

The Aye of the Storm: Partisan Politics, Informative Events, and Voting on Environmental Legislation

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Abstract:

Climate change makes storms more frequent and intense. Thus, storm damage is informative about the progression of climate change, and that information might lead us to take stronger action to protect the environment. However, this information need not be received and responded to by everyone in the same way: reactions may be tempered by ideological biases or strategic motives.

We test whether the information in storm damages is received by US lawmakers through a politically polarized lens, and as a result how lawmakers' votes on environment-related legislation are affected by storms. We further test to what extent misunderstanding of climate change (thinking cold storms are evidence against it) and constituents' responses (as proxied by environmental donations) drive lawmakers' responses to storm damages. While past studies have shown that weather (short term fluctuations that are not actually informative about climate) affects not only stated beliefs (Deryugina, 2013) and low cost actions (Lang, 2014), but also the votes of US lawmakers (Herrnstadt and Muehlegger, 2014), we focus on storms, which should be informative, and focus on differences by political party as well as the role of constituents' preferences.

We combine NOAA data from 1990-2018 on storm damage with data from the League of Conservation Voters on legislator votes on environment-related bills in the US House and Senate for that period, with votes coded by the organization as pro- or anti-environment. These votes span a wide variety of topics that relate to the environment, so it is unlikely that any vote in this data set would directly address damages associated with a storm that has just occurred; rather, we expect impacts of storms on votes to occur through lawmakers' beliefs about the urgency of environmental action, subconscious channels like salience, or strategic responses (e.g., if the other party's vote is expected to change, or if constituents' can be expected to have a shifted belief or preference). We also collect data on donations to a large environmental charity for 2011-17.

We construct a panel at the lawmaker-vote level. For each vote, we summarize storm damages in the lawmaker's state within the last thirty days (though for robustness we test other periods). (While members of the House of Representatives have districts smaller than the state, storm location data limitations forced us to assign storms at the state, rather than district, level; this could attenuate our results.) Except where noted, we use fixed effects at the lawmaker, year, and month level, so that we are assessing the impact of storm damage for a given lawmaker controlling for both longer-term time trends and seasonal variation.

Using OLS regressions, we show that on average, a recent storm increases pro-environmental votes in the House but not the Senate. When we separate parties, we find that Democrats in the House and Senate both respond to storms with more pro-environment voting. However, Republicans in the House do not react to recent storms, and in the Senate, recent storm damage makes Republicans less likely to cast a pro-environment vote. These results do not seem to be driven by any particular storm size and are robust to multiple specifications, though as the variation we identify off diminishes, our results become less interpretable.

Next, we show that Democrats in the House increase their pro-environmental vote equally in reaction to storms not associated with cold weather and those associated with cold weather (e.g., snowstorms), though Senate Democrats respond only to non-cold storms. House Republicans have no response to non-cold storms, and have a perverse (reducing pro-environmental votes) response to storms associated with cold, but this pattern is flipped for Senate Republicans. Thus, the science that shows that climate change can increase cold-weather storms is not reflected in all lawmakers' behavior.

We then construct a panel of environmental charity donations at the state-day level and show that recent storm damages cause increases in individuals' donations to the charity, but only for storms not associated with cold weather (once we remove December, which sees cold-weather storms and end-of-year-donations, from our analysis). This shows that storms shift constituents' environmental beliefs or preferences.

Finally, we return to our lawmaker-vote analysis and add in a control for recent donations to the environmental charity in the state to proxy for constituent preferences. We perform this analysis separately with lawmaker fixed effects and state fixed effects since, as the donation data only runs from 2011-17, increasing polarization yields less within-lawmaker variation in environmental voting. In these specifications, we find that donations are strongly positively correlated with Democrats' pro-environmental votes but negatively correlated with Republicans'. This latter effect may be because the people who donate to environmental charities are not Republican lawmakers' natural constituencies. Once these donations are controlled for, storm damages no longer predict Democrats' environment-related votes, implying that for Democrats, it is their constituents' preferences that are affected; however, storm damages still drive a perverse reduction in Senate Republicans' pro-environment votes, indicating that some changes in legislators' voting are driven by their own changed attitudes or beliefs.

In summary, we find that recent storm damages affect US lawmakers' votes on environmental issues: Democrats respond largely in line with the science that all storms are of concern with regard to climate change, though their reactions are at least in large part driven by constituents' environmental concerns, whereas Republicans often have perverse responses, voting less pro-environmentally in response to recent storm damages even controlling for the type of storm and constituents' preferences. This may be a strategic reaction to the expectation that Democrats will vote more pro-environmentally.

References:

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