# Local Bandwagoning and National Balancing

## How Uninformed Voters Respond to the Partisan Environment and Why It Matters

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Gento Kato
gkato@ucdavis.edu

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UCDAVIS

Motivation/Theory

Study 1: Local Bandwagoning

Study 2: National Balancing

Study 3: Simulated Consequences

Discussion

# The conventional view of uninformed voting

Previous studies suggest **Uninformed** = Unexplainable:

Random Guessing


Incorrect Preference

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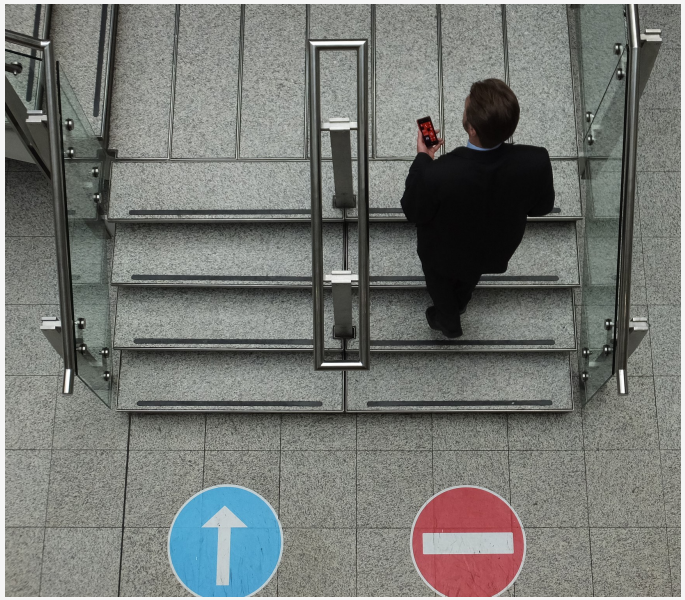

# The explanation of uninformed voting

This study argues that **uninformed voters** ...

1. Do not rely on (incorrect) individual preference/ evaluation, but their decisions are not random.
2. Respond to the partisan environment when voting.

**The partisan environment**: *The aggregated partisan voting patterns in past elections.*

**How** do voters respond to the partisan environment?

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# The partisan environment and uninformed voting

**Preference inertia**[1] prevents informed voters from responding to the partisan environment.

But **uninformed voters** may be ...

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# The logic of bandwagoning

Uninformed voters wants to know the "correct" choice for their interests.

Perceive strong majority advantage as **the cue of "correct" and viable choice**[2] for voters with shared preferences.

Given the evidence of geographical sorting, [3] more plausible at the level of **local partisan environment** (e.g., county or state) than the national partisan environment.

[2] e.g., Chaiken (1987); Lau and Redlawsk (2001)
[3] Tam Cho, Gimpel and Hui (2013) but Mummolo (2017)

# The logic of balancing

(Moderate) uninformed voters want to make **informed voters to determine the electoral outcome**.[4]

Perceive strong majority advantage as the bias that should be cancelled out.

Most plausible at the level of electoral district. In terms of a presidential election, it is the national partisan environment.

[4] Feddersen and Pesendorfer (1996)

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# Data and estimation strategy

**Dataset**: Cooperative Congressional Election Study (CCES) 2008 and 2016 (open seat elections).

**DV**: Presidential vote choice (Rep. $= 1$, Dem. $= 0$).

**Those who voted others or abstained are excluded from analysis.*

**Knowledge**: Correct answers to 8 factual questions (0-1).

**Estimation Strategy**:

- Estimated by **logistic regression**
  (Cluster robust SE by states, population weights).
- *All* predictors $\times$ knowledge.[5]
  $\Rightarrow$ Separate coef. for informed & uninformed.

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# Predictors of vote choice

**Individual preference** (↑ value → prefer Republican):

- **Relative ideological proximity to candidates** (-36:36):

$$-\{(x_{self} - x_{Republican})^2 - (x_{self} - x_{Democrat})^2\}$$

- **Party identity** (-3:3).
- **Retrospective economic evaluation** (-2:2).[6]

Demographic controls: gender, age, race, education, income, born-again Christian

[6] Reversed for 2016 since Democratic party is incumbent.

# Measuring the local partisan environment

The partisan environment as **aggregate level partisan voting patterns in two previous elections**.

Partisan voter index (PVI)[7] at election $t$

*RepShare: Two party vote share of Republican party.*

At state level:

$$PVI_{t,state_i} = \frac{1}{2} \sum_{n \in \{1,2\}} \{RepShare_{t-n,i} - RepShare_{t-n,nation}\}$$

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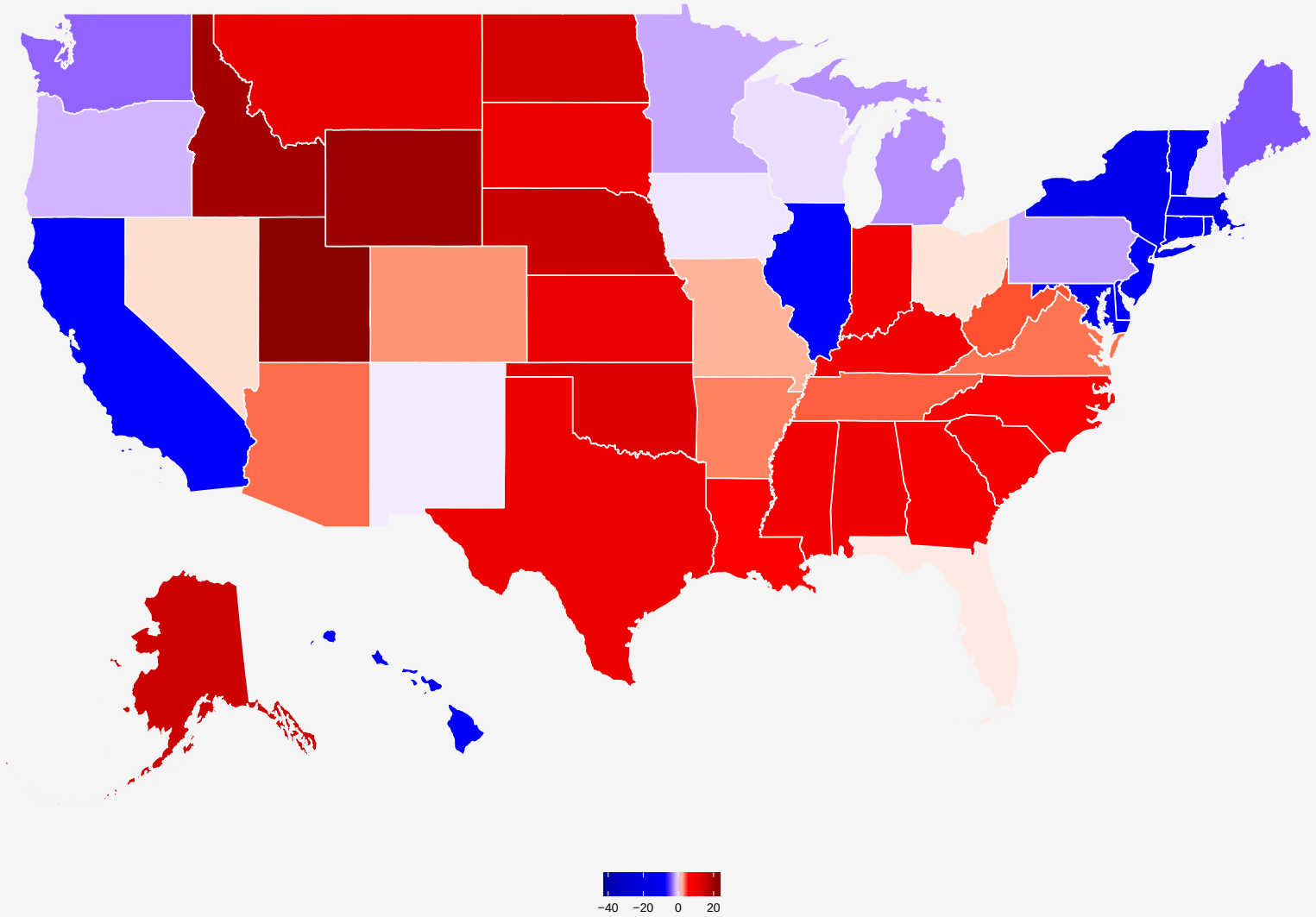
# The distribution of social information

*State PVI (2008)*



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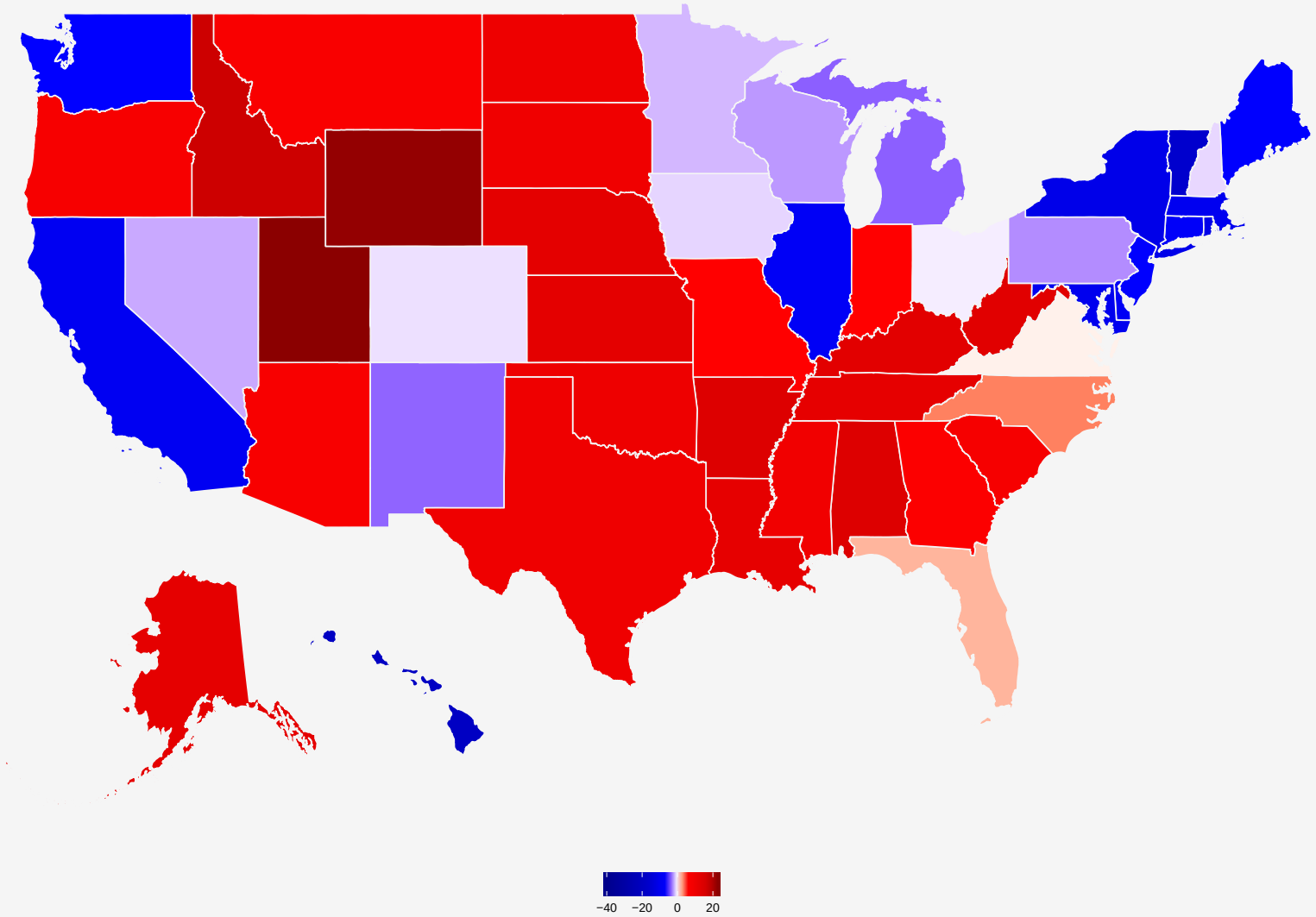

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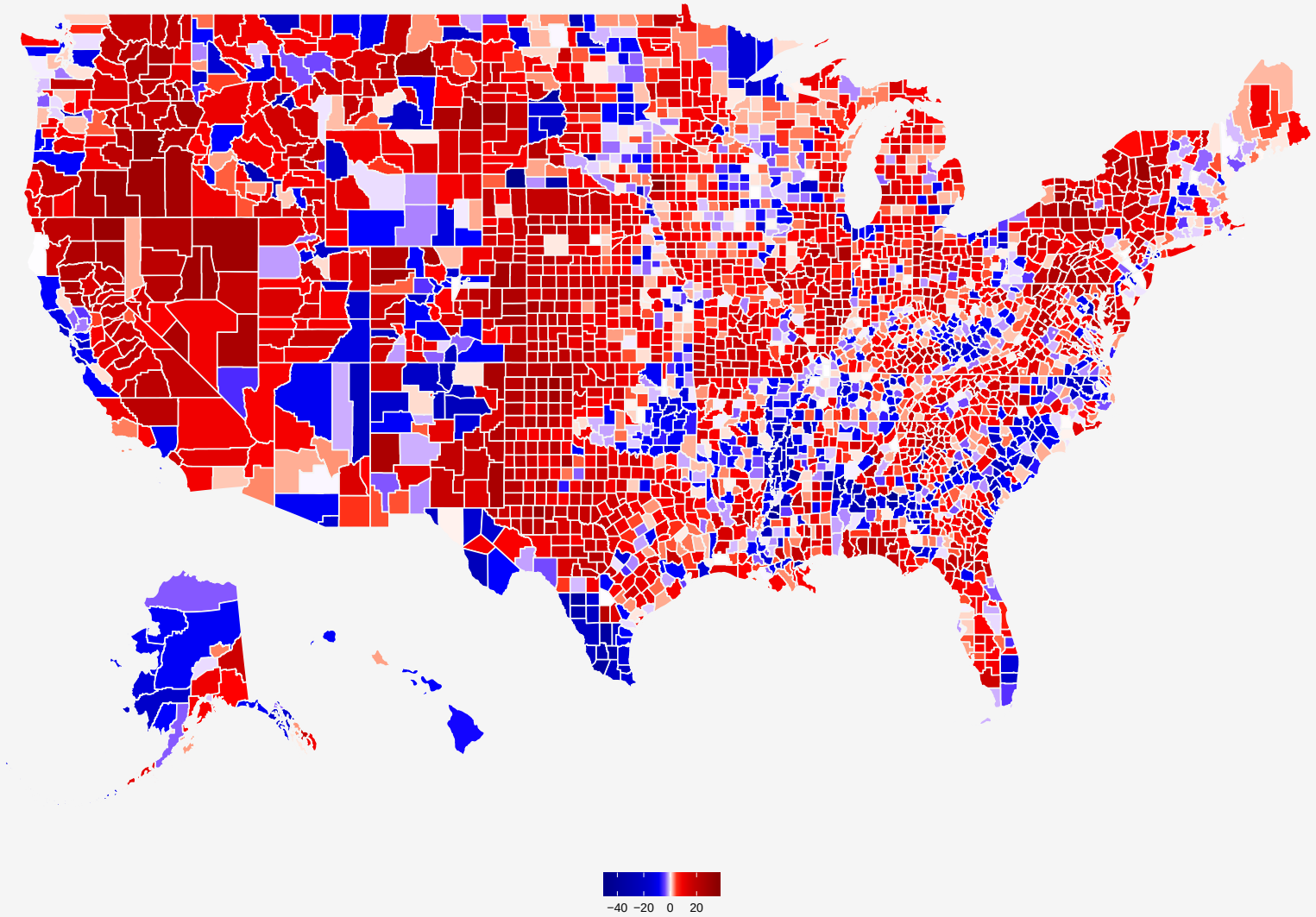

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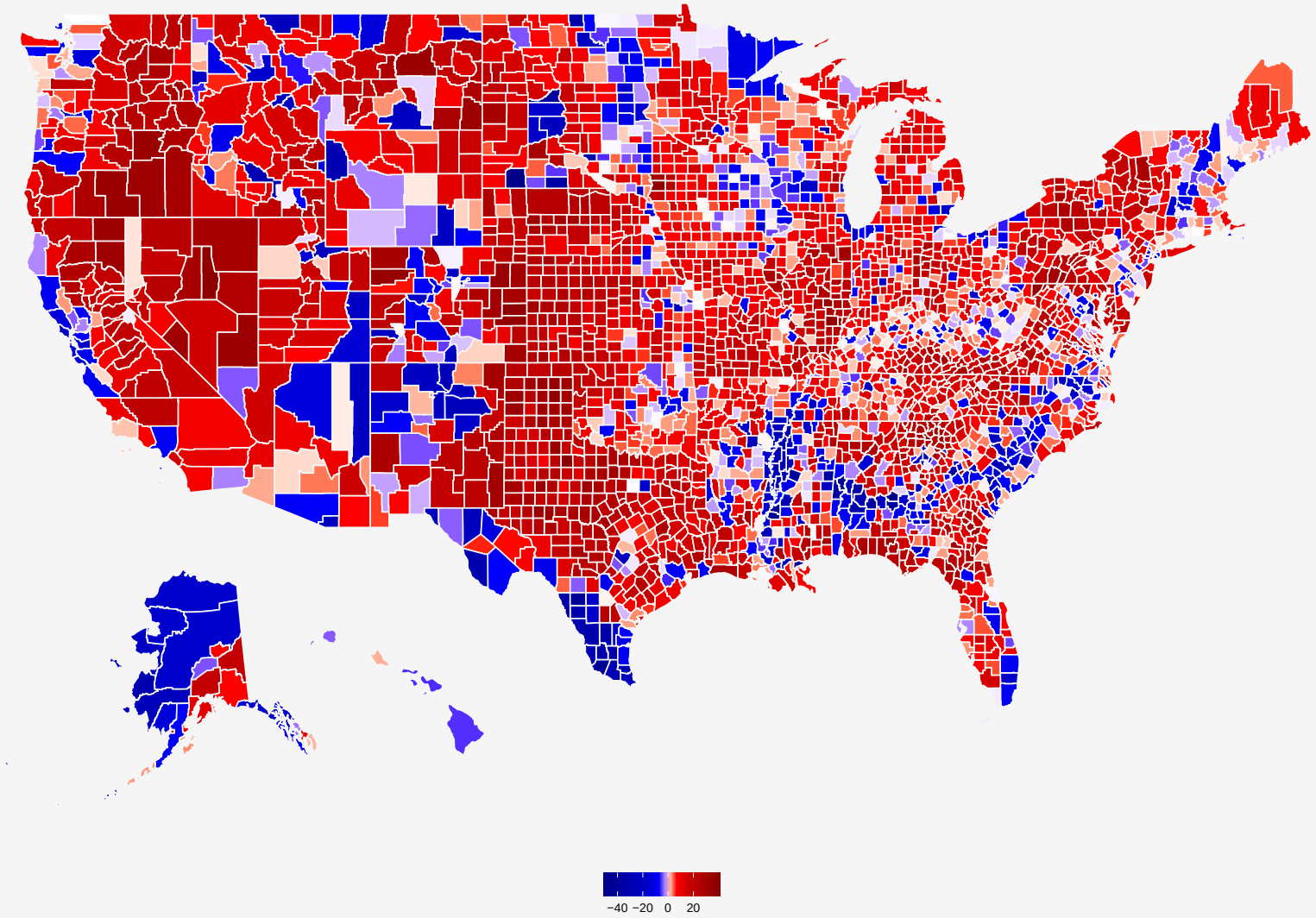

## Conditional odds ratio from logistic regression

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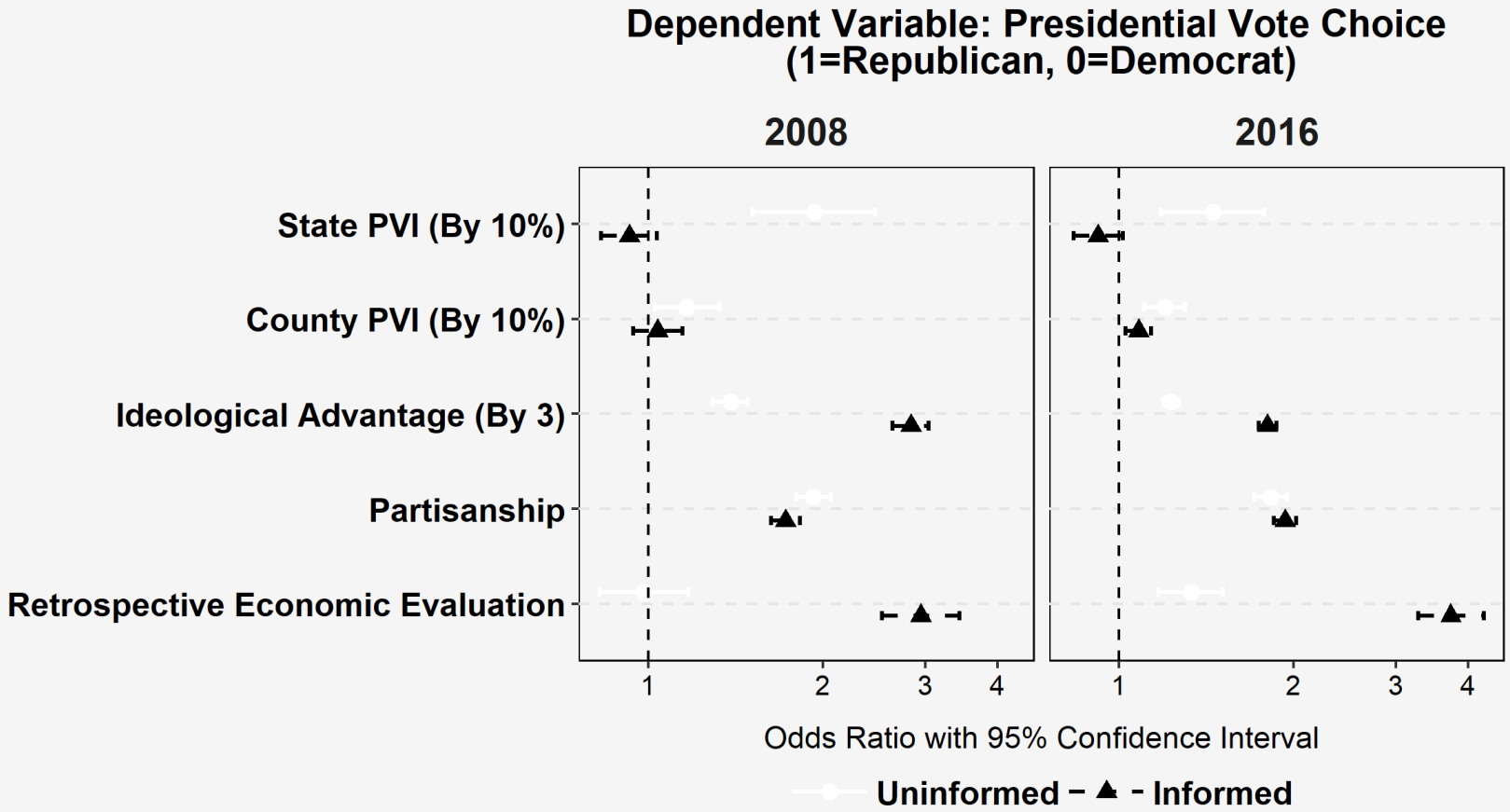


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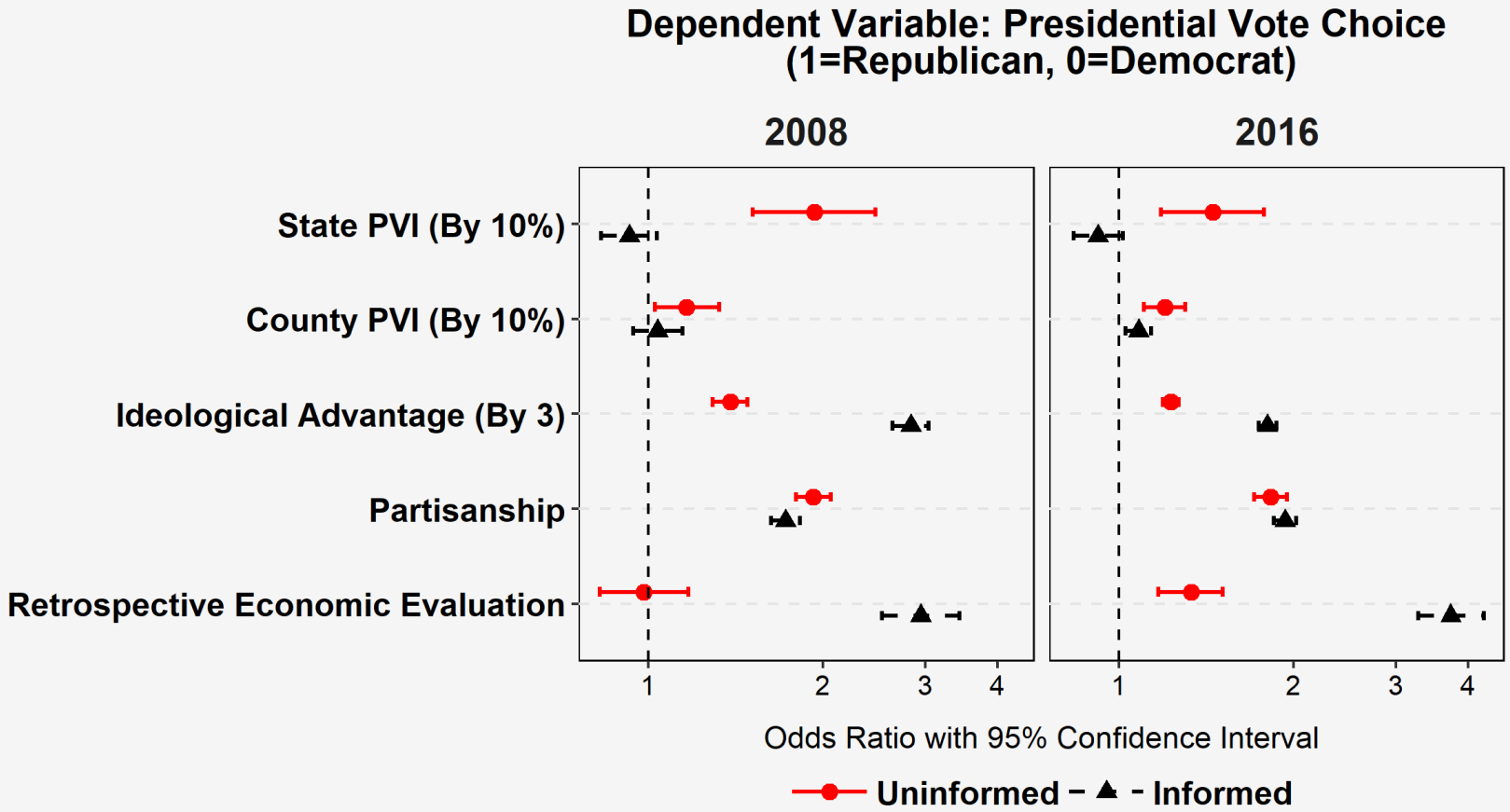


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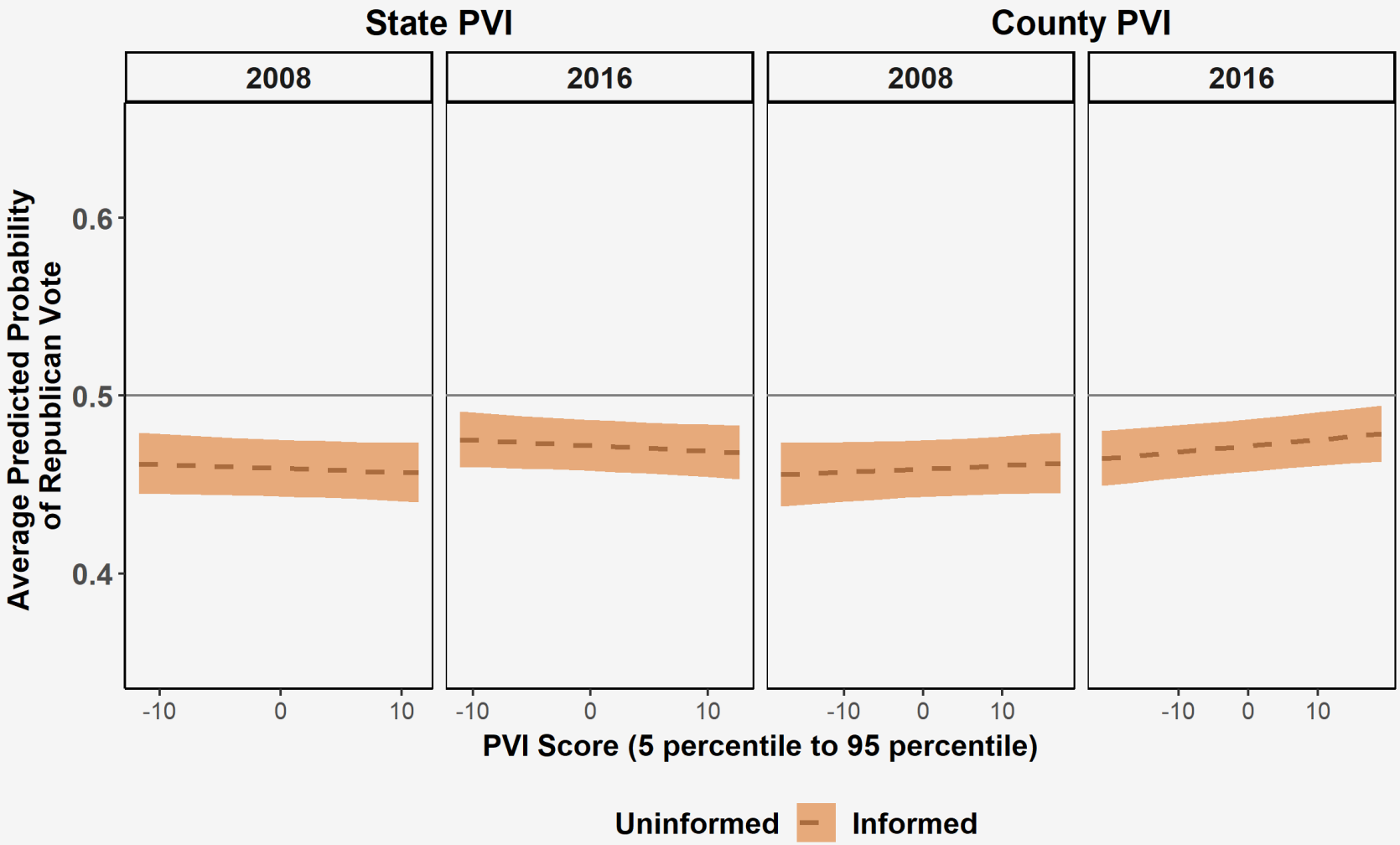
# The impact of the local partisan environment

## Simulated probability of Republican vote

**Weighted average of predicted probabilities from Monte Carlo simulation.*



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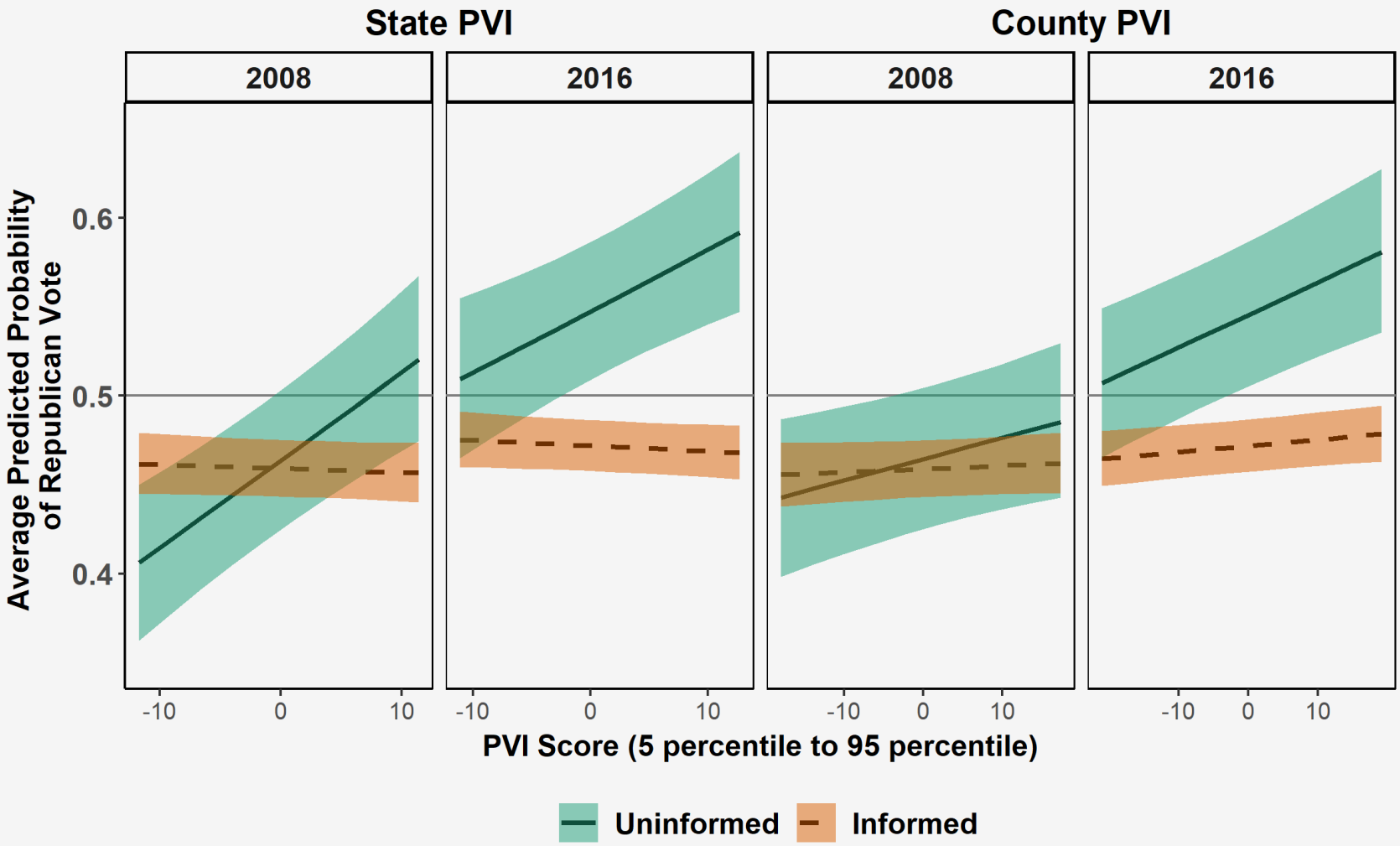

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**Dataset**: American National Election Studies (ANES) 1972-2016 (12 presidential elections).

**DV**: Presidential vote choice (Rep. $= 1$, Dem. $= 0$).

**Those who voted others or abstained are excluded from analysis.*

**Knowledge**: Interviewer's Rating of Knowledge (0-1).

**IV**: national PVI

$$PVI_t = \frac{1}{2} \sum_{n \in \{1,2\}} \{RepShare_{t-n,nation}\}$$

Covariates: ideology, PID, evaluation, gender, age, race, education, income, religion

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# Estimation strategy

1. **Logistic regression** with **predictors (excluding national PVI) $\times$ knowledge** interactions (**estimated independently for each year**).
2. Weighted average of **predicted probability** for informed and uninformed voters given the **parameter estimates from each year** and **fixed voter profile** (e.g., 1992) for other covariates.
3. **Estimated Dependent Variable (EDV) regression**[8] with DV: **Av. predicted pr. of uninformed/informed vote** IV: **the national partisan environment**

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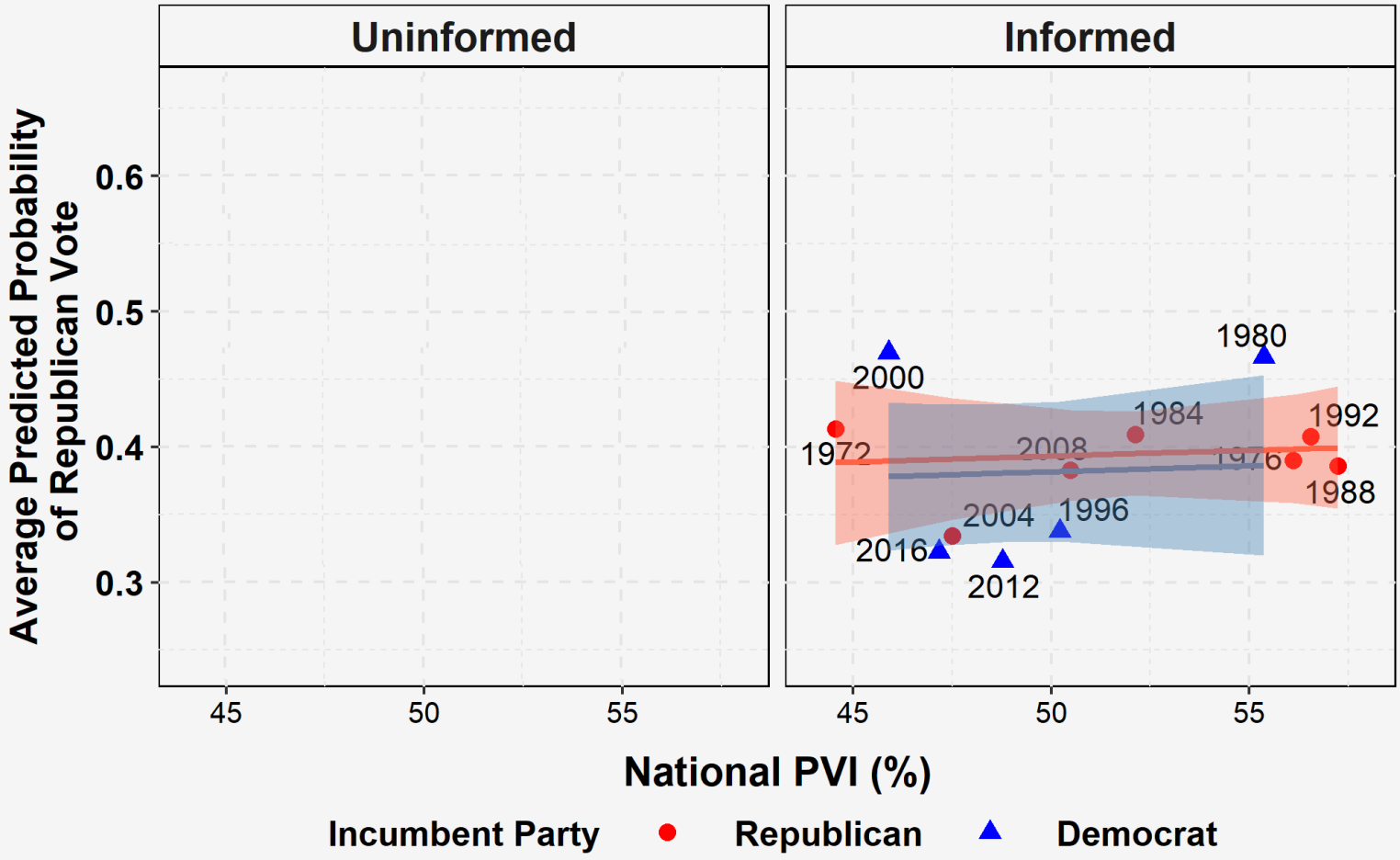
# The impact of the national partisan environment

## Predicted probability of Republican vote by years

**Weighted average of predicted probabilities based on 1992 voter profile.*

**Fitted line estimated by EDV regression (Lewis and Linzer, 2005).*



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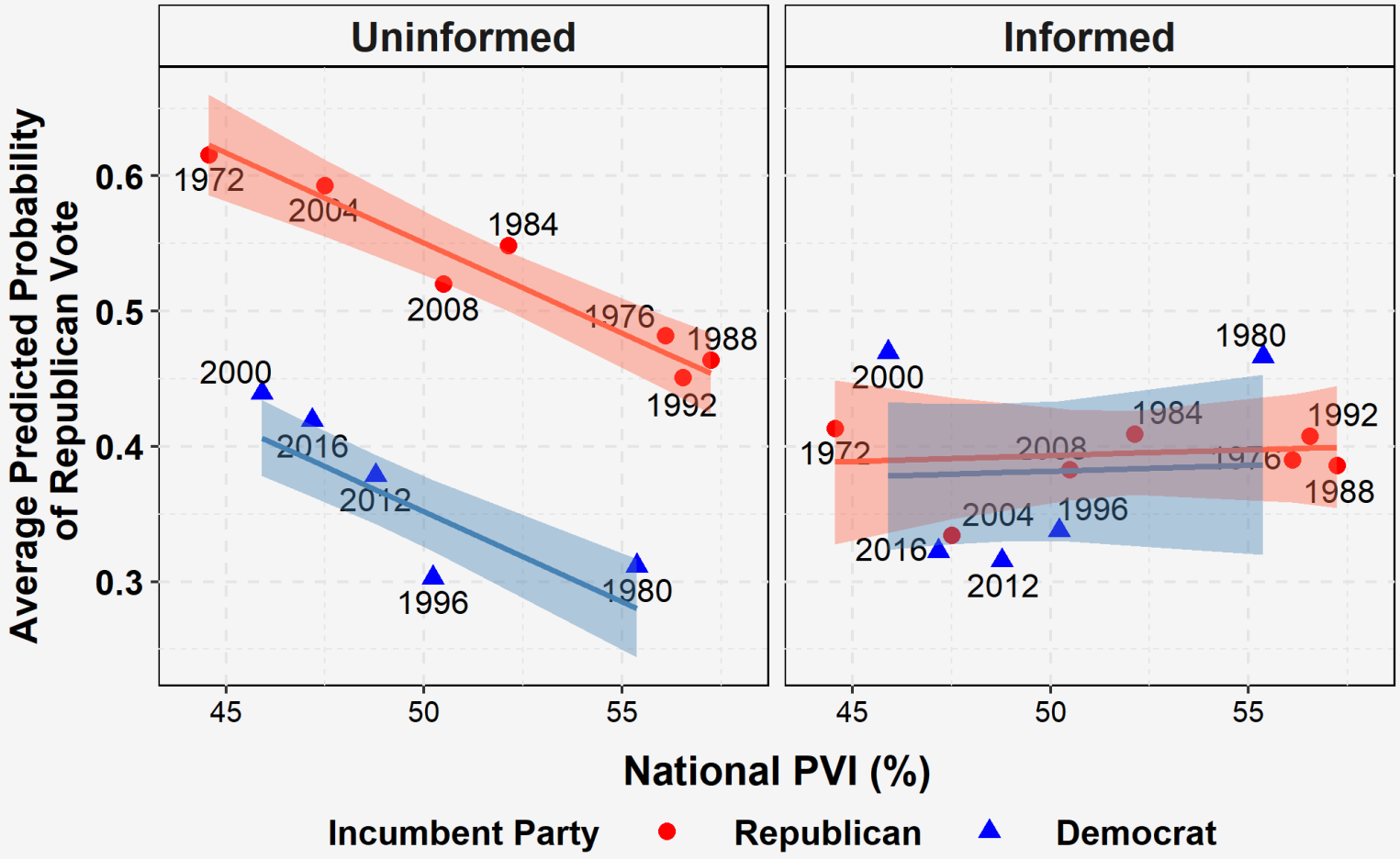

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# Agent-Based Model of Election

**Setting:**

- Two political parties $j \in \{\textbf{blue}, \textbf{red}\}$.
- Voter $i \in \{1 : 2300\}$ occupying a cell in $54 \times 54$ grid.

Voter/party parameters:

- Voter group: $g_i \in \{-1\,(blue)\,, 1\,(red)\,\}$
- Voter ideology: $\delta_i = \alpha + \beta \times g_i + \epsilon_i$
- Voter knowledge: $k_i \in [0, 1]$
- Party ideology: $\Delta_j \in \mathbb{R}$
- Party capacity: $\Theta_j \in \{0, \mathbb{R}\}$ (0 for challenger)

Voter utility function (average informed ANES estimates):

$$U_i(\text{Red Elected}) = 0.198 \times \left([\delta_i - \Delta_{red}]^2 - [\delta_i - \Delta_{blue}]^2\right) + 0.716 \times (\Theta_{red} - \Theta_{blue}) + 1.663 \times g_i$$

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# Election Steps

1. Draw voter coordinates, $g_i$, $\alpha$, $\beta$, $\epsilon_i$, $k_i$, $\Delta_i$, and $\Theta_j$.[9]
2. All voters observe $g_i$ and $k_i$.
3. Voters receive signals of **ideological distances** ($\widehat{[\delta_i - \Delta_j]^2}$) and **incumbent capacity** ($\widehat{\Theta_{red} - \Theta_{blue}}$).
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   - $\eta_i \sim N(\mu \times (1 - k_i), \sigma \times (1 - k_i))$ ($\mu$ is the **common bias**)
4. Voters observe the partisan environment (contexts).
5. Voters cast votes based on probabilistic function.
6. Voters realize their utility.

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# Election Steps

1. Draw voter coordinates, $g_i$, $\alpha$, $\beta$, $\epsilon_i$, $k_i$, $\Delta_i$, and $\Theta_j$.[9]
2. All voters observe $g_i$ and $k_i$.
3. Voters receive signals of **ideological distances** ($\widehat{[\delta_i - \Delta_j]^2}$) and **incumbent capacity** ($\widehat{\Theta_{red} - \Theta_{blue}}$).
   - $\widehat{[\delta_i - \Delta_j]^2} = [\delta_i - \Delta_j]^2 + \eta_i$
   - $\widehat{\Theta_{red} - \Theta_{blue}} = \Theta_{red} - \Theta_{blue} + \eta_i$
   - $\eta_i \sim N(\mu \times (1 - k_i), \sigma \times (1 - k_i))$ ($\mu$ is the **common bias**)
4. Voters observe the partisan environment (contexts).
5. Voters cast votes based on probabilistic function.
6. Voters realize their utility.

[9] Unless otherwise noted, drawn according to the average values of ANES respondents.

# Voting function

**PREFERENCE (Informed)** =

$$0.198 \times (\widehat{[\delta_i - \Delta_{red}]^2 - [\delta_i - \Delta_{blue}]^2}) + 0.716 \times \widehat{(\Theta_{red} - \Theta_{blue})}$$

**CONTEXT (Uninformed)** =

$$1.526 \times I(\text{Red=Incumbent}) - 9.827 \times (\text{National PVI}) + 5.156 \times (\text{Regional PVI}) + 1.744 \times (\text{Sub-Regional PVI})$$

**Region**: 9 space subsets (each with $18 \times 18 = 324$ cells).

**Sub-region**: 81 space subsets (each with $6 \times 6 = 36$ cells).

$$Pr(\textbf{Vote Red}) = \Lambda\{k_i \times PREFERENCE + (1 - k_i) \times CONTEXT + 1.663 \times g_i\}$$

# Variables

The context-based uninformed voting is **inter-dependent** and **dynamic**: 25 $\times$ 4,000 simulations (100,000 elections). $\alpha$ and $\Theta_j$ move randomly across elections.

- Knowledge inequality: $\overline{k_i} = 0.65$. **Lower** mean knowledge levels for **blue** group ( $\overline{k_{blue}} \in \{0.45 : 0.65\}$) **than** for **red** group ($\overline{k_{red}} \in \{0.85 : 0.65\}$).[10]
- Signal bias: At each election, draw $\mu_t$ from the normal distribution with the mean 0 or 1 (**constant** bias) and the standard deviation 0 or 1 (**instability**).
- Geographic sorting: Schelling (1978)'s segregation game prior to the election runs (on $g_i$). Low and high segregation (tolerance $\in \{0.3, 0.8\}$).

[10] Drawn from normal distributions with the same variance.

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[10] Drawn from normal distributions with the same variance.

# Evaluating the Outcome

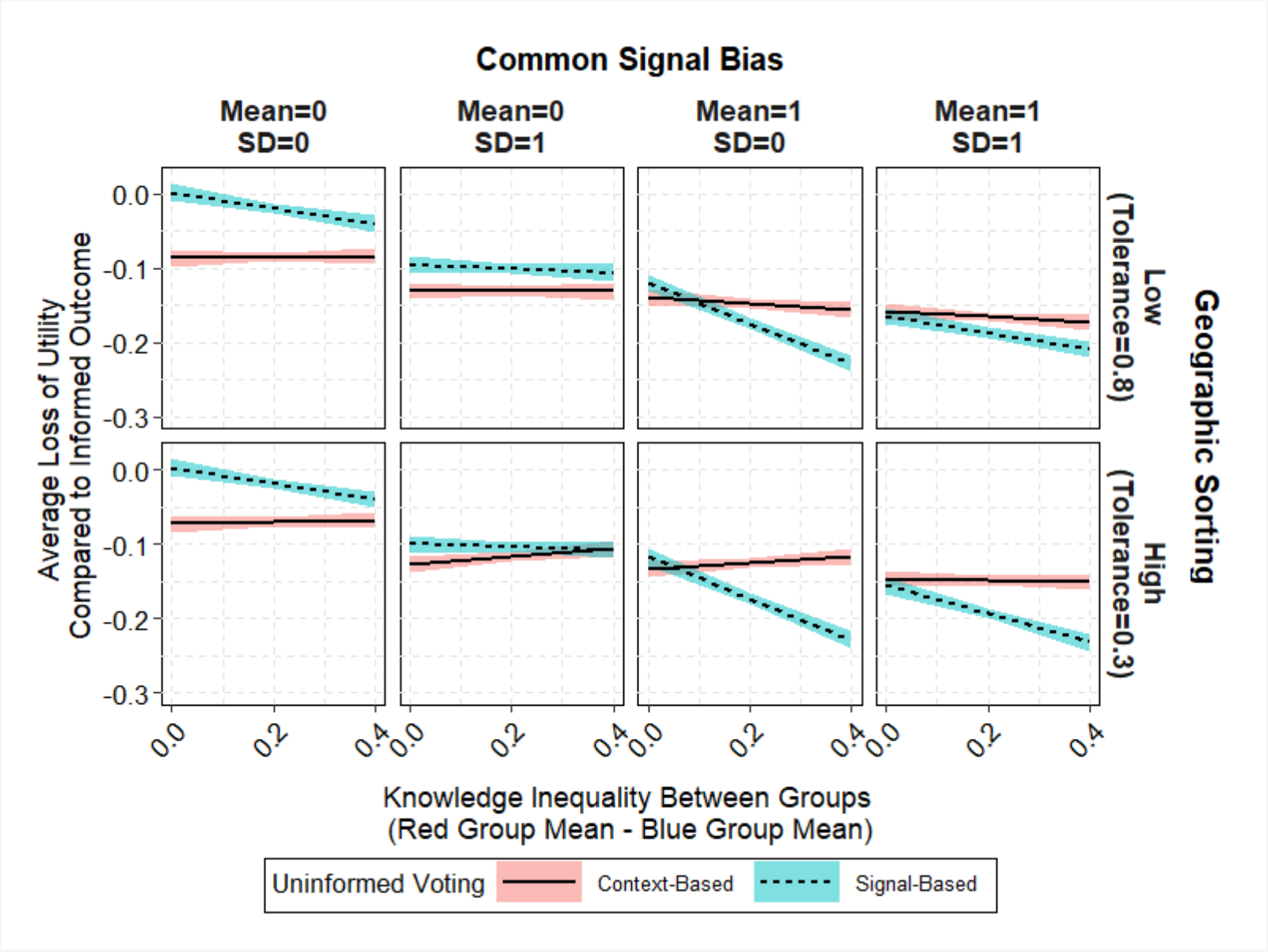
Average the mean voter utilities from 25 elections:

- Uninformed voters applies **context-based** voting.
- Uninformed voters applies **signal-based** voting (**follow incorrect preferences**, as suggested in previously).
- Outcome if all voters are informed ($k_i = 1 \forall i$: **fully informed outcome**)

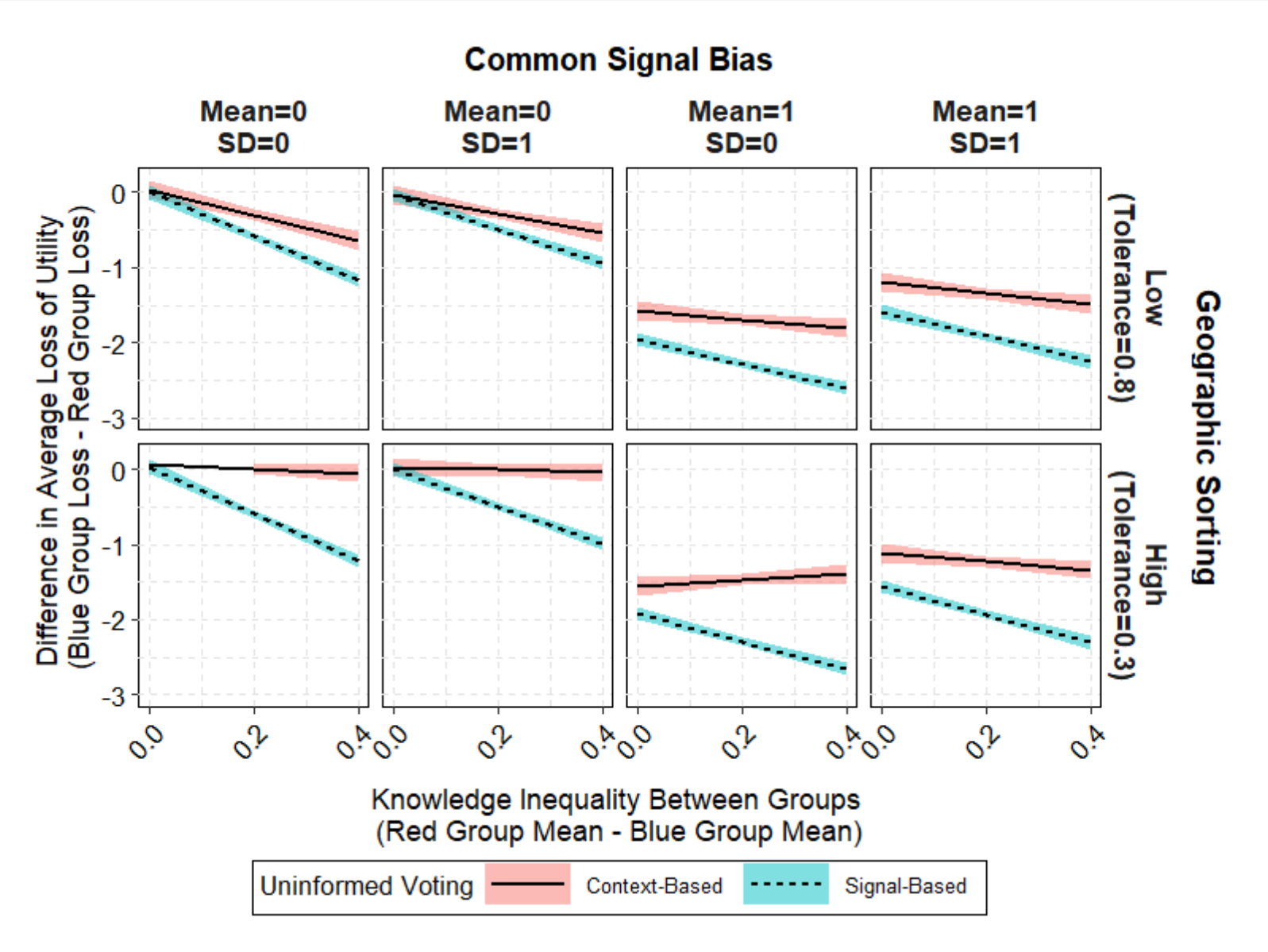
**Evaluation**:

- **Av. utility loss**: $\overline{U_i(\text{with uninformed})} - \overline{U_i(\text{fully informed})}$
- **Equality in av. utility loss**: (av. utility loss$|g_i = 1$) - (av. utility loss$|g_i = -1$)

# Average utility loss by the type of uninformed voting



# Equality in av. utility loss by the type of uninformed voting



Motivation/Theory

Study 1: Local Bandwagoning

Study 2: National Balancing

Study 3: Simulated Consequences

Discussion

# The partisan environment explains uninformed voting

Different factors explain informed and uninformed voting:

- Individual preference $\Rightarrow$ uninformed $<$ informed.
- The partisan environment $\Rightarrow$ uninformed $>$ informed.

Uninformed voters bandwagon with state and county partisan majority and balance against national partisan majority.

**context-based** uninformed voting is more optimal than **signal-based** uninformed voting especially with high knowledge inequality, strong signal bias, and high level of geographic sorting.

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**context-based** uninformed voting is more optimal than **signal-based** uninformed voting especially with high knowledge inequality, strong signal bias, and high level of geographic sorting.

# Caveats and extensions

Caveats:

- Limited to two-party presidential elections.
- Unclear process of **observing the partisan environment**.
- **Participation** incentives not considered.

Extensions:

- Interactions between informed and uninformed voters.
- Interactions between voters and politicians (parties).

Thank you for listening!

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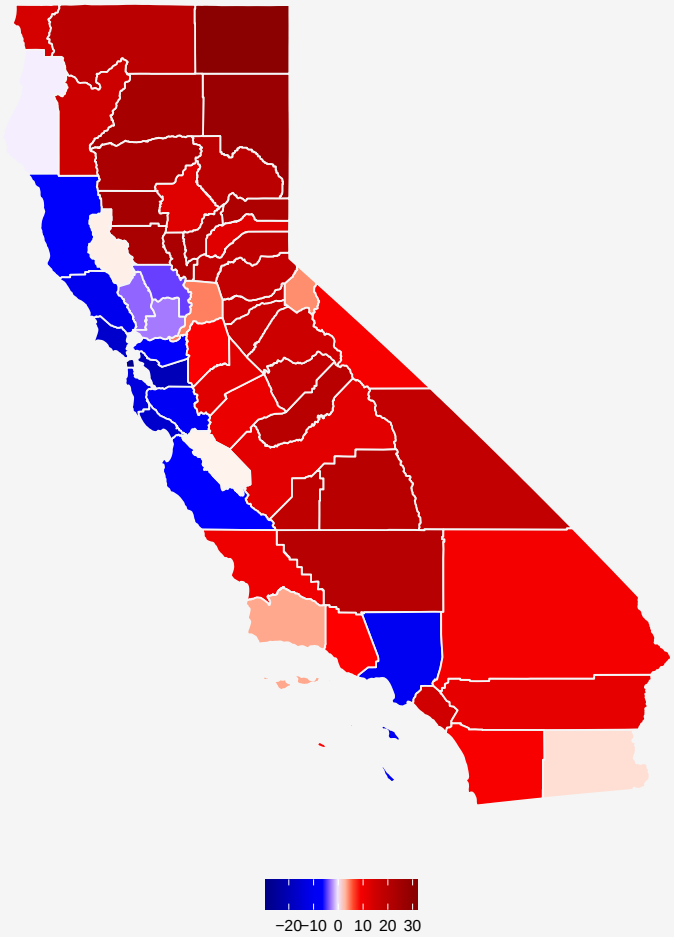
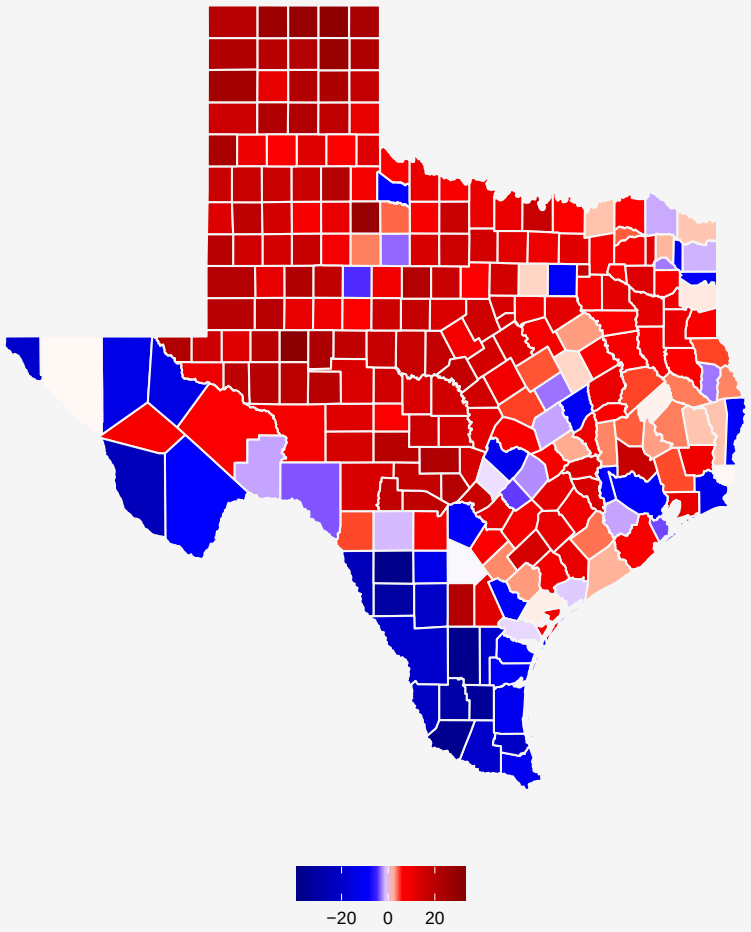
# The distribution of the partisan environment (within state)

California
(2008)

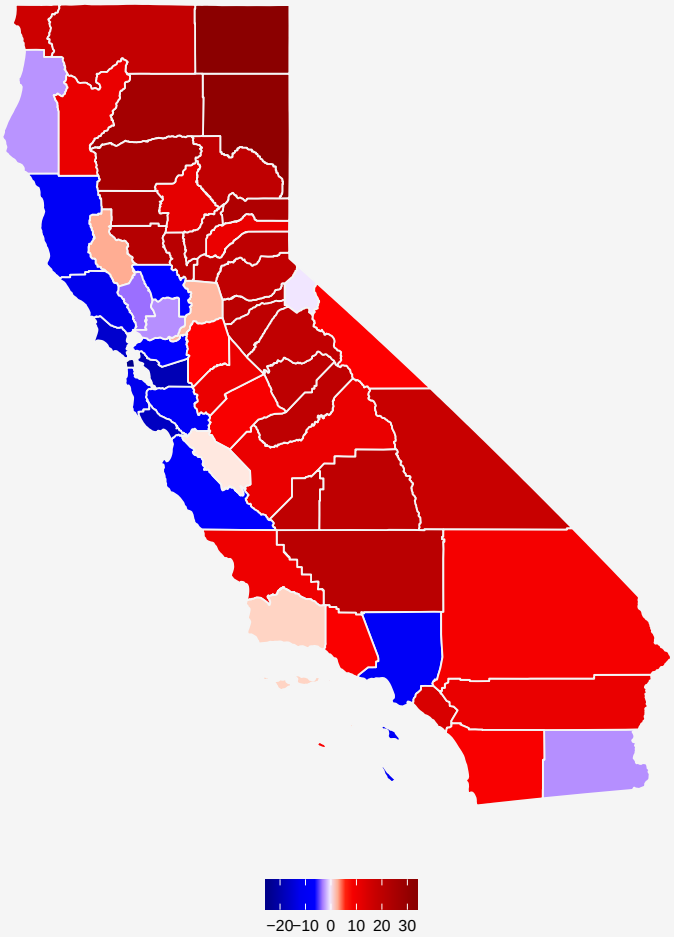



Texas
(2008)

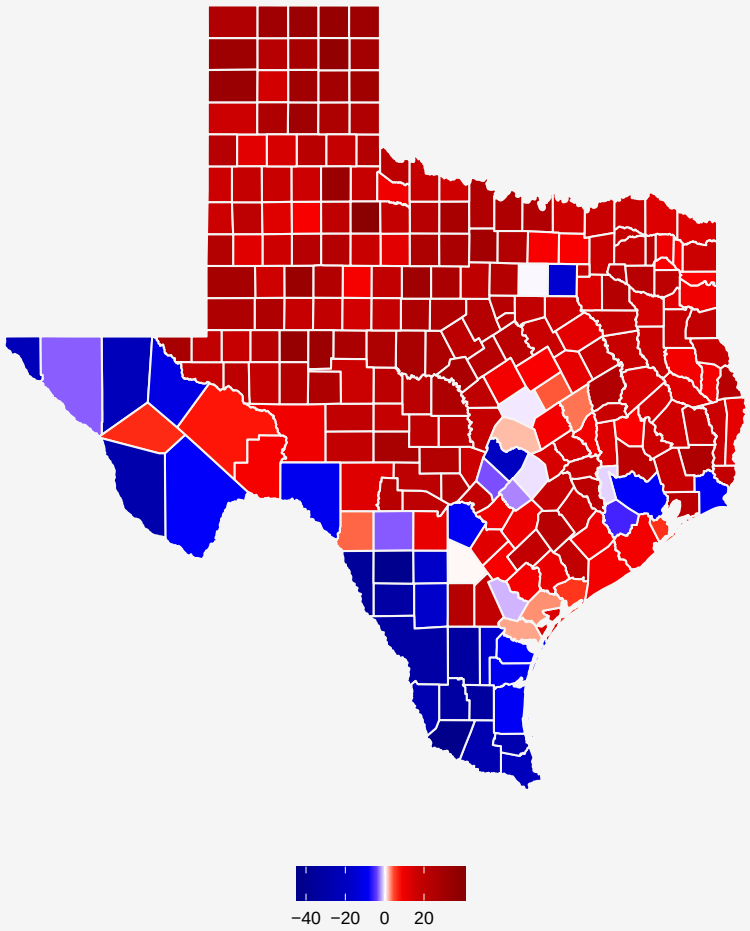


# The distribution of the partisan environment (within state)

California
(2016)

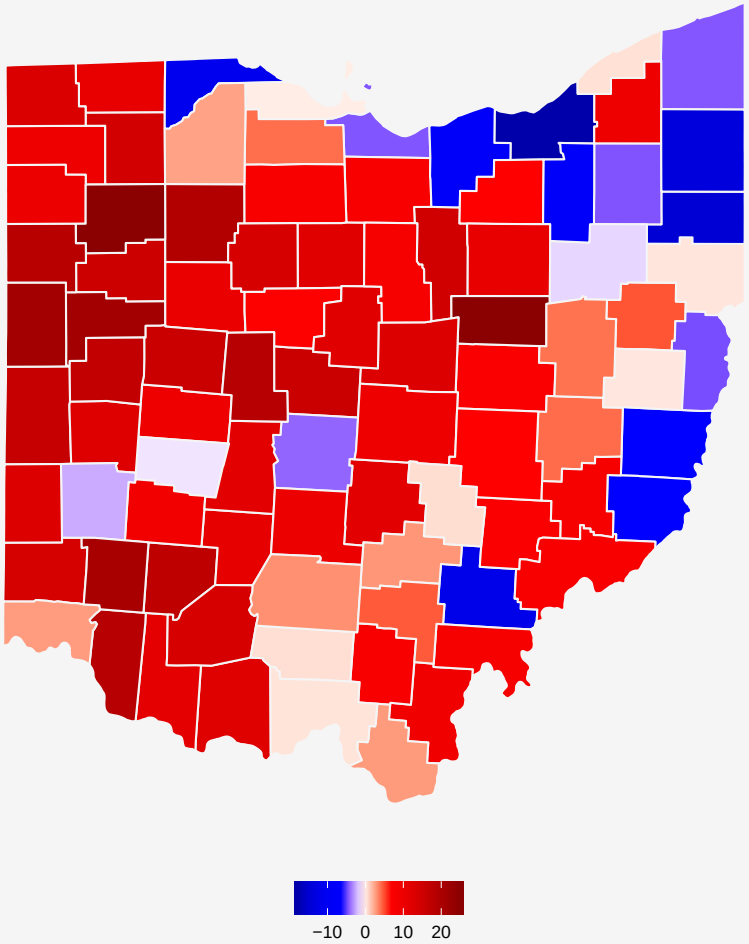



Texas
(2016)

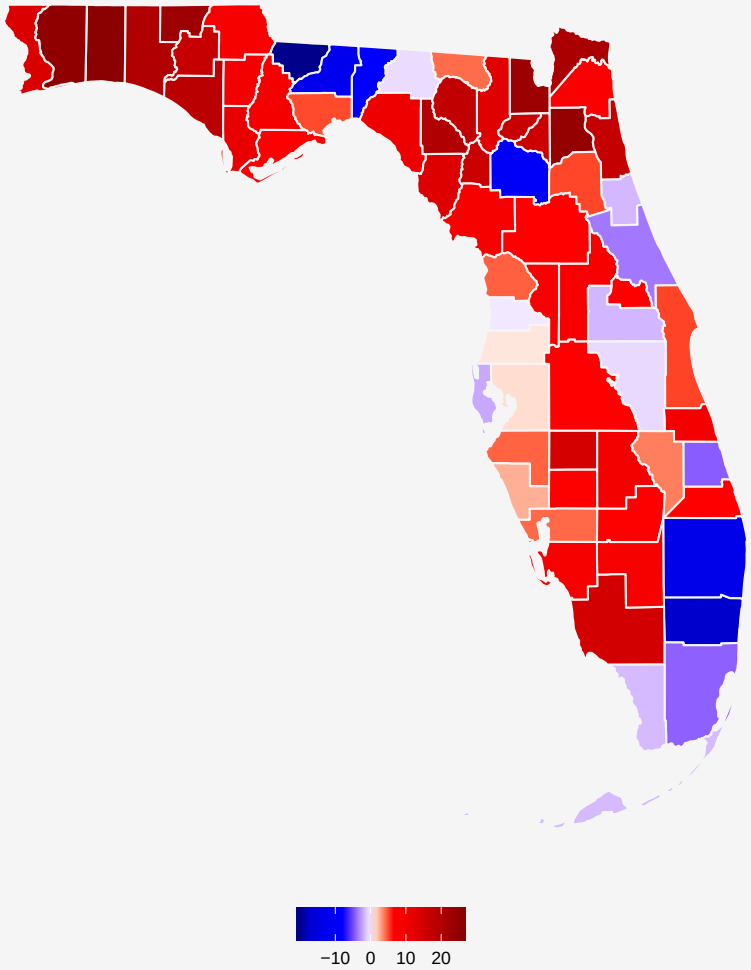


# The distribution of the partisan environment (within state)

Ohio
(2008)




Florida
(2008)



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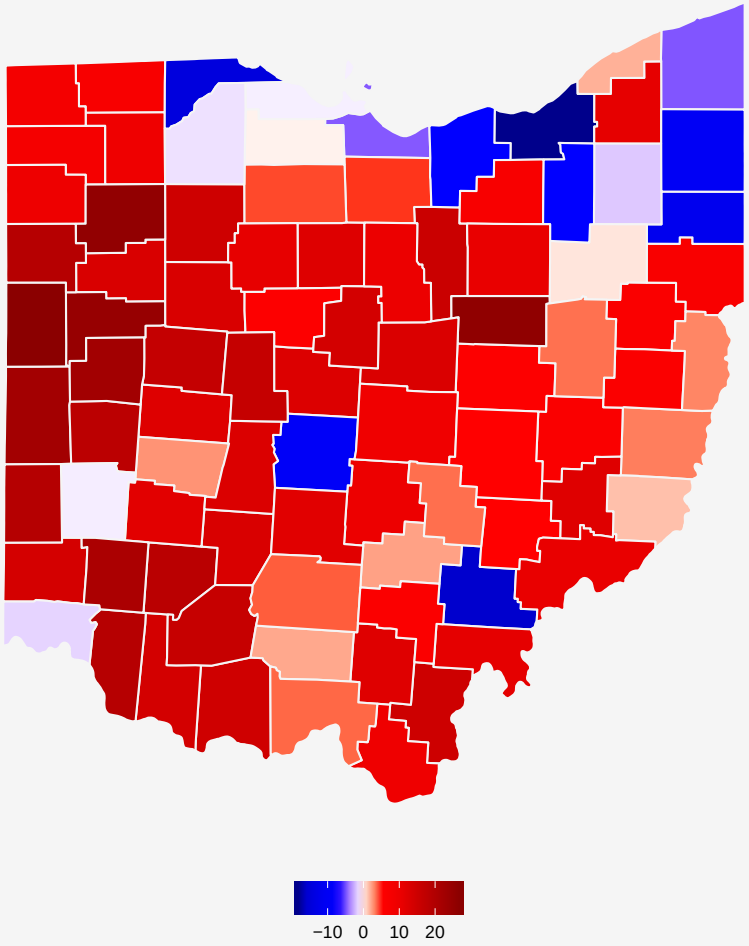
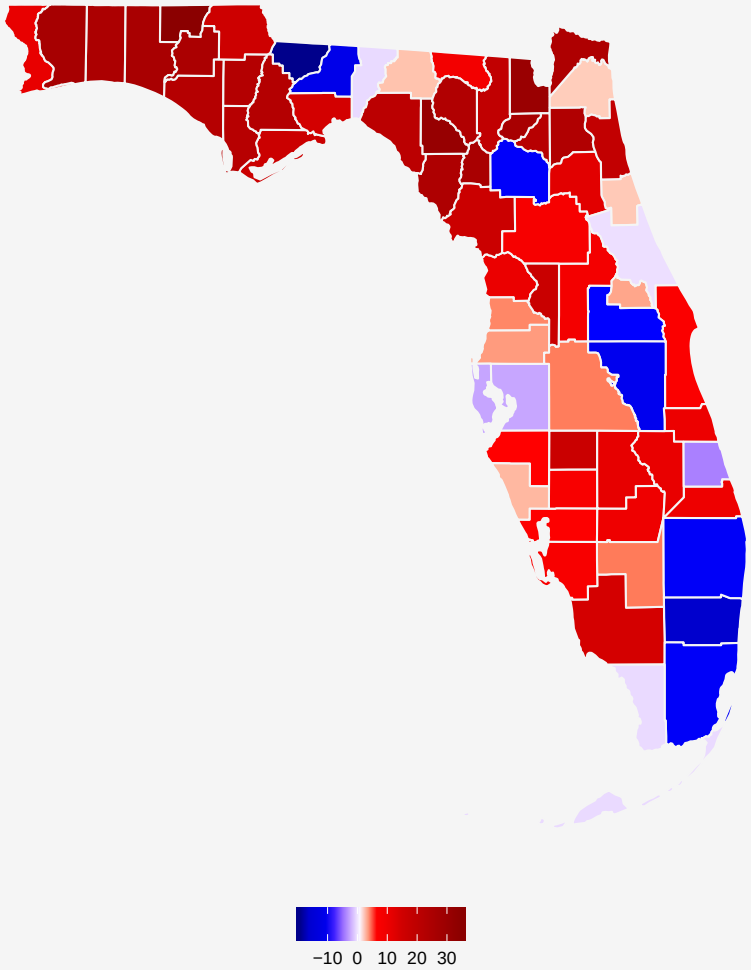


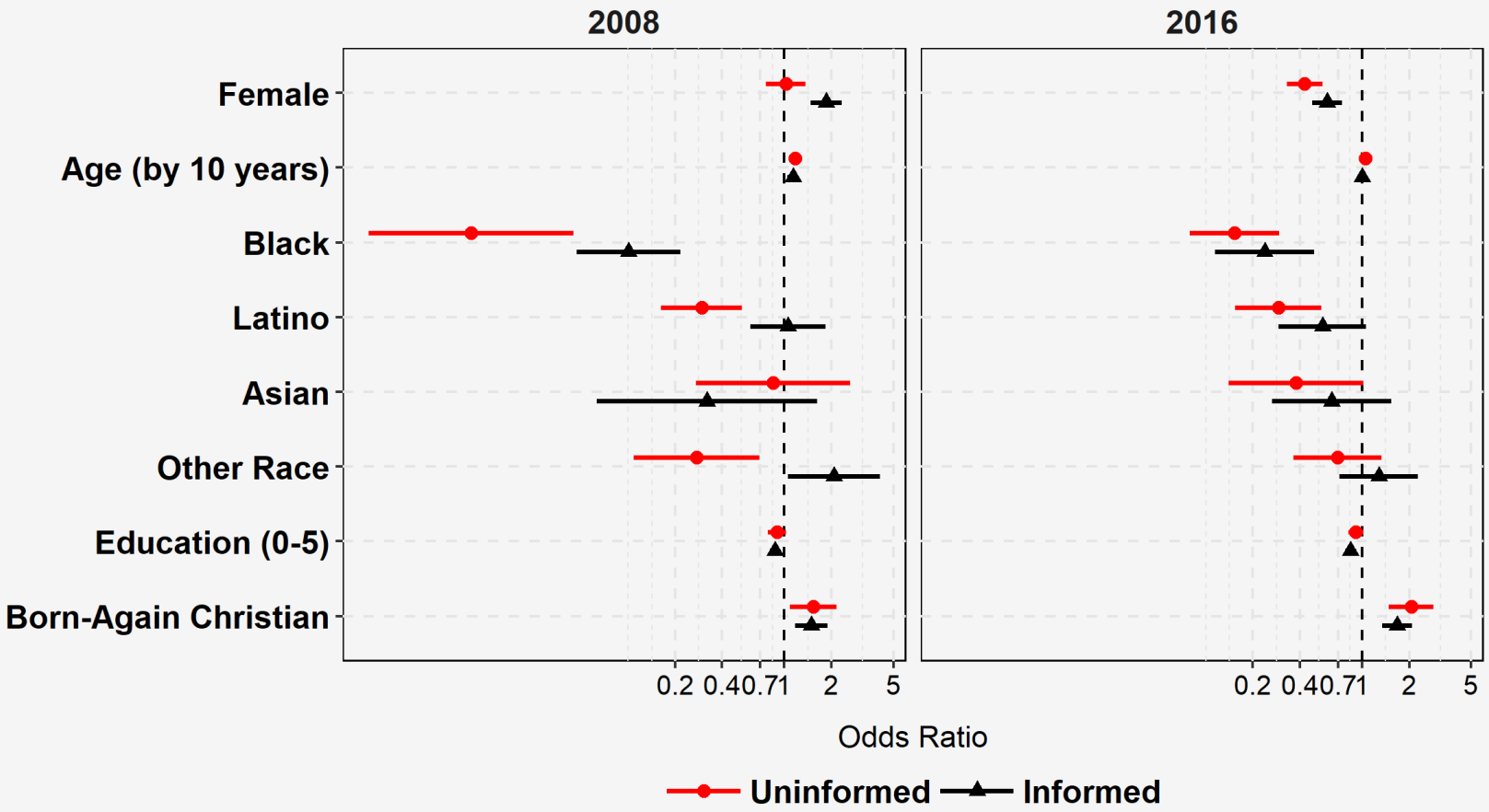

**Florida**
(2016)



# Information effects in presidential vote choice (demographic)

## Conditional Odds Ratio from Logistic Regression

**Other variables are omitted from the table.*

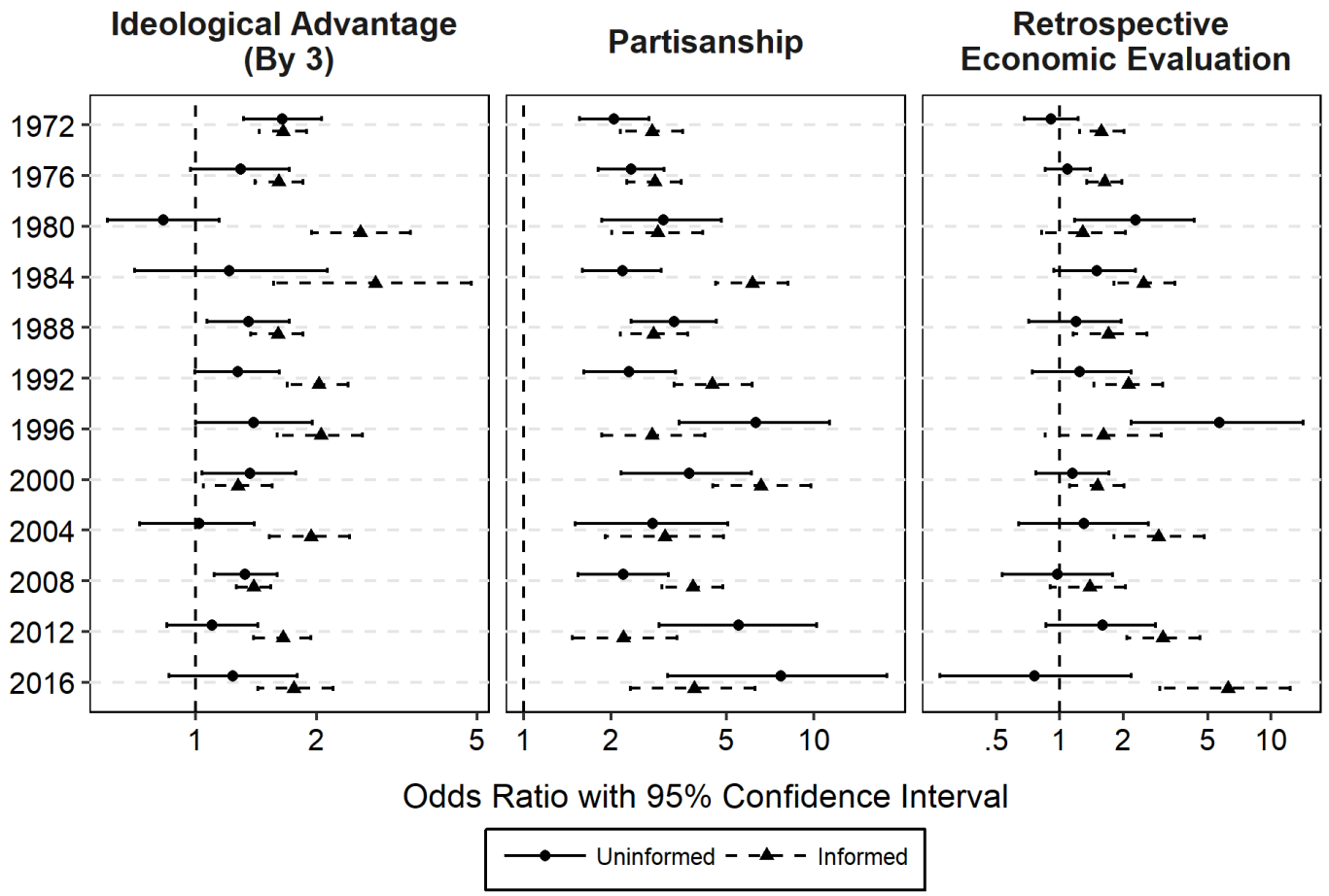



Higher values indicate Republican advantage except for retrospective evaluation.
N = 23477 in 2008 and N = 40078 in 2016.

# Information effects in presidential vote choice (ANES)

## Conditional Odds Ratio from Logistic Regression

**Demographic controls and intercept are omitted from the table.*




Note: Conditional coefficients at knowledge values of 0 (uninformed) and 1 (informed) are simulated by quasi-Bayesian Monte Carlo method based on Normal approximation. In each year, model is independently estimated with Logistic regression. Demographic controls are omitted from the figure (see Appendix).

# Information effects in presidential vote choice (ANES)

## Conditional Odds Ratio from Logistic Regression

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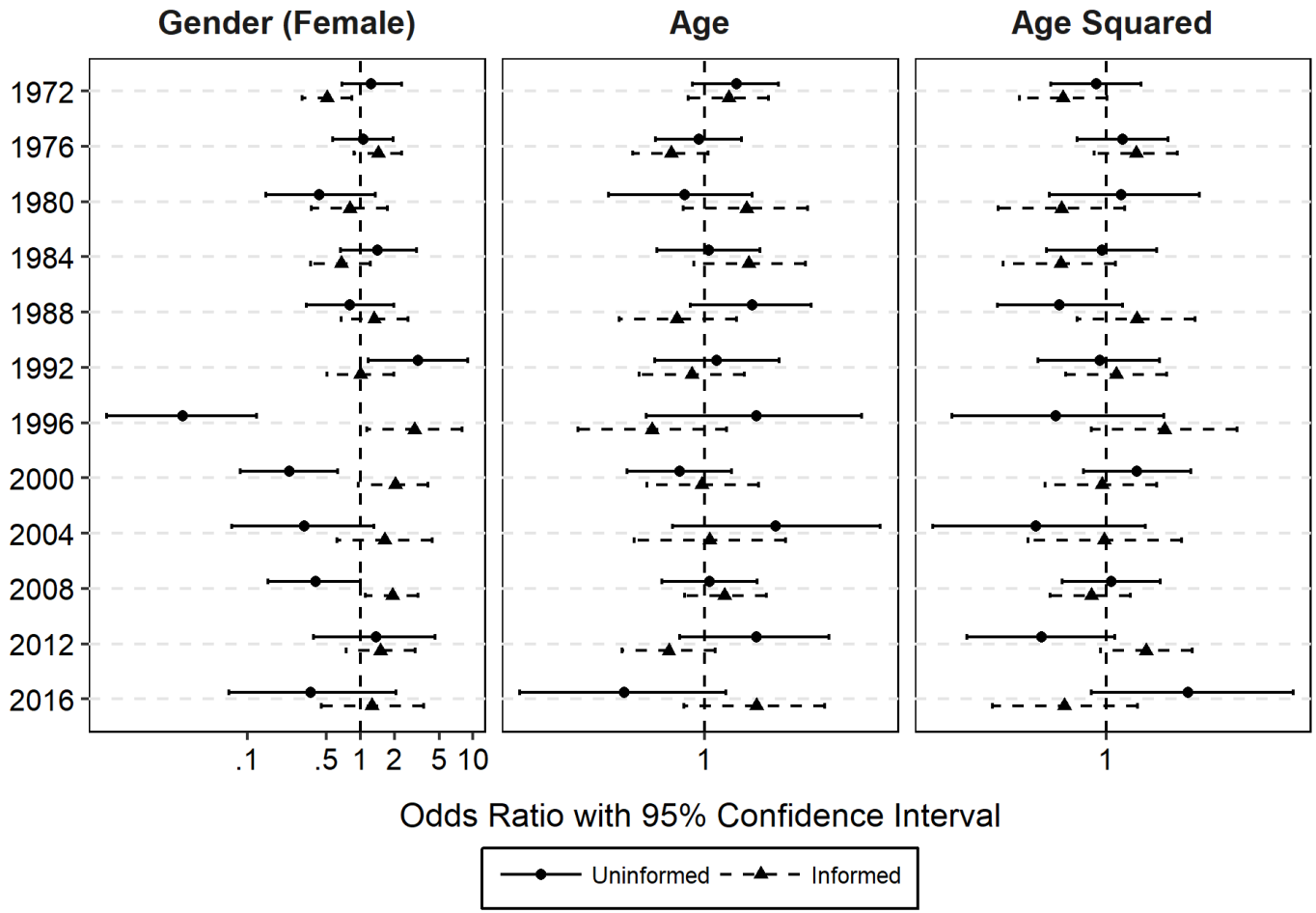


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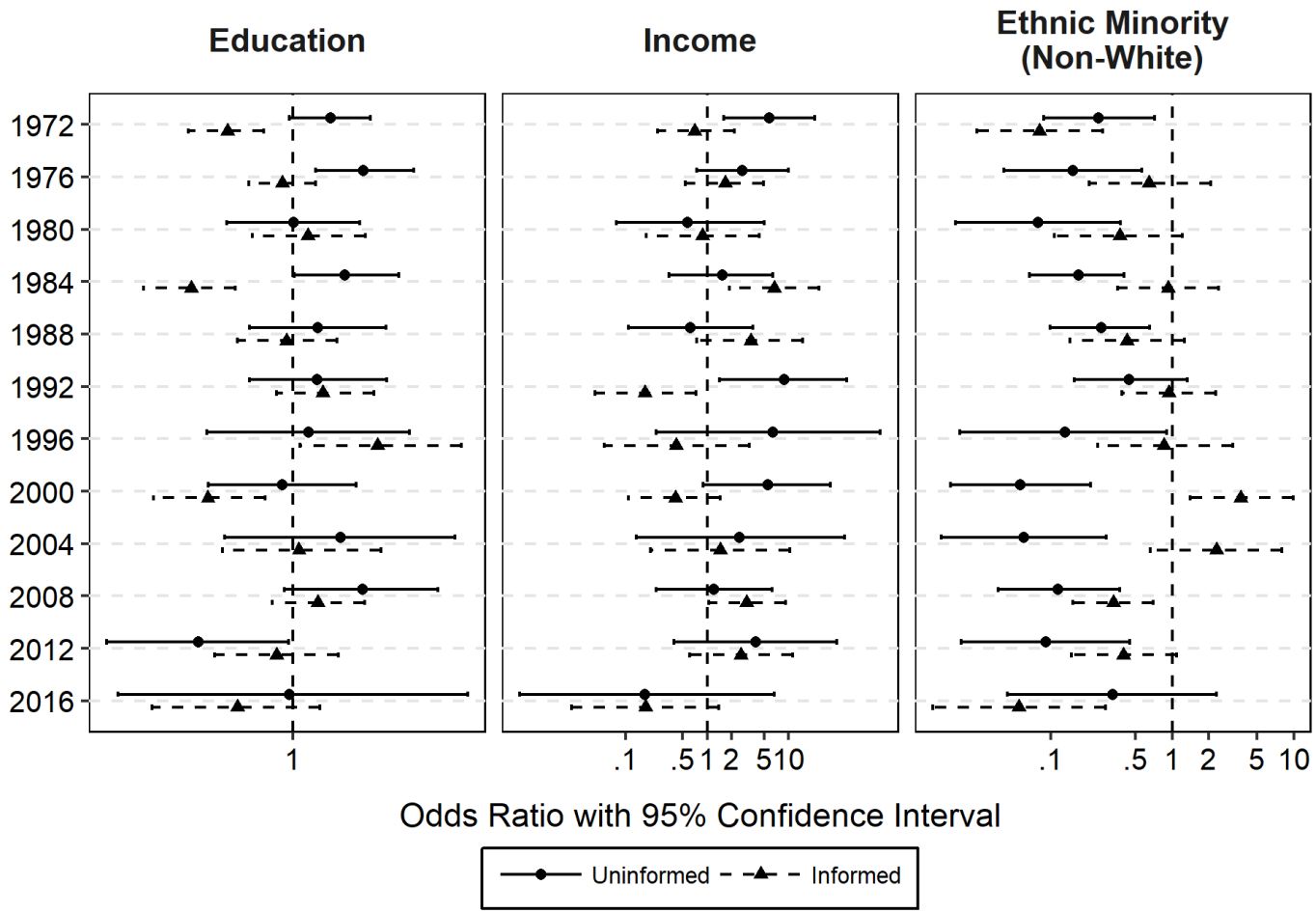


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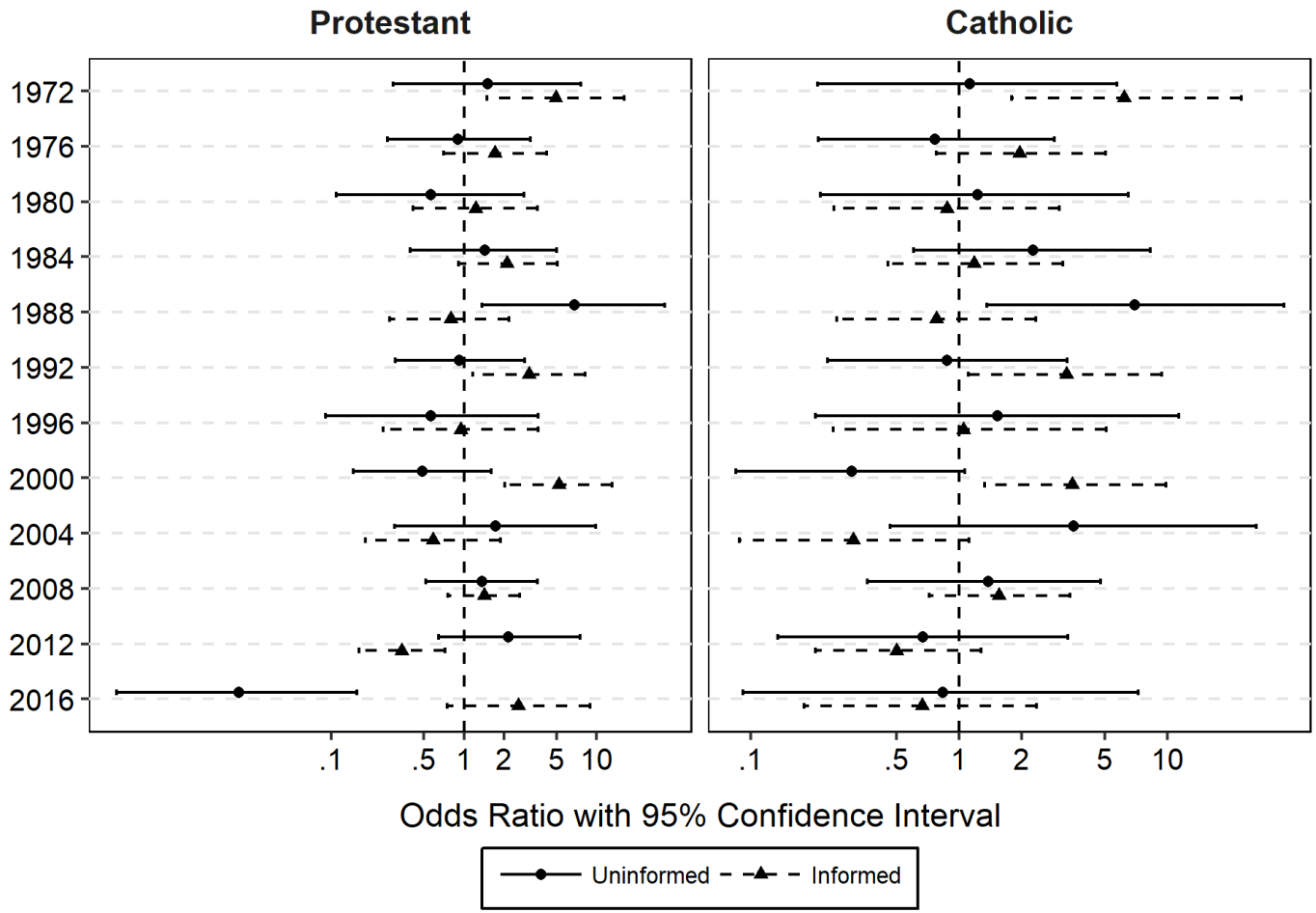


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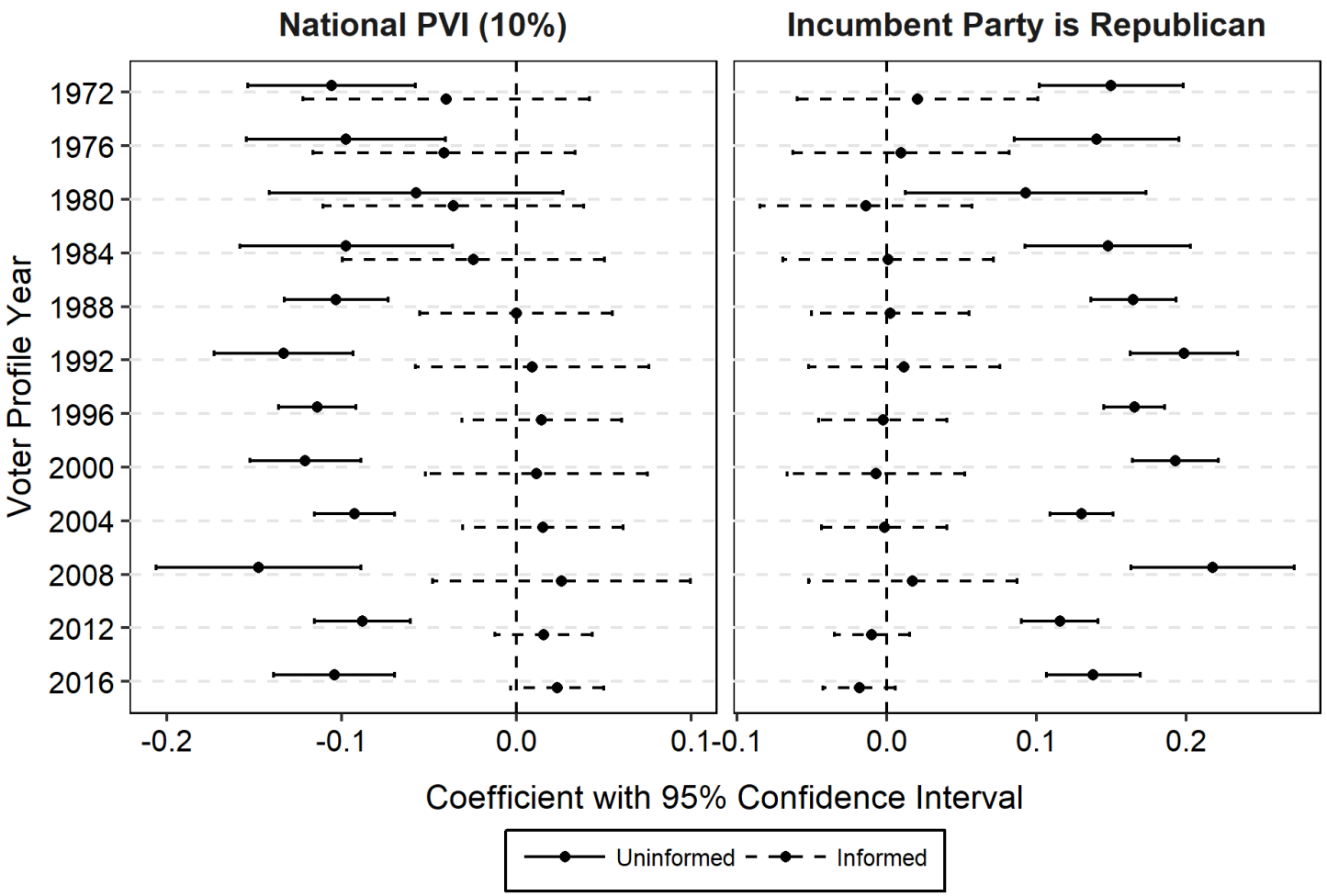
# The conditional effect of national PVI (ANES)

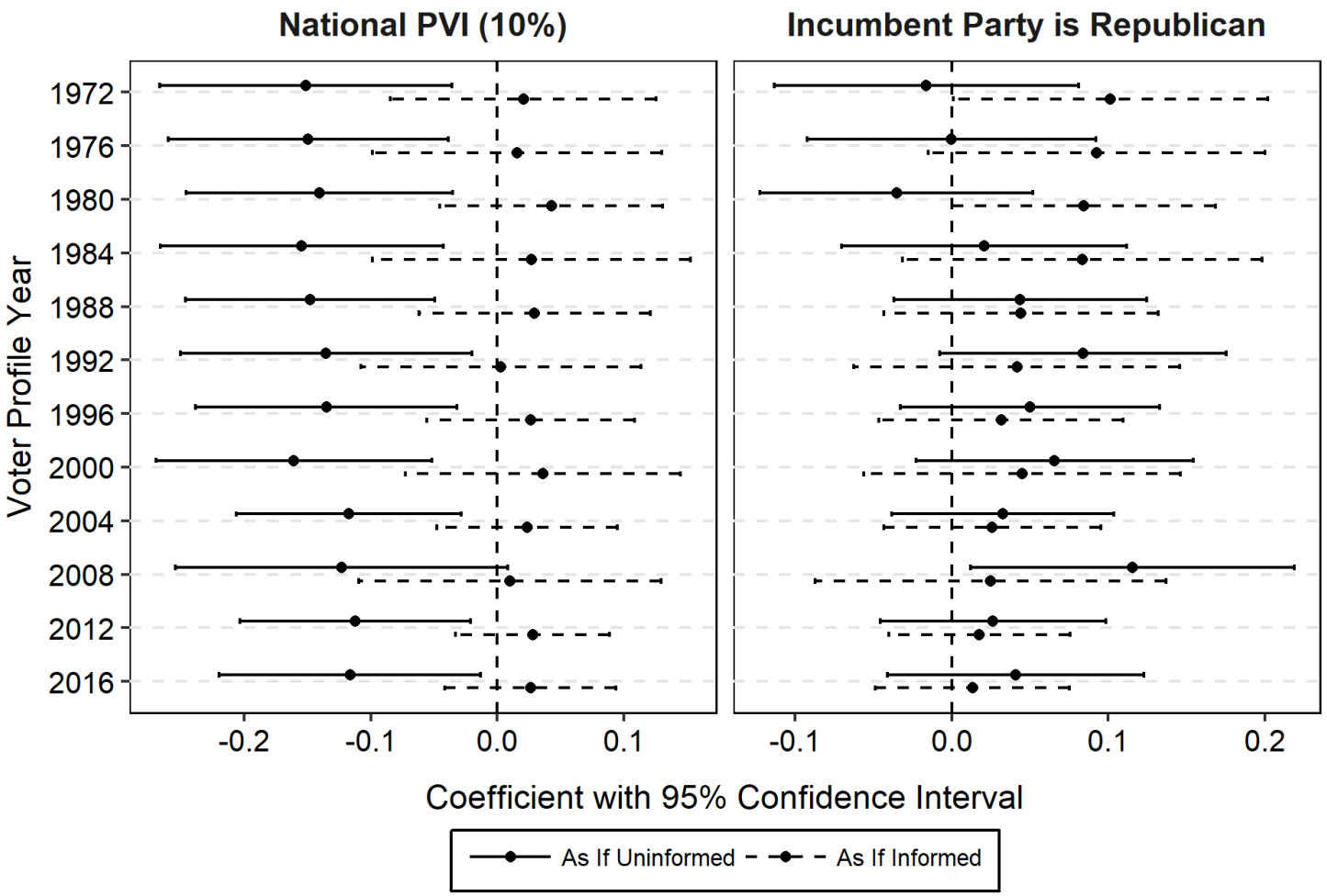
## Coefficients from EDV Regression




Note: The coefficents are from Estimated Dependent Variable (EDV) model (Lewis and Linzer 2005) with dependent variable as the weighted average of predicted probability of Republican vote based on voter profile of each presidential election year and imputed knowledge of 0 (as if uninformed) and 1 (as if informed).

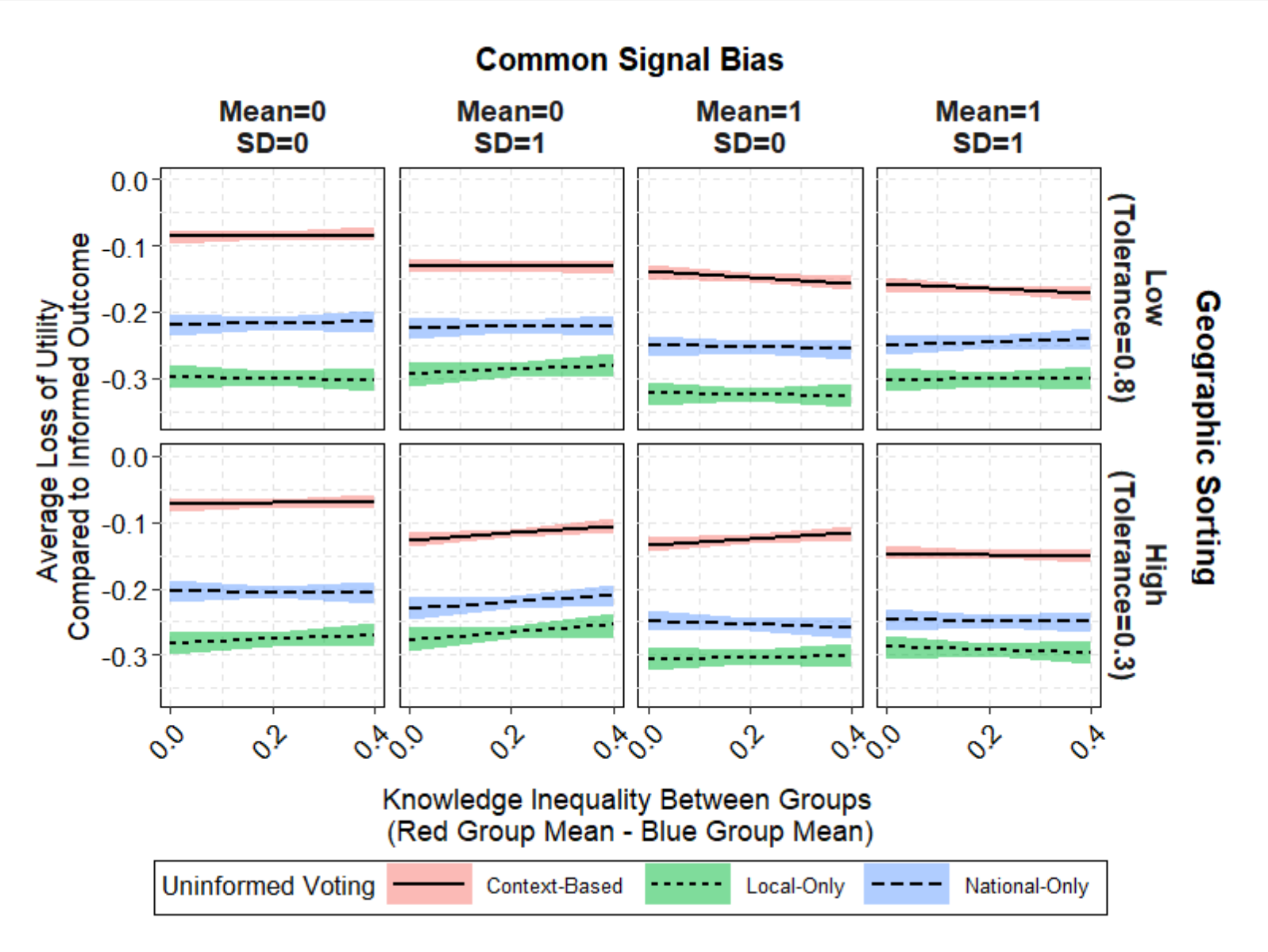
# The conditional effect of national PVI (ANES, objective)

## Coefficients from EDV Regression




Note: The coefficents are from Estimated Dependent Variable (EDV) model (Lewis and Linzer 2005) with dependent variable as the weighted average of predicted probability of Republican vote based on voter profile of each presidential election year and imputed objective knowledge of 0 (as if uninformed) and 1 (as if informed).

# Average utility loss by the type of context voting



# Equality in av. utility loss by the type of context voting