our most conservative per-protester estimate (that is, the regressions with the maximum number of protesters for the rally size), the protests lead to an estimated 25,000-46,000 additional local Tea Party organizers, 170,000-310,000 additional protesters during the 2010 Tax Day rallies, and an increase in donations to the Tea Party Express's PAC of \$840,000-\$1,540,000. Furthermore, these protests had an estimated nation-wide effect on the 2010 midterm election corresponding to 3.2-5.8 million additional votes for the Republican Party in the 2010 House elections.³⁷ Our results can thus be seen as providing support for the commonly held notion that the Tea Party Movement played an important role in the Republican Party's landslide win in the 2010 House elections. Our results also indicate that the initial nationwide Tea Party protest during Tax Day in 2009 was key in building the Tea Party movement and driving the conservative shift in the electorate.

V.G. Policy Outcomes

Ultimately people care about political rallies and movements because they have the potential to

³⁷The calculations are based on multiplying the total number of protesters with the per-protester scaled estimates. They are taken from column 4 and 10 of Table 4, column 8 of Table 5, and column 4 of Table 7, respectively. These are, of course, point estimates, and as such one should take into account that there is uncertainty about the true value of the coefficient. For a highly conservative measure, one can take the lower bound of the 95 percent confidence interval, in which case the estimated nation-wide effects are much smaller.

change policy. One channel is through elections. Another is through policy-making by incumbents. 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. We therefore test whether exogenous movements in the size of Tea Party rallies across districts impacted the voting record of representatives as evaluated by a group with similar political preferences. Each year the American Conservative Union assigns each congressman a score based on their votes on a select number of bills 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 rally turnout at the district level, we only report reduced-form results from estimating equation 5.

[Insert Table 8 about here]

Columns 1 through 4 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 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 less conservative by 1.9 to 2.8 ACU points in 2009 (significant at the five and one percent level, respectively), when the sample mean equaled 41.³⁸ For comparison, the difference between the average Democrat and the average Republican is about 85, while the standard deviation within the Republican caucus is about 12.5. The effect in 2010 is estimated at 3.2-4.3 points (significant at the one and five percent level), with slightly lower point estimates

 $^{^{38}}$ In column 1 we estimate the effect on the full sample of all congressmen. However, since a substantial fraction of representatives did not vote on all the bills scored by the ACU, we provide estimates on the sample of representatives that actually voted on all the 25 scored bills in 2009 (24 in 2010). The sample size is therefore smaller.

when taking the 2010-08 difference. As the ACU score is based on 24 roll call votes on which the ACU has an explicit position, with one vote for the conservative position giving a score of 100/24, the effect of non-rainy rallies corresponds to approximately 1 additional conservative vote in 2010 on average. The fact that the estimates in 2010 are slightly larger suggests, again, that the policy impact of the initial rallies does not fade over time. It is also important to note that changes take place before the congressional elections in 2010 replaces 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. Still, the significant impact of Tax Day rain suggests that these results may indicate substantive shifts in voting records rather than just symbolic changes. Also, columns 7 and 8 show that there is an additional selection effect through the re-election behavior of incumbents: no rain on the day of the rally is estimated to make it about 9.4 percentage points likelier for Democrat incumbents to retire, while there is no such effect for Republican incumbents. This suggests that the Tea Party protests were effective in shifting the electorate towards more conservative policies (as shown in Tables 6 and 7), which forced some Democratic incumbents into retirement.

To summarize, we find that the weather-driven exogenous variation in rally attendance on Tax Day 2009 affected the eventual impact of these rallies. Where it did not rain, the number of local Tea Party activists was larger than where it did. Grassroots organizing increased, as did contributions to associated PACs and attendance at subsequent rallies. The population at large adopted the conservative-libertarian views of the protesters, and voter mobilization rose. This then led to more conservative voting both in the 2010 midterm elections and in the U.S. House of Representatives, and encouraged Democrat incumbents to retire.

VI Robustness

To assess the sensitivity of the results to our baseline econometric specifications we perform a set of robustness tests. The outcomes of these tests are presented in a series of tables in the Appendix.

VI.A. Specification

First, in Tables A2.a and A2.b we show that the main results are robust to how the covariates are specified. Specifically, we run regressions excluding the demographic covariates (panel A) or the region fixed effects (panel B), as well as a specification with flexible covariates (panel C).³⁹ The estimated coefficients in these regressions are of the same sign, similar in magnitude and significant at the five percent level for all outcomes.⁴⁰ It should be noted that the point estimates are generally less precisely estimated when covariates are excluded (e.g., see Table 7, columns 13 and 16, for comparisons with our baseline specification). When covariates are excluded for the Republican vote share outcome, the point estimate is significant at the ten percent level or insignificant at the county level, while it remains significant at the five percent level at the congressional-district level (panel A and B, columns 13 and 14). The district-specific results in Table A2.b are quite similar to the main results in terms of significance and magnitude for ACU scores, incumbents' decision to retire, as well as average political belief effect. In sum, our findings are practically insensitive to the set of covariates included in our baseline specification.

Second, we present results using different measures of rain on the day of the protest in Tables A3.a and A3.b. In particular, we use a higher precipitation threshold for the rainfall dummy (panel A), the natural logarithm of the precipitation amount (panel B), or a rainfall dummy that uses all weather stations within 10 miles of the county centroid as opposed to the stations within a county's borders (panel C). In Panel A, the coefficients are estimated using a precipitation threshold for significant rain defined at 0.35 inches, instead of the baseline specification of 0.1 inches.⁴¹

³⁹In the flexible controls specification, we include 9 dummies for each variable, where each dummy corresponds to a decile in that variable's distribution (one decile is the omitted category).

⁴⁰As can be seen in panel C, the point estimates are larger for a majority of the outcomes when using flexible controls. ⁴¹In a previous working paper version we used a 0.35 inch threshold in some of the specifications.

Essentially all the coefficients in both the county and district-level regressions are equal to or larger than those flowing from the baseline specification, and significant at the five or ten percent level.⁴² The estimates in Panel B show that the results are qualitatively similar when using a continuous measure of rainfall on the protest day. Finally, restricting rainfall to a circle with a 10-mile radius around the county or district centroid (Panel C) changes little for our county results whereas some of our findings on the district level are more sensitive to this rainfall definition.⁴³ For example, the 2009 ACU score and the average effect on political beliefs are no longer significant and smaller in magnitude. Taken together, however, the robustness tests indicate that the results are quite insensitive to the construction of the rainfall variable on the day of the protest.

Third, in Table A4 we estimate the coefficients using a nonparametric estimation method, by checking the robustness of our results using the nearest-neighbor matching estimator (Abadie et al. 2004). Each county with rainfall is matched to the four non-rainy counties with the closest values of the controls using a procedure that is bias-corrected and includes robust standard errors. The match is based on the discrete distribution of the controls employed in our baseline specification (identical to Table A2.a, panel C). The estimates are significant at the five percent level and similar or larger in magnitude compared to the OLS estimates.

Fourth, in Tables A5 and A6 we restrict the sample in two ways. Table A5 shows the results when we exclude counties with a population size below 10,000 and above 1,000,000 people. Our findings hold up well in this setting suggesting that outliers in terms of population size are unlikely to drive the results. Table A6 limits the data to those counties where at least one of the three sources reports that a rally was held on Tax Day in 2009. Restricting the sample in this way will lead to unbiased estimates under the assumption that rainfall does not affect the likelihood of holding a rally, or being of significant enough size for the rally to be reported (i.e., the extensive margin is not

 $^{^{42}}$ The share of counties with a rainfall dummy equal to one decreases from 0.2 to 0.08 when we use the higher precipitation threshold. As there is less variation in the rainfall variable, the standard errors become larger.

⁴³Since there are counties without rainfall stations within 10 miles of the county radius, the sample size is smaller.
affected). This assumption may not be realistic, however, as behavioral mechanisms or preferences that drive lower attendance on the intensive margin are likely to affect the extensive margin as well.⁴⁴ Nevertheless, for the interested reader, we show that the results are qualitatively similar when the sample is conditioned on counties that had a reported rally.

VI.B. Inference

The baseline specification clusters the standard errors at the state level, which requires an assumption of zero cross-state spatial correlation. Since this assumption may be rather strong, we conduct three robustness tests to assess the sensitivity of the results to spatial correlation.

First, we calculate standard errors that account for spatial dependence parametrically, following the procedure developed by Conley (1999). This procedure allows for spatial dependence in each spatial dimension (latitude and longitude) that declines in distance between units (county or district centroids, in our case) and equals zero beyond a maximum distance. Since it is not known what the maximum distance is in reality, we provide standard errors with four different maximum distances: 5, 10, 15 and 20 degrees, respectively.⁴⁵ Table A7 presents the results together with the state-clustered standard errors for the main outcomes.⁴⁶ In general, the results are still significant when using these alternative ways of calculating the standard errors, and the magnitude of the spatial standard errors is broadly comparable to that of the state-clustered ones.⁴⁷

Second, to assess whether our effects are driven by an influential county or area, we run regressions where we drop each state. Figure 5 plots the distribution of coefficients, and shows that the results

⁴⁴In fact, depending on the specification, we can reject the null hypothesis that rainfall does not affect the likelihood of having a reported rally.

⁴⁵A degree is approximately 68.3 miles (110 kilometers), depending on where on earth it is measured. Alternatively, 5 degrees is about the shortest east-west distance of Utah's state boundaries.

⁴⁶The procedure developed by Conley does not allow for population-weighted regressions. However, if unweighted regression spatial standard errors are comparable in magnitude to the unweighted state-clustered standard errors, there is no obvious reason why one would suspect population-weighted standard errors not to be comparable.

⁴⁷In fact, for some outcomes the spatial standard errors are smaller in magnitude than the state-clustered ones. This suggests that clustering at the state level does lead to underestimated standard errors in this case.

are not driven by a particular state.⁴⁸

[Insert Figure 5 about here]

Third, and perhaps most importantly, we conduct a series of placebo tests using rainfall on other historical dates in April. These placebos are drawn from the same spatially correlated distribution as rainfall on 4/15/2009. If rainfall on the protest day has a causal effect, the actual estimate of rainfall ought to be an outlier in the distribution of placebo coefficients. To implement this procedure, we rerun each regression (for the main outcomes) replacing the rainfall dummy on the protest day (April 15, 2009) with the rainfall dummy from a historical day in April between 1980 and 2008. Since there are days when there are no (or very few) counties in the entire country that experienced significant rain, we run the placebo regression only on the dates where at least ten percent of the counties experienced significant rain.⁴⁹ There are 627 placebo dates in the sample at the county level. Figure 6 presents the cumulative distributions of placebo coefficients for the main outcomes, together with the actual estimate from the 2009 protest day (the black line). It also reports the fraction of placebo estimates that are larger in magnitude than the actual estimate (in absolute terms, or in terms of a larger negative value). It shows that the actual estimate is indeed an outlier in the distribution of placebo dates in essentially all regressions. For example, only 0.6 percent of the placebo estimates for the estimate of the effect of rainfall on Republican

⁴⁸Region-by-region and state-by-state Fama-MacBeth regressions show similar results.

⁴⁹By requiring that there is at least some non-trivial amount of variation in rainfall across counties, we help avoid that each placebo estimate is driven by a few outlier counties (e.g., using draws where only a few counties in Democraticleaning and typically rainy Oregon experienced rain, but the rest of the country did not). Moreover, as the mean share of counties with significant rainfall across dates in the placebo sample is 0.20, and the actual share of counties with significant rainfall on the April 15 2009 protest day is 0.22, the actual rainfall realization can be viewed as a typical draw from the placebo date distribution (number of observations: 627, standard deviation: 0.11, minimum: 0.10, maximum: 0.54). This procedure strengthens the intuition that if the actual rainfall protest day estimate is an outlier in the placebo distribution, it is likely to be the result of a true non-zero effect.

votes (in levels, or in percentage of the population) are more negative than the actual estimate, and 1.2 percent of the estimates are larger in absolute magnitude. For roll-call votes in 2009 (2010), 2.6 (3.2) percent of the estimates are more negative, and 4.7 (9.1) percent are larger in absolute magnitude. These tests strengthen the claim that the rainfall truly caused a stronger Tea Party movement, and more conservative policy-making and voting behavior in the general population.

[Insert Figure 6 about here]

Finally, our findings do not rest on any individual result alone, but on the fact that so many different measures of Tea Party strength and impact are affected in the hypothesized direction. To evaluate the likelihood of finding so many consistent results, we follow the method used in Kling et al. (2004) and Clingingsmith et al. (2009) and construct a summary average-effect measure. Specifically, we define the average-effect size for K outcomes as:

$$\tau = \frac{1}{K} \sum_{k=1}^{K} \frac{\pi_k}{\sigma_k} \tag{6}$$

where π_k is equal to the effect of rainfall on outcome k, and σ_k is the standard deviation of outcome k in the comparison non-rainfall group. We construct this measure using all outcome variables (contributions, percentage of votes, vote share, political beliefs, organizers, ACU scores, and subsequent rally attendance in both level and per capita terms, where relevant) for the weather of every day in April from 1980 to 2008.

In Figure 7 we plot the distribution of these placebo average effects against the average effect measured for the day of the rally, April 15 2009. We present placebos for all the main groups

of outcomes as well as the average standardized effect across all outcomes together (bottom-right graph). The standardized effect across all outcomes shows that the true average effect has a larger negative value than any given placebo draw, with only 2.9 percent of the placebos being larger in absolute magnitude. This is further evidence that our results are statistically meaningful even when drawn from a distribution with the same patterns of spatial correlation.

[Insert Figure 7 about here]

To summarize, our robustness tests indicate that it is highly unlikely that the results were driven by random weather patterns that did not have a true causal effect on the Tea Party protests, the movement, and consequent local political dynamics.

VII Discussion and Conclusion

This paper provides novel evidence on the effects of political protests on policymaking and elections. The existing political-economy framework that analyzes how protest size affects voting behavior and policy was first 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 of beliefs. When they observe a surprisingly large number of protesters, policymakers update their beliefs about preferences and the policy they choose to set.⁵⁰

⁵⁰We assume heterogeneous preferences among voters. Lohmann (1994a) uses heterogeneous beliefs with common preferences. For our purposes, the distinction is not important.

VII.A. A Simple Information Revelation 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 $g_c = \bar{g}_c + e_c$, where e_c is drawn from a normal distribution with mean zero and standard deviation σ_e and only \bar{g}_c 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.⁵¹ 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:

$$g_{c,t} = E_t[g_c|I_{c,t}].$$
 (7)

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 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,

⁵¹Of 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.

 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.

For simplicity, 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, $h' > 0.5^2$ 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:

$$h(g_i,c) > q_c. \tag{8}$$

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 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,

 $^{^{52}}$ 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.

$$\beta_t = E[g_{c,t}(rain) - g_{c,t}(sun)] = E[g_c|rain] - E[g_c|sun]$$
(9)

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 information revelation with no changes in political preferences among voters is unlikely to drive our results.⁵³ 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.⁵⁴ To formalize this, suppose that incumbents only observe p_c when it is sunny.⁵⁵ 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.

⁵³This statement is of course also directly supported by the survey evidence showing that political beliefs shifted in the conservative direction. Also, the Republican vote share increased, which could be because policy preferences changed, or that they *effectively* changed because of increased turnout among Republicans.

⁵⁴Another, 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.

⁵⁵The 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.

We thus claim the following: if weather on the protest day has no effect on preferences and only affects policy through learning, then any initial learning effect should decrease over time as additional information makes its way to the rainy districts:

$$|\beta_t| > |\beta_{t+1}| \tag{10}$$

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. 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.⁵⁶ The next section highlights some alternative mechanisms that would be consistent with such a shift.

VII.B. 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,

⁵⁶Note 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.

and become more passionate proselytizers, as seems to be the case for many of the local Tea Party activists portrayed by Skocpol and Williamson (2011). This may be highly effective, as interactions in person or on the phone are the most effective campaign instruments available, at least when it comes to raising voter turnout (Green and Gerber 2008). Furthermore, if political beliefs spread in social networks, protesters may persuade non-protesters. This would explain why a shift occurred in the voting population towards the conservative position, and why that shift went beyond those voters initially involved in the Tax Day rallies.⁵⁷

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 crucial 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. This mechanism goes a long way in explaining our findings regarding incumbent behavior.

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. This would explain why we see that attendance at future protests increases when many people protested initially. This would not, however, explain why we estimate increases in number of Republican votes that are larger than the total number of protesters.

⁵⁷This argument parallels the findings of Banerjee et al. (2012). Studying the diffusion of a microfinance intervention, they show that one-third of the impact detected on the diffusion of the program comes from people who themselves were not active in taking up the program. Translated to our setting, this may explain why arguably small groups of rally attendees can have a large effect as they interact with people who themselves were not necessarily present at the initial rallies but who sway other citizens through personal interactions in turn.

One could, of course, imagine that (combinations of) all three of these alternative mechanisms are relevant. Since the data do 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 affect voting behavior and policymaking, and under which conditions.

VII.C. Conclusion

We show that larger political protests can both strengthen the movement they are meant to support, and help advance the political and policy agenda of the movement. We find that the 2009 Tax Day Tea Party protests increased turnout in favor of the Republican Party in the subsequent congressional elections, and increased the likelihood that incumbent Democratic representatives decided to retire prior to the elections. Incumbent policymaking was also affected, as representatives responded to large protests in their district by voting more conservatively in Congress. In addition, we provide evidence that these effects were driven by a persistent increase in the movement's strength. Protests led to more grassroots organizing, to larger subsequent protests and monetary contributions, and to stronger conservative beliefs, as documented qualitatively by Skocpol and Williamson (2011). Finally, the estimates imply significant multiplier effects: for every protester, Republican votes increased by seven to fourteen votes. Our results suggest that political activism does not derive its usefulness solely from the provision of information or its consumption value, 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 in 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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Figure 2. 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 3. Rainfall residuals on April 15, 2009. The map shows the geographic distribution of the rain residuals in equation 1. Black dots indicate positive rain shocks, and white dots indicate negative shocks.



Figure 4. This graph shows the evolution of local media coverage of the Tea Party, as a function of rainfall on the day of the Tea Party rallies (April 15, 2009). The blue line represents the point estimates, with gray lines corresponding to the 95 percent confidence intervals.







Figure 6. The graphs show the main effect of rainfall on the day of the Tea Party rallies (April 15, 2009), compared to the cumulative distribution of estimates for rainfall from the placebo dates. The placebo dates consist of each day in April between 1980 and 2008 where at least ten percent of the counties experience rain. The black line indicates the estimated coefficient on the day of the rallies. Under each graph two summary statistics are presented, where p_1 is the fraction of placebo estimates with more negative values compared to the estimate on the day of the rally, and p_2 is the fraction with larger absolute values.



coefficient on the day of the rallies. The outcomes are: Tea Party Movement (Organizers 2010, Protesters 2010, and PAC contributions, both the level and per-capita specifications of Tables 4 and 5); Political Beliefs (same as columns 1-6, of Table 6); Voting Behavior in the 2010 Election (Republican Party votes and vote share, same as columns 1, 2 and 13 of Table 7), and; Policy-Making (ACU Score 2009, ACU Score 2010, and Retirement of Democrats, same as columns 1-4 and 8 of Table 8). The bottom-right graph is the average standardized effect across all those outcomes. Under each graph two summary statistics are presented, where p_1 is the fraction of placebo estimates with more negative values compared to the estimate on the day of the Figure 7. The graphs show the average standardized effect of rainfall on the day of the Tea Party rallies (April 15, 2009), compared to the cumulative distribution of estimates from the placebo dates. The placebo dates consist of each day in April between 1980 and 2008 where at least ten percent of the counties experience rain. The black line indicates the estimated rally, and p_2 is the fraction with larger absolute values.

	Rain	No Rain	Difference
Weather April 15, 2009			
Precipitation (hundredths of inches)	0.386	0.008	0.379***
• •	(0.021)	(0.002)	(0.021)
Probability of Rain	0.248	0.199	0.049***
	(0.015)	(0.014)	(0.018)
	(01010)	(0101.)	(0.010)
Election 2008			
Republican House Vote (percent of all votes)	50.368	51.829	-1.461
	(2.993)	(2.916)	(3.965)
Republican House Votes ('000)	21.900	16.238	5.662
	(4.050)	(2.273)	(4.252)
Republican House Votes (percent of population)	21.996	22.406	-0.410
	(1.479)	(1.144)	(1.704)
Votes for Obama (percent of all votes)	42.766	40.848	1.917
	(1.460)	(1.684)	(1.996)
Democratic House Votes ('000)	26.697	19.747	6.950
	(5.520)	(3.756)	(6.388)
Democratic House Votes (percent of population)	20.189	19.713	0.477
	(1.218)	(1.613)	(1.889)
Total House Votes ('000)	49.568	37.142	12.426
	(9.646)	(6.071)	(10.716)
Total House Votes (percent of population)	42.970	43.180	-0.210
* ** *	(1.135)	(1.282)	(1.508)
	. ,	. ,	
Election 2006			
Republican House Vote (percent of all votes)	51.953	51.697	0.255
	(2.207)	(2.047)	(2.916)
Republican House Votes ('000)	14.880	11.101	3.779
	(2.738)	(1.630)	3.779
Republican House Votes (percent of population)	16.226	16.146	0.081
	(1.237)	(0.823)	(1.302)
Democratic House Votes ('000)	17.122	12.780	4.343
	(3.867)	(2.429)	(4.389)
Democratic House Votes (percent of population)	13.716	14.778	-1.062
	(0.716)	(1.271)	(1.343)
Total Votes ('000)	32.638	24.557	8.081
× 2	(6.621)	(4.104)	(7.388)
Total Votes (percent of population)	30.519	31.595	-1.075
	(1.461)	(1.643)	(1.865)
TeaPartyMovement	0.007	0.010	0.007
Tea Party Express Donations	0.026	0.018	0.007
pre-Tax Day 2009 ('000)	(0.011)	(0.006)	(0.012)
Demographic Controls 2009			
Median Household Income	43,477	42,544	933 064
meanar Household meante	(1.648)	(811)	(1.686)
Unemployment Rate (percent)	9.819	8 820	1.000*
e nemplojinem rune (percent)	(0 512)	(0.467)	(0 571)
Population	(0.512)	04 164	10.652
i opulation	(21 885)	(17.646)	(26 501)
Purel Dopulation (parcent)	(21,003)	(17,040)	(20,301)
Kurai i opulation (percent)	(2 2 2 5)	(1 707)	-3.223
White Denulation (names ()	(3.323)	(1./9/)	(3.371)
white Population (percent)	85./50	8/.34/	-1.59/
	(2.789)	(1.867)	(2.927)
Atrican-American Population (percent)	10.699	8.105	2.594
	(2.713)	(1.904)	(2.828)
Foreign-Born Population (percent)	3.899	4.367	-0.468
	(0.709)	(0.698)	(0.933)
Hispanic Population (percent)	4.873	9.495	-4.623
	(0.898)	(2.873)	(2.937)

Table 1. County-Level Summary Statistics

 Number of observations
 588
 2,170

 Note: The unit of analysis is a county. It is defined as rainy if there was significant rain in the county (at least 0.1 inches) on the rally day (April 15, 2009). The variables and the data sources are described in Section III (Data and Summary Statistics), Section IV.A (Specifications and Hypotheses), and in the Appendix. Robust standard errors in parentheses, clustered at the state level. The column Difference reports *** 1%, ** 5%, * 10% significance.

Republican Votes, U.S. House 2008, 100 Contributions U.S. House 2008, 100 U.S. House 2008 Stare, 2008 Stare, 2008 Stare, 2008 Contributions Dependent Variable Votes, $\frac{1}{10}$ 0/1 0/1 </th <th>Turnout, U.S. House 2008, '000 Contributions U.S. House 2008, '000 Contributions U.S. House 2008 Share, 2008 Contributions U.S. House 2008, '000 U.S. House, 2008 U.S. House, 2008 Contributions U.S. House, 2008, '000 of pop Share, 2008 Contributions Votes, '000 of pop Share, 2008 Contributions Dependent Variable Votes, '000 of pop Share, 2008 Contributions Dependent Variable Votes, '000 of pop Share, 2008 Contributions Votes, '000 of pop Share, 2008 Contributions Votes, '000 of pop Share, 2008 Contributions Share, 2008 Of op 0; Of op 0; Colpha On 0; Of op 0; Of op 0; Colspital <th col<="" th=""><th>Republican Votes, U.S. House 2008; 000 Turnout, U.S. House 2008; 000 Contributions U.S. House 2008; 000 U.S. House 2008; 000 Contributions U.S. House 2008; 000 U.S. House 2008; 000 Contributions Dependent Variable Votes, 700 Votes, 700 Votes, 700 Optime Potests Dependent Variable Votes, 700 of pop Votes, 700 of pop Spart Obsame Votes Spart Observations 2.758 2</th><th>Republican Votes, U.S. House 2008, '000 Democratic Votes, U.S. House 2008, '000 Colspan="6">Obma Votes, U.S. House 2008, '000 Share, 2008 Share, 2018 <th colsp<="" th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th>PAC</th></th></th></th></th>	Turnout, U.S. House 2008, '000 Contributions U.S. House 2008, '000 Contributions U.S. House 2008 Share, 2008 Contributions U.S. House 2008, '000 U.S. House, 2008 U.S. House, 2008 Contributions U.S. House, 2008, '000 of pop Share, 2008 Contributions Votes, '000 of pop Share, 2008 Contributions Dependent Variable Votes, '000 of pop Share, 2008 Contributions Dependent Variable Votes, '000 of pop Share, 2008 Contributions Votes, '000 of pop Share, 2008 Contributions Votes, '000 of pop Share, 2008 Contributions Share, 2008 Of op 0; Of op 0; Colpha On 0; Of op 0; Of op 0; Colspital <th col<="" th=""><th>Republican Votes, U.S. House 2008; 000 Turnout, U.S. House 2008; 000 Contributions U.S. House 2008; 000 U.S. House 2008; 000 Contributions U.S. House 2008; 000 U.S. House 2008; 000 Contributions Dependent Variable Votes, 700 Votes, 700 Votes, 700 Optime Potests Dependent Variable Votes, 700 of pop Votes, 700 of pop Spart Obsame Votes Spart Observations 2.758 2</th><th>Republican Votes, U.S. House 2008, '000 Democratic Votes, U.S. House 2008, '000 Colspan="6">Obma Votes, U.S. House 2008, '000 Share, 2008 Share, 2018 <th colsp<="" th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th>PAC</th></th></th></th>	<th>Republican Votes, U.S. House 2008; 000 Turnout, U.S. House 2008; 000 Contributions U.S. House 2008; 000 U.S. House 2008; 000 Contributions U.S. House 2008; 000 U.S. House 2008; 000 Contributions Dependent Variable Votes, 700 Votes, 700 Votes, 700 Optime Potests Dependent Variable Votes, 700 of pop Votes, 700 of pop Spart Obsame Votes Spart Observations 2.758 2</th> <th>Republican Votes, U.S. House 2008, '000 Democratic Votes, U.S. House 2008, '000 Colspan="6">Obma Votes, U.S. House 2008, '000 Share, 2008 Share, 2018 <th colsp<="" th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th>PAC</th></th></th>	Republican Votes, U.S. House 2008; 000 Turnout, U.S. House 2008; 000 Contributions U.S. House 2008; 000 U.S. House 2008; 000 Contributions U.S. House 2008; 000 U.S. House 2008; 000 Contributions Dependent Variable Votes, 700 Votes, 700 Votes, 700 Optime Potests Dependent Variable Votes, 700 of pop Votes, 700 of pop Spart Obsame Votes Spart Observations 2.758 2	Republican Votes, U.S. House 2008, '000 Democratic Votes, U.S. House 2008, '000 Colspan="6">Obma Votes, U.S. House 2008, '000 Share, 2008 Share, 2018 <th colsp<="" th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th>PAC</th></th>	<th></th> <th>PAC</th>																			PAC			
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	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Dependent Variable	Votes,	000.	of I	dod	of ve	otes	Votes,	,000	of I	doc	Votes,	,000	of I	doc	Share,	2008	0	apita					
Rainy Protest 0.13 0.18 0.53 0.46 0.61 0.99 0.71 0.81 0.66 0.23 0.58 0.73 0.93 0.47 1.25 0.58 0.0006 0.00008	Rainy Protest 0.13 0.18 0.53 0.46 0.61 0.96 0.23 0.53 0.73 0.93 0.47 1.25 0.58 0.0006 0.00008 0.0008 0.00008 0.00008 0.00008 0.00008 0.00008 0.00008 0.00008 0.00008 0.00008 0.00008 0.00008 0.00008 0.00008 0.00008 0.00008 0.00008 0.00008 0.00008 0.0000	Rainy Protest 0.13 0.18 0.53 0.46 0.61 0.99 0.71 0.81 0.66 0.23 0.58 0.73 0.93 0.47 1.25 0.58 0.0006 0.00078 Observations 2.758	Rainy Protest 0.13 0.18 0.53 0.46 0.61 0.99 0.71 0.81 0.66 0.23 0.58 0.73 0.93 0.47 1.25 0.58 0.0000 0.57) (0.50) (0.50) (0.52) (1.25) (1.32) (1.30) (0.6000 (0.62) (1.16) (1.16) (1.04) (0.53) (0.62) (1.30) (0.0000 Observations 2.758		(1)	(2)	(3)	(4)	(5)	(9)	6	(8)	(6)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)					
				Rainy Protest	0.13	0.18	0.53	0.46	0.61	0.99	0.71	0.81	0.66	0.23	0.58	0.73	0.93	0.47	1.25	0.58	0.00006	0.00007					
Observations 2.758 2.75	Observations 2,758 2,75	Observations 2.758	Observations $2,758$	•	(0.57)	(0.59)	(0.50)	(0.52)	(1.25)	(1.32)	(96.0)	(0.86)	(0.63)	(0.62)	(1.16)	(1.04)	(0.63)	(0.62)	(1.39)	(1.00)	(0.00008)	(0.00008)					
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	R-squared 0.96 0.98 0.77 0.79 0.74 0.76 0.98 0.98 0.76 0.98 0.98 0.98 0.98 0.73 0.78 0.66 0.81 0.02 0.03 Election Controls Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y	R-squared 0.96 0.98 0.71 0.79 0.74 0.74 0.76 0.98 0.98 0.73 0.78 0.66 0.81 0.02 0.03 Election ControlsYYYYYYYYYYYDemographic ControlsNYYNYNYNYYYDep. Var. Mean17.417.422.351.551.521.219.819.839.843.143.141.341.30.00020.0002Var. Mean17.417.422.322.351.521.221.219.819.839.843.143.141.341.30.00020.0002Var. Mean17.417.422.322.351.521.221.219.819.839.843.143.141.341.30.00020.0002Vote: The unit of analysis is a county. Rainy Protest is based on the precipitation amount in the county on the rally day (April 15, 2009). The dummy variable is equal to one if there was significant rain in the county (at least 0.1 inches) and zo the revealed for the Republican Party, the total mumber of votes for the Republican Party vote share, the total mumber of votes for the Republican Party, the total mumber of votes for the Republican Party in the count of for the Republican Party vote share, the total mumber of votes for the Republican Party in the total mumber of votes for the Republican Party, the total mumber of votes for the Republican Party in the share of Hispanic population, the share of Hispanic population, the share of Hispanic population, the sha	R-squared 0.96 0.98 0.77 0.79 0.74 0.79 0.74 0.76 0.98 0.98 0.76 0.79 0.98 0.98 0.73 0.78 0.66 0.81 0.02 Election Controls Y Y Y Y Y Y N Y Y N Y N Y N Y N Y N Y	Observations	2,758	2,758	2,758	2,758	2,758	2,758	2,758	2,758	2,758	2,758	2,758	2,758	2,758	2,758	2,758	2,758	2,758	2,758					
Election Controls Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y	Election Controls Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y	Election Controls Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y	Election Controls Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y	R-squared	0.96	0.98	0.77	0.79	0.74	0.76	0.98	0.98	0.76	0.79	0.98	0.98	0.73	0.78	0.66	0.81	0.02	0.03					
Demographic Controls N Y N Y N Y N Y N Y N Y N Y N Y N Y N	Demographic Controls N Y N Y N Y N Y N Y N Y N Y N Y N Y N	Demographic Controls N Y N Y N Y N Y N Y N Y N Y N Y N Y N	Demographic Controls N Y N Y N Y N Y N Y N Y N Y N Y N Y N	Election Controls	Υ	Y	Υ	Υ	Υ	Υ	Υ	Υ	Υ	Υ	Υ	Υ	Y	Υ	Υ	Υ	Y	Y					
Dep. Var. Mean 17.4 17.4 22.3 21.3 51.5 51.5 51.5 21.2 21.2 19.8 19.8 39.8 39.8 43.1 41.3 41.3 41.3 0.0002 0.0002 Wote: The unit of analysis is a coury. <i>Rainy Protest</i> is based on the precipitation amount in the county on the rally day (April 15, 2009). The dummy variable is equal to one if there was significant rain in the county (at least 0.1 inches) and z otherwise. All regressions include flexible controls for the probability of rain, population, and region fixed effects. The 2006 election controls account for the outcomes of the U.S. House of Representatives elections in 2006. In the level regressions include the Republican Party varies the number of votes for the Democratic Party varies of the NE applician Party varies the number of votes for the Democratic Party the total number of votes for the Democratic Party varies of the QUS, House of Representatives elections in 2006. 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Robust is the capita regressions are population weighted. Robust is a rual to sume the event and surface the state level. **	Dep. Var. Mean 17.4 17.4 17.4 22.3 21.3 51.5 51.5 21.2 21.2 19.8 19.8 39.8 39.8 43.1 43.1 41.3 41.3 0.0002 0.0002 Wete: The unit of analysis is a coury. <i>Rainy Protest</i> is based on the precipitation amount in the coury on the rally day (April 15, 2009). The dummy variable is equal to one if there was significant rain in the courty (at least 0.1 inches) and therwise. All regressions include flexible controls for the probability of rain, population, and region fixed effects. The 2006 election controls account for the outcomes of the U.S. House of Representatives elections in 2006. In the level regres we include the Republican Party vote share, the total mumber of votes for the Republican Party, the total mumber of votes for the Perceptiation amount in the courty of the Democratic Party and total turnout. 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otherwise. All regressions include flexible controls for the probability of raim, population, and region fixed effects. The 2006 election controls account for the outcomes of the U.S. Hourse elections in 2006. In the level regressions include the Republican Party vote share, the analyse the transmission and region fixed and the turnout. The per-expit regressions include the Republican Party vote share, the number of votes for the Reputstance and the start per captia. The done of the Benecratic Party and total turnout. The per-expit regressions include the Republican Party vote share, the numerphorment rate, the change of the Republican Party votes for the Republican Party per capita, the number of votes for the Republican Party erection controls include log of production density. 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or the Republican Part vpr capita, the number of votes for the Democratic Party per capita, and tumout per capita, The demographic controls include log of the propulation density, log of median income, the unemployment rate, the change unemployment between 2005-2009, the share of white propulation, the share of African-American population, the share of immigrant population density, log of median income, the unemployment rate, the change unemployment between 2005-2009, the share of white population, the share of African-American population, the share of immigrant population and the share of the population that is rural. More information on variables, the data sources, and our specification are described in Section III (Data and Summary Statistics), Section IVA (Specifications and Hypotheses), and in the Appendix. The per capita regressions are population weighted. Robust stand strong the state level. *** 5%, * 10% significance.	or the Republican Party or capita, the number of voces for the percentic party per capita, and turning per capita. The demographic controls include log of population density, log of median income the unemployment rate, the channel number of voces for the sphere of African-American population, the share of immigrant population, and the share of the population that is rural. More information or variables, the data sources, and our specification are described in Section III (Data and Summary Statistics), Section IV.A (Specifications and Hypotheses), and in the Appendix. The per capita regressions are population weighted. Robust stan removes the the state level. *** 1%, ** 5%, * 10% significance.	ores for the Republican Part vy per capita, the number of roots for the Democratic Party per capita, and turnout per capita. The demographic controls include log of population density, log of median merophysican rate, the change unemployment take the change of the population, the share of African-American population, the share of Hispanic population, the share of immigrant population and the share of the population weighted. Robust stand, and numbers, the data sources, and our specification are described in Section III (Data and Summary Statistics), Section IV.A (Specifications and Hypotheses), and in the Appendix. The per capita regressions are population weighted. Robust stand, crucis in parentheses, clustered at the state level. *** 1%, ** 5%, * 10% significance.	votes for the Republican Party per capita, the number of votes for the Democratic Party per capita, and turnout per capita. The demographic controls include log of population density, log of median income, the unemploynent between 2005-2009, the share of white population, the share of African-American population, the share of Hispanic population, the share of immigrant population, and the share of the population that is rural variables, the data sources, and our specification are described in Section III (Data and Summary Statistics), Section IVA (Specifications and Hypotheses), and in the Appendix. The per capita regressions are population that is rural variables, the data sources, clustered at the state level. *** 1%, ** 5%, * 10% significance.	otherwise. All regressions inclu we include the Renublican Party	ide flexible	controls for	or the prob: number of	ability of ra. votes for th	in, populati se Remblics	on, and reg.	ion fixed ef	fects. The 1 her of votes	2006 electic s for the De	on controls.	account for	the outcorr	nes of the U The ner-car	.S. House c	of Represent	tatives elec-	tions in 2006. In dican Party vote	the level regression where the number					
memployment between 2005-2009, the share of white population, the share of African-American population, the share of historic population, the share of immigrant population and the share of the population that is rural. More information on variables, the data sources, and our specification are described in Section III (Data and Summary Statistics), Section IV.A (Specifications and Hypotheses), and in the Appendix. The per capita regressions are population weighted. Robust stand strong parentheses, clustered at the state level. *** 1%, ** 5%, * 10% significance.	memployment between 2005-2009, the share of white population, the share of African-American population, the share of Hispanic population, the share of immigrant population and the share of the population that is rural. More information of arrivables, the data sources, and our specification are described in Section III (Data and Summary Statistics), Section IV.A (Specifications and Hypotheses), and in the Appendix. The per capita regressions are population weighted. Robust stan errors in parentheses, clustered at the state level. *** 1%, ** 5%, * 10% significance.	inemployment between 2005-2009, the share of white population, the share of African-American population, the share of Hispanic population, the share of immigrant population and the share of the population that is rural. More information on trainables, the data sources, and our specification are described in Section III (Data and Summary Statistics), Section IV.A (Specifications and Hypotheses), and in the Appendix. The per capita regressions are population weighted. Robust stand, curves in parentheses, clustered at the state level. *** 1%, ** 5%, * 10% significance.	inemployment between 2005-2009, the share of white population, the share of African-American population, the share of Hispanic population, the share of immigrant population, and the share of the population that is rural variables, the data sources, and our specification are described in Section III (Data and Summary Statistics), Section IV,A (Specifications and Hypotheses), and in the Appendix. The per capita regressions are population variables, the data sources, clustered at the state level. *** 1%, ** 5%, * 10% significance.	otes for the Republican Party i	ber capita, t	the numbe.	r of votes t	for the Dem	nocratic Part	ty per capit.	a, and turne	out per capi	ita. The de	mographic	controls inc	lude log of	population	density, lo	g of media	n income, t	he unemployme	it rate, the change					
variables, ue data sources, and our specticiation are described in section in 11 (Jata and soundary statistics), section 11 V.A (Specifications and ryponeses), and in ule Appendix. The per capital regressions are population weighted. Kootst statistics is a statistication are statistications and the state level. *** 1%, ** 5%, * 10% significance.	varaotes, ue data sources, and our spectucation are described in section in (124a and summary statistics), section 1 v.A. (Spectifications and ripponteses), and in the Appendix. The per capital regressions are population weighted. Robust stat	araotes, ue data souces, ano ou specticiation are described in action 11 (pair and summary statistics), section 1 V.A (specifications and ripporteses), and in ure Appendix. The per capita regressions are population weigned. Robust static	araotes, ue data sources, and our spectication are described in section in (varia and summary statistics), section i v.A. (spectifications and ryponteses), and in ue Appendix. The per capita regressions are population we construct practications and inparentheses, clustered at the state level. *** 1%, ** 5%, * 10% significance.	inemployment between 2005-2	009, the sh	are of whit	te populatic	on, the share	e of African	-American	population,	the share c	of Hispanic	population,	the share c	of immigran	t populatio.	n, and the s.	hare of the	population	that is rural. Mo	e information on					
				variations, ure data sources, and strors in parentheses, clustered :	at the state.	level. ***	1%, ** 5%	ш эссион н 6 , * 10% si	gnificance.	t automatic t	orausucs),		viinade) v.		nypouteses	,, anu m u	c Appendix	r. The ber (apita regre	ssions are F	оршаноп женди						

Level
County
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Exogeneity
Table 2. a.

				ACU	Score			
Dependent Variable	2	006	2	007	2	008	Δ Score	2008-2006
	Full	All Votes	Full	All Votes	Full	All Votes	Full	All Votes
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Rainy Protest	-0.775	-0.998	1.736	1.859	-1.161	-0.893	-0.890	-0.142
	(1.124)	(1.355)	(1.121)	(1.461)	(1.094)	(1.322)	(1.192)	(1.674)
Observations	435	316	435	307	435	280	435	209
R-squared	0.961	0.965	0.962	0.951	0.951	0.973	0.826	0.923
P-value	0.494	0.465	0.128	0.210	0.294	0.600	0.485	
Election Controls	Y	Y	Y	Y	Y	Y	Y	Y
Prior Roll Call Controls	Y	Y	Y	Y	Y	Y	Y	Y
Demographic Controls	Y	Y	Y	Y	Y	Y	Y	Y
Dep. Var. Mean	53.06	54.81	42.91	40.51	41.62	38.14	-11.44	-13.09

 Table 2. b.
 Exogeneity Check at the Congressional District Level

Note: The unit of analysis is a congressional district. *Rainy Protest* is based on the precipitation amount in the district on the rally day (April 15, 2009). The dummy variable is equal to one if there was significant rain in the district (at least 0.1 inches) and zero otherwise. *Full* denotes using the full sample of all congressmen. *All votes* includes only the congressmen that voted on all scored votes. All regressions include flexible controls for the probability of rain, population, and region fixed effects. The prior roll call controls account flexibly for the past two years of ACU scores. The election controls include the identity of the victorious party, the Republican Party vote share, the total number of votes for the Republican Party, the total number of votes for the Democratic Party, and total turnout in the last two elections to the U.S. House of Representatives. The demographic controls include log of population density, log of median income, the unemployment rate, the change in unemployment between 2005-2009, the share of white population, the share of African-American population, the share of Hispanic population, the share of the population that is rural. More information on the variables, the data sources, and our specification are described in Section III (Data and Summary Statistics), Section IV.A (Specifications and Hypotheses), and in the Appendix. Robust standard errors in parentheses, clustered at the state level. *** 1% , ** 5% , * 10% significance.

Dependent Variable		Prote	sters, '000			Proteste	ers, % of pop.		log(Protesters)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Rainy Protest	-0.096***	-0.190***	-0.165***	-0.228**	-0.082***	-0.170***	-0.128***	-0.108***	-0.473**
	(0.023)	(0.051)	(0.055)	(0.096)	(0.021)	(0.046)	(0.036)	(0.034)	(0.211)
Observations	2,758	2,758	2,758	542	2,758	2,758	2,758	542	478
R-squared	0.41	0.41	0.41	0.40	0.16	0.14	0.15	0.22	0.43
Protesters Variable	Mean	Max	Mean	Mean	Mean	Max	Mean	Mean	Mean
Rain Variable	Dummy	Dummy	Continuous	Dummy	Dummy	Dummy	Continuous	Dummy	Dummy
Sample Counties	All	All	All	Protesters >0	All	All	All	Protesters >0	Protesters >0
Election Controls	Y	Y	Y	Y	Y	Y	Y	Y	Y
Demographic Controls	Y	Y	Y	Y	Y	Y	Y	Y	Y
Dep. Var. Mean	0.160	0.293	0.073	0.815	0.073	0.153	0.073	0.371	5.36

Table 3. The Effect of Rain on the Number of Tea Party Protesters in 2009

Note: The unit of analysis is a county. *Rainy Protest* is based on the precipitation amount in the county on the rally day (April 15, 2009). The dummy variable is equal to one if there was significant rain in the county (at least 0.1 inches) and zero otherwise. The continuous variable is the precipitation amount in inches. All regressions include flexible controls for the probability of rain, population, and region fixed effects. The election controls account for the outcomes of the U.S. House of Representatives elections in 2008. In the level regressions we include the Republican Party vote share, the total number of votes for the Democratic Party, and total turnout. The per-capita regressions include the Republican Party vote share, the number of votes for the Democratic Party per capita, and turnout per capita. Column 9 takes the natural logarithm of the election controls. The demographic controls include log of population, the share of finance, the unemployment rate, the change in unemployment between 2005-2009, the share of white population, the share of finance and the share of the population, and the share of the population, the advarge across the three sources of attendance data. *Max* is the highest reported turnout in any given location. The per capita regressions are population weighted. Robust standard errors in parentheses, clustered at the state level. *** 1%, ** 5%, * 10% significance.

Dependent Variable		Te	a Party Orga	mizers, 2010					Tea Party Pr	otesters, 201	0	
	Persons, '000	% of pop.	Persons, '000	Persons, '000	% of pop.	% of pop	Persons, '000	% of pop	Persons, '000	Persons '000	% of pop	% of pop
	(1)	(2)	(3)	(4)	(5)	(9)	(1)	(8)	(6)	(10)	(11)	(12)
Rainy Protest	-0.011 * * * (0.004)	-0.0077**					-0.073***	-0.065**				
Per Protester Scaling			0.113***	0.057***			(1-20-0)	(170.0)	0.760***	0.385***		
% of Pop. Protesting Scaling			(060.0)	(170.0)	0.0931^{**} (0.0382)	0.0451** (0.0211)			(067.0)	(601.0)	0.794*** (0.277)	0.384^{***} (0.126)
Observations	2,758	2,758	2,758	2,758	2,758	2,758	2,758	2,758	2,758	2,758	2,758	2,758
R-squared	0.891	0.0356	ı	ı	·		0.14	0.05	ı			
Protesters Variable		ı	Mean	Max	Mean	Max	·	·	Mean	Max	Mean	Max
Election Controls	Y	Y	Y	Y	Υ	Y	Y	Y	Y	Υ	Y	Y
Demographic Controls	Y	Y	Υ	Υ	Υ	Υ	Υ	Y	Y	Y	Y	Y
Dep. Var. Mean	0.057	0.074	0.057	0.057	0.074	0.074	0.069	0.020	0.069	0.069	0.020	0.020
Note: The unit of analysis is a county inches) and zero otherwise. <i>Per Prote</i>	. Rainy Protest ster Scaling is l	t is based on the j based on the num	precipitation am ber of people at	tending the pro	nty on the rally tests (scaled by	day (April 15, 20 1,000) on the rally ion fixed effects T	09). The dummy y day. % of Pop.	variable is equa Protesting Scali	al to one if there ing is based on the	e was significan the percent of p	t rain in the course of Devression of Devression	nty (at least 0.1 on the rally day
2008. In the level regressions we inclu Remultion Party vote share the numb	de the Republic er of votes for th	an Party vote share	re, the total num	ber of votes for ber number of vot	the Republican tes for the Dem	Party, the total nu	mber of votes for	the Democratic	Party, and total	turnout. The purchase	er-capita regressi log of nonulation	ons include the
median income, the unemployment rat	e, the change in	unemployment b	etween 2005-20	09, the share of	white populatio	on, the share of Afr	rican-American p	por cupiu. The sh opulation, the sh	nare of Hispanic	population, the	e share of immigr	ant population,
and the share of the population that is the Appendix. Mean denotes the aver regressions are population weighted. I	rural. More Info age across the the dobust standard	breation on the v hree sources of at errors in parenthe	ariables, the dat: ttendance data, i sses, clustered at	a sources, and c and <i>max</i> is the 1 t the state level.	ur specincation highest reported *** 1%, ** 5	t are described in S 1 number. The scal %, * 10% signific:	ection III (Data a ling estimates (co ance.	nd summary sel lumns 3-4 and 9	tausucs), sectio 9-12) use 2SLS	n IV.A (Specifi . All other regre	cations and Hypessions use OLS	The per capita

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

Dependent Variable					PAC Contri	ibutions				
	64	600;	5(010			2006	9-2010		
	\$, '000	\$, per capita	\$, '000	\$, per capita	\$, '000	\$, per capita	\$, `000	\$, '000	\$, per capita	\$, per capita
	(1)	(2)	(3)	(4)	(5)	(9)	(2)	(8)	(6)	(10)
Rainy Protest	-0.076*	-0.00032**	-0.286**	-0.0011*** (0.0004)	-0.362**	-0.0014***				
Per Protester Scaling	(0000)				(201.0)	(2000-0)	3.751**	1.900**		
% of Pop. Protesting Scaling							(100.1)	(170.0)	1.700** (0.698)	0.823** (0.347)
Observations	2,758	2,758	2,758	2,758	2,758	2,758	2,758	2,758	2,758	2,758
R-squared	0.69	0.16	0.72	0.20	0.74	0.23	ı	,	ı	ı
Protesters Variable	ı	ı	ı	·	'	ı	Mean	Max	Mean	Max
Election Controls	Υ	Υ	Υ	Υ	Υ	Υ	Υ	Υ	Y	Υ
Demographic Controls	Υ	Y	Y	Y	Y	Y	Υ	Υ	Y	Y
Dep. Var. Mean	0.199	0.0013	0.844	0.006	1.042	0.007	1.042	1.042	0.007	0.007
Note: The unit of analysis is a county in the county (at least 0.1 inches) and	i. Rainy Protu zero otherwis	est is based on the pr se. Per Protester Sci	ecipitation amou <i>uling</i> is based o	ant in the county on n the number of pe	the rally day (A	April 15, 2009). Th te protests (scaled	e dummy vari by 1,000) on	able is equal t the rally day.	o one if there w % of Pop. Prc	as significant rain testing Scaling is
based on the percent of people attendi controls account for the outcomes of t	ng on the rally he U.S. House	/ day relative the coul	nty population.	All regressions incl 8. In the level regre	ude flexible cont ssions we includ	rols for the probab le the Republican I	ility of rain, p Party vote sha	opulation, and re, the total m	region fixed eff imber of votes f	ects. The election or the Republican
Party, the total number of votes for the the number of votes for the Democrai	ne Democratic tic Party per c	: Party, and total turn apita, and turnout pe	out. The per-ca r capita. The de	pita regressions inc emographic control	clude the Republes Is include log of	lican Party vote shi population density	are, the numb /, log of medi	er of votes for an income, th	the Republicar e unemploymen	Party per capita, t rate, the change
in unemployment between 2005-2009 population that is rural. More informa), the share of tion on the var	white population, the	e share of Afric: ses, and our spec	an-American popul	lation, the share bed in Section II	of Hispanic populs	tion, the shar	e of immigran , Section IV.A	t population, an (Specifications	d the share of the and Hypotheses),
and in the Appendix. Mean denotes t use OLS. The per capita regressions an	he average act	ross the three sources weighted. Robust sta	of attendance d ndard errors in p	lata, and max is the varentheses, clustered	highest reported ad at the state lev	1 number. The scal /el. *** 1% , ** 59	ing estimates 6 , * 10% sigr	(columns 7-10 inficance.) use 2SLS. All	other regressions

Table 5. The Effect of Tea Party Protests on PAC Contributions

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Dependent Variable	Strongly supports the Tea Party movement, dummy	Favorable view on Sarah Palin, dummy	Feels outraged about the way things are going in country, dummy	Opposes raising taxes on income >\$ 250K, dummy	Believes Americans today have less freedom compared to 2008, dummy	Unfavorable feelings towards President Obama, dummy	Average belief effect	Reported likelihood of voting in the 2010 midtern election
Rainy Protest	(1) -0.057**	(2) -0.057**	(3) -0.046**	(4) -0.058*	(5) -0.065**	(6) -0.046*	(7) -0.13***	(8) -0.067***
	(0.025)	(0.026)	(0.021)	(0.030)	(0.026)	(0.024)	(0.037)	(0.024)
Observations R-squared	0.172	0.300	1,142 0.101	1,140 0.226	0.120	0.292	1 1	1,092 0.303
Election Controls	Y	7 7	Y	Y	Υ ,	Y	Y	Y
Dep. Var. Mean	0.120	0.311	0.174	0.228	т 0.438	0.245	г -	1 0.701
Note: The unit of analysis is is equal to one if there was si respondent voted for the Rem	a survey respondent, from gnificant rain in the distric	the 2010 ANES survey it (at least 0.1 inches) ar of Representatives elect	data. The survey took plac id zero otherwise. All regre tions in 2008 The demosra	ce in October 2010. Rain ssions include flexible controls include age	<i>ty Protest</i> is based on the precontrols for the probability of <i>t</i> : education race (white Afric:	cipitation amount in the d ain, population, and regic an American Hismanic)	listrict on the rally day ($\frac{A}{A}$) in fixed effects. The elect household income, mean	pril 15, 2009). The dummy variable tion controls account for whether the plowment status contrently working).
living in a rural area and fore	tion horn More information	n on the variables, the d	lata sources and our specific	cation are described in Se	ection III (Data and Summary	Statistics) Section IV A	(Specifications and Hyno)	theses) and in the Annendix Rohust

Table 6. Political Beliefs, ANES Survey 2010

une App una riypc living in a rural area, and foreign born. More information on the variables, the data sources, and standard errors in parentheses, clustered at the state level. *** 1%, ** 5%, * 10% significance.

ote Share	District % of all votes	5) (16)	-1.917*** (0.675) (0.675) (1.675)	58 435 0.91 AX Y Y Y 2 50.86
Republican Vc	ounty all votes	(14) (15	8.81** 9.11 (7.85) (4.4	2.758 2.7 Mean Maar - Y Y Y Y Y Y
	% 0	(13)	-1.55** (0.69) 1	2,758 0.89 - 2 Y Y 61.2 61.2 61.2 for the outcomin fication in columnour. The per- fication in columnour fication in columnour fication in columnour
	s, % op.	(12)	0.84 (1.99)	2,758 $\stackrel{-}{X}$ Max $\stackrel{-}{Y}$ $\stackrel{-}{Y}$ 11.5 on the rally da on
tes	Vote: of p	(11)	1.73 (4.18)	2,758 Mean Y Y 11.5
: Party Vo	tes, 00	(10)	2.45 (2.58)	2,758 - Max Y Y Y 12.7 12.7 12.7 12.7 the county (protests (sciounty)) the of friends: The of immungst the Append
emocratic	9 9	(6)	4.83 (5.31)	2,758 - Mean Y Y 12,7 12,7 12,7 12,7 12,7 12,7 12,7 12,7
Ď	% of pop	(8)	-0.14 (0.35)	2,758 0.87 - Y Y 11.5 11.5 - 11.5 - - - - - - - - - - - - - - - - - - -
	Votes, '000	(2)	-0.47 (0.52)	2,758 0.99 - Y Y Y 12.7 12.7 12.7 12.7 intumper of entity the plat, and turn be of Higman elevit it two elevit it two elevit it two elevit of the set of Higman elevit it two elevits and the plate and the pla
	s, % op.	(9)	6.10*** (2.22)	2,758 A. Max Y Y 19.6 19.6 19.6 19.6 19.7 19
	Vote of p	(5)	12.59*** (4.21)	2,758 – Mean Y Y 19.6 19.6 19.6 number of votester Scal for the Democi
Party Votes	tes, 00	(4)	7.19*** (2.56)	2,758 – Max Y 14,9 14,9 14,9 the congression otherwise. <i>Per</i> the congression otherwise. <i>Per</i> the congression and the con
Republican	οΛ 0.	(3)	14.20*** (4.77)	2,758 – Mean Y 14.9 14.9 14.9 14.9 1.41 perty vote : 1. All regression in All regression in All vote : 1. Controls of the number of the second in the number of the second in the number of the second in the second is the second in the second
	% of pop	(2)	-1.04*** (0.30)	2,758 0.88 - 88 Y 19.6 Intropolation intropolation fut perpulation for the the Republic for and elec fores and elec for and elec for and elec for an electric of the for an electric for an electric of the for an electric of the for an electric for an electric of the for an el
	Votes, '000	(1)	-1.37** (0.51)	2,758 0.97 Y 14.9 14.9 14.9 14.9 19.00 district) iny (or district) iny (or district) iny for the cou- try of or district) iny for the cou- try of the cou- try
Dependent Variable			Rainy Protest Per Protester Scaling % of Pop. Protesting Scaling	Observations R-squared Protesters Variable Election Controls Demographic Controls Dep. Var. Mean Note: The unit of analysis is a count there was significant rain in the count of people attending on the rally day elections in 2008. In the level regres Party vote share, the number of vote to account flexibly for the past two change in unemployment between 20 change in unemployment between 20

Table 7. The Effect of Tea Party Protests on Voting Behavior, 2010 U.S. House

				0.010			Det	liramant
	č							
Dependent Variable	7	600	20	10	Δ Score 2	2010-2008		
	Full	All Votes	Full	All Votes	Full	All Votes	Republicans	Democrats
	(1)	(2)	(3)	(4)	(5)	(9)	(2)	(8)
Rainy Protest	-1.922**	-2.827***	-4.296***	-3.181**	-3.371**	-2.405	0.049	-0.094***
	(0.937)	(1.021)	(1.258)	(1.411)	(1.310)	(1.849)	(0.064)	(0.034)
Observations	435	327	435	279	435	191	179	256
R-squared	0.979	0.982	0.961	0.973	0.804	0.894	0.242	0.235
Election Controls	Υ	Y	Υ	Υ	Υ	Υ	Υ	Υ
Demographic Controls	Υ	Υ	Υ	Υ	Υ	Υ	Υ	Υ
Dep. Var. Mean	41.14	41.44	41.45	39.17	-0.164	-0.157	0.0447	0.0469
Note: The unit of analysis is is equal to one if there was sig the congressmen that voted on account flexibly for the past w for the Republican Party, the t controls include log of popula share of African-American pol variables, the data sources, an Robust standard errors in paret	a congressiona inificant rain in all scored vote to years of AC otal number of otal number of tion density, le pulation, the sh pulation, the scifica d our specifica ntheses, cluster	I district. Rainy the district at la sa. All regression U scores. The eld f votes for the Do og of median inc pare of Hispanic J tion are described red at the state ler	<i>Protest</i> is basec east 0.1 inches) is a include flexible action controls in emocratic Party, ome, the unemp population, the s population, the s vel. *** 1%, ***	1 on the precipit and zero otherwi e controls for the oclude the identi and total turnooi loyment rate, th hare of immigra Data and Sumr 5%, * 10% sig	ise. Full deno ise. Full deno e probability o. ty of the victoi ut in the last tru e change in ur ary Statistics). infrance.	n the district on t tes using the full : frain, population, rious party, the Re vo elections to thu temployment betu and the share of t . Section IV.A (Sp	he rally day (April 15, 21 sample of all congressme , and region fixed effects. publican Party vote shart e U.S. House of Represer ween 2005-2009, the sha he population that is rura pecifications and Hypothe	009). The dummy variable an. <i>All votes</i> includes only The prior roll call controls e, the total number of votes intatives. The demographic re of white population, the I. More information on the eses), and in the Appendix.

Table 8. Policy-Making Impact

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Appendix

I. Tables II. Figures III. Data Appendix

Table A 1. a. County-Level Summary Statistics

		Counties	
	Obs	Mean	S.D.
Weather April 15, 2009			
Precipitation (hundredths of inches)	2,758	0.0884	0.208
Probability of Rain	2,758	0.209	0.0855
Rainy Protest, rainfall above 0.10 inch	2,758	0.213	0.410
T. D D			
Tea Party Protests April 15, 2009	0.750	0.160	0.740
Persons, '000, mean	2,758	0.160	0.742
% of pop. Mean	2,158	0.0729	0.294
Contraction of the second seco	2,758	0.295	0.615
% of pop. Max	2,738	0.155	0.015
Tea Party Organizers 2010			
Persons '000	2,758	0.0572	0.155
% of pop.	2,758	0.0741	0.472
, or pop.	2,700	0.07.11	0.172
Tea Party Protesters, 2010			
Persons, '000	2,758	0.0691	0.667
% of pop.	2,758	0.0203	0.305
PAC Contributions 2009-10			
\$, '000	2,758	1.043	5.061
\$, per capita	2,758	0.00749	0.0339
Republican Votes, U.S. House 2010			
Votes, '000	2,758	14.88	35.61
% of pop.	2,758	19.60	6.953
% of votes	2,758	61.18	16.25
D 11 C 1 0000			
Demographic Controls 2009			10.000
Median Household Income	2,758	42,744	10,893
Demployment Rate (percent)	2,758	9.033	3.278
Population White Develotion (connect)	2,758	99,354	322,404
A fricen American Deputation (percent)	2,758	87.000	13.234
Foreign Born Population (percent)	2,758	4 267	5 311
Hispanic Population (percent)	2,758	4.207 8.510	13 56
Thispanie i opulation (percent)	2,758	0.510	15.50
Demographic Controls 2000			
Rural Population (Percent)	2,758	59.60	30.71
	_,		
Tea Party Movement			
Tea Party Express Donations pre-Tax Day 2009 ('000)	2,758	0.0198	0.169
Election 2008			
Republican House Vote (percent of all votes)	2,758	51.52	22.44
Republican House Votes ('000)	2,758	17.45	41.80
Republican House Votes (percent of population)	2,758	22.32	10.61
Votes for Obama (percent of all votes)	2,758	41.26	13.71
Democratic House Votes ('000)	2,758	21.23	72.24
Democratic House Votes (percent of population)	2,758	19.81	10.21
Total House Votes ('000)	2,758	39.79	111.8
Total House Votes (percent of population)	2,758	43.14	9.041
EL (: 2007			
Election 2006	0.750	0.510	0.200
Republican House Vote (percent of all votes)	2,758	0.518	0.200
Republican House Votes (1000)	2,158	11.91	28.94
Democratic House Votes (percent of population)	2,138	10.10	1.199
Democratic House Votes (1000)	2,138	13./1	45.20
Total Votes (2000)	2,138	26.28	0.000
Total Votes (percent of population)	2,130	20.20	0 850
	2,138	51.57	7.037

Note: The unit of analysis is a county. The variables and the data sources are described in Section III (Data and Summary Statistics), Section IV.A (Specifications and Hypotheses), and in the Appendix.

Table A 1. b. District-Level Summary Statistics

		Districts	5
	Obs	Mean	S.D.
Republican Votes, U.S. House 2010			
% of votes	435	50.86	19.29
Policymaking	105	41.14	10.07
ACU Score 2009	435	41.14	42.96
ACU Score 2010	435	41.45	44.13
Retired Republicans	435	0.0447	0.207
Retired Democrats	435	0.0469	0.212
Demographic Controls 2000			
Median Household Income	135	51 085	13 875
Unomployment Pate (percent)	435	10.00	2 724
Deputation	435	704 284	2.734
White Dopulation (share)	435	0 746	0 172
A friend American Deputation (share)	435	0.740	0.175
African-American Population (share)	435	0.126	0.147
Foreign-Born Population (share)	435	0.125	0.111
Hispanic Population (share)	435	0.155	0.175
Demographic Controls 2000			
Bural Population (share)	135	0.210	0.108
Kurai i opulation (share)	435	0.210	0.196
Election 2008			
Republican House Vote (percent of all votes)	435	41.19	22.49
Republican House Votes ('000)	435	120.0	70.40
Republican House Votes (percent of population)	435	0.168	0.0953
Votes for Obama (percent of all votes)	435	53.75	14.82
Democratic House Votes ('000)	435	150.0	57.39
Democratic House Votes (vote)	435	0.216	0.0881
Total House Votes (2000)	435	277.5	67.97
Total House Votes (percent of population)	435	0.395	0.0927
Total House Totes (percent of population)	100	0.575	0.0727
Election 2006			
Republican House Vote (percent of all votes)	435	42.11	22.36
Republican House Votes ('000)	435	97.061	41.380
Republican House Votes (percent of population)	435	0.141	0.0641
Democratic House Votes (2000)	435	82.470	48,836
Democratic House Votes (vote)	435	0.116	0.0680
Total Votes ('000)	435	184 031	56 405
Total Votes (percent of population)	435	0.263	0.0823
Total Totes (percent of population)	тээ	0.205	0.0025

Note: The unit of analysis is a congressional district. The variables and the data sources are described in Section III (Data and Summary Statistics), Section IV.A (Specifications and Hypotheses), and in the Appendix.
	-	Individual	s
	Obs	Mean	S.D.
Political Beliefs			
Supports the Tea Party movement	1,146	0.120	0.323
Favorable view on Sarah Palin	1,140	0.311	0.461
Feels outraged about the way things are going in the country	1,142	0.174	0.379
Opposes raising taxes on income >\$250K	1,140	0.228	0.418
Believes Americans today have less freedom compared to 2008	1,138	0.438	0.496
Unfavorable feelings towards President Obama	1,145	0.245	0.431
Reported likelihood of voting in the 2010 midterm election	1,092	0.701	0.398
Demographic Controls			
Age	1,146	49.032	16.733
Education, Categorical (1-4)	1,146	2.778	1.035
Household Income, Categorical (1-19)	1,146	10.945	4.293
Currently Working (share)	1,146	0.541	0.498
White (share)	1,146	0.803	0.398
African American (share)	1,146	0.094	0.292
Hispanic (share)	1,146	0.076	0.266
Foreign Born (share)	1,146	0.028	0.159
Rural (share)	1,146	0.178	0.382
Voted for the Republican Party			
to the House of Representatives, 2008 (share of all votes)	1,146	0.348	0.477

Table A 1. c. Summary Statistics, ANES Survey 2010

Note: The unit of analysis is a survey respondent from the 2010 ANES survey data. The variables and the data sources are described in Section III (Data and Summary Statistics), Section IV.A (Specifications and Hypotheses), and in the Appendix.

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Denendent Variahle		Tea	Party rs 2009		Tea] Oroanize	Party	Tea F Protester	arty ~ 2010	PAC Col	ntributions		Republic 11 S Hot	can Votes	
Acpendent variable	Darcone	of of	10, 2007		OIBUIL	0107 (010	Torestor I	0107 0	07	01-70		011.000	County	District
	,000	no %	Persons,	% of pop.		\$, per	Persons	% of	Persons,	% of	Votes	% of	% of	% of
	mean	mean	'000, max	max	\$ `000	capita	000,	.dod	000,	dod	000,	dod	votes	votes
	(1)	(2)	(3)	(4)	(2)	(9)	(2)	(8)	(6)	(10)	(11)	(12)	(13)	(14)
Panel A: No Demographic Controls														
Rainy Protest	-0.087***	-0.076***	-0.178***	-0.160***	-0.010***	-0.0060**	-0.070***	-0.065**	-0.378**	-0.0017***	-1.34**	-0.89**	-1.28	-1.851**
Election Controls	(CZU.U)	(020.0) Y	(ctoro)	Y	Y	(~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	(F20.0)	(C20.0)	(C(170)	Y	(TC:O)	(oc.o)	(20.0) Y	(07.1.20) Y
Demographic Controls	z	z	z	z	z	z	z	z	z	z	z	z	z	z
Region FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Υ	Υ	Y	Y	Y
Panel B: No Region Fixed Effects														
Rainy Protest	-0.110***	-0.092***	-0.221***	-0.189***	-0.008**	-0.0064**	-0.075***	-0.063**	-0.288*	-0.0013**	-0.99**	-0.98***	-1.36*	-1.859***
	(0.027)	(0.023)	(0.053)	(0.048)	(0.003)	(0.0029)	(0.024)	(0.026)	(0.143)	(0.0006)	(0.42)	(0.28)	(0.71)	(0.690)
Election Controls	Y	×	×	×	×	×	×	×	×	×	×	× ×	×	×
Decision EF	H 7	1	H 2	- V	- 2	¥ 2	1	× 2	- Z	¥ 2	H 2	I V	- ¥	1
Kegioli FE	2	2	2	2	2	2	2	2	2	2	2	2	2	Z
Panel C: Flexible Election Controls														
Rainy Protest	-0.121***	-0.075**	-0.238***	-0.152**	-0.020***	-0.0068***	-0.086***	-0.046**	-0.765**	-0.0014^{***}	-3.51**	-1.08***	-2.36**	-1.760*
	(0.031)	(0.029)	(0.061)	(0.059)	(0.007)	(0.0021)	(0.027)	(0.023)	(0.315)	(0.0004)	(1.38)	(0.27)	(0.98)	(0.968)
Election Controls	Y	Y	Y	Y	Υ	Y	Y	Y	Y	Y	Y	Y	Y	Υ
Demographic Controls	Υ	Y	Υ	Y	Y	Υ	Y	Y	Y	Υ	Y	Y	Y	Y
Region FE	Y	Y	Υ	Υ	Υ	Υ	Y	Y	Y	Υ	Y	Y	Y	Y
Observations	2,758	2,758	2,758	2,758	2,758	2,758	2,758	2,758	2,758	2,758	2,758	2,758	2,758	435
Rain Variable	Dummy	Dummy	Dummy	Dummy	Dummy	Dummy	Dummy	Dummy	Dummy	Dummy	Dummy	Dummy	Dummy	Dummy
Dep. Var. Mean	0.160	0.073	0.293	0.153	0.057	0.074	0.069	0.02	1.043	0.007	14.88	19.60	61.18	50.86
Note: The unit of analysis is a county except f significant rain in the county (or district) (al let in the level regressions we use include the Republic of votes for the Republican Party per capita, ho of ACU scores and election controls of the iden-	or column (14) v ast 0.1 inches) ar can Party vote sh e number of vote tity of the victor	where we analyzand zero otherwisanare, the total numers for the Democious party of the	e the congression e. All regressions mber of votes for ratic Party per ca past two election	al district. Rain, i include flexible the Republican I ppita, and turnout ns. The demograp	<i>Protest</i> is based controls for the r Party, the total nu per capita. In ad phic controls incl	I on the precipitat probability of rain mber of votes for klition, the congre ude log of popula	tion amount in the and population. The Democratic assional district strict stri	e county (or dis The election co Party, and total pecification in o of median inco	strict) on the ral ontrols account turnout. The pe column 14 also me, the unempl	lly day (April 15, for the outcomes ar-capita regressic includes prior rol oyment rate, the c	2009). The dui of the U.S. Ho ans include the. Il call controls 1 change in unem	mmy variable is use of Represen Republican Par to account flexi uployment betw	s equal to one i ntatives electio ty vote share, t bly for the pas cen 2005-2000	f there was ns in 2008. he number t two years), the share
of white population, the share of African-Ame based on their respective distribution, one for , and Summary Statistics). Section IV.A (Specifi	rican population each decile, equi ications and Hyp	, the share of Hi al to 1 if the pro otheses), and in	spanic population bability in a cour the Appendix. M	 the share of in nty (or district) fi <i>hean</i> denotes the 	migrant populati alls within the gi average across t	on, and the share ven range and 0 (he three sources (of the populatio. otherwise. More of attendance dat	n that is rural. I information on a. Max is the h	In Panel C, the c the variables, i inshest reported	election controls a the data sources, a furnout in any gi	and demograph and our specifi- iven location. 7	ic controls con cation are desc The per capita r	sist of 9 dumm ribed in Sectio egressions are	y variables n III (Data norulation
weighted. Robust standard errors in parenthese	s, clustered at th	e state level. **:	* 1%, ** 5%, *	10% significance						0		, made and are		

The Reduced-Form Effect of Rain, Robustness to the Set of Control Variables Used Table A 2. a.

4

		ACU	Score		Keture	ment	Average Effect
Dependent Variable	77	00	507	10		Ĺ	
	Full	All Votes	Full	All Votes	Kepublicans	Democrats	Political Beliefs
	(1)	(2)	(3)	(4)	(5)	(9)	
Panel A: No Demographic Controls							
Rainy Protest	-1.455	-2.613***	-3.740***	-2.210*	0.055	-0.081**	-0.139***
	(0.893)	(0.952)	(1.116)	(1.235)	(0.050)	(0.032)	(0.035)
Election Controls	Υ	Y	Y	Υ	Υ	Υ	Υ
Demographic Controls	Z	Z	Z	Z	Z	Z	N
Region FE	Υ	Υ	Υ	Υ	Υ	Y	Υ
Panel B: No Region Fixed Effects							
Rainy Protest	-2.070**	-3.019***	-4.024***	-3.386**	0.020	-0.083**	-0.107 **
	(0.980)	(1.074)	(1.174)	(1.373)	(0.056)	(0.031)	(0.043)
Election Controls	Υ	Y	Υ	Y	Υ	Y	Υ
Demographic Controls	Y	Υ	Υ	Y	Y	Y	Υ
Region FE	Z	Z	Z	Z	Z	Z	Ν
Panel C. Elevible Election Controls							
Rainy Protest	-1.949**	-2.923**	-4.312^{***}	-3.080*	0.205	-0.138**	-0.228**
×	(0.958)	(1.220)	(1.535)	(1.827)	(0.252)	(0.065)	(0.05)
Election Controls	Ϋ́	, K	Å	, ,	۲ ۲	, Y	Y
Demographic Controls	Υ	Υ	Υ	Υ	Υ	Υ	Υ
Region FE	Y	Y	Y	Y	Υ	Y	Y
Observations	435	327	435	279	179	256	I
Dep. Var. Mean	41.14	41.44	41.45	39.17	0.0447	0.0469	I
Note: The unit of analysis is a congressional is equivalent to one if there was significant rain in t	district. Rainy	Protest is based	1 on the precipita	tion amount in the	ie county on the rally using the full sample	y day (April 15, 200 of all congressmen	9). The dummy variable
the congressmen that voted on all scored votes	s. All regression	is include flexible	e controls for the	probability of ra	in, and population. T	he prior roll call con	trols account flexibly for
the past two years of ACU scores. The election	in controls inclu	de the identity o	f the victorious I	varty, the Republi	can Party vote share,	the total number of	votes for the Republican
Farry, the total number of votes for the Democ. population density, log of median income, the t	trauc rarty, and unemployment	rate, the change	in unemploymen	ons to une U.S. H t between 2005-2	ouse of kepresentation 009, the share of whi	ves. The demograph te population, the sl	nc controls include log of hare of African-American
population, the share of Hispanic population,	the share of imi	migrant populati	on, and the share	e of the populatio	n that is rural. In Pa	nel C, the election c	ontrols and demographic
otherwise. More information on the variables,	the data source	s, and our specif	ication are descr	ibed in Section II	I (Data and Summary	/ Statistics), Section	IV.A (Specifications and
Hypotheses), and in the Appendix. Robust star	ndard errors in I	parentheses, clus	tered at the state	level. *** 1%, *	* 5% , * 10% signifi	cance.	

Different Rainfall Measures	
of Rain, I	
The Reduced-Form Effect c	
Table A 3. a.	

		Tea Party Prof	testers 2000		TeaT	Jarty	Tea D	artv	PAC Cont	ributione				
Dependent Variable		First S	Stage		Organ	nizers	Protester	s 2010	2005	-10		Republican	Party Votes	
	Persons, '000. mean	% of pop. mean	Persons, '000. max	% of pop. max	Persons, '000	% of pop.	Persons, '000	% of pop.	\$. '000	 \$, per capita 	votes, '000	% of pop	County % of votes	District % of votes
	(1)	(2)	(3)	(4)	(5)	(9)	(1)	(8)	(6)	(10)	(11)	(12)	(13)	(14)
Panel A: Higher rainfall cutoff Rainy Protest, dummy	-0.126***	-0.096***	-0.255***	-0.195***	-0.013**	-0.0067*	-0.082**	-0.053*	-0.623**	-0.0016**	-1.63**	-0.94**	-1.64**	-1.297*
Observations	(0.031) 2,758	(0.023) 2,758	(0.064) 2,758	(0.052) 2,758	(0.005) 2,758	(0.0036) 2,758	(0.032) 2,758	(0.031) 2,758	(0.242) 2,758	(0.0007) 2,758	(0.72) 2,758	(0.36) 2,758	(0.76) 2,758	(0.733) 435
Panel B: Rainfall using log of precipitation Rainv Protest loo(mecinitation)	-0.007***	-0.019***	-0.052***	-0.038***	-0.003***	-0.0020**	-0.025***	-0.020**	-0.133**	-0.00004***	-0 46***	-0.33***	-0.51**	-0.503**
Observations	(0.007) 2.758	(0.006) 2,758	(0.014) 2,758	(0.012) 2,758	(0.001) 2,758	(0.009) 2,758	(0.007) 2,758	(0.007) 2,758	(0.050) 2,758	(0.001) 2,758	(0.15) 2.758	(0.09) 2.758	(0.23) 2,758	(0.246) 435
Panel C: Rainfall within 10 mile radius														
Rainy Protest, dummy	-0.103***	-0.083***	-0.210***	-0.179***	-0.009**	-0.0071***	-0.094***	-0.080***	-0.381*	-0.0017**	-1.18*	-1.09***	-1.41*	-1.031
Observations	2,286	2,286	(0.0.0) 2,286	2,286	2,286	2,286	2,286	2,286	2,286	2,286	(0.00) 2,286	2,286	2,286	330
Election Controls	Υ	Υ	Υ	Υ	Υ	Υ	Υ	Υ	Υ	Υ	Υ	Y	Υ	Υ
Demographic Controls	Υ	Υ	Υ	γ	Υ	γ	Υ	Υ	Y	Υ	Υ	Υ	γ	Υ
Dep. Var. Mean	0.160	0.073	0.293	0.153	0.057	0.074	0.069	0.020	1.043	0.007	14.88	19.60	61.18	50.86
Note: The unit of analysis is a county, except in colurn otherwise. In Panel B, <i>Rainy Protest</i> is log(precipitatio of the county centroid. The dummy variable is equal to	nn 14. In Panel A, on+1), where preci	Rainy Protest i pitation is rainfa- ignificant rain in	is based on the pr Il in one-hundred the county (at let	ecipitation amou ths of a an inch ir tst 0.10 inches) au	nt in the county of the county on t ad zero otherwis	on the rally day (the rally day (Apri se. All regressions	April 15, 2009). il 15, 2009). In Pa s include flexible	The dummy vari anel C, Rainy P1 controls for the I	able is equal to otest is based o probability of ra	one if there was a n the average prev in, population, an	significant rain cipitation amou id region fixed e	in the county (int of all rain st effects. The ele	(at least 0.35 inch ations within a 10 ection controls act	es) and zero) mile radius count for the
outcomes of the U.S. House of Representatives electio, include the Republican Party vote share, the number of	f votes for the Rep	ublican Party per	s we include the I r capita, the num	cepublican Party ber of votes for th	vote share, the t ie Democratic F	otal number of vo Party per capita, au	ites for the Keput nd turnout per ca	pita. In addition,	the congression	votes for the Den nal district specifi	nocratic Party, a ication in colun	and total turnou nn 14 also inclu	ut. The per-capits udes prior roll cal	l controls to
account nextby for the past two years of ACU scores a $2005-2009$ the share of white nonulation the share of A	and election control African-American i	is of the identity boundation, the sh	of the victorious	party of the past t population, the sh	wo elections. 11 are of immigran	it nonulation, and i	onrois include to the share of the n	g of population of	tensity, log of fr ural. More info	cutan income, income, income, income the second s	riables the data	u rate, the chan a sources, and c	ige in unempioyi and specification :	tent between re described

2002-2005, the stare of white population, the stare of Attream-American population, the stare of Hispatic population, the stare of the population that is rural. More information on the variables, the data sources, and one specification in Section III (Data and Summary Statistics). Section IVA (Specifications and Hypotheses), and in the Appendix. The per capita regressions are population weighted. Robust standard errors in parentheses, clustered at the state level. *** 1%, ** 1%, ** 1%, ** 1% significance.

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		ACU	Score		Retire	ment	Average Effect
Dependent Variable	5	600	20	10			
4	Full	All Votes	Full	All Votes	Republicans	Democrats	Political Beliefs
Thomas A : Utichan maintain	(1)	(2)	(3)	(4)	(5)	(9)	
raiter A. trigher famman curon Rainy Protest, dummy	-1.989*	-2.329*	-4.388***	-2.773*	-0.028	-0.090***	-0.13***
	(1.044)	(1.374)	(1.386)	(1.493)	(0.077)	(0.029)	(0.038)
Panel B: Rainfall using precipitation amount Rainy Protect Lon(mecinitation)	-0 545 °C	***C0 0	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	-0 721**	0.004	**0000	_0 031***
	(0.278)	(0.292)	(0.359)	(0.353)	(0.014)	(0.012)	(0.012)
Panel C: Rainfall within county radius							
Rainy Protest, dummy	-1.517	-2.180*	-3.099**	-1.894	-0.030	-0.122***	-0.01
	(0.948)	(1.099)	(1.428)	(1.790)	(0.104)	(0.044)	(0.046)
Election Controls	Υ	Υ	Υ	Υ	Υ	Υ	Υ
Demographic Controls	Υ	Υ	Υ	Υ	Υ	Υ	Υ
Dep. Var. Mean	41.14	41.44	41.45	39.17	0.0447	0.0469	
Note: The unit of analysis is a congressional district. <i>F</i> <i>Rainy Protest</i> is based on the precipitation amount in t inches) and zero otherwise. In Panel B, <i>Rainy Protest</i> is C, <i>Rainy Protest</i> is based on the average precipitation <i>s</i> in the district (at least 0.10 inches) and zero otherwise. <i>J</i> flexibly for the past two years of ACU scores. The electi flexibly for the past two years of ACU scores. The electi the total number of votes for the Democratic Party, and log of median income, the unemployment rate, the chan population, and the scores. VM A Geneticity the scores of Data and Summary Statistics). Socied VM A Geneticity	<i>iull</i> denotes usi the district on the s log(precipitat amount of all r All regressions All regressions ion controls ind i total turnout i nge in unemplo share of the po	ing the full sample rally day (Aj ion+1), where pi ain stations with include flexible slude the identity in the last two el yment between yment patt is r wheese.	ole of all congression of all congression of the congression of the victoriou ections to the victoriou ections to the victoriou ections to the victoriou ural. More infor	smen. All votes he dummy varial nfall in one-hund us of the district probability of rai s party, the Repul S. House of Repul hare of white pol mation on the var	includes only the co- ble is equal to one if redths of a an inch in centroid. The dumm n, population, and re- blican Party vote shar resentatives. The der pulation, the share of riables, the data sour-	ngressmen that voted there was significant the county on the rall by variable is equal to gion fixed effects. The re, the total number o nographic controls in f African-American p f es, and our specifica	on all scored votes. In Panel A, rain in the district (at least 0.35 one if there was significant rain e prior roll call controls account f votes for the Republican Party, clude log of population density, opulation, the share of Hispanic tion are described in Section III
clustered at the state level. *** 1%, ** 5%, * 10% signi	nificance.			the medan and and	Pronoun my pyper		to a second and an array a manage

Table A 3. b. The Reduced-Form Effect of Rain, Different Rainfall Measures

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Dependent Variable	Tea P.	arty Protester.	s 2009, First Stag	je	Tea Party (Drganizers	Tea Party P	rotesters 2010	PAC Contribu	<u>itions 2009-10</u>	Repul	olican Party 7	Votes
	Persons, '000	% of pop	Persons, '000	% of	Persons,		Persons,			\$, per			
	mean	mean	max	pop max	000,	% of pop	000,	% of pop	\$, `000	capita	votes, '000	% of pop	% of vote
	(1)			(2)	(3)	(4)	(5)	(9)	(2)	(8)	(6)	(10)	(11)
Rainy Protest	-0.093***	-0.073***	-0.191***	-0.137***	-0.018***	-0.011***	-0.043*	-0.031**	-0.466***	-0.006***	-2.949***	-1.253***	-2.158***
	(0.022)	(0.019)	(0.036)	(0.03)	(0.004)	(0.001)	(0.024)	(0.013)	(0.147)	(0.001)	(0.895)	(0.161)	(0.554)
Observations	2,758	2,758	2,758	2,758	2,758	2,758	2,758	2,758	2,758	2,758	2,758	2,758	2,758
Protesters Variable	mean	mean	max	max	mean	mean	mean	mean	mean	mean	mean	mean	mean
Rain Variable	dummy	dummy	dummy	dummy	dummy	dummy	dummy	dummy	dummy	dummy	dummy	dummy	dummy
Sample	full	full	full	full	full	full	full	full	full	full	full	full	full
Election Controls	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Demographic Controls	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Dependent Variable Mean	0.16	0.073	0.293	0.153	0.057	0.074	0.069	0.020	1.043	0.007	14.88	19.60	61.18

The outcomes of the US, House of Representives elections in 2008. In the level tegrobican Party varies that was not number of votes for the Republican Party varies of the Republican Party and total number of votes for the Democratic Party and total number of votes for the Democratic Party and total number of votes for the Republican Party varies of the Republican Party varies and the Republican Party varies of the Republican Party varies and the Republican Party varies of the Republican Party varies and the Republican Party v

Dependent Variable		Tea. Proteste	Party 18, 2009		Tea Organiz	Party ers, 2010	Tea. Proteste	Party 3rs 2010	PAC Coni 2009	tributions)-10	Votes	Republican	s 2010
	Persons,	% of											
	000.	. bob.	Persons,	% of pop.		\$, per	Persons	% of	Persons,	% of	Votes	% of	% of
	mean	mean	`000, max	тах	\$ `000	capita	000,	pop.	000,	dod	.000	dod	votes
	(1)	(2)	(3)	(4)	(5)	(9)	(1)	(8)	(6)	(10)	(11)	(12)	(13)
Rainy Protest	-0.097***	-0.074***	-0.196***	-0.152***	-0.009**	-0.0062**	-0.051*	-0.050**	-0.175*	-0.0012	-1.30***	-1.24***	-1.80**
	(0.024)	(0.019)	(0.053)	(0.040)	(0.003)	(0.0030)	(0.029)	(0.024)	(0.101)	(0.0007)	(0.46)	(0.28)	(0.77)
Observations	2,467	2,467	2,467	2,467	2,467	2,467	2,467	2,467	2,467	2,467	2,467	2,467	2,467
R-squared	0.33	0.33	0.15	0.14	0.85	0.32	0.12	0.06	0.48	0.13	0.97	0.84	0.87
Rain Variable	Dummy	Dummy	Dummy	Dummy	Dummy	Dummy	Dummy	Dummy	Dummy	Dummy	Dummy	Dummy	Dummy
Election Controls	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Demographic Controls	Y	Y	Y	Y	Υ	Y	Υ	Υ	Υ	Υ	Υ	Υ	Υ
Note: The unit of analysis is a 2009). The dummy variable is	a county, where a	counties with a there was signifi	population size be cant rain in the co	elow ten thousar ounty (at least 0.	nds and above (one million are e	sxcluded. Rain	<i>uy Protest</i> is b include flexib	ased on the pr le controls for	ecipitation ame the probability	ount in the cour of rain, popule	nty on the rally ation, and regio	day (April 15, n fixed effects.

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numere or vues nor une Democrator rarry, van tona unnout. In the per-tapita regressions include the Kepublican Party year eaplita, and turnout per capita, the number of votes for the Democratic Party per capita, and turnout per capita. The demographic controls include log of population, the share of the population, the share of Hispanic population, the share of this population are shored as the stare of the population the share of Hispanic population, the share of the population are shored as the stare of the population the stare of the population are shored as the stare of the population the share of the population are shored as the stare of the population the stare of the population are shored as a stare of stare shored as the stare of the population and the share of the population and the share of the population are shored as the stare of the population are shored as the stare of the population and the share of the population are shored as the stare of the population are shored as the stare of the population are shored as the stare of the population are stared as the stare of the population are stared as the stare of the population are shored as the stare of the population are stared as the stare of the population are stared as the stare of the population are stared as the stare of the stare of the population are stared as the stare of the population are stared as the stare of the st

U.S.	% of	votes	(13)	-1.46*	(0.85)	542	0.91	Υ	Υ	57.71	The dummy ion controls votes for the and turnout n-American on III (Data ion. The per
blican Votes, House 2010	% of	pop.	(12)	-0.97***	(0.33)	545	0.89	Y	Y	17.20	pril 15, 2009). fects. The elect otal number of arty per capita, share of Africa scribed in Secti any given locati
Reput	Votes,	000.	(11)	-3.38**	(1.36)	545	0.97	Υ	Υ	46.66	e rally day (A) region fixed ef an Party, the tu Democratic P opulation, the ification are de ted turnout in
tributions 9-10	\$, per	capita	(10)	-0.0020***	(0.0007)	545	0.42	Y	Υ	0.010	n the county on th , population, and 1 ss for the Republic er of votes for the te share of white p rces, and our speci s the highest repor
PAC Con 200		\$, '000	(6)	-1.533***	(0.432)	545	0.77	Y	Y	4.052	itation amount i obability of rain d number of vote apita, the numb n 2005-2009, th les, the data sou les, the data sou
arty s. 2010	% of	pop.	(8)	-0.076*	(0.043)	545	0.14	Y	Υ	0.064	l on the precip trols for the pr share, the tota can Party per c syment betwee yment betwee on the variab ces of attendat cance.
Tea P Protester	Persons,	,000	(2)	-0.180**	(0.087)	545	0.17	Υ	Υ	0.322	<i>rotest</i> is based le flexible con ican Party vote ican Party vote or the Republid age in unemplo re information is the three sour * 10% signifid
Party ers. 2010	% of	pop.	(9)	-0.0070**	(0.0027)	545	0.55	Y	Υ	0.069	source. Rainy P egressions inclue egressions inclue clude the Republi amber of votes fa the chan that is rural. Mo the average across *** 1%, ** 5%,
Tea I Organize	Persons,	000,	(5)	-0.025**	(0.010)	545	0.91	Υ	Υ	0.187	to at least one therwise. All r ressions we inc te share, the m he unemploym the populatior <i>lean</i> denotes th e state level. *
	% of	pop. max	(4)	-0.236***	(0.077)	545	0.23	Y	Y	0.777	rally according ches) and zero o . In the level reg ublican Party vo nedian income, t , and the share of the Appendix. <i>M</i>
otesters 2009	Persons,	'000, max	(3)	-0.518***	(0.187)	545	0.22	Y	Y	1.491	at had a reported by (at least 0.1 in elections in 2008 s include the Rep n density, log of r grant population ootheses), and in 1 rors in parenthes
Tea Party Pro	% of pop pop.	mean	(2)	-0.108***	(0.034)	545	0.40	Y	Υ	0.371	ed to counties th train in the count Representatives apita regression. log of population he share of immi ications and Hyr
	Persons, '000,	mean	(1)	-0.228**	(0.096)	545	0.40	Y	Y	0.815	county, restrict was significant e U.S. House of mout. The per-controls include inc population, t on IV.A (Specificant Restriction) an weighted. Restriction on weighted. Restriction and the restriction of the restriction and t
Dependent Variable	1			Rainy Protest		Observations	R-squared	Election Controls	Demographic Controls	Dep. Var. Mean	Note: The unit of analysis is a variable is equal to one if there account for the outcomes of th Democratic Party, and total tu per capita. The demographic c population, the share of Hispan and Summary Statistics). Secti capita regressions are populatio

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Table 1

ACU 2010- 2008 Score	(13)	-3.371	$[1.307]^{***}$	$(1.122)^{***}$	$(0.881)^{***}$	$(0.803)^{***}$	$(0.764)^{***}$	435	District	Dummy		Y	Y	ere was significant
ACU 2010 Score	(12)	-4.296	$[1.021]^{***}$	$(1.140)^{***}$	$(0.794)^{***}$	$(0.700)^{***}$	$(0.608)^{***}$	435	District	Dummy		Υ	Y	is equal to one if th
ACU 2009 Score	(11)	-1.922	$[0.937]^{**}$	$(0.767)^{**}$	$(0.580)^{***}$	$(0.542)^{***}$	$(0.476)^{***}$	435	District	Dummy		Y	Y	cdummy variable
Democratic Votes, U.S. House 2010, '000	(10)	-0.42	[0.52]	(0.47)	(0.49)	(0.51)	(0.53)	2,758	County	Dummy		Υ	Y	pril 15, 2009). The
Republican Votes U.S. House 2010, '000	(6)	-1.22	$[0.51]^{**}$	$(0.48)^{**}$	$(0.49)^{**}$	$(0.46)^{***}$	$(0.43)^{***}$	2,758	County	Dummy		Y	Y	n the rally day (Ar
Tea Party Protesters 2010, '000	(8)	-0.072	$[0.024]^{***}$	$(0.025)^{***}$	$(0.023)^{***}$	$(0.023)^{***}$	$(0.023)^{***}$	2,758	County	Dummy		Y	Y	ntv (or district) or
Tea Party Organizers 2010 *000	Ð	-0.011	$[0.004]^{***}$	$(0.003)^{***}$	$(0.003)^{***}$	$(0.002)^{***}$	$(0.002)^{***}$	2,758	County	Dummy		Υ	Y	amount in the cou
PAC Contributions 2010, \$ '000	(9)	-0.279	$[0.126]^{**}$	$(0.135)^{**}$	$(0.139)^{**}$	$(0.129)^{**}$	$(0.123)^{**}$	2,758	County	Dummy		Υ	Y	on the precipitation
PAC Contributions 2009-10, \$ '000	(5)	-0.355	$[0.161]^{**}$	$(0.170)^{**}$	$(0.171)^{**}$	$(0.159)^{**}$	$(0.151)^{**}$	2,758	County	Dummy		Υ	Y	nu Protest is based
	(4)	-0.226	$[0.095]^{**}$	$(0.101)^{**}$	$(0.083)^{***}$	$(0.074)^{***}$	$(0.069)^{***}$	2,758	County	Dummy	Mean	Υ	Y	ional district. Rai
otesters, '000	(3)	-0.160	$[0.054]^{***}$	$(0.056)^{***}$	$(0.051)^{***}$	$(0.047)^{***}$	$(0.046)^{***}$	2,758	County	Continuous	Mean	Υ	Y	alvze the congress
Tea party Pro	(2)	-0.185	$[0.051]^{***}$	$(0.054)^{***}$	$(0.050)^{***}$	$(0.051)^{***}$	$(0.048)^{***}$	2,758	County	Dummy	Max	Υ	Y	-(13) where we ar
	Ð	-0.094	$[0.022]^{***}$	$(0.028)^{***}$	$(0.024)^{***}$	$(0.024)^{***}$	$(0.024)^{***}$	2,758	County	Dummy	Mean	Y	Y	for columns (11)
Dependent Variable		Rainy Protest	State-clustered standard errors	Spatial dependence <5 degrees	Spatial dependence <10 degrees	Spatial dependence <15 degrees	Spatial dependence <20 degrees	Observations	Unit of Analysis	Rain Variable	Protesters Variable	Election Controls	Demographic Controls	Note: The unit of analysis is a county except

Table A 7. Standard Errors with Spatial Dependence

rain in the courty (or district) (at least 0.1 inclues) and zero otherwise. All regressions include flexible controls for the probability of rain, population, and region fixed effects. The election controls account for the outcomes of the U.S. House of Representatives elections in 2008. In the level regressions windule the Republicant they note share of the probability of rain, population throws we include the Republicant throw to ensign the and turnout. The per-capita regressions induce the Republicant throws on 5005.2009, the share of while population, the share of African-American population, the share of African-American population, the share of Hammer of voices include the capita. The demographic controls include the Republicant the number of voices for the representatives elections include the reprisentative terestina and turnout the reprisental transv oute share of median include the reprisentation and turnout precupitation and turnout the share of the optican-American population, the share of African-American population, the share of firmigrant population, the share of firmingrant population, the share of immigrant population, the share of minigrant population, the share of sources, and our specification are described in Section III (Data and Summary Statistics). Section protoness, and our specification are described in Section III (Data and Summary Statistics). Section protoness, and our specification are described in Section III (Data and Summary Statistics). Section specifications and Hypotheses, and the Appenda. *Marun* denotes consons the transfare data sources, and our specification are described in the state of immigrant population, and the state as everges of attendance data. Roots introduce the state level. Standard errors in state level. Stan

	Proteste	ers, '000	Proteste	rs, % of pop
	(1)	(2)	(3)	(4)
Rainy Protest, Republican Leaning County	-0.069***	-0.124***	-0.062**	-0.119**
	(0.022)	(0.044)	(0.025)	(0.048)
Rainy Protest, Swing County	-0.156***	-0.320***	-0.081***	-0.183***
	(0.043)	(0.087)	(0.026)	(0.062)
Rainy Protest, Democratic Leaning County	-0.141	-0.322**	-0.120***	-0.246***
	(0.095)	(0.155)	(0.043)	(0.064)
Observations	2,758	2,758	2,758	2,758
R-squared	0.406	0.411	0.157	0.141
Protesters Variable	Mean	Max	Mean	Max
Demographic Controls	Y	Y	Y	Y
Election Controls	Y	Y	Y	Y
Dep. Var. Mean	0.160	0.293	0.073	0.153

Table A 8. Complier Counties

Note: The unit of analysis is a county. A Republican leaning county is a dummy variable indicating a predicted 2010 Republican vote share in the U.S. House above 0.55, a Swing County has a predicted Republican vote share between 0.45-0.55, and aDemocratic leaning county below 0.45. The predicted vote share is the linear prediction from a regression of 2010 Republican vote share on all regressors of equation 1 (i.e., previous election controls, demographics, region fixed effects, and the rain probability), except that it excludes the RainyProtest dummy. Each estimate is for the coefficient of the interaction with Rainy Protest. Rainy Protest is based on the precipitation amount in the county on the rally day (April 15, 2009). The dummy variable is equal to one if there was significant rain in the county (at least 0.1 inches) and zero otherwise. All regressions include flexible controls for the probability of rain, population, and region fixed effects. The election controls account for the outcomes of the U.S. House of Representatives elections in 2008. In the level regressions we include the Republican Party vote share, the total number of votes for the Republican Party, the total number of votes for the Democratic Party, and total turnout. The per-capita regressions include the Republican Party vote share, the number of votes for the Republican Party per capita, the number of votes for the Democratic Party per capita, and turnout per capita. The demographic controls include log of population density, log of median income, the unemployment rate, the change in unemployment between 2005-2009, the share of white population, the share of African-American population, the share of Hispanic population, the share of immigrant population, and the share of the population that is rural. More information on the variables, the data sources, and our specification are described in Section III (Data and Summary Statistics), Section IV.A (Specifications and Hypotheses), and in the Appendix. Mean denotes the average across the three sources of attendance data. Max is the highest reported turnout in any given location. The per capita regressions are population weighted. Robust standard errors in parentheses, clustered at the state level.*** 1%, ** 5%, * 10% significance.

		Tea Party			Tea Party		PAC	Contribut	ions			Republican	Votes, U.S.		
nt Variable	Ō	ganizers, 20	10	P	rotesters, 20.	10		2009-10				House	2010		
		% of pop			% of pop			\$ per capits			% of po			% of vote	s
	OLS	OLS	2SLS	OLS	OLS	2SLS	OLS	OLS	2SLS	OLS	OLS	2SLS	OLS	OLS	2SLS
	(1)	(2)	(3)	(4)	(5)	(9)	(2)	(8)	(6)	(10)	(11)	(12)	(13)	(14)	(15)
ers, % of pop.	0.013^{***} (0.003)	0.012^{***} (0.003)	0.093 ** (0.038)	0.286^{***} (0.053)	0.285*** (0.052)	0.794^{***} (0.277)	0.220* (0.112)	0.209* (0.114)	1.700^{**} (0.698)	0.769* (0.383)	0.446** (0.192)	12.594*** (4.209)	1.531 (1.342)	0.695 (0.641)	18.808** (7.847)
raphic Controls	z	Y	Y	z	Y	Y	z	Y	Y	z	Y	Y	z	Y	Y
n Controls ations	N 2.758	Y 2.758	Y 2.758	N 2.758	Y 2.758	Y 2.758	N 2.758	Y 2.758	Y 2.758	N 2.758	Y 2.758	Y 2.758	N 2.758	Y 2.758	Y 2.758
ed	0.033	0.036	Ţ	0.095	0.107	Ţ	0.216	0.232	Ţ	0.680	0.871	Ţ	0.508	0.889	Ţ
ur. Mean	0.074	0.074	0.074	0.020	0.020	0.020	0.007	0.007	0.007	19.60	19.60	19.60	61.18	61.18	61.18
e unit of analysis is a ficant rain in the cour entatives elections in	a county. The 2 nty (at least 0.1 1 2008. In the l	SLS estimates inches) and ze evel regression	use Rainy Pro ro otherwise. <i>F</i> s we include th	<i>test</i> as an instra All regressions in the Republican F	ument in equati include flexible Party vote share	on 2, and is bas controls for the , the total numb	sed on the pred probability c ber of votes fo	cipitation am of rain, populs or the Republ	ount in the co ation, and reg ican Party, th	unty on the r ion fixed effe e total numbe	ally day (Apricts. The elect er of votes for	1 15, 2009). It is ion controls acco the Democratic	a dummy va ount for the ou Party, and to	riable equal t utcomes of th tal turnout. T	o one if there e U.S. House he per-capita
log of median income of median income on, and the share of the adix. The per capita n	 e, the unemplo e population th egressions are 1 	e suare, uie nui syment rate, the at is rural. Mor population weis	change in un- c change in un- re information - phted. Robust s	on the republic employment be on the variables standard errors	attracty per cal stween 2005-20 s, the data sourc in parentheses, o	pita, une numbe 09, the share o ses, and our spe clustered at the	of white popul vification are state level. **	lation, the shi described in (** 1%, ** 59	are of African Section III (D 6. * 10% sign	capita, and tu n-American F bata and Sumi nificance.	nuour per cap oopulation, th mary Statistic	e share of Hispa s), Section IV.A	apure controns inic populatic (Specification	on, the share as and Hypotl	of immigrant of immigrant neses), and in
-	0														

Table A 9. The Effect of Tea Party Protests on Voting Behavior, OLS and 2SLS

Dependent Variable	Prote % of	sters, pop	Repu	blican Party ' % of pop.	Votes	Democi	atic Part	y Votes	Rep	ublican Vot % of all vot	e share es
	(1)	(2)	(3)	(4)	(5)	(9)	(2)	(8)	(6)	(10)	(11)
Rainy Protest	-0.030 *** (0.010)	-0.069*** (0.021)	-0.71*** (0.26)			-0.03			-1.31** (0.59)		
Per Protester Scaling				24.10*** (8 71)			1.15			44.37**	
% of Pop. Protesting Scaling				(0./1)	10.40^{***} (3.78)		((6.6)	0.50 (4.31)		(17.61)	19.15** (7.72)
Observations	2,758	2,758	2,758	2,758	2,758	2,758	2,758	2,758	2,758	2,758	2,758
R-squared	0.073	0.061	0.83	ı	·	0.81	ı	ı	0.83	·	ı
Protesters Variable	Mean	Max	·	Mean	Max	ı	Mean	Max	ı	Mean	Max
Election Controls	Y	Y	Υ	Y	Y	Υ	Υ	Υ	Υ	Υ	Y
Demographic Controls	Y	Y	Y	Y	Y	Υ	Y	Υ	Υ	Υ	Y
Dep. Var. Mean	0.073	0.153	19.6	19.6	19.6	11.5	11.5	11.5	61.2	61.2	61.2
Note: The unit of analysis is a county	y. RainyProtest	is based on the p	recipitation amo	unt in the county	/ (or district) on	the rally day	(April 15,	2009). The d	lummy variable	e is equal to or	if there was
on the percent of people attending on	the rally day re	lative the county	population. All 1	egressions inclu	de flexible contr	ug une protest	s (scaleu o obability of	f rain, popula	tion, and regio	o oj rop. rou n fixed effects	The election
controls account for the outcomes of t Party, the total number of votes for th	he U.S. House o le Democratic Pa	f Representatives urty, and total turn	elections in 2008 iout. The per-car	i. In the level reg dita regressions i	gressions we incl nclude the Repu	ude the Repul blican Party y	olican Party vote share,	<pre>/ vote share, t the number o</pre>	the total numbe f votes for the	er of votes for ta Republican Pa	he Republican rty per capita,
the number of votes for the Democrat in unemployment between 2005-2009,	tic Party per cap	ita, and turnout pe ite population, th	er capita. The de e share of Africa	mographic contr n-American pop	ols include log oll oll oll oll oll oll oll oll oll	of population e of Hispanic	density, lo	g of median i, the share of	income, the un-	employment ra pulation, and tl	te, the change is share of the

Table A 10. The Effect of Tea Party Protests on Voting Behavior, Unweighted Regressions

population that is rural. More information on the variables, the data sources, and our specification are described in Section III (Data and Summary Statistics), Section IV.A (Specifications and Hypotheses), and in the Appendix. *Mean* denotes the average across the three sources of attendance data and *Max* is the highest reported number. The scaling estimates (columns 4-5, 7-8, and 10-11) use 2SLS. All other regressions use OLS. Robust standard errors in parentheses, clustered at the state level. *** 1%, ** 5%, * 10% significance. $\begin{array}{c|c} P_{1} \\ P_{1} \\ P_{1} \\ P_{2} \\ P_{1} \\ P_{2} \\ P_{1} \\ P_{2} \\ P_{2$



Figure A.1. County Population Size and Measurement Error in Rally Size. This figure shows that measurement error decreases in population size. The x-axis is the county population size in bins of 10,000, where the highest bin includes all counties with a population of 250,000 and above. The graph on the left plots the share of counties within each population bin for which two of three sources report of a rally, but one source fails to do so. The graph on the right plots the mean difference between the highest and lowest rally size for each county with at least one source reporting a rally. The lowest rally size includes sources not reporting a rally, which implies a reported rally size of zero for that source. A value of 1 on the y-axis means that the max-min difference is 1% of the population reported protesting. The figure shows that rally size reports are more precise for larger counties.