

Natural Disasters that Cause No Damage: Retrospective Voting
and a Reanalysis of ‘Make it Rain’

Data Appendix

Justin Gallagher*

December 16, 2019

*Contact information: Montana State University, P.O. Box 172920, Bozeman, MT 59717 (email: justin.gallagher1@montana.edu). Thanks to David Clingingsmith, Neil Malhotra, and Carly Urban for detailed feedback. Simin Gao, Andrew Hoover, and especially Kyle Musser provided outstanding research assistance.

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1 Correcting Errors in the Posted Gasper and Reeves [2011] Data

We discovered several data errors related to duplicate observations and the incorrect reporting of Presidential Disaster Declarations in the posted Gasper and Reeves [2011] replication files.¹ This section describes the corrections we made to the data files. All of the reported results in the paper use the files that correct for the data errors (described below).

Paper Table 1 column 1 and Table 4 column 1 show our replication results for the presidential and gubernatorial models, respectively. These specifications are comparable to Table 2 model 3 and Table 1 model 3 in Gasper and Reeves [2011]. The coefficient estimates using the corrected files are similar to those reported in Gasper and Reeves [2011]. For example, the presidential model Disaster Declaration point estimate is 0.483 in the corrected file, and 0.518 in Gasper and Reeves [2011]. We are able to exactly replicate Gasper and Reeves [2011] Tables 1 and 2 when we use the uncorrected files.

1.1 Fix 1: Drop Duplicate Observations

In the presidential panel we drop 1,852 duplicate observations. These observations have duplicate values for all variables (i.e. each observation is identical). Opening the posted .csv file, “*presdata.csv*”, and running the Stata commands:

```
. insheet using presdata.csv , clear  
. bysort countyfips year: gen dup = cond(_N==1,0,_n)
```

will identify these duplicates. Those observations where `dup == 2` are dropped. There are no duplicates in the gubernatorial panel *govdata.csv*.

¹<https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/WPOAIB>

1.2 Fix 2: Counties with Missing Disasters

We collect the primary disaster declaration data from the Federal Emergency Management Agency (FEMA).² FEMA describes the dataset as:

This dataset lists all official FEMA Disaster Declarations, beginning with the first disaster declaration in 1953 and features all three disaster declaration types: major disaster, emergency, and fire management assistance.

We follow Gasper and Reeves [2011] and only consider major disasters that are not related to “Terrorism” or “Human Cause”.³ Gasper and Reeves [2011] aggregate the monthly weather damage, disaster declaration, and turndown information to the six months (May-October) before a presidential or gubernatorial election.

The FEMA disaster declaration information includes the month of the declaration and the list of disaster counties. We merge this information by county fips code and year into *presdata.csv* and *govdata.csv*, after first implementing Fix 1. We identify a number of county-years that are listed by FEMA as having a Presidential Disaster Declaration within six months of an election, but which are not listed as having a declaration in the Gasper and Reeves [2011] files (i.e. *disdecsall6mo* = 0). There are 71 such observations in the presidential panel and 72 in the gubernatorial panel. The list of the county observations (county fips code in parenthesis) that we update the *disdecsall6mo* variable from zero to one is as follows:

1. Presidential

(a) FEMA Disaster 339, June 1972

- i. Richmond (51159), Fairfax (51059), Franklin (51067), Lynchburg city (51680), Roanoke (51161), Bedford (51019)

Example Stata code to see observation in the .csv file:

²<https://www.fema.gov/openfema-dataset-disaster-declarations-summaries-v1>

³See: Gasper and Reeves [2011], page 1144, footnote 7.

```
. keep if (countyfips == 51159 & year == 1972)
```

- (b) FEMA Disaster 341, June 1972
 - i. Baltimore (24005), Prince George(24033)
- (c) FEMA Disaster 505, June 1976
 - i. Jefferson (16051), Fremont (16043), Bingham (16011), Madison (16065), Booneville (16019)
- (d) FEMA Disaster 944, May 1992
 - i. Franklin (51067), Bedford (51019), Roanoke (51161)
- (e) FEMA Disaster 962, September 1992
 - i. LaPorte (18091)
- (f) FEMA Disaster 1118, June 1996
 - i. LaMoure (38045)
- (g) FEMA Disaster 1129, July 1996
 - i. DuPage (17043)
- (h) FEMA Disaster 1328, May 2000
 - i. St. Louis (29189)
- (i) FEMA Disaster 1334, June 2000
 - i. LaMoure (38045)
- (j) FEMA Disaster 1518, June 2004
 - i. Fremont (19071)
- (k) FEMA Disaster 1523, June 2004
 - i. Bath (21011), Fleming (21069), Lewis (21135), Mason (21161), Nicholas (21181), Robertson (21201), Rowan (21205)
- (l) FEMA Disaster 1526, June 2004

- i. Adams (55001), Brown (55009), Calumet (55015), Chippewa (55017), Dane (55025), Eau Claire (55035), Green (55045), Iowa (55049), Jackson (55053), Juneau (55057), La Crosse (55063), Lafayette (55065), Marathon (55073), Marquette (55077), Milwaukee (55079), Monroe (55081), Outagamie (55087), Portage (55097), Racine (55101), Richland (55103), Rock (55105), Sauk (55111), Shawano (55115), Sheboygan (55117), Taylor (55119), Trempealeau (55121), Walworth (55127), Washington (55131), Waukesha (55133), Waupaca (55135), Waushara (55137), Wood (55141)
- (m) FEMA Disaster 1534, August 2004
 - i. Albany (36001)
- (n) FEMA Disaster 1544, September 2004
 - i. Charles City (51036), King William (51101), New Kent (51127)
- (o) FEMA Disaster 1570, October 2004
 - i. Roanoke (51161)
- (p) FEMA Disaster 3016, July 1976
 - i. LaMoure (38045)
- (q) FEMA Disaster 3017, September 1976
 - i. St. Louis (29189)
- (r) FEMA Disaster 3018, October 1976
 - i. Bedford (51019), Franklin (51067)

2. **Gubernatorial**

- (a) FEMA Disaster 962, September 1992
 - i. LaPorte (18091)
- (b) FEMA Disaster 1033, July 1994
 - i. Oglethorpe (13221)

- (c) FEMA Disaster 1118, June 1996
 - i. LaMoure (38045)
- (d) FEMA Disaster 1640, May 2006 & FEMA Disaster 1664, October 2006
 - i. Honolulu (15003) Kauai (15007)
- (e) FEMA Disaster 1644, May 2006
 - i. York (23031)
- (f) FEMA Disaster 1646, June 2006
 - i. Calaveras (6009), Madera (6039), Merced (6047), Stanislaus (6099), Tuolumne (6109)
- (g) FEMA Disaster 1647, June 2006
 - i. Bennett (46007), Butte (46019), Harding (46063), Meade (46093), Perkins (46105)
- (h) FEMA Disaster 1648, June 2006
 - i. Becker (27005), Kittson (27069), Marshall (27089), Red Lake (27125), Roseau (27135)
- (i) FEMA Disaster 1649, June 2006
 - i. Adams (42001), Armstrong (42005), Berks (42011), Bradford (42015), Bucks (42017), Carbon (42025), Chester (42029), Columbia (42037), Dauphin (42043), Franklin (42055), Indiana (42063), Lackawana (42069), Lancaster (42071), Lebanon (42075), Luzerne (42079), Monroe (42089), Montgomery (42091), Montour (42093), Northampton (42095), Northumberland (42097), Perry (42099), Pike (42103), Schuylkill (42107), Sullivan (42113), Susquehanna (42115), Tioga (42117), Wayne (42127), Wyoming (42131)
- (j) FEMA Disaster 1659, August 2006
 - i. Dona Ana (35013), Grant (35017), Guadalupe (35019), Harding (35021), Hidalgo (35023), Lincoln (35027), Luna (35029),

McKinley (35031), Mora (35031), Otero (35035), Rio Arriba (35039), Sandoval (35043), San Miguel (35047), Sierra (35051), Socorro (35053), Taos (35055), Torrance (35057), Valencia (35061)

(k) FEMA Disaster 1660, September 2006

i. Gila (4007), Graham (4009), Greenlee (4011), Navajo (4017), Pima (4019), Pinal (4021)

(l) FEMA Disaster 1664, October 2006

i. Hawaii (15001), Maui (15009)

(m) FEMA Disaster 3016, July 1976

i. LaMoure (38045)

(n) FEMA Disaster 3017, September 1976

i. St. Louis (29189)

1.3 Fix 3: Counties that Should Have No Disasters

We also identify a number of county-years that are listed by FEMA as having no Presidential Disaster Declaration within six months of an election, but which are listed as having a declaration in the Gasper and Reeves [2011] files (i.e. $disdecsall6mo = 1$). There are 39 such observations in the presidential panel and 34 in the gubernatorial panel. The list of county observations (county fips code in parenthesis) that we update the $disdecsall6mo$ variable from one to zero is as follows:

1. Presidential

(a) FEMA Disaster 1553 & Disaster 1546, September 2004

i. Forty-five of the 100 counties in North Carolina were eligible for Individual Assistance or Public Assistance in either of these disasters. However, *presdata.csv* lists 79 counties as having a disaster. The following 34 counties did not receive Individual Assistance or Public Assistance and are updated to $disdecsall6mo = 0$: 37013, 37015, 37019, 37029, 37031, 37041, 37049,

37053, 37055, 37061, 37065, 37073, 37079, 37083, 37091, 37095,
 37101, 37103, 37107, 37117, 37127, 37129, 37131, 37133, 37137,
 37139, 37141, 37143, 37147, 37163, 37177, 37187, 37191, 37195

(b) FEMA Disaster 3079, May 1980

- i. This disaster refers to the “Mariel boatlift” which is not a natural disaster, falls under the category of “Human Cause”, and is not a category used by Gasper and Reeves [2011]⁴. We recode the counties 12011, 12087, and 12099 as not having a disaster.

(c) Elkhart County (18039), Year = 2004. Indiana during this year received two disaster declarations. Disaster 1520, May, and Disaster 1542, July. Elkhart County is not listed as receiving Individual Assistance or Public Assistance for either of these disasters. We recode this observation as *disdecsall6mo* = 0.

(d) Mineral County (54057), Year = 2004. West Virginia received three disaster declarations during this year. Disaster 1558, September, Disaster 1536, July, and Disaster 1522, May. Mineral County is not listed as receiving Individual Assistance or Public Assistance for any of these disasters. We recode this observation as *disdecsall6mo* = 0.

2. Gubernatorial

- (a) The same 34 observations in North Carolina, Year == 2004, indicated in the above bullet point (a) for the presidential records, are updated for the gubernatorial panel.

⁴See: Gasper and Reeves [2011], page 1144, footnote 7.

2 Denied Presidential Disaster Declaration Request (Turndown) Counties

This section summarizes the supplemental data and analysis on turndown counties referenced in the manuscript. We acquired information on 102 denied Presidential Disaster Declaration requests that occurred from 1979-2006 for 30 states. We received the information as part of a series of Freedom of Information Act (FOIA) and Open Records requests from the national FEMA office, the regional FEMA offices, state-level departments, and presidential libraries from 2011-2014.

We know the exact list of counties included as part of each of the 102 denied disaster requests. We use the list of counties to calculate sample statistics for the number of counties included in each turndown. We also calculate sample statistics for the proportion of a state's counties included in a turndown. The mean number of counties included is 6.4. The median is two. The mean and median percent of counties within a state included in a denied request is 8.9% and 4.2%, respectively.

3 Time between a Natural Disaster and the Disaster Assistance Decision

The occurrence of a natural disaster and the political decision on whether to allocate federal disaster assistance often do not occur in the same month. This is the underlying rationale for why we include observations in the analysis when disaster damage occurs in the two months prior to the Presidential Disaster Declaration or Turndown (columns 3 and 4 in manuscript Tables 2, 3, 5, and 6). In our view, a three month window offers a good balance between including observations where there is a monthly delay between the disaster and the decision for federal assistance, while still excluding observations with no reported disaster-related cost information.

The three month disaster-cost window is based on analysis using FEMA

data. Beginning in 1987, FEMA consistently records and posts information on the “date the disaster was declared” and the “date the incident itself began”.⁵ We calculate the mean and median number of days between these dates for 1,064 Presidential Disaster Declarations between 1987 and 2007. The median number of days is 16. The mean number of days is 28.

4 Bootstrapped Standard Errors

As an alternative to state-by-year clustering of the standard errors, a block (panel) bootstrapping method is used where we resample over state-by-year blocks. Cameron and Trivedi [2005] discuss the panel bootstrap in Section 11.6.2 (p377):

This panel bootstrap, also called a block bootstrap, can also be applied to the nonlinear panel models [...] The key assumptions are that the panel is short and the data are independent over i . More generally, this bootstrap can be applied whenever data are clustered [...] provided cluster size is finite and the number of clusters goes to infinity. The panel bootstrap produces standard errors that are asymptotically equivalent to panel robust sandwich standard errors [...] It does not provide an asymptotic refinement.

In our setting, i is a state-by-year cluster. We have 441 and 263 state-by-year clusters in the presidential and gubernatorial data, respectively. We use the `areg vce(bootstrap, cluster() idcluster() group())` command in Stata.

5 Supporting Analysis

This section provides supporting analysis for the results shown in the manuscript. The tables in this section are all directly referenced in the manuscript.

⁵<https://www.fema.gov/openfema-dataset-disaster-declarations-summaries-v1>

Appendix Tables 1 and 4 repeat the analysis of manuscript Tables 1 and 4, except that we show the bootstrapped standard errors rather than the clustered standard errors. The magnitude of the standard errors is similar under both approaches for the presidential analysis. In the gubernatorial analysis, the bootstrapped standard errors are somewhat smaller for the estimated weather damage coefficients, and larger for the estimated disaster assistance coefficients.

Appendix Tables 2 and 3 repeat the presidential vote share analysis in manuscript Tables 2 and 3, except that we use the 2009 SHELDUS weather damage information. Appendix Tables 2 and 3 use the same information for the weather damage variable as Gasper and Reeves [2011]. Manuscript Tables 2 and 3 use weather damage information from the 2018 SHELDUS (version 16) to construct the damage variable. Overall, the appendix tables that use the 2009 SHELDUS information show less support for a responsive electorate, relative to the same tables in the manuscript. The estimated weather damage coefficients are negative and larger in magnitude, while the estimated disaster declaration coefficients are less positive.

Appendix Tables 5 and 6 repeat the gubernatorial vote share analysis in manuscript Tables 5 and 6, except that we use the 2009 SHELDUS weather damage information. Overall, and in contrast to the presidential analysis, the appendix tables that use the 2009 SHELDUS information show somewhat greater support for a responsive electorate, relative to the same tables in the manuscript. The estimated weather damage coefficients are more positive and the turndown coefficients are more negative.

Appendix Table 7 shows presidential vote share estimates from panels that use a less restrictive inclusion rule than Manuscript Tables 2 and 3. Appendix Table 8 shows gubernatorial vote share estimates from panels that use a less restrictive inclusion rule than Manuscript Tables 5 and 6.

6 References

A Colin Cameron and Pravin K Trivedi. *Microeconometrics: methods and applications*. Cambridge university press, 2005.

John T. Gasper and Andrew Reeves. Make it rain? retrospection and the attentive electorate in the context of natural disasters. *American Journal of Political Science*, 55(2), 2011.

7 Figures and Tables

Table 1: **Effect of Severe Weather and Disaster Assistance on Incumbent Presidential Vote Share, Replication of Gasper and Reeves (2011)**

Bootstrapped Standard Errors in Parentheses

Dependent Variable: <u>Incumbent Presidential Vote Share</u>						
Damage Data:	<u>SHELDUS 2009</u>			<u>SHELDUS 2018</u>		
	GR Replication (1)	Lagged Vote Share (2)	County F.E. (3)	GR Replication (4)	Lagged Vote Share (5)	County F.E. (6)
Weather Damage	-0.028 (0.034)	-0.021 (0.033)	-0.013 (0.050)	-0.039 (0.031)	-0.028 (0.032)	-0.014 (0.048)
Disaster Declaration	0.483 (0.493)	0.548 (0.400)	0.415 (0.697)	0.503 (0.489)	0.564 (0.395)	0.415 (0.688)
Turndown	-0.949 (0.700)	-0.651 (0.590)	-0.799 (0.988)	-0.963 (0.701)	-0.662 (0.591)	-0.803 (0.989)
Lagged Vote Share	X	X		X	X	
County Fixed Effects	X		X	X		X
Income	X	X	X	X	X	X
Year Fixed Effects	X	X	X	X	X	X
N	27,894	27,894	27,894	27,894	27,894	27,894
Disaster Obs.	3,132	3,132	3,132	3,132	3,132	3,132
Disaster Obs. with Damage = 0	1,017	1,017	1,017	687	687	687
Turndown Obs.	4,698	4,698	4,698	4,698	4,698	4,698
Turndown Obs. with Damage = 0	2,343	2,343	2,343	1,765	1,765	1,765
R ²	0.816	0.793	0.415	0.816	0.793	0.415

This table reproduces the model estimates from Manuscript Table 1, except that we bootstrap the standard errors instead of clustering at the state-by-year level. The bottom panel reports the number of Presidential Disaster Declaration observations and denied Presidential Disaster Declaration observations (Turndowns) where the six month weather damage variable is zero (i.e. all six months have non-reported information or report zero damage). Standard errors that allow for state-by-year spatial correlation are in parentheses. Data sources: Federal Emergency Management Agency (FEMA), Public Entity Risk Institute (PERI), Special Hazards and Losses Database for the United States (SHELDUS), US Decennial Census.

Table 2: **Effect of Severe Weather and Disaster Assistance on
Incumbent Presidential Vote Share,
Complete Case Analysis
Using 2009 SHELDUS**

Dependent Variable:	<u>Incumbent Presidential Vote Share</u>			
Missing Rule:	<u>Disaster Month</u>		<u>Disaster Month or 2 Prior Months</u>	
Specification:	Lagged Vote Share (1)	County F.E. (2)	Lagged Vote Share (3)	County F.E. (4)
Weather Damage	-0.236 (0.070)	-0.171 (0.110)	-0.229 (0.065)	-0.152 (0.100)
Disaster Declaration	0.285 (0.430)	-0.544 (0.748)	0.316 (0.366)	-0.080 (0.693)
Turndown	-0.750 (0.695)	-0.243 (1.306)	-0.918 (0.551)	-0.729 (1.138)
Lagged Vote Share	X		X	
County Fixed Effects		X		X
Income	X	X	X	X
Year Fixed Effects	X	X	X	X
N	12,298	12,298	13,309	13,309
Disaster Obs:	1,392	1,392	1,990	1,990
Disaster Obs. with Damage = 0	66	66	73	73
Turndown Obs.	1,419	1,419	1,963	1,963
Turndown Obs. with Damage = 0	33	33	98	98
R ²	0.830	0.502	0.830	0.486

This table shows estimates from the same models as Manuscript Table 2, except that we use the same 2009 SHELDUS damage information and weather damage variable as Gasper and Reeves [2011]. The table shows estimates from the presidential lagged vote share and county fixed effect models using data panels that only include observations (counties) that report non-missing weather damage information for at least one of the six months before the election. Columns 1 and 2 further restrict the panel to only include Presidential Disaster Declaration request counties that report weather damage at the time of the Disaster Declaration or Turndown (columns 3 and 4 relax this restriction to include the two prior months). The bottom panel reports the number of Disaster Declaration observations and denied Disaster Declaration observations (Turndowns) where the six month weather damage variable is zero (i.e. reported as zero for at least one of the six months, and missing or zero for the other months). Standard errors that allow for state-by-year spatial correlation are in parentheses. Data sources: Federal Emergency Management Agency (FEMA), Public Entity Risk Institute (PERI), Special Hazards and Losses Database for the United States (SHELDUS), US Decennial Census.

Table 3: **Effect of Severe Weather and Disaster Assistance on Incumbent Presidential Vote Share, Exclude Disaster Request Counties with Zero Reported Weather Damage**

Using 2009 SHELDUS

Dependent Variable:	<u>Incumbent Presidential Vote Share</u>			
Missing Rule:	<u>Disaster Month</u>		<u>Disaster Month or 2 Prior Months</u>	
Specification:	Lagged Vote Share	County F.E.	Lagged Vote Share	County F.E.
	(1)	(2)	(3)	(4)
Weather Damage	-0.266 (0.073)	-0.190 (0.118)	-0.269 (0.070)	-0.182 (0.113)
Disaster Declaration	0.596 (0.403)	-0.283 (0.778)	0.491 (0.350)	0.046 (0.708)
Turndown	-0.607 (0.721)	-0.162 (1.327)	-0.585 (0.598)	-0.411 (1.223)
Lagged Vote Share	X		X	
County Fixed Effects		X		X
Income	X	X	X	X
Year Fixed Effects	X	X	X	X
N	12,079	12,079	12,990	12,990
Disaster Obs:	1,277	1,277	1,879	1,879
Disaster Obs. with Damage = 0	0	0	0	0
Turndown Obs.	1,306	1,306	1,743	1,743
Turndown Obs. with Damage = 0	0	0	0	0
R ²	0.830	0.503	0.829	0.486

This table shows estimates from the same models as Manuscript Table 3, except that we use the same 2009 SHELDUS damage information and weather damage variable as Gasper and Reeves [2011]. The table shows estimates from the presidential lagged vote share and county fixed effect models using data panels that only include observations (counties) that report non-missing weather damage information for at least one of the six months before the election. Columns 1 and 2 further restrict the panel to only include Presidential Disaster Declaration request counties that report non-zero weather damage at the time of the Disaster Declaration or Turndown (columns 3 and 4 relax this restriction to include the two prior months). The bottom panel reports the number of Disaster Declaration observations and denied Disaster Declaration observations (Turndowns) where the six month weather damage variable is zero (i.e. reported as zero for at least one of the six months, and missing or zero for the other months). Standard errors that allow for state-by-year spatial correlation are in parentheses. Data sources: Federal Emergency Management Agency (FEMA), Public Entity Risk Institute (PERI), Special Hazards and Losses Database for the United States (SHELDUS), US Decennial Census.

Table 4: **Effect of Severe Weather and Disaster Assistance on Incumbent Gubernatorial Vote Share, Replication of Gasper and Reeves (2011)**

Bootstrapped Standard Errors in Parentheses

Incumbent Gubernatorial Vote Share						
Dependent Variable:						
Damage Data:	<u>SHELDUS 2009</u>			<u>SHELDUS 2018</u>		
	GR Replication	Lagged Vote Share	County F.E.	GR Replication	Lagged Vote Share	County F.E.
	(1)	(2)	(3)	(4)	(5)	(6)
Weather Damage	-0.133 (0.076)	-0.051 (0.077)	-0.161 (0.065)	-0.209 (0.097)	-0.113 (0.080)	-0.239 (0.097)
Disaster Declaration	4.015 (2.837)	1.952 (1.622)	2.531 (2.836)	4.167 (2.836)	2.085 (1.602)	2.684 (2.821)
Turndown	2.647 (2.870)	1.838 (2.087)	2.577 (3.079)	2.628 (2.840)	1.837 (2.069)	2.555 (3.056)
Lagged Vote Share	X	X		X	X	
County Fixed Effects	X		X	X		X
Income	X	X	X	X	X	X
Year Fixed Effects	X	X	X	X	X	X
N	15,580	15,580	15,580	15,580	15,580	15,580
Disaster Obs.	1,586	1,586	1,586	1,586	1,586	1,586
Disaster Obs. with Damage = 0	468	468	468	345	345	345
Turndown Obs.	2,849	2,849	2,849	2,849	2,849	2,849
Turndown Obs. with Damage = 0	1,324	1,324	1,324	984	984	984
R ²	0.527	0.430	0.216	0.529	0.431	0.219

This table reproduces the model estimates from Manuscript Table 4, except that we bootstrap the standard errors instead of clustering at the state-by-year level. The bottom panel reports the number of Presidential Disaster Declaration observations and denied Presidential Disaster Declaration observations (Turndowns) where the six month weather damage variable is zero (i.e. all six months have non-reported information or report zero damage). Standard errors that allow for state-by-year spatial correlation are in parentheses. Data sources: Federal Emergency Management Agency (FEMA), Public Entity Risk Institute (PERI), Special Hazards and Losses Database for the United States (SHELDUS), US Decennial Census.

Table 5: **Effect of Severe Weather and Disaster Assistance on Incumbent Gubernatorial Vote Share, Complete Case Analysis Using 2009 SHELDUS**

Dependent Variable:	Incumbent Gubernatorial Vote Share			
Missing Rule:	Disaster Month		Disaster Month or 2 Prior Months	
Specification:	Lagged Vote Share	County F.E.	Lagged Vote Share	County F.E.
	(1)	(2)	(3)	(4)
Weather Damage	0.063 (0.140)	-0.176 (0.239)	0.008 (0.133)	-0.197 (0.217)
Disaster Declaration	1.596 (1.257)	3.081 (1.373)	1.925 (1.152)	2.620 (1.312)
Turndown	-0.347 (2.236)	-2.074 (2.905)	-0.115 (1.967)	-1.217 (2.464)
Lagged Vote Share	X		X	
County Fixed Effects		X		X
Income	X	X	X	X
Year Fixed Effects	X	X	X	X
N	7,584	7,584	8,129	8,129
Disaster Obs:	807	807	1,125	1,125
Disaster Obs. with Damage = 0	58	58	82	82
Turndown Obs.	1,039	1,039	1,315	1,315
Turndown Obs. with Damage = 0	32	32	51	51
R ²	0.447	0.451	0.447	0.437

This table shows estimates from the same models as Manuscript Table 5, except that we use the same 2009 SHELDUS damage information and weather damage variable as Gasper and Reeves [2011]. The table shows estimates from the gubernatorial lagged vote share and county fixed effect models using data panels that only include observations (counties) that report non-missing weather damage information for at least one of the six months before the election. Columns 1 and 2 further restrict the panel to only include Presidential Disaster Declaration request counties that report weather damage at the time of the Disaster Declaration or Turndown (columns 3 and 4 relax this restriction to include the two prior months). The bottom panel reports the number of Disaster Declaration observations and denied Disaster Declaration observations (Turndowns) where the six month weather damage variable is zero (i.e. reported as zero for at least one of the six months, and missing or zero for the other months). Standard errors that allow for state-by-year spatial correlation are in parentheses. Data sources: Federal Emergency Management Agency (FEMA), Public Entity Risk Institute (PERI), Special Hazards and Losses Database for the United States (SHELDUS), US Decennial Census.

Table 6: **Effect of Severe Weather and Disaster Assistance on Incumbent Gubernatorial Vote Share, Exclude Disaster Request Counties with Zero Reported Weather Damage**

Using 2009 SHELDUS

Dependent Variable:	<u>Incumbent Gubernatorial Vote Share</u>			
Missing Rule:	<u>Disaster Month</u>		<u>Disaster Month or 2 Prior Months</u>	
Specification:	<u>Lagged Vote Share</u>	<u>County F.E.</u>	<u>Lagged Vote Share</u>	<u>County F.E.</u>
	(1)	(2)	(3)	(4)
Weather Damage	0.060 (0.153)	-0.167 (0.251)	0.031 (0.154)	-0.174 (0.243)
Disaster Declaration	1.721 (1.064)	3.392 (1.359)	1.951 (1.127)	2.598 (1.311)
Turndown	-0.690 (2.306)	-2.215 (3.002)	-0.425 (1.997)	-1.656 (2.564)
Lagged Vote Share	X		X	
County Fixed Effects		X		X
Income	X	X	X	X
Year Fixed Effects	X	X	X	X
N	7,407	7,407	7,955	7,955
Disaster Obs:	681	681	1,023	1,023
Disaster Obs. with Damage = 0	0	0	0	0
Turndown Obs.	985	985	1,241	1,241
Turndown Obs. with Damage = 0	0	0	0	0
R ²	0.449	0.449	0.449	0.440

This table shows estimates from the same models as Manuscript Table 6, except that we use the same 2009 SHELDUS damage information and weather damage variable as Gasper and Reeves [2011]. The table shows estimates from the gubernatorial lagged vote share and county fixed effect models using data panels that only include observations (counties) that report non-missing weather damage information for at least one of the six months before the election. Columns 1 and 2 further restricts the panel to only include Presidential Disaster Declaration request counties that report non-zero weather damage at the time of the Disaster Declaration or Turndown (columns 3 and 4 relax this restriction to include the two prior months). The bottom panel reports the number of Disaster Declaration observations and denied Disaster Declaration observations (Turndowns) where the six month weather damage variable is zero (i.e. reported as zero for at least one of the six months). Standard errors that allow for state-by-year spatial correlation are in parentheses. Data sources: Federal Emergency Management Agency (FEMA), Public Entity Risk Institute (PERI), Special Hazards and Losses Database for the United States (SHELDUS), US Decennial Census.

Table 7: Effect of Severe Weather and Disaster Assistance on Incumbent Presidential Vote Share

Dependent Variable:	<u>Incumbent Presidential Vote Share</u>			
Missing Rule:	<u>6 Months</u>		<u>6 Months</u>	
Specification:	Lagged Vote Share	County F.E.	Lagged Vote Share	County F.E.
	(1)	(2)	(3)	(4)
Weather Damage	-0.174 (0.050)	-0.157 (0.085)	-0.205 (0.055)	-0.161 (0.101)
Disaster Declaration	0.600 (0.365)	0.506 (0.695)	0.673 (0.365)	0.391 (0.701)
Turndown	-1.003 (0.570)	-1.058 (1.045)	-0.698 (0.560)	-0.937 (1.046)
Lagged Vote Share	X		X	
County Fixed Effects		X		X
Income	X	X	X	X
Year Fixed Effects	X	X	X	X
N	19,323	19,323	18,831	18,831
Disaster Obs:	2,605	2,605	2,445	2,445
Disaster Obs. with Damage = 0	160	160	0	0
Turndown Obs.	3,278	3,278	2,933	2,933
Turndown Obs. with Damage = 0	345	345	0	0
R ²	0.810	0.456	0.809	0.455

Columns 1 and 2 of the table show estimates from the presidential lagged vote share and county fixed effect models using data panels that only include observations (counties) that report non-missing weather damage information for at least one of the six months before the election. The panels in columns 1 and 2 differ from those used in Manuscript Table 2 because we do not restrict the panel to only include Presidential Disaster Declaration request observations with non-missing information at the time of the disaster. The panels in columns 3 and 4 are similar to those in Manuscript Table 3, except that we use a less restrictive rule to include disaster request counties in the panel: the six month weather damage variable can not be missing or reported as zero dollars. Data sources: Federal Emergency Management Agency (FEMA), Public Entity Risk Institute (PERI), Special Hazards and Losses Database for the United States (SHELDUS), US Decennial Census.

Table 8: **Effect of Severe Weather and Disaster Assistance on Incumbent Gubernatorial Vote Share**

Dependent Variable:	Incumbent Gubernatorial Vote Share			
Missing Rule:	6 Months		6 Months	
Specification:	Lagged Vote Share	County F.E.	Lagged Vote Share	County F.E.
	(1)	(2)	(3)	(4)
Weather Damage	-0.091 (0.110)	-0.282 (0.165)	-0.077 (0.127)	-0.256 (0.199)
Disaster Declaration	1.993 (1.257)	2.859 (1.521)	2.011 (1.220)	2.862 (1.497)
Turndown	0.405 (1.626)	0.590 (2.068)	0.239 (1.676)	0.396 (2.137)
Lagged Vote Share	X		X	
County Fixed Effects		X		X
Income	X	X	X	X
Year Fixed Effects	X	X	X	X
N	10,851	10,851	10,617	10,617
Disaster Obs:	1,352	1,352	1,241	1,241
Disaster Obs. with Damage = 0	111	111	0	0
Turndown Obs.	1,988	1,988	1,865	1,865
Turndown Obs. with Damage = 0	123	123	0	0
R ²	0.421	0.325	0.420	0.325

Columns 1 and 2 of the table show estimates from the presidential lagged vote share and county fixed effect models using data panels that only include observations (counties) that report non-missing weather damage information for at least one of the six months before the election. The panels in columns 1 and 2 differ from those used in Manuscript Table 5 because we do not restrict the panel to only include Presidential Disaster Declaration request observations with non-missing information at the time of the disaster. The panels in columns 3 and 4 are similar to those in Manuscript Table 6, except that we use a less restrictive rule to include disaster request counties in the panel: the six month weather damage variable can not be missing or reported as zero dollars. Data sources: Federal Emergency Management Agency (FEMA), Public Entity Risk Institute (PERI), Special Hazards and Losses Database for the United States (SHELDUS), US Decennial Census.