Incumbents' Performance and Political Polarization*

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Abstract

This paper studies the relationship between incumbents' performance and political polarization, both with theory and data. The theory is based on a spatial model of political competition in which the voters use the incumbent's performance in office to update their beliefs about his competence. A better performance leads to the incumbent's electoral advantage and so allows him to announce a more extreme platform closer to his bliss point. Therefore, conditioned on reelection, a better incumbent's performance leads to higher political polarization. We use the data on the incumbents' performance in natural disaster relief and the ideological positions they take in the U.S. House of representatives in 1953-2010. The empirical evidence shows that a better performance in post-disaster recovery is associated with more extreme ideological positions of the corresponding incumbents. These and other empirical results are in line with the model predictions.

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1 Introduction

In representative democracies, elected officials decide on policy issues on behalf of their constituencies. While policy choice is the ultimate goal of political representation, voters might also value competence or ability of politicians independently of their ideological platforms. In this case, they opt for a candidate offering a better combination thereof. This in turn makes politicians condition their electoral platforms on voters' assessment of their competence. However, innate ability is often hard to observe which leaves the voters clueless about political newcomers. As for incumbents, the voters can use the performance to assess their competence. It implies that the incumbent's performance might affect candidates' electoral promises and so have an impact on polarization in the political arena. In this paper, we analyze the relationship between incumbents' performance and political polarization where the latter is defined as the candidates' political extremism relative to the median voter's political stances.

Using the data on the incumbents' performance in natural disaster relief and the ideological positions they take in the U.S. House of representatives in 1953-2010, we show empirically that a better incumbent's performance is associated with higher political polarization. To provide one plausible explanation for this empirical pattern, we propose a simple theory in which a better incumbent's performance leads to his electoral advantage and so allows him to announce a more extreme platform closer to his bliss point. In particular, we build a spatial model of political competition with two policy-motivated candidates and full commitment as in Wittman (1983, 1990), Calvert (1985), and others. We extend the model further to incorporate unobservable random ability of the candidates and assume that the median voter cares not only about policy issues but also about politician's competence. While there is no information revealed about the challenger's talent before the election, the voter can use the incumbent's performance in office to update the beliefs about his competence level. Then, a better performance makes the voter perceive the incumbent as being more competent and so leads to his electoral advantage over the challenger. This allows the incumbent to pursue a more extreme policy closer to his bliss point and still to have decent chances of reelection. In turn, his poor performance leads to the challenger's electoral advantage. The incumbent then has to moderate his policy and to advocate a less extreme platform in order to keep his reelection prospects up. This suggests that in the case of the incumbent's reappointment, his better performance leads to higher political polarization, i.e., to a more extreme policy getting advocated.

To investigate empirically the relationship between the incumbents' performance and political polarization, we analyze ideological positions the incumbents take in the U.S. House based on their roll-call voting records for the time period 1953-2010. We use the data on ideological scores of U.S. representatives available online on the website of the Voteview

project of Lewis, Poole and Rosenthal (Lewis and Poole, 2004; Carroll et al., 2009). We take absolute values of these scores to measure political polarization. The unit of analysis is an incumbent representative who gets reelected at least once. As for the incumbent's performance, our focus is on a new measure of natural disaster relief we build in order to capture the voters' assessment of their representatives' work. In particular, we construct an aggregate measure of post-disaster treatment duration as a proxy for performance. This measure is built for the incumbent's state during his previous term in office using the data from the Federal Emergency Management Agency. We expect a negative effect such that a shorter post-disaster treatment makes the voters perceive their representatives as being more competent and so leads to higher political polarization.

In our main specifications, we estimate fixed effects models with and without congressional term (time) dummies. We find a significant negative effect of post-disaster treatment duration on political polarization. According to our results, one standard deviation of the post-disaster treatment duration makes the incumbents' ideological scores more moderate, by 0.35% for the Democrats and by 0.5% for the Republicans. Thus, one deviation decrease in the post-disaster treatment delay shifts the ideological score of an average Democrat from -0.33 to -0.3335 while that of an average Republican from 0.3736 to 0.3786. Adjusting for assistance programs initiated after the disaster declarations slightly decreases the magnitude of the effects. In this case, the Democrats still demonstrate the shift by almost 0.35%, but the Republicans have a smaller effect by 0.1% so they polarize their ideological scores by only 0.4%. We also find that more senior Republican incumbents (those with more congressional terms in office) have more extreme ideological scores, which is somewhat consistent with our argument of competence revelation over time. One additional term in office makes their ideological scores by almost two percent more extreme.

Along with the post-disaster treatment duration, we consider an additional measure of natural disaster relief which proxies the incumbents' performance. In particular, we construct a dummy for public assistance programs initiated after the disaster declarations. For this measure, we expect a positive effect. In other words, a public assistance program initiated after the disaster makes the voters perceive their representatives as being more competent and so leads to higher political polarization. We report a significant positive effect for the Democrats in this case. Initiating a public assistance program after the disaster declaration makes the ideological scores of the Democratic incumbents more extreme, by about 0.55%. This finding is robust to a number of checks. However, we observe no significant effect for the Republicans. We think that this might be due to the voters associating any type of spending with the Democrats rather than with the Republicans and so not relating the public assistance programs to their Republican representatives. Moreover, Republican supporters are often considered as core voters with strong conservative values who are somewhat less

responsive to the politicians' performance than Democratic supporters. This might also partially explain why we observe no significant effect for the Republicans in the case of public assistance programs.

While these empirical findings support our theoretical prediction, they might also be consistent with other alternative explanations. For example, the electorate might adjust its ideological preferences after natural disaster incidents. If this is the case then the incumbents might adapt their ideological positions in response to the shifts in the voters' preferences rather than to their own performance. To address this concern, we control for changes in the voters' preferences which we proxy with the Democratic vote margins in corresponding presidential elections. We find that the inclusion of this control does not affect our findings. The presidential vote margin variable is insignificant in all the specifications.

In addition, we present a placebo test for the incumbents' performance mechanism. We investigate whether post-disaster relief performance in the neighboring states rather than in the incumbents' home state affects their ideological scores in the next congressional term. We find no significant effect in most specifications. In the case of public assistance programs, the Democratic incumbents demonstrate a significant but inverse effect. Our conjecture is that the voters might adopt relative performance evaluation. Then, having observed initiation of post-disaster public assistance programs in the neighboring states, they might perceive their own representatives as less competent. The representatives will in turn moderate their electoral policies in order to appeal to the median voter and increase their reelection chances. What is important, none of the placebo specifications yield significant effects similar to those in our main specifications. Therefore, the placebo tests validate our results about incumbents' performance impacts on political polarization. Moreover, we run additional robustness checks in which we account for particular time periods and states with specific characteristics. The results of these checks further confirm our findings.

It is helpful to stress that the disaster response and recovery process is fundamentally a relationship between the executive and legislative branches of government. The major role of Congress is in the appropriation of disaster relief funding and emergency supplemental funding. In particular, once a disaster is declared to the federal level, Congress appropriates money to the Disaster Relief Fund to ensure that there is enough funding available to mitigate the disaster's aftermath. During the time period 1989-2009, Congress has appropriated approximately $322.7 billion for post-disaster relief assistance in 34 appropriations acts, primarily supplemental appropriations acts (Lindsay and McCarthy, 2009, p. 11). The notable examples of the legislative response after the disaster declarations include the Post-Katrina Emergency Management Reform Act of 2006 and the Post-Sandy Appropriation Act of 2013 (Public Law 113-2). Apart from the fund appropriation, congressional offices also provide information to the recovery teams and constituents in their respective states and districts.

Legislators often serve "as a valuable source of accurate and timely information to their constituents" and assist the process toward recovery (McCarthy and Brown, 2011, p. 2). Senator Schumer's and other NY legislators' involvement in the post-Sandy relief assistance serves as a recent example of this.[1] It is reasonable to expect then that the voters do attribute some responsibility for the post-disaster relief assistance to the legislative branch of government.

The remainder of the paper is organized as follows. The next Section describes the related literature. Section 3 outlines the model and derives its empirical implications. Section 4 describes the data, illustrates the empirical strategy and presents the estimation results as well as robustness checks. Finally, Section 5 concludes the paper.

2 Related Literature

Our theoretical model is related to several strands of political economy literature. First, it builds on a spatial model of political competition with two policy-motivated candidates and full commitment as in Wittman (1983, 1990), Calvert (1985), Roemer (1994), and others. Second, we assume that the candidates differ in their innate competence, which since Stokes (1963) has been often referred to as valence. This relates our model to the literature on spatial political competition with exogenously-given valence advantage of one of the candidates (Aragones and Palfrey, 2002; Ansolabehere and Snyder, 2000; Groseclose, 2001; Londregan and Romer, 1993; Schofield, 2007, and others). Furthermore, we borrow from the political agency literature with adverse selection. The latter studies how the voter updates her beliefs about the politicians' type after having observed their performance in office (Ashworth, 2012; Banks and Sundaram, 1993, 1996; Besley, 2006; Fearon, 1999; Persson and Tabellini, 2000, and others). The fourth strand of related literature combines political competition between policy-motivated citizen-candidates with electoral accountability and analyzes the trade-offs thereof (Bernhardt et al., 2011; Van Weelden, 2013, 2014). Finally, Boleslavsky and Cotton (2015) study a political competition model somewhat similar to ours in which new information about candidate quality is revealed prior to voting. In their setting, this occurs during an electoral campaign which takes place after the candidates' platforms are chosen. In our model, in contrast, new information about the incumbent competence is revealed before the platform announcements.

There is also a growing theoretical literature which addresses the question of electoral accountability in the context of natural disasters and catastrophes (see Ashworth and Bueno De Mesquita, 2014; Fox and Van Weelden, 2014; Gailmard and Patty, 2014). Fox and Van Weelden (2014) and Gailmard and Patty (2014) study the incumbents' incentives to

[1] David M. Schwartz "Sandy aid money to increase, says Schumer," October 27, 2013. Available online at http://www.newsday.com/news/nation/sandy-aid-money-to-increase-says-schumer-1.6328784 (accessed February 24, 2015).

prevent potential disasters. Ashworth and Bueno De Mesquita (2014) in turn focus on the impacts of voter competence and rationality on democratic performance in the case of exogenous shocks including disasters. We take a stand similar to theirs and assume that politicians have no means of preventing disasters but have to relieve their aftermath.

Our empirical findings complement the existing literature in several ways. First, our paper is related to the studies which investigate the impacts of natural disasters and incumbents' post-disaster response performance on electoral outcomes and voting behavior. In the pioneering work, Abney and Hill (1966) report negative effects of hurricane Betsy on the incumbent's electoral outcome in the 1965 mayoral election in New Orleans. Achen and Bartels (2013) demonstrate that the voters are "blind" and blame the incumbent for natural disaster occurrence. In turn, Gasper and Reeves (2011) find that the voters are rational and punish the incumbent for severe weather damage only in the case of his poor performance. Lazarev et al. (2014) advocate that occurrence of natural disasters negatively affects the voters' attitudes toward the government while the post-disaster aid provision boosts its popularity. Other recent studies show that it's the incumbents' post-disaster response that is crucial for the voters (rather than the disaster occurrence itself). According to Cole et al. (2012), Indian voters do not punish the incumbent party for severe weather damage if the latter provides relief and assistance. In turn, Bechtel and Hainmueller (2011) show that the massive aid after the 2002 Elbe flooding increased the incumbent's party vote share in Germany. Moreover, as shown in Healy and Malhotra (2009), the voters are more responsive to the incumbents' post-disaster relief performance rather than to the disaster prevention and preparedness measures. Interestingly, Flores and Smith (2013) argue that occurrence of natural disasters may undermine the survival of authoritarian regimes. This suggests that natural disaster occurrence might affect political outcomes not only in democratic but also in non-democratic societies. Our contribution to this literature is to investigate the impacts of incumbents' post-disaster response performance on implemented policies and political polarization. To the best of our knowledge, our study is the first one to focus on policy outcomes rather than on electoral outcomes.

Our paper is also related to several recent studies, which propose different empirical measures of politicians' performance using within-country data. For example, Ferraz and Finan (2008, 2011a) use the data from Brazil's publicly released audit reports to investigate the impacts of disclosing information about political corruption on electoral outcomes. They define political corruption as any irregularity associated with fraud in procurements, diversion of public funds or over-invoicing of goods and services. In Ferraz and Finan (2011b), legislative performance is proxied by the number of submitted and approved bills in Brazil's municipal governments. The level of participation in legislative voting (e.g., the absence percentage) and in plenary sessions (e.g., the number of given speeches) might also serve as measures of

legislative performance. Humphreys and Weinstein (2012) use those indicators to measure the MPs' performance in a multilevel field experiment in Uganda. While analyzing the performance of local or municipal political leaders, the literature often uses the real GDP growth of the province that each leader rules (e.g. Jia and Kudamatsu (2015)) or budget indicators and government expenditures (e.g. Gagliarducci and Nannicini (2013)). As for the natural disasters, the standard measures of political performance are the amount of post-disaster relief and the type of post-disaster assistance (Lazarev et al., 2014; Cole et al., 2012; Bechtel and Hainmueller, 2011). Gasper and Reeves (2011) introduce an alternative indicator based on the presidents' and governors' actions taken in response to natural disasters. In their analysis, the action is a disaster declaration requested by the governor and approved by the president. They show that the electorate rewards presidents and governors for disaster declarations at the ballot box.

Another strand of related literature comprises empirical studies on politicians' valence and valence measures. For example, Grose and Husser (2008) use campaign rhetoric as a proxy for valence of presidential candidates. Ansolabehere et al. (2001) utilize several indicators of the degree of electoral competition to measure valence of electorally weak versus electorally strong incumbents. In turn, Jacobson (1989) proxies politicians' valence by their incumbency status since reelection itself signals their competence to some extent. Several recent studies investigate empirically the relationship between valence and ideological positioning of candidates. Gouret et al. (2011) test spatial voting models with valence using the 2007 French presidential election data. Zakharova and Warwick (2014) investigate the impacts of political polarization on individual valence assessments of the voters. Stone and Simas (2010) analyze the relationship between the valence qualities of candidates and the ideological positions they take in the 2006 U.S. House midterm elections. They find however that the interactions between policy and valence may be somewhat counterintuitive and contrary to conventional wisdom.

Finally, our paper is related to the empirical literature on ideological positioning of the U.S. congressional members. For example, Ensley (2007) finds that the ideological divergence of the Senate candidates affects vote choice and might produce ideological voters. Hirano et al. (2010) analyze the link between the primary election turnout and roll call voting records of the U.S. congressional members. McCarty et al. (2009) assess whether gerrymandering causes polarization in Congress. In turn, McCarty et al. (2006) and Bonica et al. (2013) investigate the links between polarization over time and economic changes, in particular, income inequality. Our contribution to this literature is to study the impacts of incumbents' performance on their ideological positioning in the U.S. House, the task that has not been addressed in the existing literature, to the best of our knowledge.

3 Model

Suppose that a certain one-dimensional policy option x is available to a society. The set of feasible policies is $\mathbb{R}$. Policy implementation is delegated to a politician. The politician is elected in a competitive election. We assume that there are two candidates running in the election – the incumbent and a challenger. Denote by $\theta_i \sim N\left(\overline{\theta}, \sigma_\theta^2\right)$ the random ability and by α_i the preferred policy of candidate i, $i = 1, 2$. Candidates' ability is their private information. Without loss of generality, we assume that candidate 1 is the incumbent while candidate 2 is the challenger, and that $\alpha_1 < \alpha_2$. The candidates announce policy proposals x_1 and x_2 before the election. We assume full commitment such that a newly elected politician will implement a policy he has announced before the election.[2]

The candidates are assumed to be policy-motivated. They have Euclidean preferences and so want the implemented policy to be close to their bliss points. Candidate i's utility when candidate j is elected, $i, j = 1, 2$, is given by

$$-|x_j - \alpha_i|.$$

Denote by $p_i(x_1, x_2)$ the probability of candidate i winning the election. We now specify the candidates' expected payoffs $\Pi_i(x_1, x_2)$ as functions of policy proposals x_1 and x_2 announced before the election:

$$\begin{aligned}
\Pi_1(x_1, x_2) &= p_1(x_1, x_2)(-|x_1 - \alpha_1|) + p_2(x_1, x_2)(-|x_2 - \alpha_1|), \\
\Pi_2(x_1, x_2) &= p_1(x_1, x_2)(-|x_1 - \alpha_2|) + p_2(x_1, x_2)(-|x_2 - \alpha_2|).
\end{aligned}$$

There is one (e.g., median) voter with bliss point m who determines the outcome of the election.[3] We assume that $\alpha_1 < m < \alpha_2$, i.e., the candidates have opposite preferences and are more extreme than the voter is. Like the candidates, the voter wants implemented policy x to be close to her bliss point m. She also cares about politician's ability. Her utility when candidate i gets elected, denoted by u_i, is given by

$$u_i \equiv -|x_i - m| + \theta_i.$$

The voter will therefore get greater or equal utility if candidate 1 is elected than if candidate 2 is elected (i.e., $u_1 \geq u_2$) when

$$\theta_2 - \theta_1 \leq |x_2 - m| - |x_1 - m|.$$

[2]One can also assume that if a politician deviates from his announced platform he loses credibility and therefore carries a large reputational cost, which exceeds potential benefits from deviation.

[3]Under a number of technical assumptions about the distribution of voters' bliss points, our results are robust to assuming many voters instead of one median voter.

Here, $\theta_2 - \theta_1$ is the difference between random abilities of candidates 2 and 1, which are not observed by the voter. Still, the voter knows the distribution of θ_i. Then, given policy proposals x_1 and x_2, she assigns the probability

$$P(u_1 \geq u_2) = P(\theta_2 - \theta_1 \leq |x_2 - m| - |x_1 - m|)$$

to the event that $u_1 \geq u_2$. We assume probabilistic voting here such that facing a pair of policies x_1 and x_2, the voter votes for candidate 1 with the same probability as the probability that $u_1 \geq u_2$, and for candidate 2 with the rest of that probability. It follows therefore that the probability of candidate i winning the election and implementing his announced policy is equal to

$$\begin{aligned} p_1(x_1, x_2) &= P(u_1 \geq u_2), \\ p_2(x_1, x_2) &= 1 - P(u_1 \geq u_2). \end{aligned}$$

We assume that before the election, no information is revealed about the challenger's talent θ_2. The voter only knows that $\theta_2 \sim N(\overline{\theta}, \sigma_\theta^2)$. However, the voter observes the incumbent's performance during his current term in office and so can use it to update her beliefs about the incumbent's competence θ_1. The incumbent's performance, denoted by ρ, is determined by his ability θ_1 but observed by the voter with a random noise ε:

$$\rho = \theta_1 + \varepsilon,$$

where $\varepsilon \sim N(0, \sigma_\varepsilon^2)$ is uncorrelated with θ_1. Only performance ρ is observed by the voter, not its composition between the ability and the noise. The voter can then update her beliefs about the incumbent's talent θ_1 by conditioning on his performance in office.

The timing of events is as follows. First, the candidates' competence levels θ_i are realized. The voter does not observe the realization of θ_i.[4] Second, the voter observes the incumbent's performance ρ during his current term in office and then updates her beliefs about the distribution of the incumbent's talent θ_1. The candidates then announce policy proposals x_1 and x_2. Finally, the election takes place and the voter uses probabilistic voting to determine the outcome.

Note that voting is rather "mechanical" in this framework. The candidates are the only strategic players. Once they announce policy proposals x_1 and x_2, their chances of being elected are determined. We search for a policy pair x_1^*, x_2^* which characterizes a pure strategy Nash equilibrium in this game played by the incumbent and the challenger. To prevent bizarre outcomes (such as announcement of a rightist platform by a left-wing candidate or vice versa), we focus on equilibrium in which $x_1 \leq m \leq x_2$.[5]

[4] Our results hold for the cases when the candidates observe their ability levels and when they don't.

[5] Wittman (1990) also concentrates on equilibrium in which a right-wing candidate announces a rightist platform while a left-wing candidate announces a leftist platform.

3.1 Analysis

We turn next to the analysis of the game and start with the voter's belief updating. The voter observes the incumbent's performance during his current term in office and so can update her beliefs about the incumbent's competence by conditioning on this performance. Given the assumption about normality of the distributions of talent θ_1 and noise ε, it follows from a standard lemma on the bivariate conditional distribution that the conditional distribution of θ_1 given that $\theta_1 + \varepsilon = \rho$ is

$$\theta_1 | \theta_1 + \varepsilon = \rho \sim N\left(\overline{\theta} + \frac{\sigma_\theta^2}{\sigma_\theta^2+\sigma_\varepsilon^2}\left(\rho - \overline{\theta}\right), \frac{\sigma_\theta^2\sigma_\varepsilon^2}{\sigma_\theta^2+\sigma_\varepsilon^2}\right).$$

This is therefore a signal extraction result when the perception of competence is discounted by the signal-noise ratio $\frac{\sigma_\theta^2}{\sigma_\theta^2+\sigma_\varepsilon^2}$. Then the difference between the abilities of candidates 2 and 1 given that $\theta_1 + \varepsilon = \rho$ is also normally distributed:

$$\theta_2 - \theta_1 | \theta_1 + \varepsilon = \rho \sim N\left(-\frac{\sigma_\theta^2}{\sigma_\theta^2+\sigma_\varepsilon^2}\left(\rho - \overline{\theta}\right), \frac{\sigma_\theta^2\left(\sigma_\theta^2+2\sigma_\varepsilon^2\right)}{\sigma_\theta^2+\sigma_\varepsilon^2}\right).$$

The voter uses probabilistic voting and elects candidate 1 with the same probability as the probability that she is better off with candidate 1 rather than with candidate 2 in office. Thus, given the incumbent's performance ρ and the candidates' proposals x_1 and x_2, this probability is equal to

$$\begin{aligned} p_1(x_1, x_2) &= P\left(\theta_2 - \theta_1 \leq |x_2 - m| - |x_1 - m| \mid \theta_1 + \varepsilon = \rho\right) = \\ & F\left(|x_2 - m| - |x_1 - m|\right) = F\left(x_1 + x_2 - 2m\right), \end{aligned}$$

where $F(\cdot)$ denotes the distribution function of $\theta_2 - \theta_1$ given that $\theta_1 + \varepsilon = \rho$.

We consider next the candidates' maximization problem. The candidates choose policy platforms x_1 and x_2 to maximize their expected payoffs $\Pi_1(x_1, x_2)$ and $\Pi_2(x_1, x_2)$. The maximization problem is analyzed in Appendix A. First, we show that given one candidate's proposal, the other candidate strictly prefers his bliss point to a more extreme platform. It implies that the candidates have no incentives to announce policies which are more extreme than their bliss points. Second, we characterize equilibrium in which $\alpha_1 \leq x_1^* \leq x_2^* \leq \alpha_2$. It arises when $\alpha_2 - \alpha_1 \geq \sqrt{\frac{\pi}{2}\frac{\sigma_\theta^2\left(\sigma_\theta^2+2\sigma_\varepsilon^2\right)}{\sigma_\theta^2+\sigma_\varepsilon^2}}$, i.e., when the distance between the candidates' bliss points is large enough. In what follows, we focus on the case in which this condition holds. The following proposition summarizes our findings.

Proposition 1 *In equilibrium, the candidates announce policy proposals x_1^*, x_2^* such that*

$$\begin{aligned} x_1^* &= m - \tfrac{1}{2}\frac{\sigma_\theta^2}{\sigma_\theta^2+\sigma_\varepsilon^2}\left(\rho - \overline{\theta}\right) - \tfrac{1}{2}\sqrt{\tfrac{\pi}{2}\frac{\sigma_\theta^2\left(\sigma_\theta^2+2\sigma_\varepsilon^2\right)}{\sigma_\theta^2+\sigma_\varepsilon^2}}, \\ x_2^* &= m - \tfrac{1}{2}\frac{\sigma_\theta^2}{\sigma_\theta^2+\sigma_\varepsilon^2}\left(\rho - \overline{\theta}\right) + \tfrac{1}{2}\sqrt{\tfrac{\pi}{2}\frac{\sigma_\theta^2\left(\sigma_\theta^2+2\sigma_\varepsilon^2\right)}{\sigma_\theta^2+\sigma_\varepsilon^2}}. \end{aligned}$$

The candidates actually compete for office regardless of being purely policy-motivated as they need office to be able to implement policies. This competition makes them move toward $m - \frac{1}{2}\frac{\sigma_\theta^2}{\sigma_\theta^2+\sigma_\varepsilon^2}\left(\rho - \overline{\theta}\right)$ but not all the way long since there is uncertainty about voting outcome. The degree to which the candidates move toward $m - \frac{1}{2}\frac{\sigma_\theta^2}{\sigma_\theta^2+\sigma_\varepsilon^2}\left(\rho - \overline{\theta}\right)$ is negatively related to the degree of uncertainty captured by the variance of $\theta_2 - \theta_1|\theta_1 + \varepsilon = \rho$. The candidates' proposals are symmetric around $m - \frac{1}{2}\frac{\sigma_\theta^2}{\sigma_\theta^2+\sigma_\varepsilon^2}\left(\rho - \overline{\theta}\right)$, which is the voter's bliss point net of the (weighted by the signal-noise ratio) difference between the incumbent's actual performance and the expected performance of a randomly chosen candidate. This differs from the classical models with policy-motivated candidates and uncertainty (Calvert (1985), Wittman (1990)) in which the candidates' proposals are symmetric around the median voter's bliss point. The reason is that in our framework, the incumbent might have electoral advantage (or disadvantage) over the challenger which is determined by the difference between his observed performance ρ and the challenger's expected performance $\overline{\theta}$. Intuitively, the voter uses probabilistic voting and elects the incumbent with the same probability as the probability that her utility with the incumbent in office is greater than or equal to that with the challenger in office. The larger the difference between ρ and $\overline{\theta}$, the higher is the incumbent's competence (as perceived by the voter) relative to that of the challenger. So for given policy proposals x_1 and x_2, the more likely is the voter to be better off with the incumbent rather than with the challenger in office. It follows therefore that for $\rho > \overline{\theta}$ the incumbent enjoys electoral advantage while for $\rho < \overline{\theta}$ the challenger does. This allows the advantaged candidate to propose a more extreme platform (which is closer to his bliss point) and still to have decent chances of getting elected. In turn, the disadvantaged candidate has to pick a more moderate platform in order to improve his election prospects. The degree to which the advantaged candidate shifts away from the voter's bliss point (while the disadvantaged one toward it) is determined by the degree of electoral advantage itself. The latter in turn is defined by the difference between ρ and $\overline{\theta}$. That is why the candidates' announcements are symmetric around $m - \frac{1}{2}\frac{\sigma_\theta^2}{\sigma_\theta^2+\sigma_\varepsilon^2}\left(\rho - \overline{\theta}\right)$.

Our results suggest that the incumbent's performance affects the candidates' platforms announced before the election and therefore also affects policies implemented by the winning candidate after the election. According to the model, the better the incumbent's performance, the more extreme position is chosen by the incumbent and the more moderate one by the challenger. In the empirical analysis to follow, we investigate the performance-polarization relationship. Specifically, we ask whether the better performance of reelected incumbents is associated with more extreme policies they are pursuing after reelection.

4 Empirical Analysis

In our empirical analysis, we study the relationship between the incumbents' performance and the ideological positions they take in the U.S. House based on their roll-call voting records for the time period 1953-2010. As for the incumbents' performance, our focus is on a new measure of natural disaster relief we build in order to capture the voters' assessment of their representatives' work. In what follows, we describe the data and methodology, and then present our results.

4.1 Data

This section reports the data sources and descriptive statistics.

4.1.1 Political Polarization

To measure political polarization, we use the data on ideological scores of U.S. House representatives available online on the website of the Voteview project of Lewis, Poole and Rosenthal (Lewis and Poole, 2004; Carroll et al., 2009).[6] We focus on the legislative branch of government since we expect voters to attribute some responsibility for the post-disaster relief assistance to the legislators (see our discussion on this in the Introduction). Our paper therefore complements the previous literature which mostly focused on executives and their electoral outcomes. Our contribution is to study legislators and the policies they pursue after reelection.

Ideological scores of U.S. representatives are based on their roll-call voting records and are available from 1789 on. We consider the time period 1953-2010 due to the availability of data on natural disaster relief. The ideological scores are available for every term (two years) a representative is holding office. The unit of our analysis is an incumbent representative who gets reelected at least once. We focus on "young" incumbents who hold office for less than 6 terms.[7] Intuitively, we expect a more pronounced performance effect for the representatives at the beginning of their legislative career. In total, we consider 28 legislative periods (terms) and 1030 representatives among whom 627 are Democrats. We exclude from consideration representatives that "cross over," e.g., Democrats with positive ideological scores and Republicans with negative scores. The reason is that we want to illustrate the performance-polarization relationship guided by our theoretical model in which we focus on equilibrium with a right-wing candidate announcing a rightist platform and a left-wing candidate announcing a leftist platform.

[6] We have also run our analysis for Senators and it's available upon request.

[7] The results are robust to considering the thresholds of 5 and 7 instead of 6 office terms.

We use an economic dimension of ideological scores which reflects government intervention in the economy in past years or liberal-conservative measure in the modern era.[8] The Democrats' ideological scores are to the left while the Republicans' are to the right from zero. To measure political polarization, we take absolute values of those scores, e.g., the distance between the scores and zero. A larger distance implies higher political polarization.

The extreme ideological score of the Democrats comes to -0.877 while that one of the Republicans comes to 1.005. The average score is lower in absolute value for the Democrats than for the Republicans, -0.34 versus 0.43. In turn, the standard deviation for the Republicans is higher than for the Democrats, 0.2 versus 0.16. The descriptive statistics by terms show that most representatives hold office for 4-6 terms.[9] A Democrat with the most extreme score has held office for 3 terms while a Republican with the most extreme score has held office for 11 terms. The distributions of the Democrats' and Republicans' ideological scores are depicted in Figure 1. The Republicans on average have more extreme scores but higher

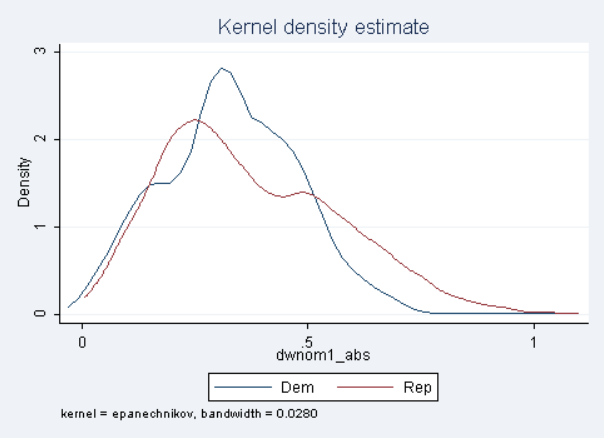

Figure 1: Ideological score densities.

variation than the Democrats do. Figure 2 suggests that the young Republicans with less than 10 terms in office are on average more polarized than the young Democrats.

4.1.2 Incumbents' Performance

To proxy incumbents' performance, we construct a new measure of natural disaster relief which captures the voters' assessment of their representatives' work. We extract data on the U.S. natural disasters across counties since 1953. All disaster declarations are reported by the National Emergency Management Information System (NEMIS) of the Federal Emergency Management Agency (FEMA) established in 1953 in order to provide federal assistance before

[8] It is denoted by "dwnom1" in the DW-Nominate database.

[9] The descriptive statistics by terms are presented in Tables 6 and 7 in Appendix B.

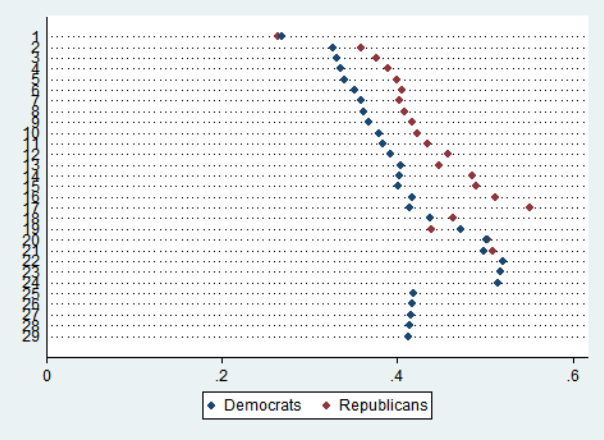

Figure 2: Ideological scores by terms.

and after catastrophes occur.

The FEMA dataset lists in total 3117 official disaster declarations since 1953. For each disaster, there is information on the incident type, its starting and ending dates, exact location, assistance programs initiated by the FEMA. There is also information on opening and closing dates of declarations and the disaster type declared, whether this is a major disaster, fire management, emergency declaration or fire suppression.

All natural disasters are aggregated at the state-term level. One term lasts for two years, from January of uneven year till December of even year. The Congressional elections fall on the beginning of November of even year and the candidates usually finalize their electoral platforms by September of the corresponding year. To reflect the logic of our model, we consider disasters which occur during a representative's current term in office till the announcement of electoral platforms for the next term. Therefore, we aggregate all disasters which took place from January of uneven year till August of next even year. We also excluded human cause disasters so finally our dataset consists of 2698 disasters in total.

We consider the following proxies for performance. Our main explanatory variable is an aggregate measure of post-disaster treatment duration, in particular, a deviation from the average post-disaster treatment period. This measure is built for the incumbent's state during his previous term in office.

We use data on the incidents' starting and ending dates and the declarations' opening and closing dates to compute duration of the catastrophes and the period of damage elimination in days. We first take the difference between the duration and post-disaster treatment period for every incident. We normalize these differences and find the deviations of these differences from the averages over the incident types. Finally, we calculate the means of these deviations for a considered term in a particular state (state-term level aggregation).

For further robustness checks, we consider one more measure of post-disaster treatment duration which is constructed in a similar way with the following difference. The averages of the duration-treatment differences are computed not only for each disaster type but also for each type of federal assistance programs initiated after disasters (individual assistance, household assistance, public assistance and hazard mitigation).

Our intuition is that the longer the disaster declarations are open at the FEMA, the longer it takes to deal with the disaster aftermaths. The voters then perceive the officials (including their representatives) as less competent. In other words, a negative deviation from the average means that the corresponding disaster declarations were closed faster than the average for those disaster types. This in turn signals the competence of all branches of government involved in post-disaster relief including the legislative branch. We therefore expect a negative sign such that a shorter post-disaster treatment makes the voters perceive their representatives as being more competent and so leads to higher political polarization. A longer post-disaster treatment might also signal the severity of the corresponding catastrophe. We somewhat take this into account as we extract the duration-treatment differences and compute the deviations of these differences from the averages by incident types. First, we consider the difference between treatment and duration periods so can compare how long is the treatment period dependent on the duration of a particular disaster. Second, we focus on these differences relative to the average of the same type disasters and not the absolute values. What is more important, this is still consistent with our theoretical model, in which the incumbents' performance is determined not only by their competence but also by a random noise which might be interpreted as the unobserved severity of disasters.

In addition to the post-disaster treatment duration, we consider an extra measure of natural disaster relief which proxies the incumbents' performance. In particular, we construct a dummy for federal assistance programs initiated after the disaster declarations. There are four assistance programs provided by the FEMA: individual assistance, household assistance, public assistance and "hazard mitigation" program. Households are required to submit individual applications for the first two programs. The "hazard mitigation" program supports investment in prevention of certain disaster types. We do not consider those but rather concentrate on the public assistance program which is more likely to be associated with the representatives' performance. It includes "debris removal, emergency protective measures and public services, repair of damaged public property, loans needed by communities for essential government functions and grants for public schools."[10] We first construct a dummy variable for each disaster which takes value 1 in case the public assistance program has been initiated after that disaster declaration. We compute then the average across all disasters

[10]Description of the Public Assistance Program at the FEMA website. Available online at https://www.fema.gov/disaster-process-disaster-aid-programs (accessed April 11, 2015).

Table 1: Incidences, time period 1953-2010.

Incidence type	Number	Percent	Accum per	Program mean	Mean duration	Mean treatment
Coastal Storm	18	0.67	0.67	1	17.722	2434.071
Dam/Levee Break	3	0.11	0.78	1	14	942
Drought	32	1.19	1.96	1	3.344	462.531
Earthquake	22	0.82	2.78	0.954	92.682	3482.167
Fire	748	27.72	30.5	0.989	20.044	1223.776
Fishing Losses	3	0.11	30.62	0	181	2021
Flood	627	23.24	53.85	0.941	22.352	2039.77
Freezing	13	0.48	54.34	0.231	15.769	957.583
Hurricane	191	7.08	61.42	0.989	13.937	2500.078
Mud/Landslide	3	0.11	61.53	1	86	2116
Other	22	0.82	62.34	0.954	16.318	1324.263
Severe Ice Storm	31	1.15	63.49	0.968	53.742	2294.053
Severe Storm(s)	693	25.69	89.18	0.923	27.278	2721.432
Snow	132	4.89	94.07	0.984	4.614	1586.272
Terrorist	2	0.07	94.14	1	4	3331
Tornado	145	5.37	99.52	0.841	3.055	1750.791
Toxic Substances	5	0.19	99.7	0.8	22.4	4973.8
Tsunami	4	0.15	99.85	1	1	3360
Volcano	4	0.15	100	1	1261.75	3496.75
Total	2698	100		0.947	23.33	1899.641

for a considered term in a particular state (state-term level aggregation). We finally build a dummy which takes value 1 if the average across all disasters exceeds 75% or 80%.[11] For this measure of incumbents' performance, we expect a positive sign. Intuitively, a public assistance program initiated after the disaster makes the voters perceive their representatives to be more competent and so leads to higher political polarization.

Table 1 summarizes the detailed disaster statistics by incident types for the time period 1953-2010, including the average disaster duration and post-disaster treatment periods (in days). The most common disasters are fires, floods and severe storms. Public assistance programs are regularly initiated for fires, storms, snows, hurricanes, and volcanos. However, they are somewhat less frequently initiated in case of floods and earthquakes (in 95% of the incidents), and even less frequently in case of tornados and toxic substances (in approximately 80% of the incidents). The disaster lengths and treatment periods vary considerably across disaster types. For example, floods and severe storms last on average longer than hurricanes, fires, snow and tornados. The latter, however, can still cause severe damages and so require longer post-disaster treatment duration. That is why we take into account incident types while constructing our measures of natural disaster relief.

4.2 Empirical Strategy

The unit of our analysis is an incumbent representative who gets reelected at least once. We study the relationship between the incumbents' performance and their ideological scores. To capture the performance effect, we estimate the average positive bias in the representatives'

[11] We choose these thresholds based on the distribution of the variable but the results are robust for the non-modified variable too.

ideological scores associated with the negative variation in post-disaster treatment deviations or the public assistance program dummy. We estimate the performance effect separately for the Democrats and Republicans because of the structural differences in their ideological scores. Moreover, we focus on "young" representatives who hold office for less than six terms since we expect the performance effect to be more pronounced at the beginning of the legislative career.

Let y be the outcome variable of political polarization (i.e., the distance between the ideological score and zero), n the incumbent, i the state, and t the congressional term. We assume that the relationship between the political polarization and the representatives' performance follows the following model:

$$y_{nt} = \nu_n + \psi_t + \beta \cdot D_{it-1} + \gamma \cdot T_{nt} + \delta \cdot T_{nt}^2 + x'_{it} \cdot \alpha + \epsilon_{nt},$$

where ν_n are representative fixed effects, ψ_t are term (time) fixed effects, D_{it-1} is an indicator for deviation from the average post-disaster treatment duration, or a public assistance program dummy, T_{nt} are the representative term trends, x_{it} are time-varying control variables including the level of state income per capita and state population. Hence, β is our coefficient of interest.

We assume non-linear term trends for all legislators so we include in all regressions both linear and quadratic term variables. The idea is that the longer the legislators stay in office, the more polarized they become as they reveal their competencies. This effect is especially stronger for young legislators, then this effect decreases over time. We estimate the fixed effect models with and without term (time) dummies. Robust standard errors are clustered at the state level. Representative fixed effects allow us to control for unobserved geographical heterogeneity at the state level. The performance effect is estimated for congressional terms in which at least one disaster occurred.

In addition, we run several robustness checks and report the results of placebo fixed effect regressions. In particular, we check whether the post-disaster treatment deviations and public assistance programs in the neighboring states yield similar significant effects on the representatives' ideological scores in the states of interest. Intuitively, if our hypothesis holds, then there shouldn't be any significant influence of the representatives' performance from the neighboring states.

4.3 Empirical Results

4.3.1 Post-Disaster Treatment Duration and Representatives' Ideological Scores

Our theoretical model suggests that a better performance of the incumbent leads to his electoral advantage over the challenger. This allows the incumbent to announce an electoral platform closer to his bliss point and still to have reasonable reelection chances. Therefore, a

Table 2: Performance effect: post-disaster treatment duration.

	(1) Dem	(2) Dem	(3) Dem	(4) Dem	(5) Rep	(6) Rep	(7) Rep	(8) Rep
Deviation	-0.00254$^{\gamma}$	-0.00344*			-0.00542**	-0.00499***		
	(0.00197)	(0.00213)			(0.00228)	(0.00185)		
Dev(prog)			-0.00265*	-0.00340**			-0.00412*	-0.00389**
			(0.00162)	(0.00165)			(0.00231)	(0.00193)
Log population	-0.143**	-0.214**	-0.145**	-0.216**	-0.00233	-0.0328	-0.00774	-0.0468
	(0.0631)	(0.107)	(0.0631)	(0.107)	(0.0747)	(0.107)	(0.0761)	(0.108)
Log income	0.0233	0.0775	0.0225	0.0753	0.00880	0.0140	0.00222	0.0110
	(0.0195)	(0.0679)	(0.0195)	(0.0686)	(0.0416)	(0.0723)	(0.0424)	(0.0731)
Term	-0.00313	-0.000688	-0.00277	-0.000973	0.0199**	-0.00608	0.0208**	-0.00726
	(0.00479)	(0.00830)	(0.00469)	(0.00830)	(0.00827)	(0.00552)	(0.00852)	(0.00547)
Term^2	0.000429	0.000407	0.000400	0.000385	-0.000986	0.000958	-0.000951	0.000982
	(0.000490)	(0.000648)	(0.000482)	(0.000647)	(0.000681)	(0.000714)	(0.000681)	(0.000715)
Constant	1.377**	1.488**	1.405**	1.522**	0.290	0.455	0.412	0.592
	(0.570)	(0.608)	(0.568)	(0.607)	(0.865)	(0.643)	(0.895)	(0.665)
Observations	1,080	1,080	1,080	1,080	923	923	923	923
R-squared	0.024	0.056	0.025	0.057	0.317	0.421	0.314	0.420
Number of Leg	509	509	509	509	421	421	421	421
Legislator FE	YES	YES	YES	YES	YES	YES	YES	YES
Term FE	NO	YES	NO	YES	NO	YES	NO	YES

Robust standard errors clustered at the state level in parentheses. *** Significant at 1%; ** significant at 5%; * significant at 10%; $^{\gamma}$ significant at 20%. Fixed effects specifications without and with congress dummies are presented. The dependent variable is the absolute distance between zero and the incumbent's ideological score. The main independent variables are deviations from post-treatment duration averages based on either incidence type or both incidence type and public assistance program initiation. Term and squared term indicators are included to take into account a non-linear effect of service on the legislator's polarization. The other control variables are the logarithms of state income and total population.

better performance is associated with a more extreme ideological score of the corresponding incumbent. In this section, we address this hypothesis and use deviations from the average post-disaster treatment duration as proxies for the incumbents' performance.

We present our results for the fixed effects models in Table 2. The independent variable is the deviation from the average post-disaster treatment duration. The first deviation indicator, *Deviation*, is averaged by the incident type. The second indicator, *Dev*(*prog*), is averaged by both the incident type and assistance programs initiated after the corresponding disaster declarations. Columns 1-4 present the estimates for the Democrats while columns 5-8 for the Republicans. Both for the Democrats and Republicans, a shorter post-disaster treatment duration during the previous congressional term is associated with a higher (by absolute value) ideological score in the current term. Indeed, in both specifications without term fixed effects (odd columns) and with term fixed effects (even columns), we report significant negative coefficients for the two deviation indicators.[12]

The Republicans demonstrate a stronger performance effect than the Democrats do.

[12]The only exception is the first column, which reports the estimated coefficient for our first deviation indicator, *Deviation*, in the case of the Democrats without term fixed effects. The coefficient is significant at the 20% level in this case.

Based on the estimated coefficients, an increase in post-disaster treatment duration equal to one standard deviation translates into a 0.5% decrease of the ideological position for the Republicans and 0.35% decrease for the Democrats. In other words, one deviation increase in the post-disaster treatment delay shifts the ideological score of an average Democrat from -0.33 to -0.3335 while that of an average Republican from 0.3736 to 0.3786 (which is about 0.15% higher). Adjusting for assistance programs initiated after the disaster declarations slightly decreases the magnitude of the effects. In this case, one deviation increase in post-disaster treatment duration leads to the shift of ideological scores of the Republicans only by 0.4% (compared to the previous post-disaster treatment measure the effect is smaller by 0.1%). The Democrats shift their political platforms by the same 0.35%.

The control variables, though not always significant, give the expected signs. Richer states demonstrate higher political polarization. More populous states, on the contrary, are less polarized. Furthermore, the Republicans with longer terms in office have more extreme ideological scores, which is somewhat consistent with our argument of competence revelation over time. We assume that there is a non-linear effect of the term on legislators' polarization. However, the squared term is not significant that testifies rather a linear effect of the term on polarization. However, this trend effect is critical only in the specifications without term fixed effects (columns 5 and 7). One additional year in office leads to 2% more extreme policies. Intuitively, controlling for the congress characteristics accounts for the term effect. The goodness of fit of the models is better for the Republicans than for the Democrats. This justifies our initial division of the sample by party affiliation because of the structural difference between ideological scores of the Democrats and Republicans.

Even though we somewhat control for the disasters' severity by taking into account their duration, our indicators of post-disaster treatment duration might reflect not only the incumbents' competence in alleviating the disasters' aftermath but also the intensity of the incidents. In particular, more severe disasters might simply require longer post-disaster treatment periods. Then our results would imply that the more severe the disasters, the less polarized policies are pursued by the incumbents from the affected states. However, this is somewhat inconsistent with the previous empirical findings. For instance, Kimball and Gross (2007) find that the U.S. voters become more polarized after notable disasters suggesting that the politicians will support more polarized policies as well. It implies that we might actually underestimate the performance effect rather than overestimate it.

4.3.2 Public Assistance Programs and Representatives' Ideological Scores

Our second measure of the incumbents' performance is the indicator for public assistance programs initiated after the disaster declarations. We construct a dummy which takes value of 1 if public assistance programs have been initiated in 75% or 80% of the incidents for a

Table 3: Performance effect: public assistance programs.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Dem	Dem	Dem	Dem	Rep	Rep	Rep	Rep
Public Assis 75	0.00582*	0.00603*			-0.00453	-0.00252		
	(0.00336)	(0.00344)			(0.00431)	(0.00458)		
Public Assis 80			0.00469*	0.00471*			-0.00434	-0.00306
			(0.00266)	(0.00273)			(0.00384)	(0.00379)
Log population	-0.144**	-0.214**	-0.144**	-0.218**	0.00633	-0.0490	0.00680	-0.0484
	(0.0636)	(0.107)	(0.0637)	(0.108)	(0.0753)	(0.108)	(0.0756)	(0.108)
Log income	0.0200	0.0702	0.0204	0.0759	-0.00598	0.0197	-0.00577	0.0188
	(0.0196)	(0.0682)	(0.0196)	(0.0681)	(0.0429)	(0.0726)	(0.0426)	(0.0725)
Term	-0.00154	-0.000311	-0.00176	-0.000369	0.0214**	-0.00685	0.0211**	-0.00708
	(0.00461)	(0.00842)	(0.00458)	(0.00843)	(0.00852)	(0.00561)	(0.00844)	(0.00558)
$Term^2$	0.000266	0.000316	0.000290	0.000317	-0.000940	0.000941	-0.000896	0.000967
	(0.000473)	(0.000644)	(0.000472)	(0.000643)	(0.000676)	(0.000718)	(0.000673)	(0.000713)
Constant	1.413**	1.543**	1.409**	1.528**	0.381	0.539	0.375	0.542
	(0.571)	(0.616)	(0.572)	(0.616)	(0.892)	(0.657)	(0.892)	(0.660)
Observations	1,080	1,080	1,080	1,080	923	923	923	923
R-squared	0.025	0.056	0.024	0.055	0.309	0.415	0.309	0.416
Number of Leg	509	509	509	509	421	421	421	421
Legislator FE	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	NO	YES	NO	YES	NO	YES	NO	YES

Robust standard errors clustered at the state level in parentheses. *** Significant at 1%; ** significant at 5%; * significant at 10%. Fixed effects specifications without and with congress dummies are presented. The dependent variable is the distance between zero and the incumbent's ideological score. The main independent variables are dummies whether public assistance programs have been initiated at least in 75% or 80% disaster cases in the state during the particular congress term. Term and squared term indicators are included to take into account a non-linear effect of service on the legislator's polarization. The other control variables are the logarithms of state income and total population.

considered term in a particular state. We choose these thresholds because of the distribution of the program dummy that has jumps at these levels. According to our estimates presented in Table 3, this performance indicator yields a significantly positive effect for the Democrats.

The coefficient varies from 0.0047 to 0.006 which means that a public assistance program initiated after the disaster declaration is on average associated with 0.55% more extreme policies pursued by the corresponding Democratic representatives. The effect is not large but very robust. However, we observe no significant effect for the Republicans. We think that this might be due to the voters associating any type of spending with the Democrats rather than with the Republicans and so not relating the public assistance programs to their Republican representatives. Moreover, Republican supporters are often considered as core voters with strong conservative values who are somewhat less responsive to the politicians' performance than Democratic supporters. This might also partially explain non-significant effect for the Republicans in the case of public assistance programs.

The control variables give the similar results for the Democrats as in the case of our first performance indicator, deviations from the average post-disaster treatment duration. Less populous and richer states demonstrate higher political polarization. However, the income

effect is not significant. Note moreover that the Republicans demonstrate a significantly positive term effect in the regressions without term fixed effects but a non-significant effect in the regressions with term fixed effects. Intuitively, controlling for the congress characteristics accounts for the term effect.

There exist other federal assistance programs apart from the public assistance. Those are individual assistance, household assistance and "hazard mitigation" programs. However, these programs somewhat differ in goals and procedures from the public assistance program. The first two are aimed to provide personal aid to the U.S. citizens affected by the natural disasters. Both programs require individual applications to be sent directly to the federal administration. We have constructed indicators for these programs similar to that for the public assistance program but, as expected, found no evidence of the performance effect. The goal of the "hazard mitigation" program is the long-run disaster prevention and preparedness. For this program, we found no evidence of the performance effect either.[13] This is consistent with the findings of Healy and Malhotra (2009) who showed that voters tend to be more responsive to the post-disaster relief rather than to the pre-disaster preparedness.

4.3.3 Robustness

The estimates reported in the previous sections give clear evidence of better performance being associated with more extreme ideological scores of the corresponding incumbents. By controlling for congress and legislator fixed effects, we account for many potential confounding factors. Furthermore, our term and term squared variables capture the natural trend of political polarization over time. We assume a non-linear effect of years in office. However, the squared term is not significant that refers to rather a linear effect. However, there might be other unobservables, which also affect representatives' ideological scores. In what follows, we conduct several robustness checks to support the validity of the results presented in Tables 2 and 3.

First, we address the concern about changes of median voter preferences in the U.S. states over time. For examples, the voters might adjust their ideological stances after natural disasters. Then the incumbents would tailor their ideological positions in response to the shifts in the voter preferences rather than to their own performance as suggested by our theoretical model. To account for this, we control for changes in the voter preferences which we proxy with vote margins in the corresponding presidential elections. We argue that if the median voter preferences change in a particular state then there will be a shift in the presidential vote margin in that state. We define the vote margin as the difference between the Democratic/Republican candidate vote shares.[14] The results are presented in Appendix

[13] These results are available upon request.

[14] The Democratic/Republican candidate vote share is computed as the candidate vote divided by the sum

Table 4: Placebo test for post-disaster treatment duration.

	(1) Dem	(2) Dem	(3) Dem	(4) Dem	(5) Rep	(6) Rep	(7) Rep	(8) Rep
Deviation (neigh)	-0.000673	-0.00122			-0.00256	0.00173		
	(0.00132)	(0.00160)			(0.00183)	(0.00171)		
Dev (prog) (neigh)			-0.000711	-0.00113			-0.00106	0.00294*
			(0.00119)	(0.00140)			(0.00162)	(0.00158)
Log population	-0.0953**	-0.142**	-0.0946**	-0.142**	0.0863	0.131	0.0890	0.133
	(0.0459)	(0.0720)	(0.0455)	(0.0717)	(0.0554)	(0.0865)	(0.0556)	(0.0860)
Log income	0.0358***	0.0596	0.0356***	0.0601	-0.0249	-0.0878	-0.0285	-0.0914
	(0.0125)	(0.0461)	(0.0126)	(0.0461)	(0.0301)	(0.0691)	(0.0303)	(0.0692)
Term	-0.00281	-0.00398	-0.00277	-0.00396	0.0156***	-0.00562	0.0161***	-0.00544
	(0.00296)	(0.00442)	(0.00297)	(0.00442)	(0.00534)	(0.00649)	(0.00539)	(0.00649)
$Term^2$	0.000344	0.000409	0.000342	0.000407	-0.000351	0.000183	-0.000359	0.000161
	(0.000258)	(0.000308)	(0.000258)	(0.000308)	(0.000352)	(0.000441)	(0.000350)	(0.000440)
Constant	0.777**	0.929**	0.772**	0.925**	-0.134	-0.0551	-0.119	-0.0443
	(0.392)	(0.407)	(0.390)	(0.404)	(0.584)	(0.441)	(0.589)	(0.441)
Observations	1,740	1,740	1,740	1,740	1,465	1,465	1,465	1,465
R-squared	0.041	0.066	0.041	0.066	0.233	0.345	0.232	0.346
Number of Leg	612	612	612	612	481	481	481	481
Legislator FE	YES	YES	YES	YES	YES	YES	YES	YES
Term FE	NO	YES	NO	YES	NO	YES	NO	YES

Robust standard errors clustered at the state level in parentheses. *** Significant at 1%; ** significant at 5%; * significant at 10%. Fixed effects specifications without and with congress dummies are presented. The dependent variable is the absolute distance between zero and the incumbent's ideological score. The main independent variables are deviations from post-treatment duration averages based on either incidence type or both incidence type and public assistance program initiation in the neighboring states. Term and squared term indicators are included to take into account a non-linear effect of service on the legislator's polarization. The other control variables are the logarithms of state income and total population.

C. We find that the inclusion of this control does not qualitatively affect our findings. The Democratic vote margin variable is not significant in all specifications.

Second, we run a placebo test for the incumbents' performance mechanism. We check whether the shorter post-disaster treatment duration and public assistance programs initiated after the disaster declarations in the neighboring states (rather than in the incumbents' home states) are associated with more extreme ideological scores of the incumbents. We use the performance indicators from the neighboring states to calculate the averages of post-disaster treatment deviations and public assistance program initiations across all neighbors of each state. Therefore, in the placebo tests, we use the performance indicators averaged across the neighboring states as the main independent variables.[15] If our hypotheses hold then we should find no significant influence of the neighbors' performance on the incumbents' ideological scores. Tables 4 and 5 report the results for the placebo tests.

Our results suggest that the Democratic incumbents do not significantly adjust their ide-

of the votes of the two candidates. So the vote shares are normalizes even in the case of more than two presidential candidates.

[15]In the case of public assistance programs, we first calculate the averages of indicators across all neighboring states and then generate dummies which take value 1 if the corresponding average across all neighbors exceeds 75% or 80%.

Table 5: Placebo test for public assistance programs.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Dem	Dem	Dem	Dem	Rep	Rep	Rep	Rep
Public Assis 75 (neigh)	-0.00484**	-0.00389			8.53e-06	-0.00121		
	(0.00230)	(0.00245)			(0.00267)	(0.00283)		
Public Assis 80 (neigh)			-0.00386*	-0.00246			0.00161	0.000568
			(0.00201)	(0.00209)			(0.00213)	(0.00207)
Log population	-0.0897**	-0.134*	-0.0901**	-0.136*	0.0901	0.129	0.0894	0.130
	(0.0453)	(0.0714)	(0.0453)	(0.0713)	(0.0560)	(0.0866)	(0.0558)	(0.0866)
Log income	0.0329**	0.0547	0.0336***	0.0570	-0.0303	-0.0853	-0.0301	-0.0854
	(0.0127)	(0.0462)	(0.0127)	(0.0462)	(0.0300)	(0.0689)	(0.0299)	(0.0689)
Term	-0.00271	-0.00407	-0.00274	-0.00412	0.0165***	-0.00566	0.0163***	-0.00561
	(0.00297)	(0.00442)	(0.00295)	(0.00442)	(0.00539)	(0.00650)	(0.00540)	(0.00654)
$Term^2$	0.000360	0.000414	0.000359	0.000424	-0.000381	0.000194	-0.000359	0.000203
	(0.000259)	(0.000305)	(0.000259)	(0.000306)	(0.000354)	(0.000442)	(0.000356)	(0.000443)
Constant	0.763*	0.910**	0.758*	0.909**	-0.110	-0.0684	-0.107	-0.0690
	(0.391)	(0.403)	(0.391)	(0.402)	(0.587)	(0.440)	(0.583)	(0.440)
Observations	1,740	1,740	1,740	1,740	1,465	1,465	1,465	1,465
R-squared	0.045	0.067	0.044	0.066	0.232	0.345	0.232	0.345
Number of Leg	612	612	612	612	481	481	481	481
Legislator FE	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	NO	YES	NO	YES	NO	YES	NO	YES

Robust standard errors clustered at the state level in parentheses. *** Significant at 1%; ** significant at 5%; * significant at 10%. Fixed effects specifications without and with congress dummies are presented. The dependent variable is the distance between zero and the incumbent's ideological score. The main independent variables are dummies whether public assistance programs have been initiated at least in 75% or 80% disaster cases in the neighboring states during the particular congress term. Term and squared term indicators are included to take into account a non-linear effect of service on the legislator's polarization. The other control variables are the logarithms of state income and total population.

ological scores in response to the post-disaster treatment delays in the neighboring states. This is the case for both deviation indicators (columns 1-4 in Table 4) which supports the validity of the results presented in columns 1-4 of Table 2. As for the public assistance programs, the Democrats demonstrate a significant but inverse effect (columns 1 and 3 in Table 5). Initiation of public assistance programs after the disaster declarations in the neighboring states is associated with more moderate ideological scores of the Democratic incumbents in the states of interest. Our intuition consists in the spillover effects that voters might compare post-disaster relief assistance in their home states with that in the neighboring states and evaluate the relative (rather than absolute) performance of their representatives. Then a better performance outcome of the neighbors might lead to the voters' dissatisfaction with their own incumbent representatives. Those in turn will moderate their ideological positions in order to appeal to the median voter and increase their reelection chances. What is important, none of the specifications yield a significant positive effect (columns 1-4 in Table 5). It follows therefore that in the case of the Democrats, the placebo tests confirm robustness of the performance effect estimates.

We turn next to the results for the Republicans. As for the post-disaster treatment duration in the neighboring states, the Republicans demonstrate no significant effect in most of the specifications (columns 5-7 in Table 4). In column 8, we report a significant but inverse effect such that a post-disaster treatment delay in the neighboring states is associated with a

more extreme ideological score of the incumbent. Our intuition here is similar to that for the previous case with the significant inverse effect (columns 1-4 in Table 5). Voters might adopt relative performance evaluation and so perceive their own incumbent representative as more competent after having observed a post-disaster treatment delay in the neighboring states. The representative then enjoys electoral advantage and so can pursue a more extreme policy still having decent reelection chances. As for the public assistance programs, we observe no significant effect for the Republicans (columns 5-8 in Table 5). In other words, the Republican incumbents do not significantly change their policies in response to initiation of post-disaster public assistance programs in the neighboring states. Therefore, the placebo tests validate our performance mechanism for the Republicans as well.

To confirm further our findings, we run additional robustness checks in which we account for particular time periods and states with specific characteristics.[16] First, we account for a change in the voters' perception and attribution of responsibility for disaster damage recovery. According to (Lindsay and McCarthy, 2012), the major changes occurred in 1972 when the voters started to attribute some responsibility for post-disaster relief to elected officials. So we split the whole sample in shorter periods (before and after 1972) and run regressions separately. We show that our results are valid for both time periods. Second, we remove some conservative as well as disaster-vulnerable states from the sample to ensure that our findings are not driven by those.[17] The results are still strongly valid for non-conservative states. In the case of non-vulnerable states, we find strong evidence of performance impacts on political polarization for Republicans but not for Democrats. It seems that the Democrats do not switch to the more polarized policies in non-vulnerable states as these issues do not come to the forefront of their agenda in these states. It's reasonable that the more significant effect persists only in disaster vulnerable states. In non-vulnerable states, on the one hand, the legislators do not get a lot of opportunities to signal about their performance as natural disasters are rare. On the other hand, the voters do not perceive the legislators' performance on disaster relief as a main element of their political agenda.

These robustness checks ensure that our estimates are not driven by particular time periods and states with specific characteristics. This provides further evidence for the performance mechanism suggested by our theoretical model.

[16]The results of these robustness checks are available upon request.

[17]Most disaster-vulnerable states are Alabama, Arkansas, California, Florida, Kentucky, Louisiana, New York, Missouri, Oklahoma, and Texas. Most conservative states are Alabama, Arkansas, Idaho, Louisiana, Mississippi, Nebraska, North Dakota, Oklahoma, Utah, and Wyoming.

5 Conclusion

Does politicians' performance affect their ideological positioning? And if so, what is the mechanism at work? A number of studies have identified and formally analyzed the relationships between politicians' performance and electoral outcomes. However, there remains a great deal of uncertainty with regard to the impacts of politicians' performance on ideological positions they take (and therefore on political polarization). The present paper contributes to this line, both with theory and data.

Our empirical analysis reveals a robust correlation between incumbents' performance in natural disaster relief and ideological positions they take in the U.S. House of representatives in 1953-2010. In particular, we find that a better performance is associated with more extreme ideological scores of the corresponding incumbents. To provide one plausible explanation for this empirical pattern, we propose a theoretical model of spatial political competition in which the electorate uses incumbents' performance to update its beliefs about their competence. A better performance leads to the incumbents' electoral advantage and so allows them to pursue more extreme policies closer to their bliss points. Our empirical findings are consistent with this interpretation.

From a more general perspective, our study emphasizes the impacts of incumbents' performance on future policies while the existing literature has mainly focused on the links between incumbents' performance and voting outcomes. This emphasis allows us to disclose a plausible additional source of political polarization, namely, the incumbents' previous achievements. Our findings therefore complement the existing literature and suggest that various theories of political polarization may benefit from taking politicians' performance into account.

References

Abney, Glenn F. and Larry B. Hill, "Natural Disasters as a Political Variable: The Effect of a Hurricane on an Urban Election," *American Political Science Review*, 1966, *60* (4), 974–981.

Achen, Christopher H. and Larry M. Bartels, "Blind Retrospection: Why Shark Attacks Are Bad For Democracy," *Working Paper*, 2013, *5-2013.*

Ansolabehere, Stephen and James M. Snyder, "Valence Politics and Equilibrium in Spatial Election Models," *Public Choice*, 2000, *103* (3/4), 327–336.

_ , _ , and Charles Stewart III, "Candidate Positioning in U.S. House Elections," *American Journal of Political Science*, 2001, *45* (1), 136–159.

Aragones, Enriqueta and Thomas R. Palfrey, "Mixed Equilibrium in a Downsian Model with a Favored Candidate," *Journal of Economic Theory*, 2002, *103* (1), 131–161.

Ashworth, Scott, "Electoral Accountability: Recent Theoretical and Empirical Work," *Annual Review of Political Science*, 2012, *15*, 183–201.

_ **and Ethan Bueno De Mesquita**, "Is Voter Competence Good for Voters?: Information, Rationality, and Democratic Performance," *American Political Science Review*, 2014, *108* (3), 565–587.

Banks, Jeffrey S. and Rangarajan K. Sundaram, "Adverse Selection and Moral Hazard in a Repeated Elections Model," in William A. Barnett, Melvin Hinich, and Norman Schofield, eds., *Political Economy: Institutions, Competition, and Representation*, Cambridge, MA: Cambridge University Press, 1993, chapter 12, pp. 295–311.

_ **and** _ , "Electoral Accountability and Selection Effects," mimeo 1996.

Bechtel, Michael and Jens Hainmueller, "How Lasting is Voter Gratitude? An Analysis of the Short- and Long-term Electoral Returns to Beneficial Policy," *American Journal of Political Science*, 2011, *55* (4), 852–868.

Bernhardt, Dan, Odilon Câmara, and Francesco Squintani, "Competence and Ideology," *Review of Economic Studies*, 2011, *78* (2), 487–522.

Besley, Tim, *Principled Agents?: The Political Economy of Good Government*, New York: Oxford University Press, 2006.

Boleslavsky, Raphael and Christopher Cotton, "Information and Extremism in Elections," *American Economic Journal: Microeconomics*, 2015, *7* (1), 165–207.

Bonica, Adam, Nolan McCarty, Keith T. Poole, and Howard Rosenthal, "Why Hasn't Democracy Slowed Rising Inequality?," *Journal of Economic Perspectives*, 2013, *27* (3), 103–124.

Calvert, Randall L., "Robustness of the Multidimensional Voting Model: Candidate Motivations, Uncertainty, and Convergence," *American Journal of Political Science*, 1985, *29* (1), 69–95.

Carroll, Royce, Jeffrey B. Lewis, James Lo, Keith T. Poole, and Howard Rosenthal, "Measuring Bias and Uncertainty in DW-NOMINATE Ideal Point Estimates via the Parametric Bootstrap," *Political Analysis*, 2009, *17* (3), 261–275.

Cole, Shawn, Andrew Healy, and Eric D. Werker, "Do Voters Demand Responsive Governments? Evidence from Indian Disaster Relief," *Journal of Development Economics*, 2012, *97* (2), 167–181.

Ensley, Michael J., "Candidate Divergence, Ideology, and Vote Choice in U.S. Senate Elections," *American Politics Research*, 2007, *35* (1), 103–122.

Fearon, James D., "Electoral Accountability and the Control of Politicians: Selecting Good Types versus Sanctioning Poor Performance," in Adam Przeworski, Susan C. Stokes, and Bernard Manin, eds., *Democracy, Accountability, and Representation*, Cambridge, MA: Cambridge University Press, 1999, chapter 2, pp. 55–97.

Ferraz, Claudio and Frederico Finan, "Exposing Corrupt Politicians: The Effect of Brazil's Publicly Released Audits on Electoral Outcomes," *Quarterly Journal of Economics*, 2008, *123* (2), 703–745.

_ **and** _ , "Electoral Accountability and Corruption: Evidence from the Audits of Local Government," *American Economic Review*, 2011, *101* (4), 1274–1311.

_ **and** _ , "Motivating Politicians: The Impact of Monetary Incentives on Quality and Performance," NBER Working Paper No. 14906 2011.

Flores, Alejandro Quiroz and Alastair Smith, "Leader Survival and Natural Disaster," *British Journal of Political Science*, 2013, *43* (4), 821–843.

Fox, Justin and Richard Van Weelden, "Hoping for the Best, Unprepared for the Worst," mimeo 2014.

Gagliarducci, Stefano and Tommaso Nannicini, "Do Better Paid Politicians Perform Better? Disentangling Incentives from Selection," *Journal of the European Economic Association*, 2013, *11* (2), 369–398.

Gailmard, Sean and John W. Patty, "Preventing Prevention," mimeo 2014.

Gasper, John and Andrew Reeves, "Make It Rain? Retrospection and the Attentive Electorate in the Context of Natural Disasters," *American Journal of Political Science*, 2011, *55* (2), 340–355.

Gouret, Fabian, Guillaume Hollard, and Stephane Rossignol, "An Empirical Analysis of Valence in Electoral Competition," *Social Choice and Welfare*, 2011, *37* (2), 309–340.

Grose, Christian R. and Jason Husser, "The Valence Advantage of Presidential Persuasion: Do Presidential Candidates Use Oratory to Persuade Citizens to Vote Contrary to Ideological Preferences?," Technical Report, mimeo 2008.

Groseclose, Tim, "A Model of Candidate Location When One Candidate Has a Valence Advantage," *American Journal of Political Science*, 2001, *45* (4), 862–886.

Healy, Andrew and Neil Malhotra, "Myopic Voters and Natural Disaster Policy," *American Political Science Review*, 2009, *103* (3), 387–406.

Hirano, Shigeo, James M. Snyder, Stephen Ansolabehere, and John Mark Hansen, "Primary Elections and Partisan Polarization in the U.S. Congress," *Quarterly Journal of Political Science*, 2010, *5* (2), 169–191.

Humphreys, Macartan and Jeremy M. Weinstein, "Policing Politicians: Citizen Empowerment and Political Accountability in Uganda," Technical Report 2012.

Jacobson, Gary C., "Strategic Politicians and the Dynamics of U.S. House Elections, 1946-86," *American Political Science Review*, 1989, *83* (3), 773–793.

Jia, Ruixue and Masayuki Kudamatsu, "Political Selection in China: the Compelementary Roles of Connections and Performance," *Journal of the European Economic Association*, 2015, *13* (4), 631–668.

Kimball, David C. and Cassie A. Gross, "The Growing Political Polarization of American Voters," in John Clifford Green and Daniel J. Coffey, eds., *The State of the Parties: The Changing Role of Contemporary American Politics*, Cambridge, MA: Cambridge University Press, 2007, chapter 16, pp. 265–278.

Lazarev, Egor, Anton Sobolev, Irina V. Soboleva, and Boris Sokolov, "Trial by Fire: A Natural Disaster's Impact on Support for the Authorities in Rural Russia," *World Politics*, 2014, *66* (4), 641–668.

Lewis, Jeffrey B. and Keith T. Poole, "Measuring Bias and Uncertainty in Ideal Point Estimates via the Parametric Bootstrap," *Political Analysis*, 2004, *12* (2), 105–127.

Lindsay, Bruce R. and Francis X. McCarthy, "Disaster Relief Funding and Emergency Supplemental Appropriations," Technical Report 7-5700 R40708, Congressional Research Service Report for Congress 2009.

_ **and** _ , "Stafford Act Declarations 1953-2011: Trends and Analyses, and Implications for Congress," Technical Report 7-5700 R42702, Congressional Research Service Report for Congress 2012.

Londregan, John and Thomas Romer, "Polarization, Incumbency, and the Personal Vote," in William A. Barnett, Melvin Hinich, and Norman Schofield, eds., *Political Economy: Institutions, Competition, and Representation*, Cambridge, MA: Cambridge University Press, 1993, chapter 14, pp. 355–376.

McCarthy, Francis X. and Jared T. Brown, "Congressional Primer on Major Disasters and Emergencies," Technical Report 7-5700 R41981, Congressional Research Service Report for Congress 2011.

McCarty, Nolan, Keith T. Poole, and Howard Rosenthal, *Polarized America: The Dance of Ideology and Unequal Riches*, Cambridge, MA: MIT Press, 2006.

_ , _ , and _ , "Does Gerrymandering Cause Polarization?," *American Journal of Political Science*, 2009, *53* (3), 666–680.

Persson, Torsten and Guido Tabellini, *Political Economics: Explaining Economic Policy*, Cambridge, MA: MIT Press, 2000.

Roemer, John E., "A Theory of Policy Differentiation in Single Issue Electoral Politics," *Social Choice and Welfare*, 1994, *11* (4), 355–380.

Schofield, Norman, "The Mean Voter Theorem: Necessary and Sufficient Conditions for Convergent Equilibrium," *Review of Economic Studies*, 2007, *74* (3), 965–980.

Stokes, Donald E., "Spatial Models of Party Competition," *American Political Science Review*, 1963, *57* (2), 368–377.

Stone, Walter J. and Elizabeth N. Simas, "Candidate Valence and Ideological Positions in U.S. House Elections," *American Journal of Political Science*, 2010, *54* (2), 371–388.

Van Weelden, Richard, "Candidates, Credibility, and Re-election Incentives," *Review of Economic Studies*, 2013, *80* (4), 1622–1651.

_ , "The Welfare Implications of Electoral Polarization," *Social Choice and Welfare*, 2014, *forthcoming.*

Wittman, Donald, "Candidate Motivation: A Synthesis of Alternative Theories," *American Political Science Review*, 1983, *77* (1), 142–157.

_ , "Spatial Strategies when Candidates have Policy Preferences," in James M. Enelow and Melvin J. Hinich, eds., *Advances in the Spatial Theory of Voting*, Cambridge, MA: Cambridge University Press, 1990, chapter 4, pp. 66–94.

Zakharova, Maria and Paul V. Warwick, "The Sources of Valence Judgments. The Role of Policy Distance and the Structure of the Left-Right Spectrum," *Comparative Political Studies*, 2014, *47* (14), 2000–2025.

Appendix

A Candidates' Maximization Problem

Throughout Appendix A, we use the following notations for the mean and variance of $\theta_2 - \theta_1$ given that $\theta_1 + \varepsilon = \rho$:

$$\mu \equiv -\frac{\sigma_\theta^2}{\sigma_\theta^2+\sigma_\varepsilon^2}\left(\rho - \overline{\theta}\right) \quad \text{and} \quad v \equiv \frac{\sigma_\theta^2\left(\sigma_\theta^2+2\sigma_\varepsilon^2\right)}{\sigma_\theta^2+\sigma_\varepsilon^2}. \tag{1}$$

The incumbent and the challenger announce policy proposals x_1 and x_2 such that $x_1 \leq m \leq x_2$ to maximize $\Pi_1(x_1, x_2)$ and $\Pi_2(x_1, x_2)$, respectively. The candidates have no incentives to announce policies which are more extreme than their bliss points. We prove this by contradiction. Suppose that in equilibrium, one of the candidates, say candidate 1, announces policy x_1 which is more extreme than α_1, i.e., $x_1 < \alpha_1$. However, given the candidate 2's proposal $x_2 \geq m$, announcing α_1 instead of $x_1 < \alpha_1$ increases the probability of candidate 1 getting elected, $p_1(\cdot)$, and also decreases the disutility from implementing a policy different from his bliss point, $-|x_1 - \alpha_1|$. As a result, candidate 1's expected utility strictly increases and so he will deviate to α_1, which implies that this is not equilibrium. It follows therefore that in equilibrium, $x_1 \geq \alpha_1$ and $x_2 \leq \alpha_2$.

The first-order condition (FOC) of candidate 1's maximization problem is

$$f(x_1 + x_2 - 2m)(x_2 - x_1) - F(x_1 + x_2 - 2m) = 0, \tag{2}$$

where $f(\cdot)$ denotes the density function of $\theta_2 - \theta_1$ given that $\theta_1 + \varepsilon = \rho$. The second derivative of candidate 1's payoff function with respect to x_1 is

$$f'(x_1 + x_2 - 2m)(x_2 - x_1) - 2f(x_1 + x_2 - 2m),$$

which evaluated at the critical point characterized by the FOC (2) becomes

$$f(x_1 + x_2 - 2m)\left(\frac{f'(x_1+x_2-2m)F(x_1+x_2-2m)}{f^2(x_1+x_2-2m)} - 2\right). \tag{3}$$

The first term in the parentheses, $\frac{f'(\cdot)F(\cdot)}{f^2(\cdot)}$, is negative for $x_1 + x_2 - 2m > \mu$, equal to zero for $x_1 + x_2 - 2m = \mu$, and positive for $x_1 + x_2 - 2m < \mu$. Moreover, $\frac{f'(\cdot)F(\cdot)}{f^2(\cdot)}$ is a strictly decreasing function for $x_1 + x_2 - 2m \leq \mu$ which approaches 1 when $x_1 + x_2 - 2m$ goes to $-\infty$. It follows that $\frac{f'(\cdot)F(\cdot)}{f^2(\cdot)} < 1$ for all $x_1 + x_2 - 2m \in \mathbb{R}$ and so (3) is strictly negative. Therefore, the second-order condition for candidate 1's maximization problem is satisfied and thus the best response function is characterized by the FOC (2).

The FOC of candidate 2's maximization problem is

$$f(x_1 + x_2 - 2m)(x_1 - x_2) + 1 - F(x_1 + x_2 - 2m) = 0. \tag{4}$$

The second derivative evaluated at the critical point characterized by the FOC (4) is

$$f\left(x_1+x_2-2m\right)\left(-\frac{f'(x_1+x_2-2m)(1-F(x_1+x_2-2m))}{f^2(x_1+x_2-2m)}-2\right). \tag{5}$$

The first term in the parentheses, $-\frac{f'(\cdot)(1-F(\cdot))}{f^2(\cdot)}$, is negative for $x_1+x_2-2m<\mu$, equal to zero for $x_1+x_2-2m=\mu$, and positive for $x_1+x_2-2m>\mu$. Next, $-\frac{f'(\cdot)(1-F(\cdot))}{f^2(\cdot)}$ is a strictly increasing function for $x_1+x_2-2m\geq\mu$ which approaches 1 when x_1+x_2-2m goes to ∞. Therefore, $-\frac{f'(\cdot)(1-F(\cdot))}{f^2(\cdot)}<1$ for all $x_1+x_2-2m\in\mathbb{R}$ and so (5) is strictly negative. It follows that the second-order condition for candidate 2's maximization problem is satisfied and thus the best response function is characterized by the FOC (4).

Dividing the FOC (2) by the FOC (4) yields $F\left(x_1+x_2-2m\right)=\frac{1}{2}$ and therefore $x_1+x_2-2m=\mu$. Plugging this into (2) yields $x_2-x_1=\sqrt{\frac{\pi v}{2}}$. Then, solving for x_1 and x_2 yields

$$\begin{aligned} x_1 &= m+\tfrac{\mu}{2}-\tfrac{1}{2}\sqrt{\tfrac{\pi v}{2}}, \\ x_2 &= m+\tfrac{\mu}{2}+\tfrac{1}{2}\sqrt{\tfrac{\pi v}{2}}. \end{aligned} \tag{6}$$

We focus on the case in which $\alpha_1\leq x_1\leq x_2\leq\alpha_2$. It is non-empty when $\alpha_2-\alpha_1\geq\sqrt{\frac{\pi v}{2}}$. Then, equilibrium platforms x_1^*, x_2^* are given by (6) with μ and v substituted from (1). ■

B Ideological Scores by Terms

Term	Democrats	N	Mean	St deviation	Min	Max
2	265	265	.346	.171	.001	.877
3	124	268	.335	.159	.003	.689
4	61	242	.331	.150	0	.69
5	59	305	.341	.161	.001	.711
Total	509	1080	.339	.160	0	.877

Table 6: Ideological scores: Democrats.

Term	Republicans	N	Mean	St deviation	Min	Max
2	96	222	.421	.194	.007	.981
3	101	231	.423	.202	.009	.989
4	114	245	.435	.197	.019	.997
5	110	225	.429	.218	.006	1.005
Total	421	923	.427	.203	.006	1.005

Table 7: Ideological scores: Republicans.

C Controlling for Median Voter Preferences

Table 8: Performance effect: post-disaster treatment duration controlling for the Democratic vote margin.

	(1) Dem	(2) Dem	(3) Dem	(4) Dem	(5) Rep	(6) Rep	(7) Rep	(8) Rep
Deviation	-0.00234	-0.00305$^{\gamma}$			-0.00545**	-0.00496***		
	(0.00195)	(0.00213)			(0.00229)	(0.00187)		
Dev (prog)			-0.00253*	-0.00309*			-0.00419*	-0.00386**
			(0.00160)	(0.00164)			(0.00232)	(0.00194)
Log population	-0.142**	-0.231**	-0.144**	-0.233**	-0.000194	-0.0345	-0.00570	-0.0484
	(0.0627)	(0.104)	(0.0627)	(0.104)	(0.0757)	(0.107)	(0.0772)	(0.108)
Log income	0.0227	0.0869	0.0221	0.0848	0.00764	0.0157	0.00106	0.0127
	(0.0185)	(0.0662)	(0.0186)	(0.0667)	(0.0419)	(0.0726)	(0.0427)	(0.0735)
Term	-0.00349	-0.00130	-0.00318	-0.00156	0.0193**	-0.00605	0.0201**	-0.00722
	(0.00485)	(0.00814)	(0.00477)	(0.00814)	(0.00825)	(0.00552)	(0.00850)	(0.00548)
Term^2	0.000491	0.000558	0.000466	0.000539	-0.000884	0.000951	-0.000846	0.000975
	(0.000508)	(0.000629)	(0.000502)	(0.000626)	(0.000681)	(0.000714)	(0.000682)	(0.000715)
Dem margin	0.000212	0.000598	0.000216	0.000597	0.000248$	0.000149	0.000255$	0.000149
	(0.000193)	(0.000467)	(0.000194)	(0.000466)	(0.000172)	(0.000386)	(0.000173)	(0.000395)
Constant	1.375**	1.558**	1.401**	1.587***	0.286	0.455	0.409	0.591
	(0.566)	(0.604)	(0.564)	(0.603)	(0.871)	(0.643)	(0.901)	(0.666)
Observations	1,080	1,080	1,080	1,080	923	923	923	923
R-squared	0.029	0.063	0.030	0.064	0.320	0.421	0.316	0.420
Number of Leg	509	509	509	509	421	421	421	421
Legislator FE	YES	YES	YES	YES	YES	YES	YES	YES
Term FE	NO	YES	NO	YES	NO	YES	NO	YES

Robust standard errors clustered at the state level in parentheses. *** Significant at 1%; ** significant at 5%; * significant at 10%; $^{\gamma}$ significant at 20%. Fixed effects specifications without and with congress dummies are presented. The dependent variable is the distance between zero and the incumbent's ideological score. The main independent variables are deviations from post-treatment duration averages based on either incidence type or both incidence type and public assistance program initiation in the neighboring states. Term and squared term indicators are included to take into account a non-linear effect of service on the legislator's polarization. The other control variables are the logarithms of state income and total population. To capture the change in median voter preferences we include one additional control, the democratic margin in the last presidential elections at state level.

Table 9: Performance effect: public assistance programs controlling for the Democratic vote margin.

	(1) Dem	(2) Dem	(3) Dem	(4) Dem	(5) Rep	(6) Rep	(7) Rep	(8) Rep
Public Assis 75	0.00599*	0.00619*			-0.00437	-0.00247		
	(0.00335)	(0.00344)			(0.00432)	(0.00459)		
Public Assis 80			0.00506*	0.00518*			-0.00421	-0.00302
			(0.00266)	(0.00275)			(0.00385)	(0.00379)
Log population	-0.143**	-0.231**	-0.143**	-0.235**	0.00826	-0.0511	0.00875	-0.0503
	(0.0632)	(0.104)	(0.0632)	(0.105)	(0.0763)	(0.108)	(0.0766)	(0.108)
Log income	0.0197	0.0798	0.0202	0.0856	-0.00703	0.0218	-0.00685	0.0210
	(0.0186)	(0.0663)	(0.0185)	(0.0662)	(0.0432)	(0.0730)	(0.0429)	(0.0728)
Term	-0.00201	-0.00100	-0.00224	-0.00107	0.0208**	-0.00681	0.0205**	-0.00704
	(0.00468)	(0.00823)	(0.00465)	(0.00823)	(0.00851)	(0.00562)	(0.00843)	(0.00558)
$Term^2$	0.000336	0.000484	0.000361	0.000487	-0.000840	0.000932	-0.000798	0.000957
	(0.000491)	(0.000623)	(0.000490)	(0.000623)	(0.000676)	(0.000718)	(0.000673)	(0.000713)
Dem Margin	0.000230	0.000650	0.000236	0.000670	0.000236	0.000194	0.000236	0.000192
	(0.000195)	(0.000469)	(0.000195)	(0.000468)	(0.000178)	(0.000400)	(0.000178)	(0.000400)
Constant	1.407**	1.611***	1.402**	1.595***	0.377	0.539	0.371	0.541
	(0.567)	(0.611)	(0.567)	(0.610)	(0.898)	(0.657)	(0.898)	(0.660)
Observations	1,080	1,080	1,080	1,080	923	923	923	923
R-squared	0.030	0.064	0.030	0.063	0.311	0.415	0.311	0.416
Number of Leg	509	509	509	509	421	421	421	421
Legislator FE	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	NO	YES	NO	YES	NO	YES	NO	YES

Robust standard errors clustered at the state level in parentheses. *** Significant at 1%; ** significant at 5%; * significant at 10%. Fixed effects specifications without and with congress dummies are presented. The dependent variable is the distance between zero and the incumbent's ideological score. The main independent variables are dummies whether public assistance programs have been initiated at least in 75% or 80% disaster cases in the state during the particular congress term. Term and squared term indicators are included to take into account a non-linear effect of service on the legislator's polarization. The other control variables are the logarithms of state income and total population. To capture the change in median voter preferences we include one additional control, the democratic margin in the last presidential elections at state level.