Climate Change Policies and Electoral Accountability*

Stefano Gagliarducci
Tor Vergata University, EIEF and IZA

M. Daniele Paserman
Boston University, NBER, CEPR and IZA

Eleonora Patacchini
Cornell University, EIEF, CEPR and IZA

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Abstract

This paper attempts to understand how elected politicians and voters respond to new information on the threats of climate change. In particular, we study how members of the U.S. House of Representatives change their support for bills aimed at contrasting climate change in the aftermath of a hurricane. Exploiting the quasi-random trajectory of hurricanes within states for identification, we document that Congress members from districts hit by a hurricane are substantially more likely to support green bills in the year after the disaster. The effect does not seem to persist for more than one year. The effect is weaker for Congress members from districts that specialize in fossil fuel production, with a strong Republican electoral share, and who have a conservative voting record.

Keywords: U.S. Congress, Climate Change, Hurricanes, Myopia.
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1 Introduction

There is almost unanimous consensus among scientists that climate change is occurring, and it is caused largely by human activity (IPCC, 2013 Report). However, failure to internalize the long-run (irreversible) costs of climate change is keeping policies below the suggested optimal level. This may be because the general public fails to adequately assess the relative costs and benefits of policies aimed at mitigating the effects of global climate change; or because it myopically believes that intervention at a later date would still be effective; or because, even if it correctly assesses the intertemporal decision problem, it chooses to avoid action today because it does not value sufficiently the welfare of future generations.

This paper attempts to disentangle between these competing explanations, by studying how voters and their elected representatives react to new information regarding the risks of climate change. Specifically, we analyze United States House members' support for legislation aimed at contrasting global warming in the aftermath of hurricanes that directly impact their congressional district. Extreme weather events could very well be one of the most visible markers of global climate change. Even though the scientific community is somewhat cautious in its assessment of the causal link from anthropogenic global warming to the frequency and intensity of hurricanes,[1] there is ample evidence that extreme weather events are associated with an increase in the perceived threats of global climate change (see also Section 2 for a non-exhaustive summary of this literature). In some cases, extreme weather events have led political personalities to explicitly call for more action to fight climate change. For example, in November 2012 New York City Mayor Michael Bloomberg surprisingly endorsed Barack Obama just days before the Presidential election, citing the fallout from Hurricane Sandy as the main reason for his decision, and arguing that the risk that extreme weather events may be the result of climate change "should be enough to compel all elected leaders to take immediate action."[2] Our analysis can shed light on whether elected politicians do in

[1] For example, the Geophysical Fluid Dynamics Laboratory of the National Oceanic and Atmospheric Administration states that "[i]t is premature to conclude that human activities – and particularly greenhouse gas emissions that cause global warminghave already had a detectable impact on Atlantic hurricane or global tropical cyclone activity." (*https://www.gfdl.noaa.gov/global-warming-and-hurricanes/*, accessed on May 17, 2017.)

[2] Quoted from *http://www.nytimes.com/2012/11/02/nyregion/bloomberg-endorses-obama-saying-*

fact take action in response to changes in the perceived risks of climate change.

In theory, several possible results are possible. If voters and politicians are already fully aware of the risks of climate change, the occurrence of hurricanes should not meaningfully affect their views about the optimal policy response, and we would not expect to see any response in terms of either legislation or electoral outcomes. On the other hand, if hurricanes shift views on what the optimal policy is, we would expect a permanent increase in green legislation. It is also possible, however, that the only effect of hurricanes is to make the dangers of climate change more salient, without affecting voters' assessment of the costs and benefits of climate action. In this case, the response in terms of green legislation would be of a more temporary nature. Finally, the strategic interaction between parties, coupled with disagreement about the optimal policy response, could mean that the effect could depend on the politician's ideological position and the interests of his/her constituents, as well as the balance of power within the legislature.

We use data on the universe of federal disaster declarations between 1953 and 2014 collected from FEMA. The data contain detailed information at the county level on the population assisted by FEMA after each event. We match counties to congressional districts and then ask whether representatives of congressional districts directly affected by a hurricane are more likely to initiate environmental legislation by either sponsoring or cosponsoring "green" bills (see Section 3 for the exact definition of green bills). The empirical strategy consists of regressing the number of green bills supported on a measure of hurricane intensity, controlling for a vast range of district and individual congress member characteristics, as well as district and year fixed effects. The long nature of our panel (we have data on Congressional bills going from the 101st to the 113th Congress, i.e., from 1990 to 2014) means that we are exploiting for identification the variation in hurricane occurrence within districts over time. The quasi-random trajectory of hurricanes ensures that the occurrence of a hurricane can be thought of as exogenous.

We find that congress members are significantly more likely to initiate green legislation in the year after their district has been affected by a hurricane. This result is robust to

hurricane-sandy-affected-decision.html, accessed on May 17, 2017.)

controls for district fixed effects, individual congressperson fixed effects, and state-specific time trends. The result is essentially unchanged regardless of how we measure exposure to hurricanes (the share of counties affected by the hurricane, a dummy for whether any county was affected, the share of the population affected, and the hurricane's maximum wind speed) and also if we restrict attention only to those hurricanes after which a Major Disaster declaration was issued, or we use the classification of the Center for Climate and Energy Solutions (C2ES, an environmental nonprofit organization) to identify bills related to climate change.

We conduct an event study analysis to assess the extent to which the effect of hurricanes on the propensity to initiate green legislation is permanent. The estimates in the event-study analysis are less precise and are somewhat sensitive to the number of leads and lags included in the specification; nevertheless, in none of the specifications does it appear that the effect persists for more than one year. Finally, look at whether the response to hurricanes differs by district and congress member characteristics. We find that the effect of hurricanes on subsequent green legislation is weaker for representatives of districts with intensive infossil fuel production, districts with a large republican share of the congressional vote, and representatives who are further to the right on the ideological spectrum, as measured by the first dimension of the DW-Nominate score. Representatives from the majority party and congressional leaders (i.e., the chairs and ranking members of congressional committees) also have a more muted response to hurricanes affecting their district. On the other hand, there does not appear to be a differential response to hurricanes in election years versus non-election years, nor in competitive versus non-competitive districts.

[To be completed] Electoral outcomes and campaign contributions.

The rest of the paper is structured as follows: Section 2 discusses how the paper fits into different strands of the literature. Section 3 describes the data. Section 4 discusses the empirical approach, and in Section 5 we present the main empirical results. Section 7 concludes.

2 Related Literature

A number of recent studies have noted that personal experiences with extreme weather events influence opinions on climate change and political activity. Leiserowtiz (2006) and Myers et al. (2012) use surveys of the U.S. population to determine the factors influencing beliefs in climate change. They note that, among other factors, personal experience with extreme weather is associated with stronger beliefs about the reality of climate change.[3] In addition, two papers examine the impact of objective weather patterns rather than reported experiences. Bosetti and Weber (2016) examine twitter comments, finding that extreme weather increase the frequency of tweets about climate change in the local area. Egan and Mullin (2012) find that higher-than-average temperatures are associated with stronger short-term beliefs in global warming (with the strongest impact for those without strong political affiliation and lower levels of education).

Other studies examine how experiences with extreme weather affect political decisions. Gasper and Reeves (2011), Healy and Malhotra (2010), and Cole (2012) note that incumbents suffer if weather events produce severe damage, but are rewarded by requesting or granting recovery funds. Healy and Malhotra (2009), Bechtel and Hainmueller (2011), and Chen (2013) also find that incumbents are rewarded for disaster recovery spending.[4] Rudman, McLean, and Bunzl (2013) find that Hurricanes Irene and Sandy were associated with increased support for a green politician, especially among those most affected by the storm. Examining legislative behavior, Kahn (2007) finds that environmental disasters (such as oil spills) increase politicians' pro-environment voting.[5]

[3]For recent studies on the link between personal experiences of weather and beliefs in global warming, see Borick and Rabe (2010), Joireman et al. (2010), Li et al. (2011), Akerlof et al. (2013), Borick (2014), Lang (2014), Zaval et al. (2014), Konisky (2016), Land and Ryder (2016), Shao and Goidel (2016), and Demski et al. (2017), among others. Others find similar results for those outside of the United States (Dai et al., 2015; Blennow et al., 2012; Frondel, Simora, and Sommer, 2017).

[4]An influence of disaster funding on incumbent support may underlie the finding that competitive states receive more presidential disaster declarations than noncompetitive states (see Reeves, 2011 and Garrett and Sobel, 2003). A related literature suggests that politicians are rewarded for local spending in general (see Kriner and Reeves, 2012). Interestingly, however, Healy and Malhotra (2009) also note that politicians are not rewarded for natural disaster preparedness spending.

[5]A related literature examines the impact of natural disasters more broadly. For example, Barrot and Sauvagnat (2016) use natural disasters to instrument for shocks to suppliers, and examine how these shocks impact production of customers.

Our work is also related to a larger strand of economics literature on how personal experiences influence individuals' and politicians beliefs. From a theoretical perspective, Fudenberg and Levine (1993), Piketty (1995), and Levy and Razin (2016) develop models to explain the perpetuation of different beliefs between groups (even when one group's beliefs are incorrect). The predictions of these models are supported by an empirical literature examining the role of exposure on beliefs, including Dustmann and Preston (2001), who highlight that neighborhood segregation can affect views toward minorities; and Boisjoly et al (2006) and La Ferrara et al (2014), who note that living in racially diverse housing can decrease discriminatory views.

It also relates to the literature on how voters use information to evaluate the quality of candidates and policies (Ashworth and Bueno de Mesquita, 2014;

Personal experiences have also been shown to impact political actions in many other areas. For example, exposure to females in the form of daughters affects their father's attitudes and opinions. Washington (2008) shows that politicians with more daughters demonstrate more feminist voting behavior, and Glynn and Sen (2015) note that the presence of daughters causes judges to give more female-friendly rulings.[6] However, for the general population, there is less evidence that personal experiences such as having daughters affect political orientation (see, e.g., Lee and Conley, 2014).

With respect to legislation, Luca et al. (2016) find that experiences with mass shootings lead to a significant increase in the number of firearms bills in a state. With respect to voting, it has been shown that voters in the U.S. and other countries appear to respond to increases in government aid by giving credit to their local politicians/representatives even if these politicians were not responsible for the aid (Chen and Healy; Guiteras and Mobarak, 2015).[7] Incumbents are also likely to benefit from exogenous increases in their constituents'

[6] The effect of the gender of children has also been shown for CEOs, with CEOs with daughters more likely to work for companies with higher levels of "corporate responsibility" (Cronqvist and Yu, 2016). There is also additional evidence that labor market activities are affected by personal experiences: men's wages and hours increase after the birth of children, and particularly after the birth of son (Lundberg and Rose, 2002).

[7] A related strand of literature suggests that proximity to time of election may affect support for trade liberalization policies (Conconi et al. 2014), gun control (Bouton et al.,2014), and even environmental policies (Costa, 2016).

incomes (Bagues and Esteve-Volart, 2016). In associated work, Guiso et al. (2017) show that "economic insecurity" increases populist voting.

3 Data

U.S. House of Representatives We use data from the U.S. House of Representatives for the 101^{st} to the 113^{th} Congresse (1989-2014). We obtained data on bill characteristics, sponsorship and cosponsorship, plus demographic characteristics for congressmen and their district of election, from the *Library of Congress* (www.congress.gov).

We identify bills aimed at fighting climate change (in short "green bills") as those classified with one of the following two minor topics, based on the Congressional Bills Project (*http://www.congressionalbills.org/*): "Air pollution, Global Warming, and Noise Pollution", and "Alternative and Renewable Energy". As an alternative measure, we use the list of climate change federal legislation provided by the *Center for Climate and Energy Solutions* (www.c2es.org), an environmental think tank that replaced the former *Pew Center on Global Climate Change*. The list is only available from the 107^{th} Congress onwards, but it has the advantage of identifying whether the bill was aimed at reducing (i.e., imposing additional taxes on greenhouse gas emissions) or increasing (i.e., spurring fossil fuel development, or curtailing environmental regulations) global warming.[8]

Our baseline definition is a somewhat coarse measure of environmental legislative activity, as it may also include legislation in the environmental and energy fields that is actually aimed at reducing regulations and may in fact lead to higher emissions. We are nonetheless reassured by the fact that the correlation in the number of green bills sponsored or cosponsored per year based on the two measures is about 0.6.

An additional concern is that cosponsorship may not necessarily indicate active engagement with the bill, and instead may be simply a way to signal to constituents and other Congress members support for a specific legislation. We note, however, that expressing sup-

[8]The majority of bills in the list favor climate action, with nearly half of those bills dealing with climate change adaptation and climate science. Many more bills touch on energy, environment, transportation, agriculture and other areas that could have an impact on or be affected by climate change. The list contains for the most part only those bills whose authors explicitly reference climate change or related terms, such as greenhouse gases or carbon dioxide.

port for a bill through cosponsorship is actually part of the effect that we intend to measure. In any case, to assuage some of these concerns, we count only the cosponsorships that were listed at the time of the bill's introduction.

Finally, we gathered detailed information on electoral results and campaign finance for each candidate through the *Federal Election Commission* (www.fec.gov), and information on fossil production (gas, oil and coal) at state level through the *Energy Information Administration* (www.eia.gov).

Hurricanes We collected federal disaster declarations for the period 1953-2014 from the *Federal Emergency Management Agency* (www.fema.gov), which provides county-level detailed information on assisted population after each event. We focus on disasters caused by hurricanes only (no severe storms, nor typhoons), and consider both Major Disaster Declarations (DR) and Emergency Declarations (EM).[9]

Since disaster declarations, and especially the intensity of assistance, could be potentially influenced by the political momentum (Garret and Sobel, 2003), we additionally collected more objective measures of hurricanes' intensity, like wind speed and trajectory, on *Weather Underground* (www.wunderground.com).

Matching We collapsed data on green bills and hurricanes at year/district level. To account for re-districting, the mapping of counties into districts was performed using the congressional districts relationship files available at the *Census Bureau* (www.census.gov).

In doing so, we computed the total number of green bills sponsored or cosponsored in a year. In the case of more than one hurricane over the same district in one year, we identified the number of counties ever hit and highest wind intensity ever recorded.

See Table 1 for a summary of the final sample used in our analysis.

[9] The President can declare a major disaster for any natural event that has caused damage of such severity that it is beyond the combined capabilities of state and local governments to respond. A Major Disaster Declaration provides a wide range of federal assistance programs for individuals and public infrastructure, including funds for both emergency and permanent work. Emergency Declarations supplement State and local or Indian tribal government efforts in providing emergency services, such as the protection of lives, property, public health, and safety, or to lessen or avert the threat of a catastrophe.

4 Empirical Model

We estimate the following model:

$$cospgreen_{sdi,t} = \alpha + \beta H_{sdi,\tau} + \gamma' X_{sdi,t} + \delta_t + \mu_z + \epsilon_{sdi,t} \tag{1}$$

where $cospgreen_{sdi,t}$ is the number of green bills sponsored or cosponsored by congressman i at year t representing district d in state s; $H_{sdi,\tau}$ is the share of counties in district d of state s hit by a hurricane at year τ, where τ is equal to either t or $t-1$; $X_{sdi,t}$ is a vector of district (log population, log area, log average income, the share of the population over 65, share black, share foreign born, share urban, the state's share of the national fossil production, the Republican and Green party electoral shares, and a dummy for the district being unsafe, defined as a margin of victory less than 10%) and individual congress member characteristics (the number of non-green bills sponsored and cosponsored, a dummy for being a House leader, a dummy for being Republican, the DW-Nominate score, a dummy for being in the majority party, age, tenure in congress, and a gender dummy); δ_t are year fixed effects; and μ_z are geographic (state or district) or individual fixed effects, depending on the specification. In some specifications, we will also control for state-specific time trends for robustness.

Our identification strategy rests on the assumption that within geographic units (but also regions) the trajectory of a hurricane is as good as random (see Figure 1 for a few examples). Table 2 tests the validity of this assumption by looking at whether pre-determined congressman and district characteristics are balanced between districts hit by a hurricane or not. Of the 17 balancing tests reported in the Table, only one is statistically significant at the 5%level. This lends support to our key identifying assumption that the occurrence and location of hurricanes is as good as random.

5 Results

Baseline Results. The main results are presented in Table 3. The top panel of the table shows results from a regression of the number of green bills on contemporaneous hurricane activity, while the bottom panel lags the key right hand side variable one period. Since hurricanes tend to hit in the second part of the year, it is unlikely that Congress members have sufficient time to introduce legislation in the same year as the hurricane. And in fact, the coefficients in the top panel tend to be smaller and less precise than those in the bottom panel, where we measure hurricane incidence lagged one year, albeit with the same sign. We therefore concentrate our comments on the results from the bottom panel. Note that the number of observations drops by about 15% when we use the lagged value of hurricane incidence. Because of the reapportioning of congressional districts following the Decennial Census, we define districts as decade-specific. This means, for example, that Florida's 18^{th}Congressional district in Congresses 108-112, which includes parts of Miami, is treated as a different district from Florida's 18^{th} district in Congresses 113-114, which does not include Miami. Therefore, controlling for lagged hurricane incidence we lose the first year in every decade.

The first column shows the simple correlation between hurricane incidence and sponsorship of green bills, controlling only for year effects. The correlation is negative and not statistically significant, probably reflecting the fact that most hurricanes hit the Southeastern United States, which in recent years have become solidly Republican and generally opposed to environmental regulation.

The picture changes immediately in column (2), with the inclusion of state fixed effects. Now the coefficient on lagged hurricane incidence becomes positve and statistically significant at the 5% level. This implies that Congress members representing a district hit by a hurricane are significantly more likely to sponsor green legislation than the members of their own state's delegation representing districts not hit by a hurricane.

The results are even more dramatic when we include district fixed effects and the full set of control variables (column 3). The coefficient nearly doubles in magnitude, and becomes statistically significant at the 1% level. Going from no hurricane to a hurricane that affects all counties in a district raises the average number of sponsored bills by 0.52 relative to a mean of 1.76, an almost 30% increase relative to the sample mean.

The results are qualitatively and quantitatively unchanged if instead of controlling for district fixed effects we control for individual congress member fixed effects (column 4), or if we control for state specific linear trends in addition to district fixed effects (column

5). Therefore, we conclude that there is strong evidence that the occurrence of hurricanes does causally affect the behavior of elected politicians, and induces them to initiate more environmental legislation. [10]

Robustness In Table 4 we assess the robustness of our results to alternative definitions of hurricane incidence. We follow our preferred specification, which controls for all individual and district characteristics and district fixed effects (i.e., specification (3) in Table 3.

In Column (1) we use as our measure of hurricane incidence a binary variable indicating whether any county in the district was affected by a hurricane (instead of the share of counties affected by the hurricane). In column (2), the key right hand side variable is the share of the population affected by the hurricane. The results of both these specifications are essentially indistinguishable from those of the previous table.

One concern with all these measures of hurricane incidence is that they are based on FEMA disaster declarations. These declarations and the intensity of FEMA assistance may be themselves affected by the political environment, and therefore not completely endogenous. Therefore, we replace the key right hand side variable with a more "objective" measure of hurricane incidence, namely the maximum wind intensity across all counties affected by the hurricane. Reassuringly, the coefficient is still positive and statistically significant. The magnitude of the coefficient implies a slightly smaller response to the hurricanes: the average hurricane has a maximum wind speed of about 90 miles per hour, meaning that oing from no hurricane to an average hurricane raises the number of bills by about 0.27.

In column (4), we restrict attention only to hurricanes that were declared Major Disasters. The coefficient becomes somewhat smaller, but is still highly statistically significant. Finally, in column (5) we use the C2ES classification of green bills. The sample becomes noticeably smaller, because we only have data from the 106$^{\text{th}}$ Congress onwards. Nevertheless, even with this quite different definition, we a positive and statistical effect of hurricanes on the number of green bills sponsored.

[10] The results are also essentially identical if we treat each state-district number combination as a unique district that remains unchanged across the whole period (i.e., ignoring redistricting), or if we calculate the lagged value of hurricane incidence based on the individual Congress member.

Event Studies [To be completed]. There does not seem to be any evidence that the effect is persistent. The number of green bills sponsored by representatives of affected districts drops back to pre-hurricane levels in years 2 and beyond. These results point to inattentive voters and politicians who do not give sufficient weight to the threats of climate change if these are not salient. They are not consistent with a theory of hurricanes having a permanent effect on people's perceptions of the risks.

Heterogeneity [To be completed]. We looked at heterogeneous effects of hurricanes, by district and individual characteristics, focusing in particular on political variables (Table 5). Fairly clear evidence that the response to hurricanes is weaker among representatives of districts that specialize in fossils and are strongly Republican. House leaders and majority party representatives are also less likely to respond, probably because they are more focused on promoting the national agenda. No evidence of heterogeneity with respect to the electoral cycle or the competitiveness of the district.

6 Additional Results: Electoral outcomes and Campaign Contributions

[To be completed]

7 Conclusion

[To be completed]

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Figures and Tables

Table 1: Descriptive statistics

	Mean	S.d.	Min	Median	Max
Legislative activity at year t:					
N. bills sponsored	39.374	31.370	0	30	288
N. bills cosponsored	107.268	71.076	0	91	643
N. green bills sponsored	0.549	1.030	0	0	10
N. green bills cosponsored	1.342	1.826	0	1	22
Hurricanes at year t:					
At least 1 county	0.088	0.284	0	0	1
N. hurricanes (at least 1 county)	0.102	0.357	0	0	4
Share counties	0.073	0.248	0	0	1
Share population	0.074	0.252	0	0	1
Wind (100) mph intensity	0.075	0.266	0	0	1.75
Overall:					
Ever 1 county	0.860	0.348	0	1	1
N. times at least 1 county	2.040	1.733	0	1	8
N. year/districts			11,042		
N. districts			478		
N. decades/districts			1,733		
N. individual congress members			1,325		

Notes. Green bills identified by the following minor topics: *Air pollution, Global Warming, and Noise Pollution*, and *Alternative and Renewable Energy.*

Table 2: Balancing Tests

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
District:	Pop. (log)	Income (log)	Land area (log)	Over 65 (share)	Black (share)	Foreign (share)	Urban (share)	Fossil (share)	Rep. Share
Share counties (t-1)	-0.010	0.022	-0.102	-0.003**	0.008	0.004	0.020	0.022	1.896
	(0.007)	(0.018)	(0.093)	(0.001)	(0.009)	(0.004)	(0.015)	(0.043)	(1.149)
Avg. outcome	13.35	10.21	14.12	0.132	0.118	0.0916	0.720	-2.695	46.54
Individual:	House leader	Rep.	DW-NOM	Majority	Unsafe	Female	Tenure (terms)	Age (years)	
Share counties (t-1)	0.018	0.008	-0.004	-0.030	-0.002	-0.012	0.098	0.417	
	(0.013)	(0.021)	(0.022)	(0.040)	(0.022)	(0.014)	(0.206)	(0.666)	
Avg. outcome	0.0410	0.489	0.0819	0.552	0.132	0.135	4.514	55.23	
N. year/districts					9,324				
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes. See Table 3 for a description of the variables. Standard errors clustered by state in brackets ***, **, *: denote significant at 1, 5 and 10 percent level respectively.

Table 3: Baseline Estimates

	(1)	(2)	(3)	(4)	(5)
	N. of green bills sponsored/cosponsored				
Share counties	-0.406***	0.005	0.085	0.068	0.095
	(0.134)	(0.131)	(0.145)	(0.111)	(0.145)
Avg. outcome			1.891		
N. year/districts	11,042	11,042	11,041	11,033	11,041
Share counties (t-1)	-0.154	0.286**	0.518***	0.500***	0.506***
	(0.139)	(0.127)	(0.155)	(0.141)	(0.162)
Avg. outcome			1.756		
N. year/districts	9,324	9,324	8,898	9,167	8,898
Year FE	Yes	Yes	Yes	Yes	Yes
State FE	No	Yes	No	No	No
District FE	No	No	Yes	No	Yes
Controls	No	No	Yes	Yes	Yes
Individual FE	No	No	No	Yes	No
State trends	No	No	No	No	Yes

Notes. *Share counties* and *Share counties (t-1)* is the share of counties hit by a hurricane (from FEMA) at *t* and *t-1*, respectively. Green bills identified by the following minor topics: *Air pollution, Global Warming, and Noise Pollution*, and *Alternative and Renewable Energy*. *Controls* include log population, log area, log average income, share population over 65, share black population, share urban population, national share of fossil (oil, gas and coal, equally weighted) production at state level (from *U.S. Energy Information Administration*), number of bills sponsored and cosponsored, a dummy for being a House leader (speaker, minority/majority leader/whip, standing committee chair), a dummy for being republican, DW-nominate score, a dummy for being in the majority party, a female dummy, continuous terms in office, age, a dummy for the district being unsafe (margin of victory lower than 10%), the share of the Green Party candidate, and the share of the Republican candidate. State level linear trends in column (5). Standard errors clustered by state in brackets ***, **, *: denote significant at 1, 5 and 10 percent level respectively.

Table 4: Alternative Measures

	(1)	(2)	(3)	(4)	(5)
	N. of green bills sponsored/cosponsored				N. of green bills (C2ES) sponsored/cosponsored
At least 1 county (t-1)	0.485***				
	(0.101)				
Share population (t-1)		0.521***			
		(0.141)			
Wind (100) mph intensity (t-1)			0.300***		
			(0.069)		
Share counties (t-1) - DR				0.277**	
				(0.125)	
Share counties (t-1)					0.202*
					(0.117)
Avg. outcome	1.769				1.284
N. year/districts	8,898	8,898	8,898	8,898	4,687
Year FE	Yes	Yes	Yes	Yes	Yes
State FE	No	No	No	No	No
District FE	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes

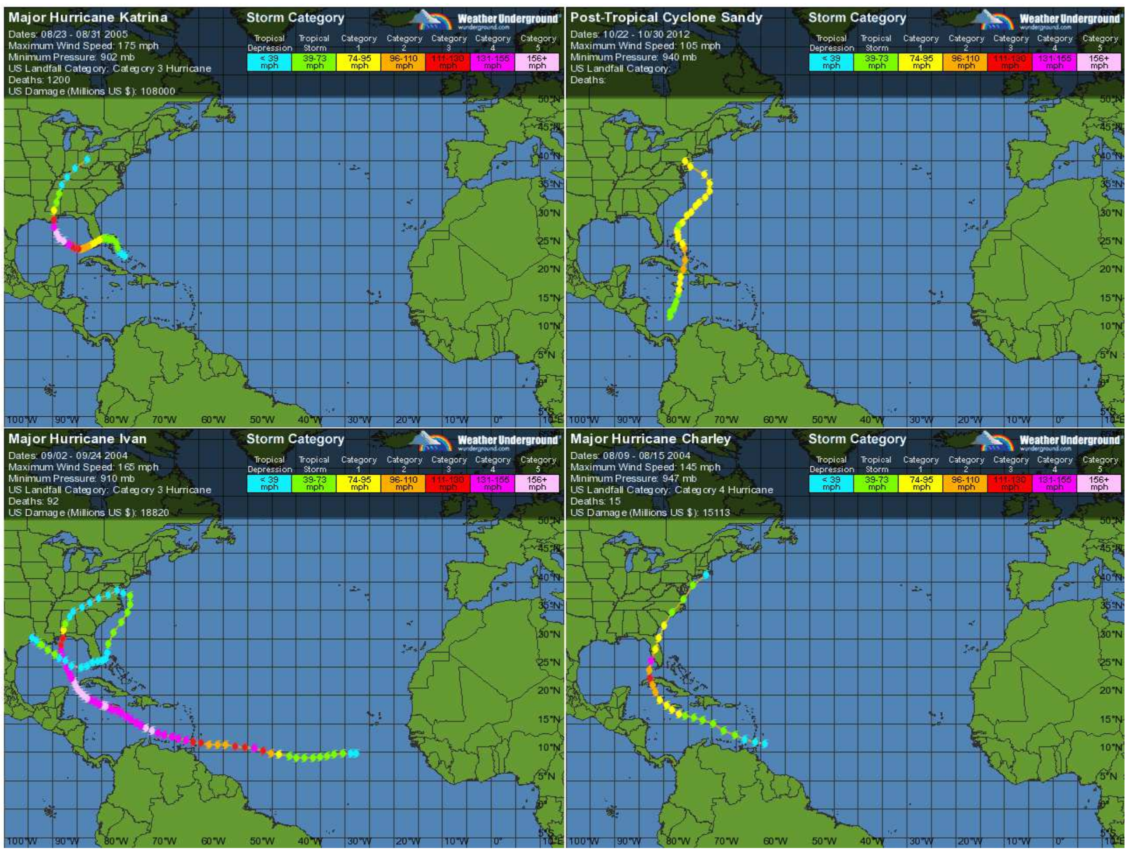
Notes. *C2ES* green bills identified by the *Center for Climate and Energy Solutions*, only available from the 107^{th} Congress. *Share population (t-1)* is the share of population hit by a hurricane at t-1 (from FEMA). *Wind mph (100) intensity (t-1)* is the intensity of the hurricane in mph at t-1 (from NHC) divided by 100. *DR* only includes FEMA major disaster declarations. See Table 3 for a description of the variables in *Controls*. Standard errors clustered by state in brackets ***, **, *: denote significant at 1, 5 and 10 percent level respectively.

Table 5: Heterogeneous estimates

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	N. of green bills sponsored/cosponsored									
Share counties (t-1)	0.467***	0.587***	0.558***	0.471***	0.508***	0.496***	0.507***	0.631***	0.434**	0.551**
	(0.156)	(0.176)	(0.185)	(0.165)	(0.153)	(0.154)	(0.160)	(0.198)	(0.201)	(0.242)
X Fossil ratio (log)	-0.059**								-0.037	-0.051
	(0.029)								(0.035)	(0.037)
X Republican share		-0.022***							-0.002	-0.004
		(0.005)							(0.005)	(0.005)
X DW-Nominate1			-1.396***						-0.359	-0.295
			(0.242)						(0.474)	(0.474)
X Majority				-1.529***					-1.181**	-1.350**
				(0.303)					(0.545)	(0.571)
X House Leader					-0.735*				-0.738**	-0.851**
					(0.383)				(0.367)	(0.390)
X First Session						-0.198			-0.157	-0.194
						(0.320)			(0.419)	(0.449)
X Unsafe							-0.204		-0.266	-0.337
							(0.318)		(0.303)	(0.352)
X Green bills (t-2)								-0.027		-0.005
								(0.091)		(0.082)
Avg. outcome	1.769									
N. year/districts	8,898	8,898	8,898	8,898	8,898	8,898	8,898	7,614	8,898	7,614
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

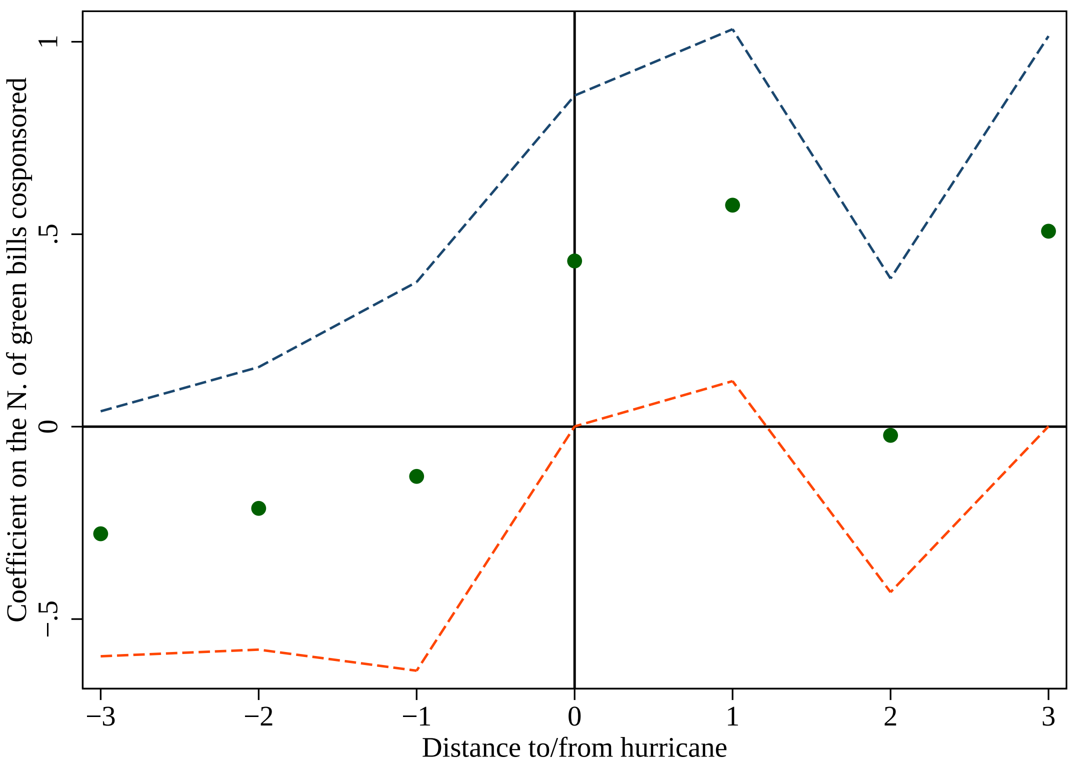
Notes. *Fossil (share)*, *Tenure (terms)*, *Age (years)* and *Green bills (t-2)* are demeaned. Also interact *Share counties (t-1)* with any other control variable in Table 3. See Table 3 for a description of the variables in *Controls*. Standard errors clustered by state in brackets ***, **, *: denote significant at 1, 5 and 10 percent level respectively.

Figure 1: Hurricane trajectories



Notes. Source: *Weather Underground.*

Figure 2: Event-study analysis



Notes. The figure displays the estimated number of green bills sponsored/cosponsored at different lags and leads since a hurricane hit the district (denoted by a vertical line). All estimates include year, state, district and individual fixed-effects, plus all the controls as in Column (3) of Table 3. Sample: districts with at most two hurricanes during the observed period, and all lags and leads available (6,263 year/district observations). 95 percent confidence intervals reported (standard errors clustered by state).