

**Supporting Information (Online Appendix) for:
"Voter Partisanship and the Effect of Distributive Spending on Political Participation."**

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Table App.1: Partisan Composition of FEMA Aid Applicants

Party Affiliation	Number of FEMA Aid Applicants who were Party Affiliates
Democratic Party	142,637 (44.0%)
Republican Party	126,115 (38.9%)
[No Party Affiliation Selected]	36,729 (11.3%)
Independent Party of Florida	7,206 (2.2%)
The No Party Affiliation Party of Florida	1,707 (0.6%)
Libertarian Party of Florida	322 (<0.1%)
Independence Party of Florida	162 (<0.1%)
Reform Party	130 (<0.1%)
The Green Party of Florida, Inc.	110 (<0.1%)
[Other or non-recognized party]	9,201 (2.8%)
Total Applicants with Voter Registrations	324,319 (100%)

Note: This Table reports each party's share of the 2004 Florida FEMA applicants who satisfied the following three criteria: 1) The individual's household applied for FEMA aid during the 2004 hurricane season; 2) FEMA took action on the household's aid application prior to the November 2004 general election; 3) The individual was eligible and actively registered to vote in both the 2002 and 2004 general elections

**Table App.2: Re-estimation of Table 1 Models Using Clustered Standard Errors
Effect of FEMA Application Approval on Voter Turnout Among FEMA Applicants**

<i>Voters Included:</i>	<i>Dependent Variable: Voted in November 2004 Election</i>		
	Democrats	Republicans	Democrats and Republicans
FEMA Application Approved	-0.039* (0.018)	0.054** (0.017)	-0.041* (0.019)
FEMA Application Approved × Registered Republican	----	----	0.100*** (0.028)
Registered Republican	----	----	0.080 (0.045)
Voted in November 2002 General Election	2.343*** (0.115)	2.347*** (0.140)	2.352*** (0.125)
Maximum Wind Speed (Miles Per Hour)	0.000 (0.005)	-0.011 (0.008)	-0.005 (0.006)
Maximum Wind Speed (Miles Per Hour Squared)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Voter's Age (Years)	0.071*** (0.006)	0.081*** (0.008)	0.075*** (0.006)
Voter's Age (Years Squared)	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)
Med. Home Value in Block Group (\$1,000s)	0.009* (0.003)	0.010 (0.006)	0.010* (0.004)
Voter's Gender (Male)	-0.276*** (0.027)	-0.162*** (0.013)	-0.226*** (0.020)
African-American	-0.011 (0.040)	-0.474*** (0.078)	-0.027 (0.040)
Med. Household Income in Block Group (\$1,000s)	0.081*** (0.011)	0.092*** (0.012)	0.081*** (0.008)
County Fixed Effects	Included	Included	Included
Constant	-1.689*** (0.260)	-1.534*** (0.377)	-1.633*** (0.292)
<i>Pseudo R</i> ²	0.34	0.33	0.34
<i>N</i>	142,637	126,115	268,752

*** $p < .001$; ** $p < .01$; * $p < .05$ (two-tailed). Clustered standard errors in parentheses, where each cluster is a county.

Note: Data include registered voters whose household applied for FEMA disaster aid before the November 2004 election and who were registered to vote in both the 2002 and 2004 elections.

Table App.3: Effect of FEMA Aid Delivered One Week Before the November 2004 Election

	<i>Dependent Variable: Voted in November 2004 Election</i>			
	Model (1)	Model (2)	Model (3)	Model (4)
	<i>Voters Included:</i>		Democrats	Republicans
FEMA Application Approved During Aug. 14 to Oct. 27, 2004	-0.030* (0.014)	0.077*** (0.016)	-0.034* (0.014)	0.048** (0.016)
FEMA Application Approved During Oct. 27 to Nov. 2, 2004	-0.125** (0.040)	0.203*** (0.048)	-0.124** (0.041)	0.168*** (0.049)
Voted in November 2002 General Election	2.358*** (0.014)	2.416*** (0.016)	2.343*** (0.015)	2.347*** (0.017)
Maximum Wind Speed (Miles Per Hour)	----	----	0.000 (0.005)	-0.011* (0.005)
Maximum Wind Speed (Miles Per Hour Squared)	----	----	0.000 (0.000)	0.000* (0.000)
Voter's Age (Years)	----	----	0.071*** (0.002)	0.081*** (0.003)
Voter's Age (Years Squared)	----	----	-0.001*** (0.000)	-0.001*** (0.000)
Med. Home Value in Block Group (\$1,000s)	----	----	0.009*** (0.002)	0.010*** (0.002)
Voter's Gender (Male)	----	----	-0.276*** (0.014)	-0.162*** (0.016)
African-American	----	----	-0.011 (0.018)	-0.474*** (0.051)
Med. Household Income in Block Group (\$1,000s)	----	----	0.081*** (0.008)	0.092*** (0.009)
County Fixed Effects	----	----	Included	Included
Constant	-0.088*** (0.011)	0.032* (0.013)	-1.688*** (0.182)	-1.539*** (0.229)
<i>Pseudo R</i> ²	0.30	0.30	0.34	0.33
<i>N</i>	142,637	126,115	142,637	126,115

*** $p < .001$; ** $p < .01$; * $p < .05$ (two-tailed). Standard errors in parentheses.

Note: Data include voters whose household applied for FEMA disaster aid before the November 2004 election, and who were registered to vote in both the 2002 and 2004 elections.

Table App.4: Effect of FEMA Award Size on Voter Turnout Among FEMA Applicants

<i>Voters Included:</i>	<i>Dependent Variable: Voted in November 2004 Election</i>					
	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)
	Democrats	Republicans	Democrats and Republicans	Democrats	Republicans	Democrats and Republicans
$\text{Log}_e(\text{FEMA Aid} + \$1)$	-0.009*** (0.002)	0.008*** (0.002)	-0.009*** (0.002)	-0.009*** (0.002)	0.005* (0.002)	-0.009*** (0.002)
$\text{Log}_e(\text{FEMA Aid} + \$1) \times$ Registered Republican	----	----	0.017*** (0.003)	----	----	0.014*** (0.003)
Registered Republican	----	----	0.141*** (0.015)	----	----	0.081*** (0.016)
Voted in November 2002 General Election	2.356*** (0.014)	2.416*** (0.016)	2.383*** (0.011)	2.342*** (0.015)	2.348*** (0.017)	2.352*** (0.012)
Maximum Wind Speed (Miles Per Hour)	----	----	----	-0.000 (0.005)	-0.011* (0.005)	-0.005 (0.003)
Maximum Wind Speed (Miles Per Hour Squared)	----	----	----	0.000 (0.000)	0.000* (0.000)	0.000 (0.000)
Voter's Age (Years)	----	----	----	0.071*** (0.002)	0.082*** (0.003)	0.075*** (0.002)
Voter's Age (Years Squared)	----	----	----	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)
Med. Home Value in Block Group (\$1,000s)	----	----	----	0.009*** (0.002)	0.010*** (0.002)	0.010*** (0.002)
Voter's Gender (Male)	----	----	----	-0.275*** (0.014)	-0.161*** (0.016)	-0.226*** (0.010)
African-American	----	----	----	-0.012 (0.018)	-0.475*** (0.051)	-0.027 (0.016)
Med. Household Income in Block Group (\$1,000s)	----	----	----	0.080*** (0.008)	0.092*** (0.009)	0.081*** (0.006)
County Fixed Effects	----	----	----	Included	Included	Included
Constant	-0.072*** (0.011)	0.048*** (0.013)	-0.081*** (0.010)	-1.669*** (0.182)	-1.523*** (0.229)	-1.618*** (0.140)
<i>Pseudo R</i> ²	0.30	0.30	0.30	0.34	0.33	0.34
<i>N</i>	142,637	126,115	268,752	142,637	126,115	268,752

*** $p < .001$; ** $p < .01$; * $p < .05$ (two-tailed). Standard errors in parentheses.

Note: Data include registered voters whose household applied for FEMA disaster aid before the November 2004 election and who were registered to vote in both the 2002 and 2004 elections. *FEMA Aid* is the number of dollars each applicant's household received. Rejected applicants receive \$0.

Table App.5: Alternative Specifications of Logged FEMA Aid Models

<i>Dependent Variable: Voted in November 2004 Election</i>									
	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)	Model (7)	Model (8)	Model (9)
<i>Voters Included:</i>	Democrats	Republicans	Democrats and Republicans	Democrats	Republicans	Democrats and Republicans	Democrats	Republicans	Democrats and Republicans
Log_e (FEMA Aid + \$10)	-0.017*** (0.003)	0.009** (0.003)	-0.017*** (0.003)	----	----	----	----	----	----
Log_e (FEMA Aid + \$10) × Registered Republican	----	----	0.025*** (0.004)	----	----	----	----	----	----
Log_e (FEMA Aid + \$0.1)	----	----	----	-0.006*** (0.001)	0.007*** (0.002)	-0.006*** (0.001)	----	----	----
Log_e (FEMA Aid + \$0.1) × Registered Republican	----	----	----	----	----	0.013*** (0.002)	----	----	----
Log_{10} (FEMA Aid + \$1)	----	----	----	----	----	----	-0.022*** (0.004)	0.018*** (0.005)	-0.022*** (0.004)
Log_{10} (FEMA Aid + \$1) × Registered Republican	----	----	----	----	----	----	----	----	0.040*** (0.007)
Registered Republican	----	----	0.085*** (0.023)	----	----	0.171*** (0.012)	----	----	0.141*** (0.015)
Voted in November 2002 General Election	2.355*** (0.014)	2.416*** (0.016)	2.382*** (0.011)	2.357*** (0.014)	2.416*** (0.016)	2.383*** (0.011)	2.356*** (0.014)	2.416*** (0.016)	2.383*** (0.011)
Constant	-0.027 (0.015)	0.036 (0.019)	-0.036* (0.015)	-0.091*** (0.009)	0.060*** (0.011)	-0.099*** (0.008)	-0.072*** (0.011)	0.048*** (0.013)	-0.081*** (0.010)
<i>Pseudo R</i> ²	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
<i>N</i>	142,637	126,115	268,752	142,637	126,115	268,752	142,637	126,115	268,752

*** $p < .001$; ** $p < .01$; * $p < .05$ (two-tailed). Standard errors in parentheses.

Note: Data include registered voters whose household applied for FEMA disaster aid before the November 2004 election and who were registered to vote in both the 2002 and 2004 elections.

Table App.6: Effect of FEMA Responsiveness on Voter Turnout Among Applicants

	<i>Dependent Variable: Voted in November 2004 Election</i>					
	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)
	<i>Voters Included:</i> Democrats	Republicans	Democrats and Republicans	Democrats	Republicans	Democrats and Republicans
FEMA Application Approved	-0.033* (0.014)	0.088*** (0.016)	-0.032* (0.014)	-0.039** (0.014)	0.055*** (0.016)	-0.041** (0.014)
FEMA Application Approved × Registered Republican	----	----	0.118*** (0.020)	----	----	0.100*** (0.021)
Registered Republican	----	----	0.141*** (0.015)	----	----	0.079*** (0.016)
Waiting Time for FEMA Response to Application (Days)	-0.001 (0.001)	-0.001 (0.001)	-0.001 (0.001)	0.000 (0.001)	-0.000 (0.001)	0.000 (0.001)
Voted in November 2002 General Election	2.358*** (0.014)	2.416*** (0.016)	2.384*** (0.011)	2.343*** (0.015)	2.347*** (0.017)	2.352*** (0.012)
Maximum Wind Speed (Miles Per Hour)	----	----	----	0.000 (0.005)	-0.006 (0.016)	-0.005 (0.003)
Maximum Wind Speed (Miles Per Hour Squared)	----	----	----	0.000 (0.000)	0.000* (0.000)	0.000 (0.000)
Voter's Age (Years)	----	----	----	0.071*** (0.002)	0.081*** (0.003)	0.075*** (0.002)
Voter's Age (Years Squared)	----	----	----	-0.001*** (0.000)	-0.001*** (0.000)	-0.001*** (0.000)
Med. Home Value in Block Group (\$1,000s)	----	----	----	0.009*** (0.002)	0.010*** (0.002)	0.010*** (0.002)
Voter's Gender (Male)	----	----	----	-0.276*** (0.014)	-0.162*** (0.016)	-0.226*** (0.010)
African-American	----	----	----	-0.011 (0.018)	-0.474*** (0.051)	-0.027 (0.016)
Med. Household Income in Block Group (\$1,000s)	----	----	----	0.081*** (0.008)	0.092*** (0.009)	0.081*** (0.006)
County Fixed Effects	----	----	----	Included	Included	Included
Constant	-0.087*** (0.011)	0.035** (0.013)	-0.095*** (0.010)	-1.688*** (0.182)	-1.535*** (0.229)	-1.633*** (0.140)
<i>Pseudo R²</i>	0.30	0.30	0.30	0.34	0.33	0.34
<i>N</i>	142,637	126,115	268,752	142,637	126,115	268,752

*** $p < .001$; ** $p < .01$; * $p < .05$ (two-tailed). Standard errors in parentheses.

Note: Data include registered voters whose household applied for FEMA disaster aid before the November 2004 election and who were registered to vote in both the 2002 and 2004 elections.

Table App.7: Re-estimation of Table 5 Models Using Clustered Standard Errors
WLS Regression: The Effect of FEMA Aid on Precinct-Level Bush Vote Share

	<i>Dependent Variable: 2004 George Bush Vote Share ×100</i>					
	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	
	Precincts Included: All Precincts	All Precincts	All Precincts	Democratic Precincts (< 50% Bush Vote)	Republican Precincts (> 50% Bush Vote)	
Proposition 2:						
FEMA Aid (Dollars Per Capita, Logged)	0.36** (0.12)	0.78*** (0.12)	1.03*** (0.09)	0.79*** (0.16)	1.20*** (0.11)	
2000 G.W. Bush Vote Share	33.65*** (4.44)	26.16*** (3.52)	27.26*** (3.34)	20.78*** (2.88)	35.44*** (5.50)	
2002 Jeb Bush Vote Share	60.19*** (4.27)	66.50*** (3.31)	57.12*** (3.54)	55.46*** (3.99)	49.79*** (5.11)	
Median Household Income (\$10,000s)	----	----	0.50*** (0.08)	0.85*** (0.15)	0.14 (0.14)	
Welfare Receipts (\$1,000s) Per Capita	----	----	-11.97*** (3.01)	-3.49 (3.79)	-12.24* (5.79)	
African-American Proportion	----	----	-4.88*** (0.99)	-7.94*** (1.38)	-11.36*** (3.25)	
Homeowner Proportion	----	----	5.50*** (0.68)	2.81*** (0.77)	7.48*** (1.21)	
Hurricane Wind Speeds Included	No	Yes	Yes	Yes	Yes	
Constant	0.78 (0.61)	6.28** (1.92)	7.16*** (2.06)	11.07*** (2.24)	10.48** (3.32)	
	R^2	0.93	0.93	0.94	0.93	0.80
	N	5,897	5,897	5,897	2,866	3,031

*** $p < .001$; ** $p < .01$; * $p < .05$ (two-tailed). Clustered standard errors in parentheses, where each cluster is a State House district, the smallest geographic unit within which precincts lie.

Note: Observations are weighted by precinct voting-age population. Democratic (Republican) precincts are those in which George Bush's share of the two-party vote in November 2000 was under (at least) 50%.

Figure App.1: Distribution of FEMA Aid Across Individuals

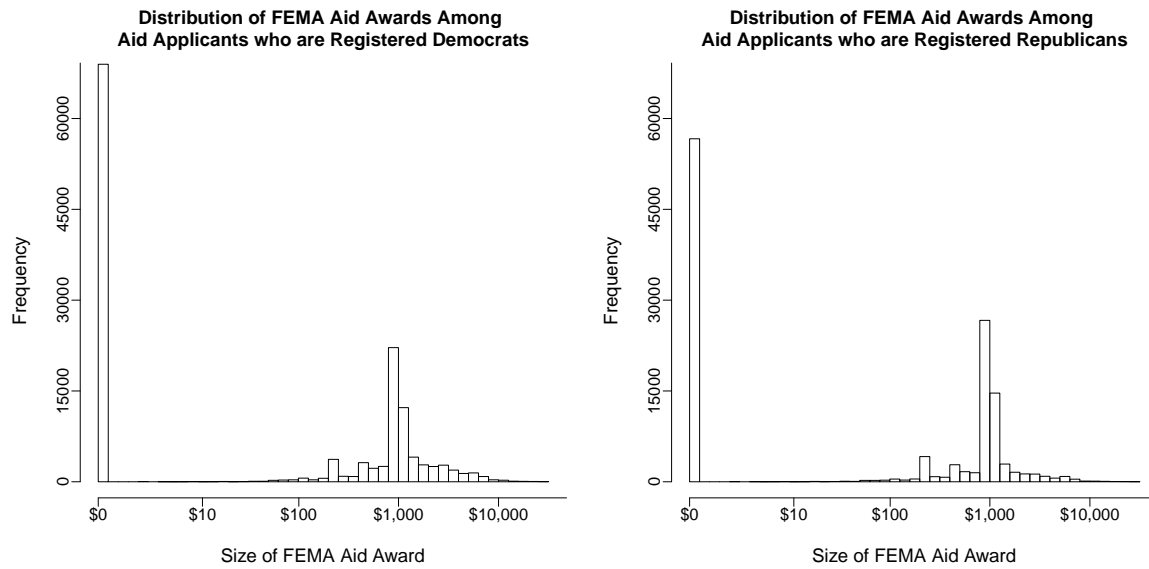
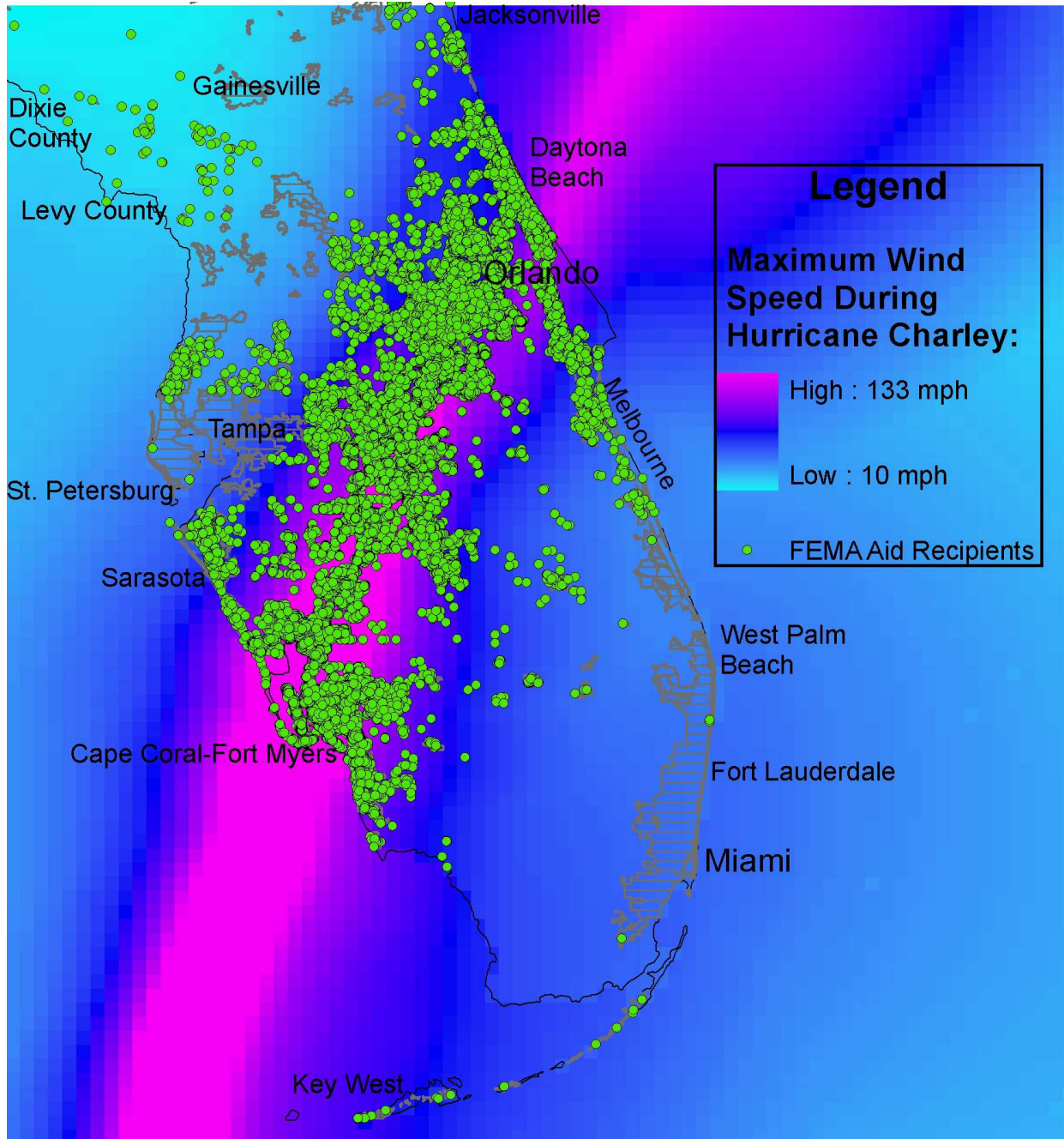
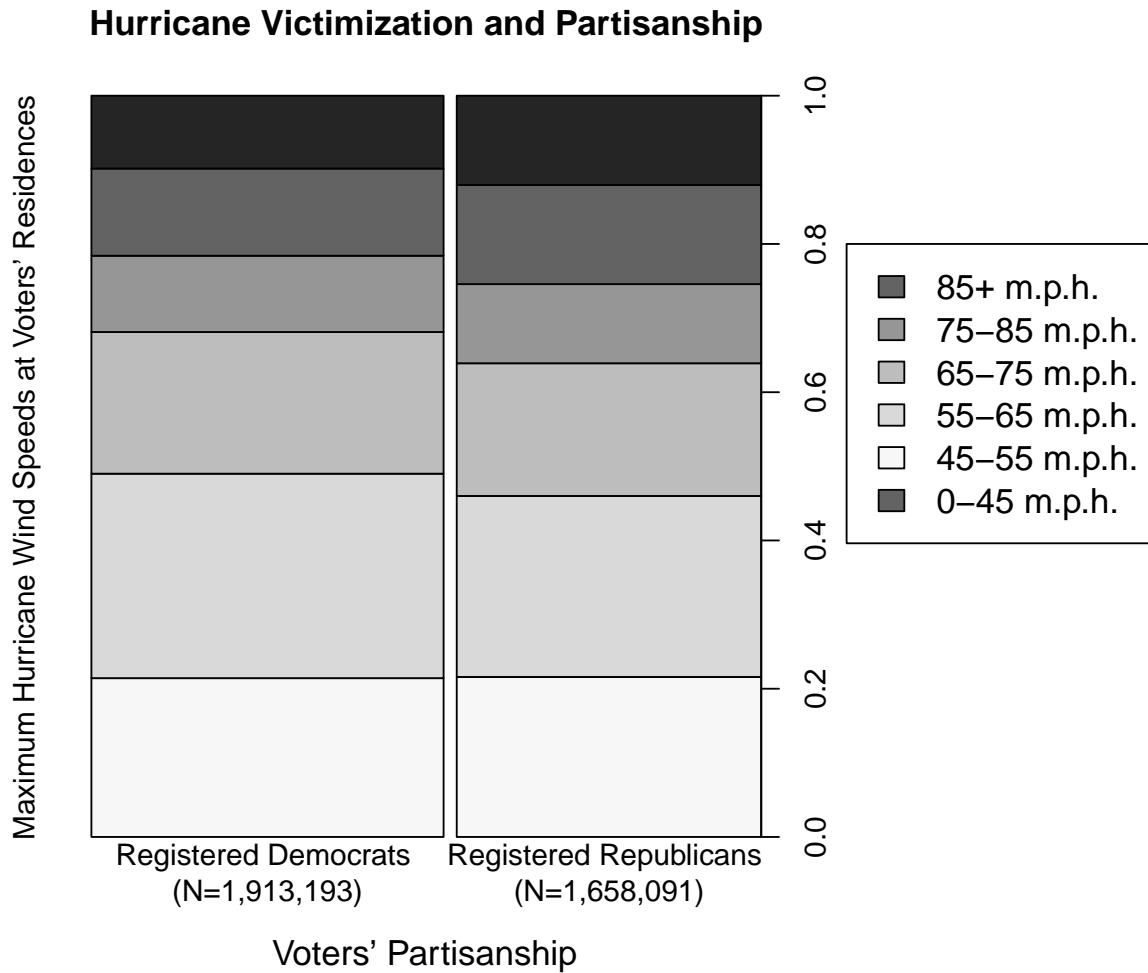


Figure App.2: FEMA Aid Recipients for Hurricane Charley (FEMA Disaster #1539)



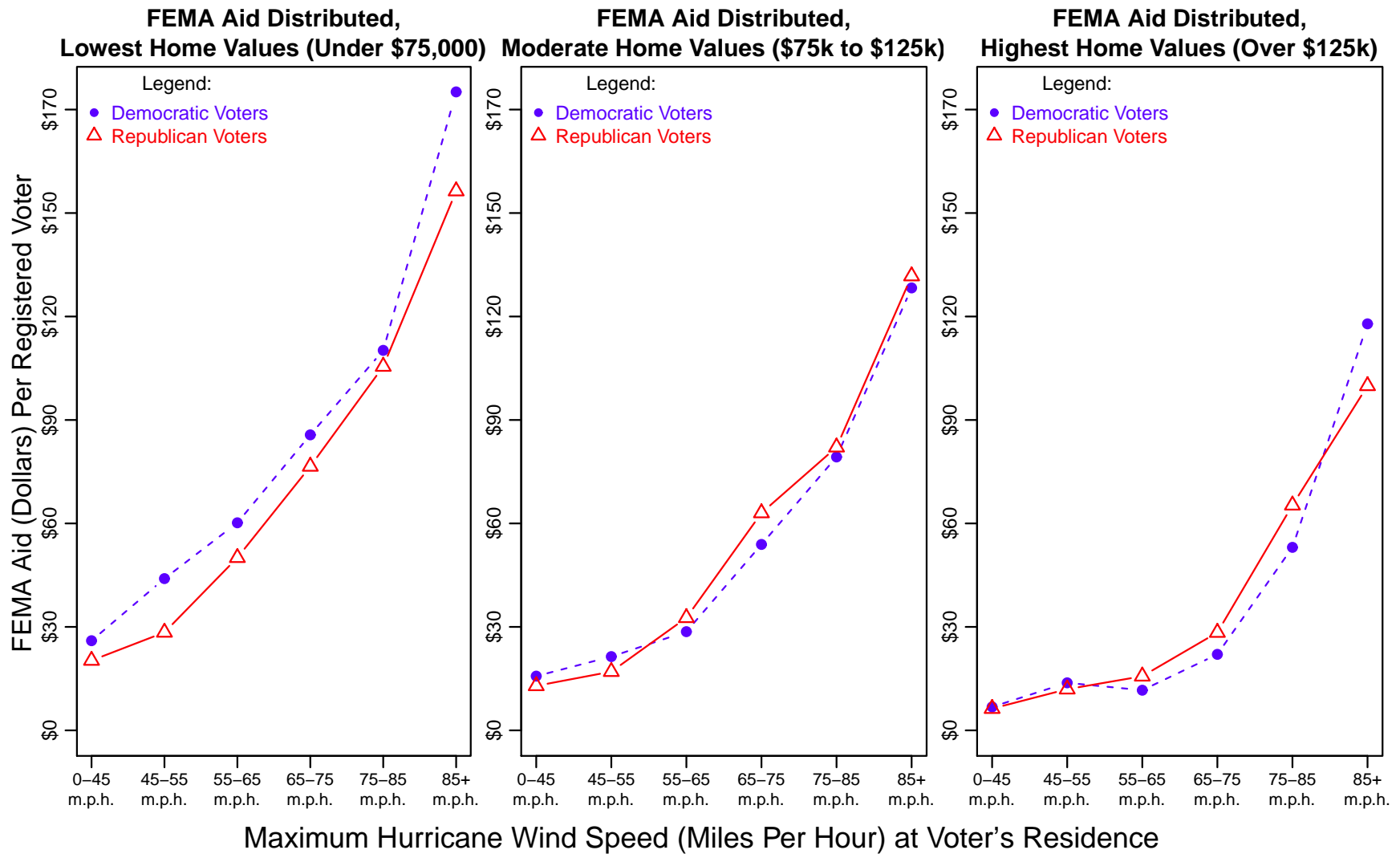
Note: The bright pink strip in this map denotes the center path of Hurricane Charley, which traveled northeast across Florida. The green dots denote the residential location of each successful FEMA aid applicant.

Figure App.3: Hurricane Wind Speeds Experienced by Democratic and Republican Voters



Note: These stacked plots include all Florida registered voters who: 1) were eligible and actively registered to vote in the 2004 general election; 2) were either registered Democrats (left plot) or Republicans (right plot) as of the November 2004 election; and 3) had a residential address that could be geocoded.

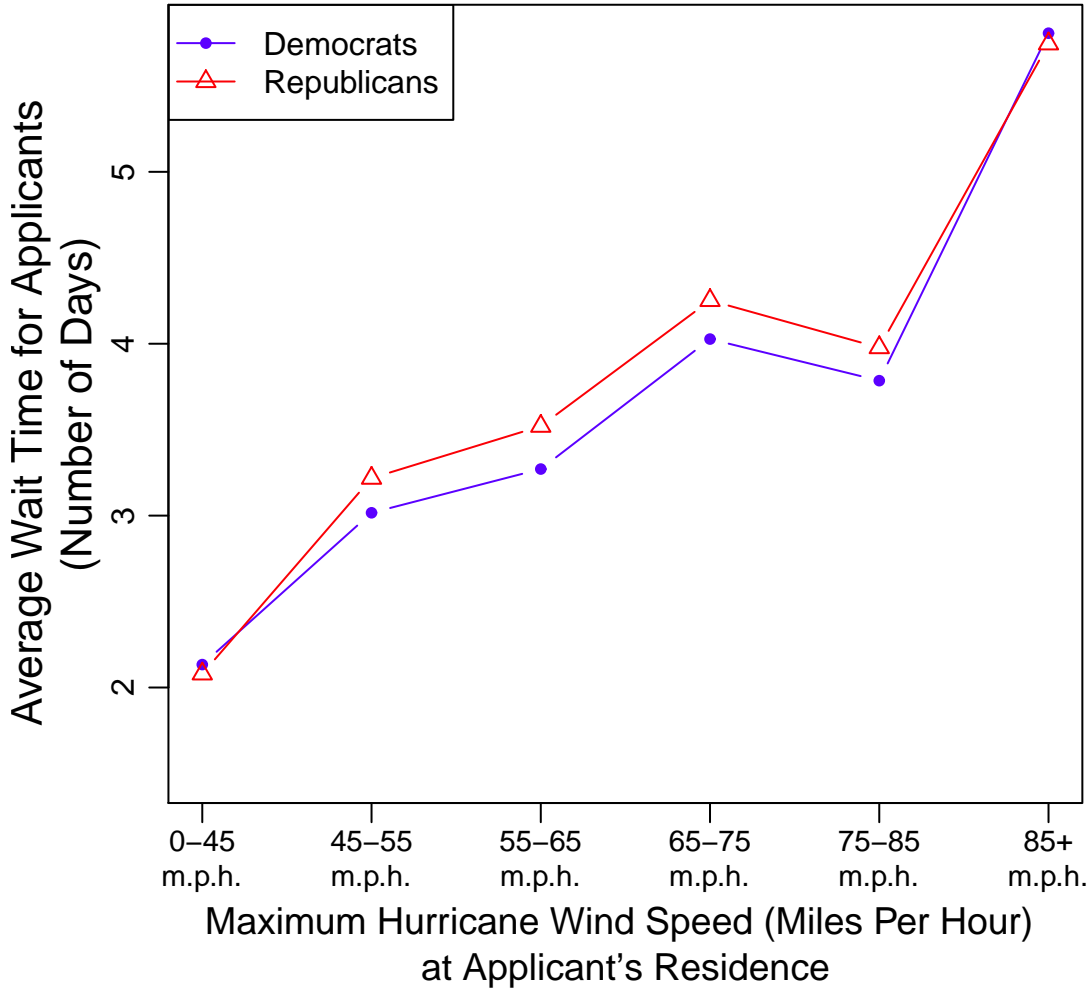
Figure App.4: The Awarding of FEMA Aid by Party, by Home Value Group, and by Hurricane Severity



Note: Data include all individuals who were registered to vote in both the 2002 and 2004 elections, and who were either registered Democrats (blue circles) or Republicans (red triangles) as of the November 2004 election.

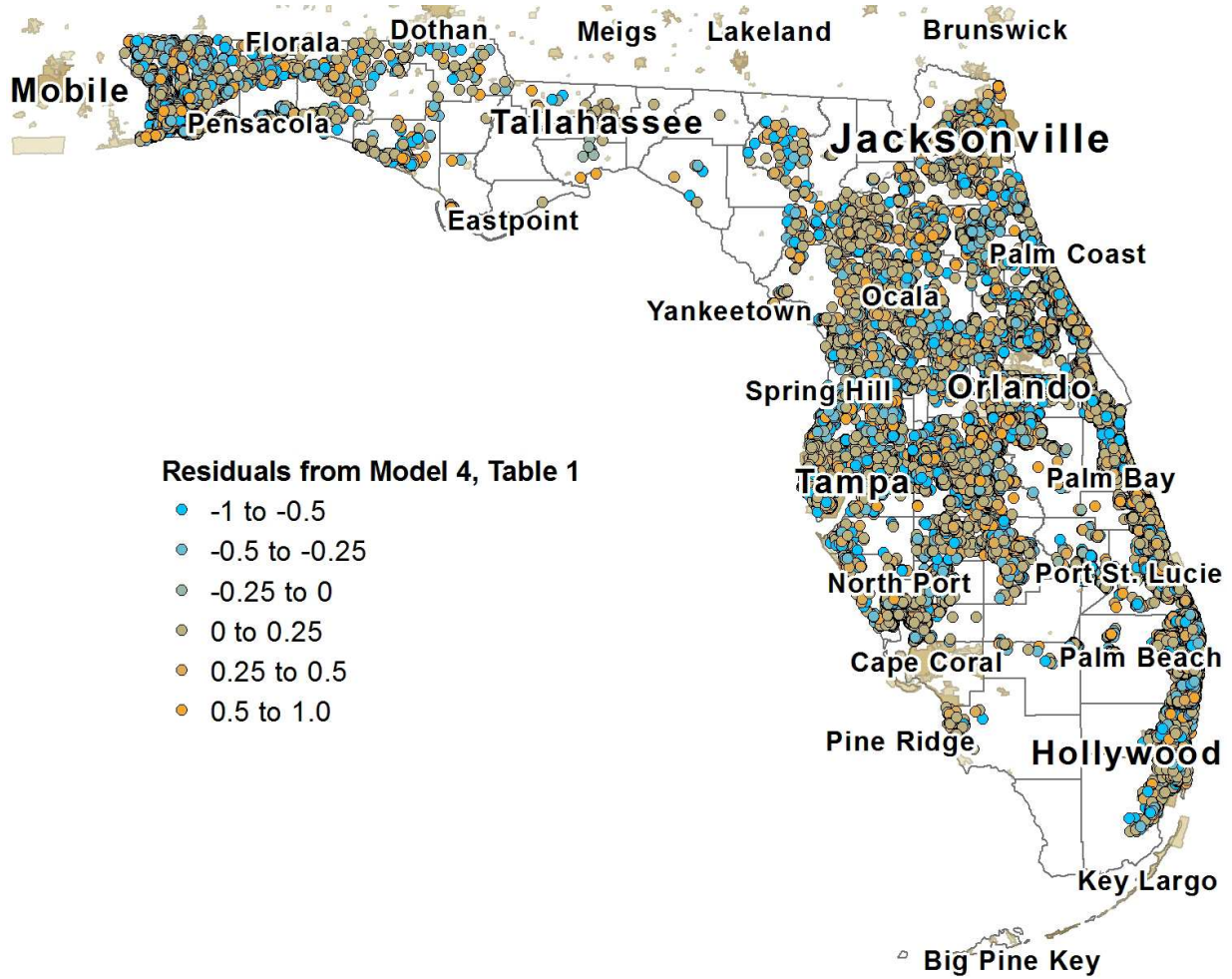
Figure App.5: Efficacy of FEMA Application Process for Democratic and Republican Applicants

Applicants' Average Wait Time for FEMA Inspection



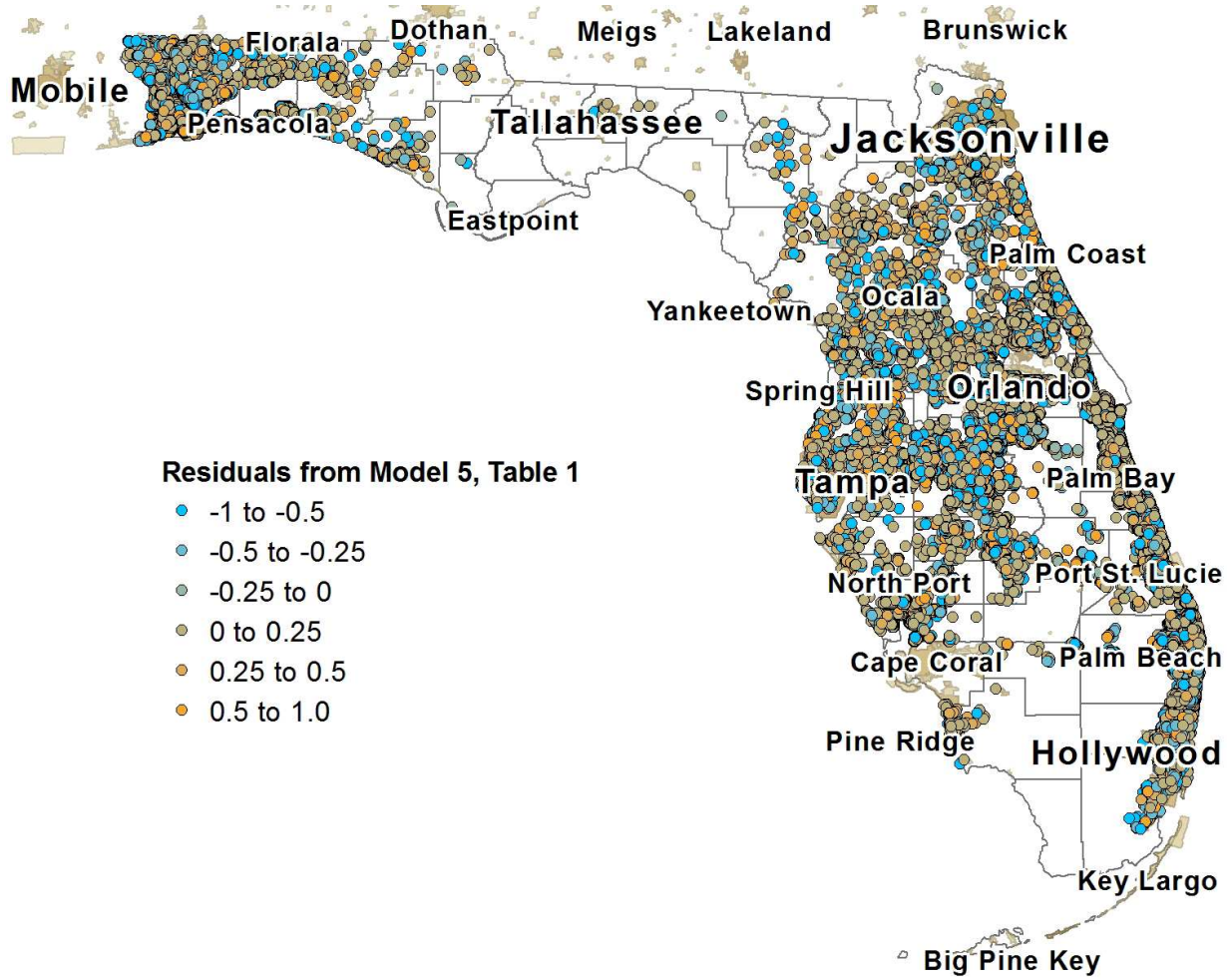
Note: Data include registered voters whose household applied for FEMA disaster aid before the November 2004 election, who were registered to vote in both the 2002 and 2004 elections, and who were either registered Democrats (left plot) or Republicans (right plot) as of the November 2004 election

Figure App.6: Spatial Autocorrelation of Residuals from Table 1, Model 4
(Democratic Applicants)



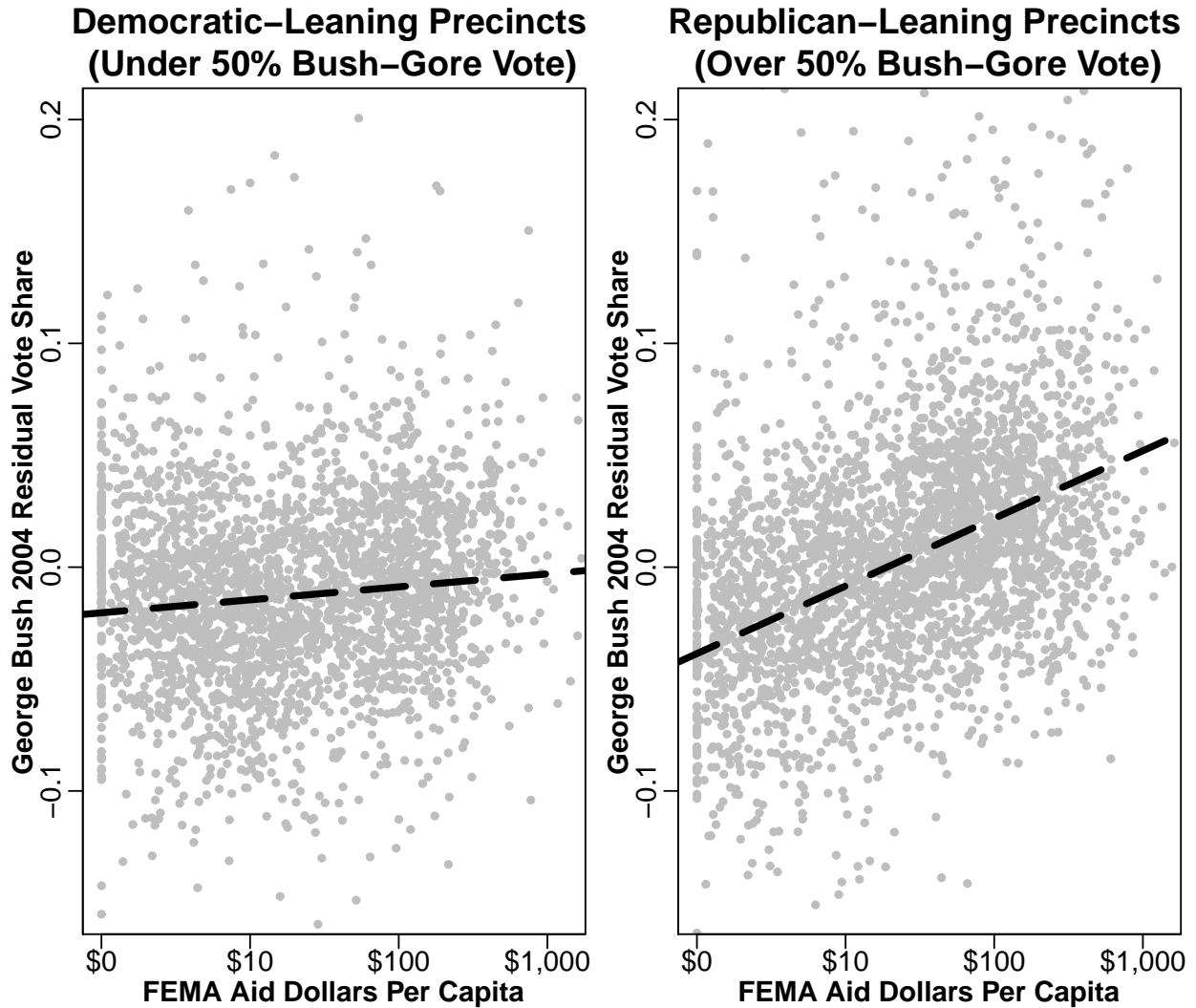
Democrat Residuals	
Moran's I	0.0003287953
Expected (null)	-0.0002235136
Standard Deviation	0.002488056
p-value	0.8243263

**Figure App.7: Spatial Autocorrelation of Residuals from Table 1, Model 5
(Republican Applicants)**



Republican Residuals	
Moran's I	0.002831336
Expected (null)	-0.0002619859
Standard Deviation	0.002527063
p-value	0.220923

Figure App.8: Effect of FEMA Aid on Bush Vote Share in Democratic and Republican Precincts



Note: The vertical axes measure the residuals from the population-weighted least squares regression: $Bush04_i = \alpha + \beta_1 \cdot Bush00_i + \beta_2 \cdot Bush02_i + \beta_3 \cdot Wind_i + \varepsilon_i$, where $Bush00_i$ and $Bush04_i$ are George Bush's precinct-level vote shares from the 2000 and 2004 Presidential elections, respectively, and $JebBush02_i$ is Jeb Bush's precinct-level vote shares from the 2002 Gubernatorial election. $Wind_i$ represents the vector of maximum wind speeds in each precinct during each of the four summer 2004 hurricanes. The dashed line in each plot depicts the least-squares fit. Observations are weighted by each precinct's voting-age population.

The Formal Model:

Players: There are two politicians, an Incumbent (I) and a Challenger (C), who have divergent ideal points. Without loss of generality, we assume that I and C have ideal points $x_I = 1$ and $x_C = 0$, respectively; that is, the incumbent is right-wing and the challenger is left-wing, mirroring the 2004 Bush-Kerry election. At the start of the game, Nature selects the politicians' types, $\theta_I, \theta_C \in \{0,1\}$, with probabilities: $\Pr(\theta_I = 0) = \Pr(\theta_I = 1) = \Pr(\theta_C = 0) = \Pr(\theta_C = 1) = \frac{1}{2}$. θ_I, θ_C are privately revealed to I and C , respectively. As explained below, a politician of type $\theta = 0$ prefers not to deliver aid the voter, while one of type $\theta = 1$ prefers to deliver aid. Finally, there is a single Voter V whose ideal point, denoted $x_V \in (0,1)$, lies somewhere between those of I and C . For clarity, we use female pronouns for the Incumbent I and the Challenger C and male pronouns for the Voter V .

Strategies: The game consists of two periods and an election between the first and second periods. In period 1, the Incumbent I holds office and chooses whether to give the voter V a one-unit distributive aid, $y_1 \in \{0,1\}$. After the first period, V decides whether to participate in the election, $v \in \{0,1\}$, and if so, whether to elect the Incumbent or the Challenger, $e \in \{I, C\}$. If V does not vote, then Nature chooses the winner $e \in \{I, C\}$ with probabilities $(\frac{1}{2}, \frac{1}{2})$. In period 2, the election winner is in office and decides whether to give V a one-unit distributive aid, $y_2 \in \{0,1\}$.

Voter's Utility: During each period $t \in \{1, 2\}$, the voter's utility is:

$$U_V^t = -|x_p - x_V| + y_t, \quad (1)$$

where $y_t \in \{0,1\}$ represents the amount of distributive aid awarded to the voter in period t , x_V represents the voter's ideal point, and x_p is the ideal point of the office-holding politician p , who is either the Incumbent I ($x_I = 1$) or the Challenger C ($x_C = 0$). Hence, the voter's utility depends on his ideological proximity to the office holder as well as his benefit from any distributive aid.

In between the two periods, the voter may choose to vote in the election by incurring a turnout cost, ω , which is randomly drawn by Nature from the uniform distribution $\omega \sim U[0,1]$ and revealed to V prior to the election. Hence, V 's overall utility payoff over the entire game is:

$$U_V = U_V^1 + U_V^2 - \omega \cdot (v), \quad (2)$$

where $v \in \{0,1\}$ is V 's choice of whether to turn out in the election, and U_V^1 and U_V^2 are V 's payoffs from the first and second periods, respectively.

Politicians' Utility: In each period $t \in \{1, 2\}$, each politician $p \in \{I, C\}$ receives the payoff:

$$U_p^t = -|\theta_p - y_t|, \quad (3)$$

where $y_t \in \{0,1\}$ is the executive's choice of distributive aid policy. θ_p denotes the politician's type, which represents her preferred distributive policy. Hence, a politician of type $\theta_p = 1$ prefers to deliver aid ($x_t = 1$), while a politician of type $\theta_p = 0$ always prefers no aid ($x_t = 0$) for V .

Sequence of Play: Formally, the sequence of play is as follows:

1. Nature determines each politician's type, $\theta_I, \theta_C \in \{0,1\}$, with probabilities $(\frac{1}{2}, \frac{1}{2})$ and reveals types privately to I and C , respectively.
2. The incumbent I picks the first period aid amount, $y_1 \in \{0,1\}$.
3. Nature determines the cost of voting, $\omega \sim U[0,1]$.
4. The voter V chooses whether to vote, $v \in \{0,1\}$
- 5(a). If V votes ($v = 1$), then he chooses the election winner, $e \in \{I, C\}$.
- 5(b). If V does not vote ($v = 0$), then Nature determines the election winner, $e \in \{I, C\}$.
6. The winner of the election (I or C) picks the second period aid amount, $y_2 \in \{0,1\}$.

Voter Beliefs: The Voter V does not observe the politician types, θ_I and θ_C , that Nature randomly chooses. Instead, V can only observe the Incumbent's first-period distributive policy, y_1 , and form updated beliefs about I 's type. Let $p_{\theta_I}(\theta|y_1)$ denote the V 's posterior beliefs about the probability that $\theta_I = 1$ after observing y_1 .

Equilibrium Results: In this section, we describe players' strategies and beliefs in Perfect Bayesian Equilibrium and derive testable predictions. For simplicity, we assume that Voter V resolves uncertainty in favor of turning out and in favor of voting for the Incumbent I . Under these assumptions, the game has a unique, fully separating equilibrium solution.

Lemma A (Executive's Distributive Policy): In each period $t \in \{1, 2\}$, the office-holding executive, $p \in \{I, C\}$, chooses the distributive policy: $x_t = \theta_p$. **Proof: Appendix.**

Lemma B (Voter's updated beliefs about Incumbent's type): After observing the Incumbent's choice of $y_1 \in \{0, 1\}$ during the first period, the Voter V 's updated belief about the Incumbent's type is: $p_{\theta_I}(1|y_1) = y_1$. **Proof: Appendix.**

Lemmas A and B state that the equilibrium is fully separating. An Incumbent of type $\theta_p = 1$ always chooses to provide distributive aid ($x_t = 1$), while type $\theta_p = 0$ never provides aid. Hence, the Incumbent's period 1 choice of distributive policy, y_1 , is an informative signal to the voter about her type. As incumbent types are fully separating, the delivery of aid during period 1 thus increases V 's expected payoff from having the incumbent reelected. This increased payoff drives our main result that the delivery of period 1 aid increases a right-wing voter's probability of turnout in the election.

Lemma C: (V's Turnout and Vote Choice): V 's turnout choice in the election is:

$$v = \begin{cases} 1, & \text{if } \omega \leq \bar{\omega}; \\ 0, & \text{otherwise,} \end{cases} \text{ where: } \bar{\omega} = \begin{cases} -y_1/2 - x_v + 3/4, & \text{if } x_v < 1/4; \\ x_v(2y_1 - 1) - y_1 + 3/4, & \text{if } 1/4 \leq x_v < 3/4; \\ y_1/2 + x_v - 3/4, & \text{if } x_v \geq 3/4. \end{cases} \quad (5)$$

$$\text{Conditional on turning out, } V\text{'s vote in the election is: } e = \begin{cases} I, & \text{if } x_v \geq \frac{3-2y_1}{4}; \\ C, & \text{otherwise.} \end{cases}$$

Proof: Supplemental Appendix.

These *Lemmas* describe the equilibrium strategies of the Incumbent and the Voter. *Lemma C* describes V 's preferred candidate in the election. Conditional on turning out, a right-wing voter elects the Incumbent, while a left-wing voter elects the Challenger. But a moderate voter prefers the Incumbent if she provided aid during period 1 and prefers the Challenger otherwise. The intuition behind this result is as follows. The Voter derives utility both from the ideological leaning of the office-holder and from any distributive aid he receives. The Incumbent is right-wing, and the Challenger is left-wing. Hence, a solidly right-wing and left-wing voter always vote for the Incumbent and the Challenger, respectively, regardless of their distributive policies. But a moderate voter ($1/4 \leq x_v < 3/4$) is relatively ideologically indifferent and will prefer the Incumbent only if she has demonstrated a favorable distributive policy during period 1.

Additionally, *Lemma C* states that the Voter V turns out in the election only if the cost of voting, ω , is sufficiently low. The intuition here is that V 's decision of whether to turn out in the election depends on whether his expected utility from electing his preferred candidate sufficiently exceeds his expected utility from allowing Nature to randomly determine the election winner.

From the equilibrium results described in *Lemmas A* through *C*, we derive three testable predictions concerning changes in electoral outcomes caused by the distribution of aid:

Proposition 1 (Effect of Distributive Aid on Voter turnout):

I(a) (Left-wing turnout): For a left-wing voter ($x_v < 1/2$), receiving distributive aid in period 1 causes a strict decrease in the probability of voter turnout.

I(b) (Right-wing turnout): For a right-wing voter ($x_v > 1/2$), receiving distributive aid in period 1 causes a strict increase in the probability of voter turnout.

Proof: Supplemental Appendix.

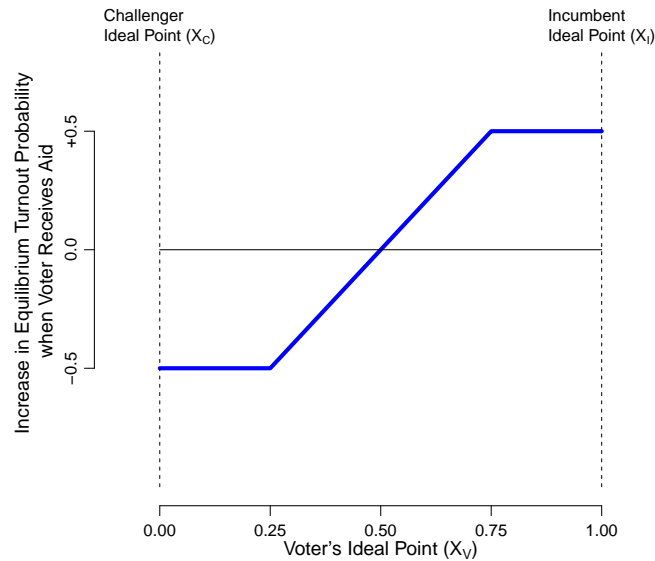
Proposition 1 represents the main theoretical and empirical result of this manuscript. This *Proposition* describes how voter turnout changes in response to receiving aid: Receiving aid in the first period causes a relatively larger increase in a right-wing voter's turnout probability but a relatively smaller decrease in a left-wing voter's turnout probability.

Why does disaster aid affect voter turnout in opposite directions for a right-wing and a left-wing voter? The intuition behind this result is that for both types of voters, the delivery of aid in period 1 enhances voter perception of the incumbent's quality. This perceived high quality increases a right-wing voter's preference for the incumbent over the challenger, and it decreases a left-wing voter's motivation to expel the incumbent in favor of the challenger. Hence, the right-wing voter becomes more motivated to vote and reelect the incumbent, while the left-wing voter becomes less motivated to oust the incumbent by voting.

Figure App.9 visually depicts these *Proposition 1* results, calculated from the equilibrium

turnout strategies described in *Lemma C*. This figure plots the marginal change in equilibrium turnout (vertical axis) caused by the incumbent's delivery of aid as a function of the voter's ideal point, x_V (horizontal axis). As illustrated in this plot, distributive aid causes a decrease in the turnout of a left-wing voter but an increase in turnout for a right-wing voter.

Figure App.9
The Effect of Aid on Voter Turnout
in Equilibrium (Proposition 1)



Proposition 2: *Providing distributive aid during period 1 strictly increases the incumbent's probability of re-election. Proof: Supplemental Appendix.*

Proposition 2 states that in equilibrium, an *Incumbent* who delivers aid in period 1 always enjoys a higher probability of reelection than an *Incumbent* who does not deliver aid. The intuition behind *Proposition 2* is as follows. The delivery of aid during the first period is an informative signal to the voter that the incumbent will again deliver aid in period 2 if reelected. This information increases a right-leaning voter's incentive to re-elect the incumbent and decreases a left-wing voter's motivation to oust the incumbent in favor of the challenger, as demonstrated in *Proposition 1*. Either an increase in right-wing turnout or a decrease in left-wing turnout increase the right-wing *Incumbent's* probability of winning re-election, as Nature chooses the election winner if the voter does not turnout. Hence, distributive aid affects not only turnout, but also the outcome of the election.

Formal Model Proofs

Proof of Lemma A: In each period $t \in \{1, 2\}$ and for either politician $p \in \{I, C\}$, p 's utility payoff

is: $U_p^t(x_t) = -|\theta_p - y_t| = \begin{cases} -|\theta_p - \theta_p|, & \text{if } y_t = \theta_p; \\ -1, & \text{if } y_t \neq \theta_p. \end{cases}$ Hence, in the final period, $t=2$, choosing

$y_2 = \theta_p$ is a strictly dominant strategy. In period $t=1$, an incumbent of type $\theta_I = 0$ could increase her probability of reelection by choosing $y_1 = 1$, but this increased probability is never sufficiently large to outweigh the disutility of playing her less-preferred strategy in period 1. Hence, choosing $y_1 = \theta_I$ is always strictly dominant.

Proof of Lemma B: Via Lemma A, incumbent types are fully separating in equilibrium, so after observing y_1 , V 's updated belief about I 's type is: $p_{\theta_I}(\theta | y_1) = y_1$.

Proof of Lemma C: Given Lemma B, V expects to receive $E(y_2 | e = I) = y_1$ units of aid in period 3 if I is reelected and $E(y_2 | e = C) = E(\theta_C) = 1/2$ units of aid if C wins the election. Hence, V 's expected second period payoff from I 's reelection would be: $EU_V(e = I) = -(1 - x_V) + y_1$, whereas his expected third period payoff from C 's election would be: $EU_V(e = C) = -x_V + 1/2$. Therefore, conditional on turning out, V votes for I iff:

$$EU_V(e = I) \geq EU_V(e = C) \Rightarrow -(1 - x_V) + y_1 \geq -x_V + 1/2 \Rightarrow x_V \geq \frac{3 - 2y_1}{4}. \quad (6)$$

When x_V is above the threshold in Eq. 6, V prefers that the Incumbent win the election, so V 's total expected payoff from voting would be:

$$EU_V(v = 1 | x_V \geq (3 - 2y_1)/4) = -(1 - x_V) + y_1 - \omega.$$

When x_V is below the threshold in Eq. 6, V prefers that the Challenger win the election, so V 's total expected payoff from voting would be:

$$EU_V(v = 1 | x_V < (3 - 2y_1)/4) = -x_V + 1/2 - \omega.$$

In both cases, V 's total combined expected payoff from not voting is:

$$EU_V(v = 0) = \frac{EU_V(e = I)}{2} + \frac{EU_V(e = C)}{2} = \frac{-(1 - x_V) + y_1}{2} + \frac{-x_V + 1/2}{2} = \frac{y_1}{2} - \frac{1}{4}.$$

Hence, in equilibrium, V turns out to vote iff: $EU_V(v = 1) \geq EU_V(v = 0) \Rightarrow \omega \leq \bar{\omega}$, where:

$$\bar{\omega} = \begin{cases} -y_1/2 - x_V + 3/4, & \text{if } x_V < 1/4; \\ x_V(2y_1 - 1) - y_1 + 3/4, & \text{if } 1/4 \leq x_V < 3/4; \\ y_1/2 + x_V - 3/4, & \text{if } x_V \geq 3/4. \end{cases}$$

Proof of Proposition 1: Via Lemma C, the Voter turns out iff ω , which is drawn from $\omega \sim U[0,1]$, is sufficiently low. Let $T_{y_1}(x_V)$ denote the probability of turnout for a voter with ideal point x_V and who receives $y_1 \in \{0,1\}$ of aid during period 1. Applying Eq. 5, we have:

$$T_{y_1}(x_V) = \begin{cases} -y_1/2 - x_V + 3/4, & \text{if } x_V < 1/4; \\ x_V(2y_1 - 1) - y_1 + 3/4, & \text{if } 1/4 \leq x_V < 3/4; \\ y_1/2 + x_V - 3/4, & \text{if } x_V \geq 3/4. \end{cases} \quad (7)$$

Hence, the change in turnout probability caused by the delivery of aid ($y_1 = 1$) in period 1 is:

$$T_1(x_V) - T_0(x_V) = \begin{cases} -1/2, & \text{if } x_V < 1/4; \\ 2x_V - 1, & \text{if } 1/4 \leq x_V < 3/4; \\ 1/2, & \text{if } x_V \geq 3/4. \end{cases} \quad (8)$$

which is graphed on the left plot of Figure App.9. This quantity is strictly positive when $x_V > 1/2$ and strictly negative when $x_V < 1/2$.

Proof of Proposition 2: Let $R_{y_1}(x_V)$ denote the incumbent I 's probability of reelection after delivering $y_1 \in \{0,1\}$ of aid during period 1 to voter V , whose ideal point is x_V . Incumbent reelection occurs either when V votes for the incumbent, $e = I$, or when V abstains from the election and Nature randomly chooses the incumbent. Via *Lemma C*, we have:

$$R_{y_1}(x_V) = \begin{cases} \Pr(\omega \leq \bar{\omega}|y_1) + \frac{1}{2} \cdot [\Pr(\omega > \bar{\omega}|y_1)], & \text{if } x_V \geq (3 - 2y_1)/4, \\ \frac{1}{2} \cdot [\Pr(\omega > \bar{\omega}|y_1)], & \text{otherwise.} \end{cases} \quad (9)$$

$$\Rightarrow R_{y_1}(x_V) = \begin{cases} y_1/4 - x_V/2 + 1/8, & \text{if } x_V < 1/4; \\ x_V/2 + (1 + 2y_1)/8, & \text{if } 1/4 \leq x_V < 3/4; \\ y_1/4 - x_V/2 + 1/8, & \text{if } x_V \geq 3/4. \end{cases}$$

Applying *Eq. 5*, the delivery of aid in period 1 increases I 's reelection probability by the amount: $R_1(x_V) - R_0(x_V) = 1/4 > 0$, $\forall x_V \in [0,1]$, proving *Proposition 2*.