

How American Politics Ensures Electoral Accountability in Congress¹

Gary King²

Institute for Quantitative Social Science
Harvard University

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¹Joint with Danny Ebanks & Jonathan N. Katz (thanks to Aleksandra Conevska)

²GaryKing.org

The Plan

Model Validation: Out-of-sample tests

Prob(Incumbent Defeat): High Mean, No Trend

Intermediate Variables: Massive Change

How No Change Leads to Massive Change

Evaluating the Health of American Legislative Democracy

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 - Different combos of {**Polarization**, **Partisanship**, **IncAd**, **Marginals**, **Gerrymandering bias**} \leadsto the same Prob(Defeat)

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 - Interpret: to understand the big picture

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$$\mu_{it} = X_{it} \beta_t$$

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- Extensions: uncontested outcomes; > 2 parties

A Generative Model for District-Level Elections

- Data: 14,710 Congressional district elections, 1954–2020
- v_{it} : Dem vote proportion
- X_{it} : lag(vote), Inc party, Inc status, uncontestedness, South

$$v_{it} \sim \text{ALT}(\mu_{it}, \sigma^2, v_t) \quad \text{LogisTiCC}$$

$$\mu_{it} = X_{it}\beta_t + \gamma_i + \eta_t$$

- District Uniqueness: $\gamma_i \sim \mathcal{N}(0, \sigma_\gamma^2)$
- National Swing: $\eta_t \sim \mathcal{N}(0, \sigma_\eta^2)$
- Coeff. Stability: $\beta_t \sim \mathcal{N}(\bar{\beta}, \sigma_\beta^2) \rightsquigarrow$ Midterm penalty, Early exits
- Surprises (nonlinear, nonnormal): $\ln[v_{it}/(1 - v_{it})] \sim t(\mu_{it}, \sigma, v_t)$
- Ablation studies: every component essential
- Extensions: uncontested outcomes; > 2 parties
- Computation: extensive but easy; ElectIt Software

The Plan

Model Validation: Out-of-sample tests

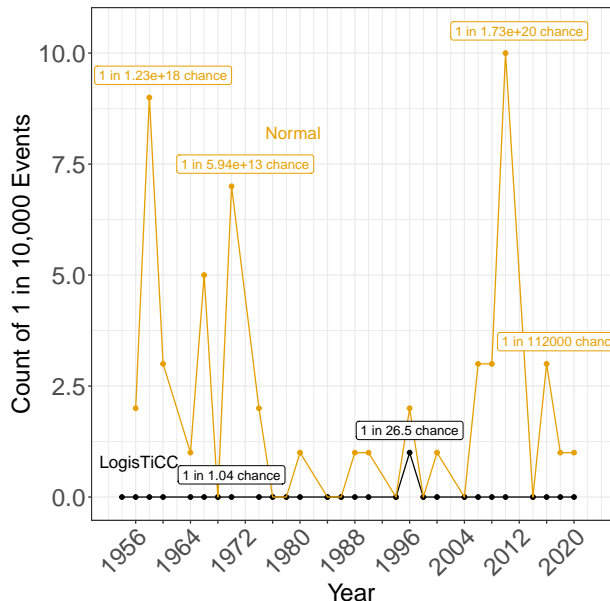
Prob(Incumbent Defeat): High Mean, No Trend

Intermediate Variables: Massive Change

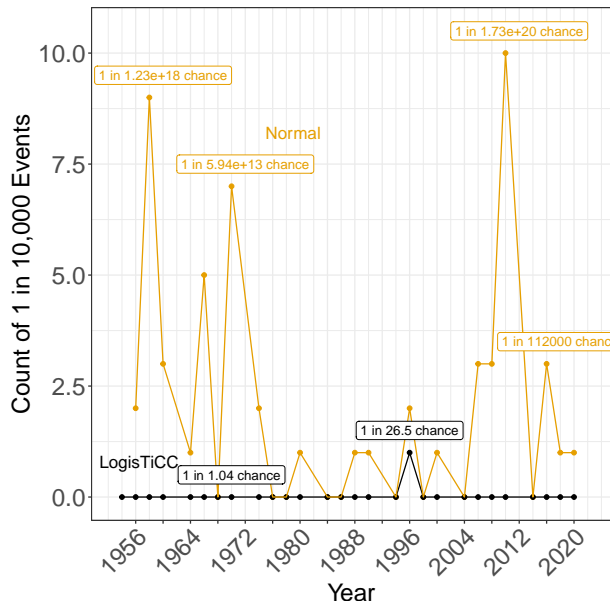
How No Change Leads to Massive Change

“Moral Certitude”: Elections outside 99.99% CI

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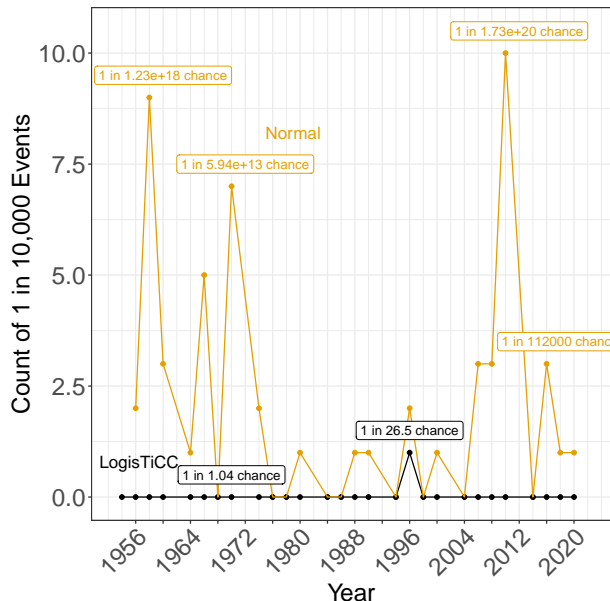


“Moral Certitude”: Elections outside 99.99% CI



1-in-10K Events:

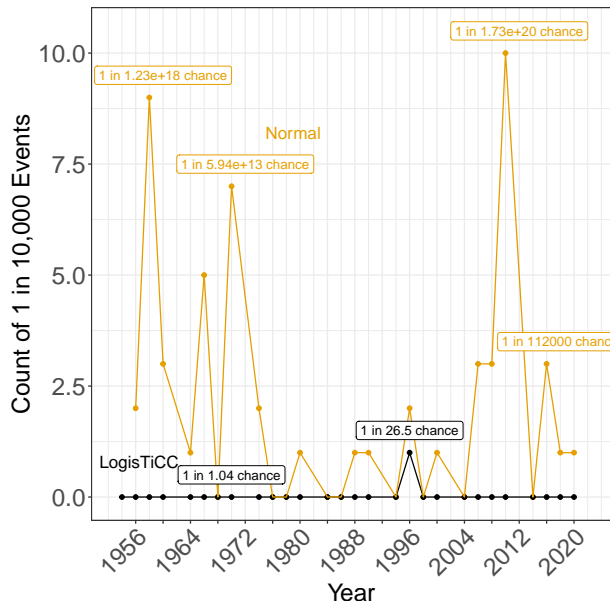
“Moral Certitude”: Elections outside 99.99% CI



1-in-10K Events:

LogisTiCC:
1 in 10K

“Moral Certitude”: Elections outside 99.99% CI



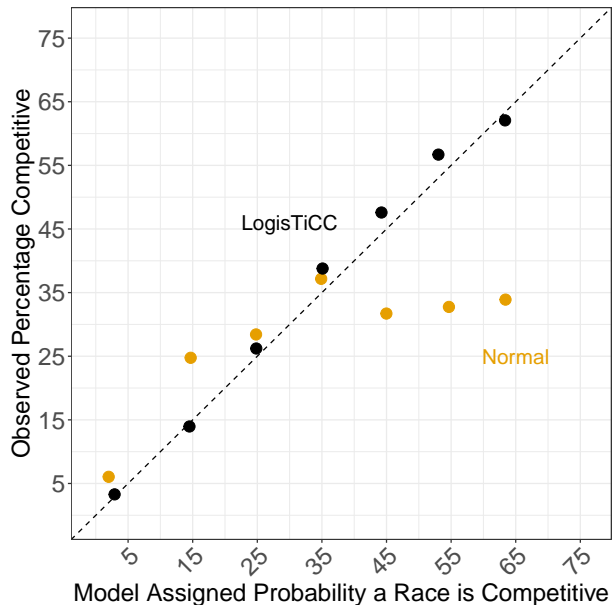
1-in-10K Events:

LogisTiCC:
1 in 10K

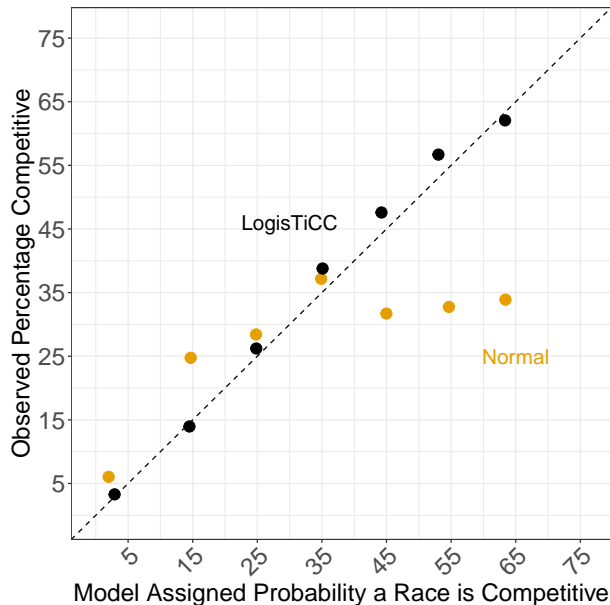
Normal:
All the time!

Competitiveness Calibration

Competitiveness Calibration

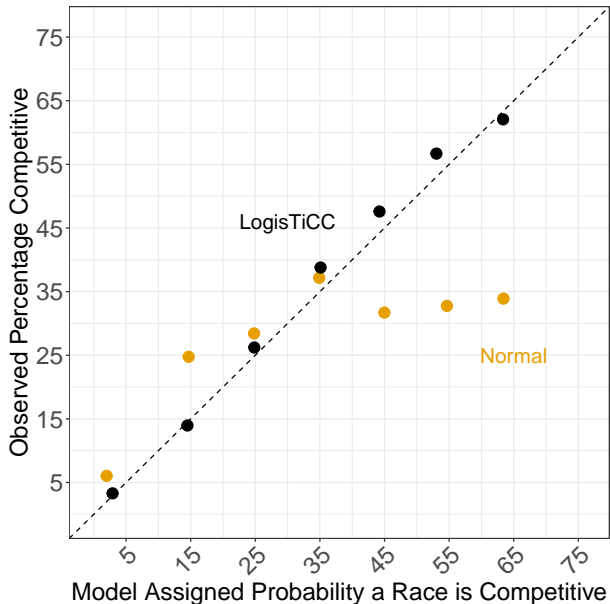


Competitiveness Calibration



LogisTiCC: Near perfect

Competitiveness Calibration



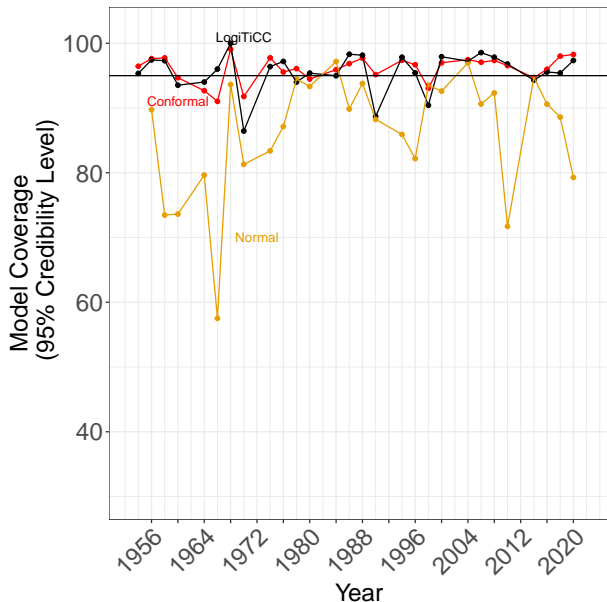
LogisTiCC: Near perfect

Normal: Fails for the most important elections

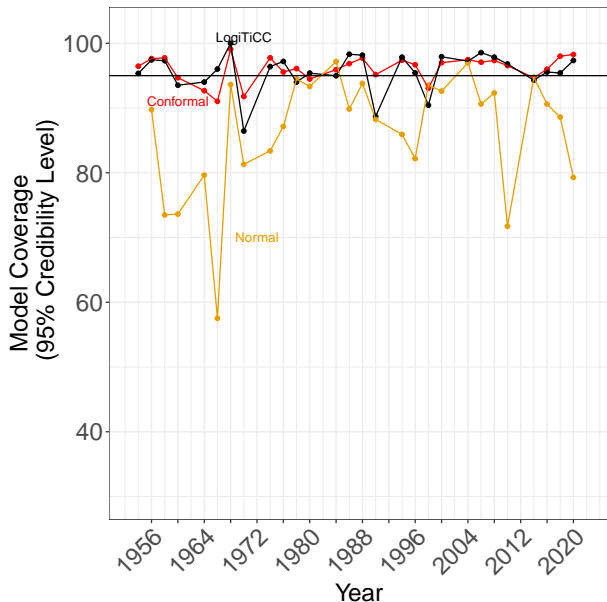
95% CI Coverage:

95% CI Coverage: District Vote

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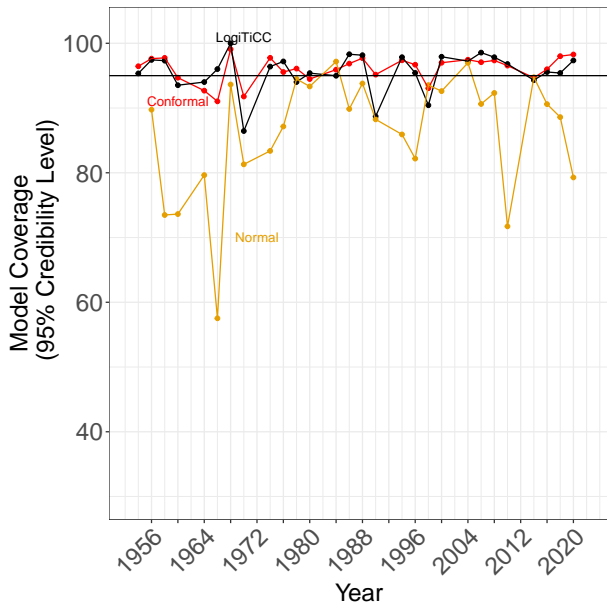


95% CI Coverage: District Vote



LogisTiCC:
~ correct

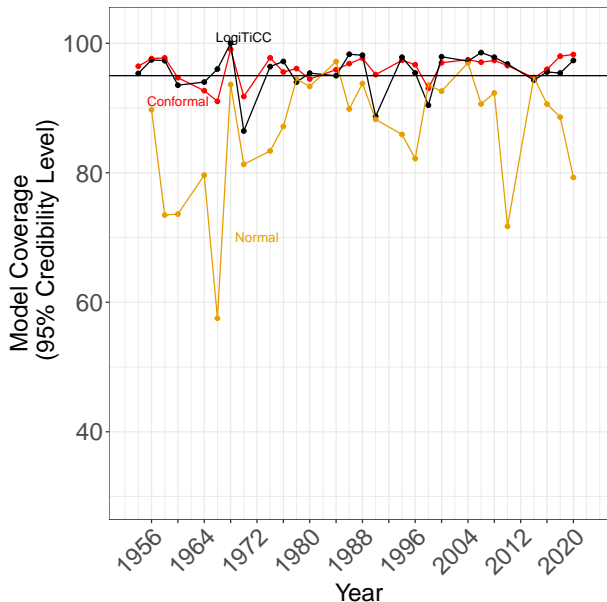
95% CI Coverage: District Vote



LogisTiCC:
~ correct

Normal: Way
over confident

95% CI Coverage: District Vote

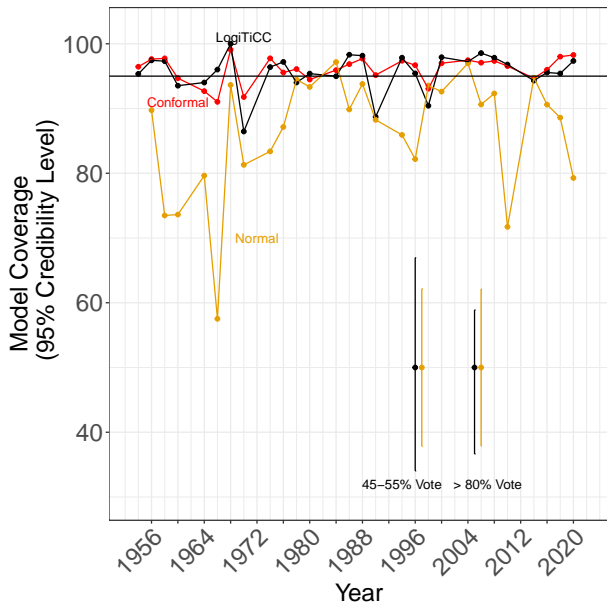


LogisTiCC:
~ correct

Normal: Way
over confident

Nonparametric:
~ correct

95% CI Coverage: District Vote



LogitTiCC:
~ correct

Normal: Way
over confident

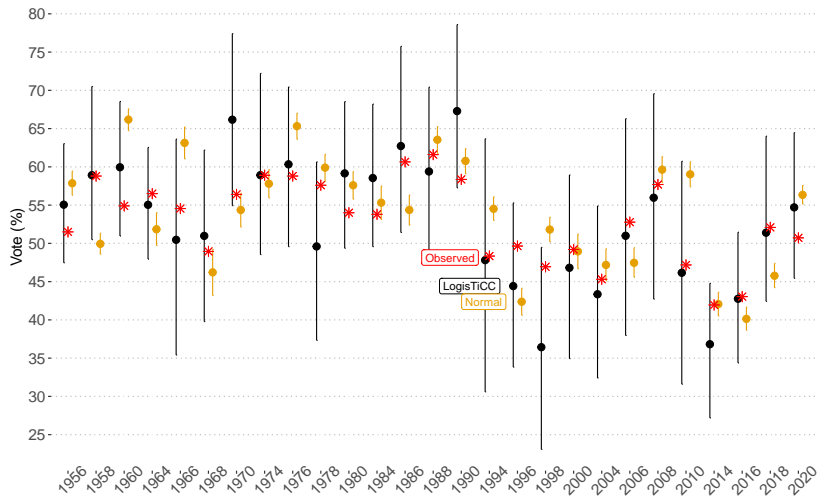
Nonparametric:
~ correct

Average CI
Width

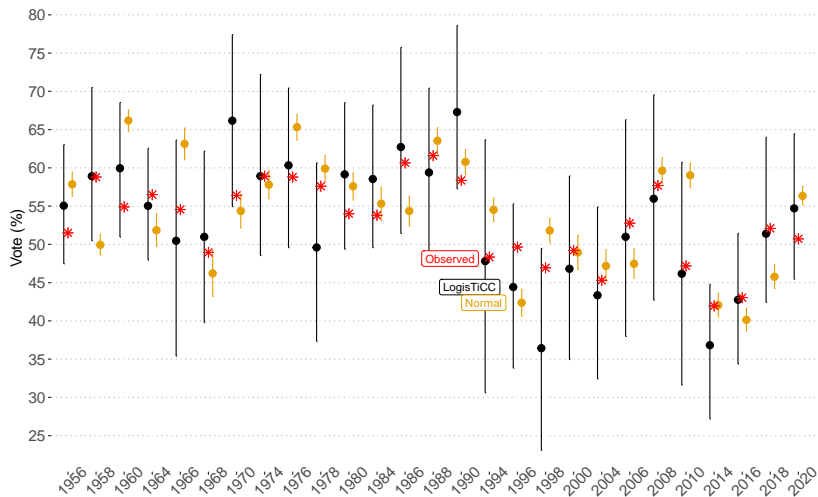
95% CI Coverage:

95% CI Coverage: Median House Seat Expected Vote

95% CI Coverage: Median House Seat Expected Vote

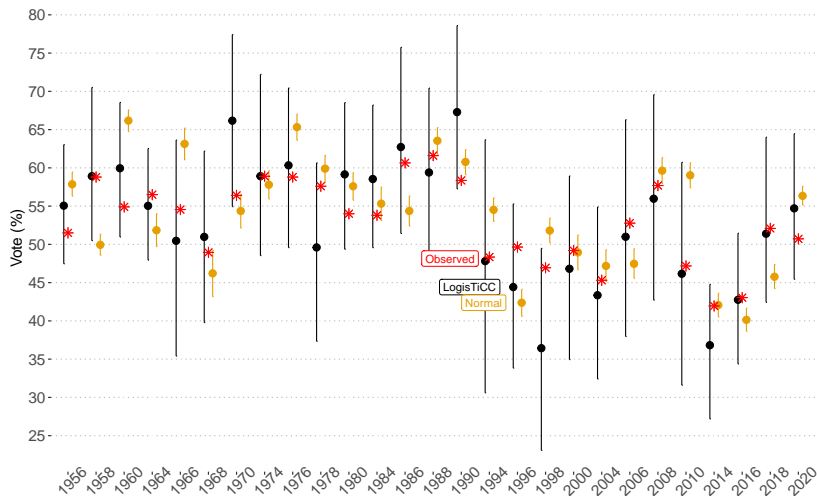


95% CI Coverage: Median House Seat Expected Vote



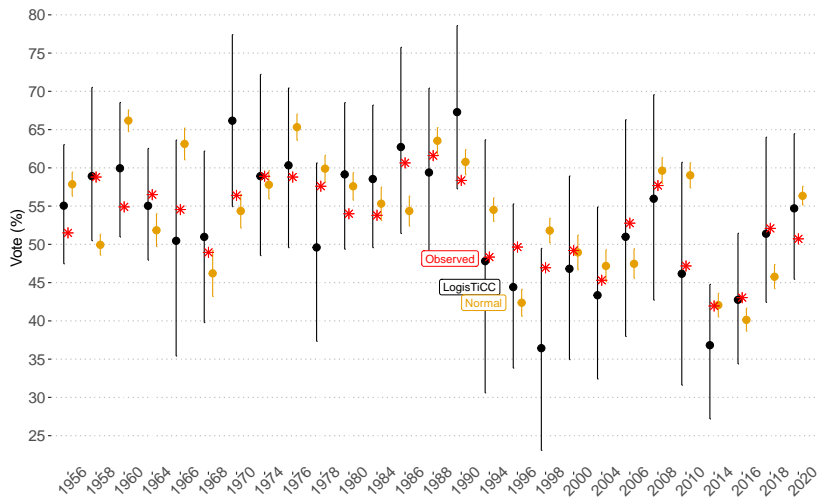
95% CI captures

95% CI Coverage: Median House Seat Expected Vote



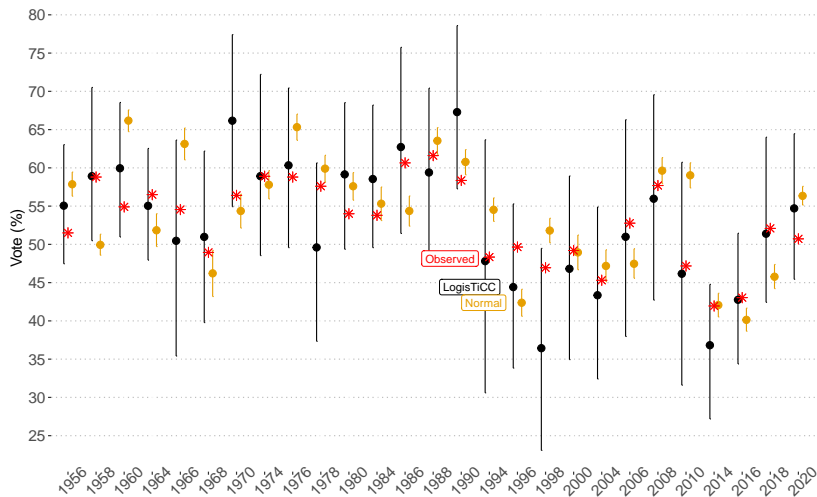
95% CI captures (Theory: 26/27):

95% CI Coverage: Median House Seat Expected Vote



95% CI captures (Theory: 26/27): Normal 7/27,

95% CI Coverage: Median House Seat Expected Vote



95% CI captures (Theory: 26/27): Normal 7/27, LogisTiCC 27/27

The Plan

Model Validation: Out-of-sample tests

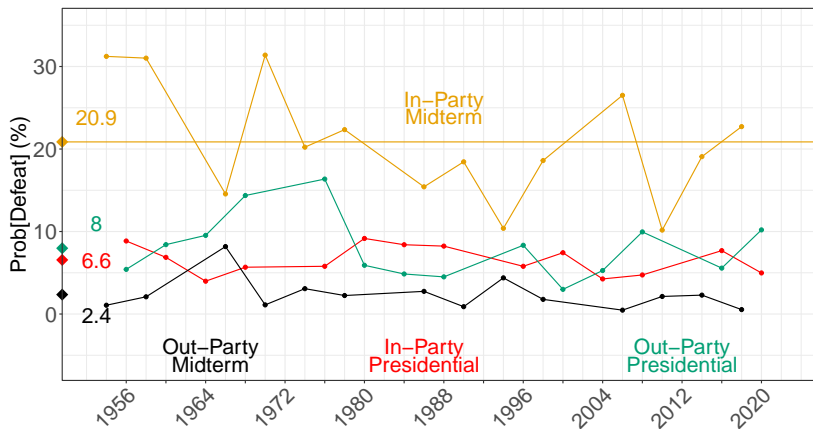
Prob(Incumbent Defeat): High Mean, No Trend

Intermediate Variables: Massive Change

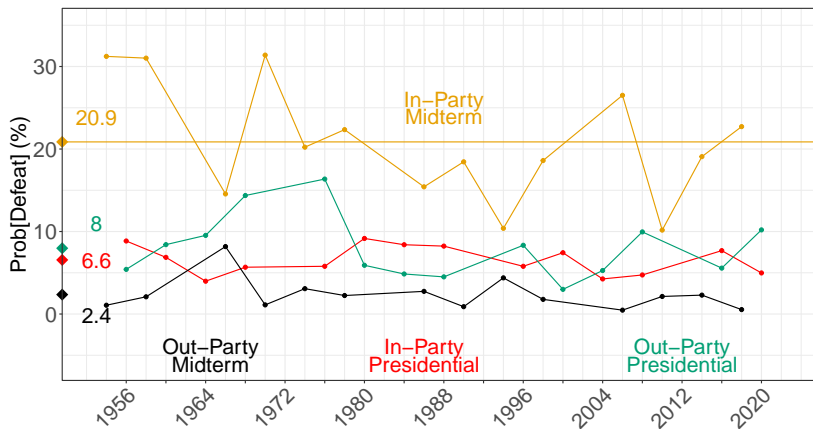
How No Change Leads to Massive Change

$\Pr(\text{Defeat}_t | \text{winner}_{t-1} \text{ runs at } t)$: High Mean, No Trend

$\Pr(\text{Defeat}_t | \text{winner}_{t-1} \text{ runs at } t)$: High Mean, No Trend

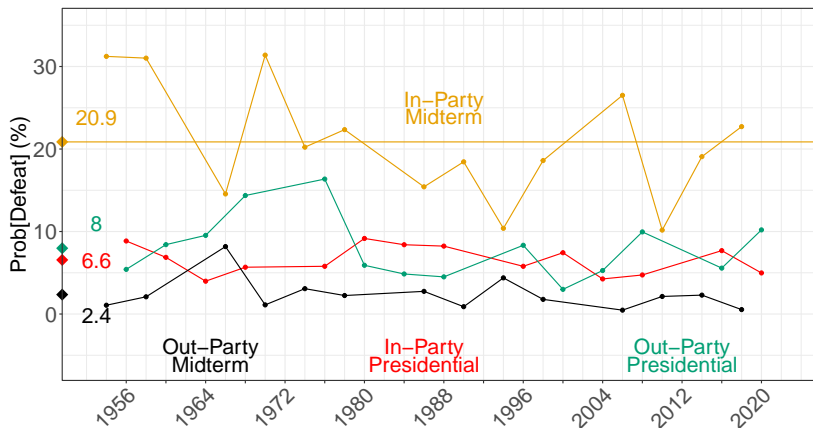


$\Pr(\text{Defeat}_t | \text{winner}_{t-1} \text{ runs at } t)$: High Mean, No Trend



High Mean: 2.4–20.9%; overall: 11%

$\Pr(\text{Defeat}_t | \text{winner}_{t-1} \text{ runs at } t)$: High Mean, No Trend



High Mean: 2.4–20.9%; overall: 11%

No Trend

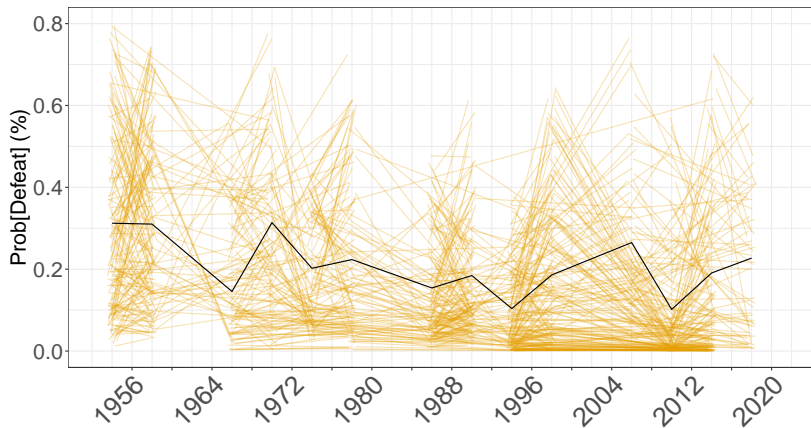
Prob(Defeat) for Individual Incumbents

Prob(Defeat) for Individual Incumbents

In Party, Midterm

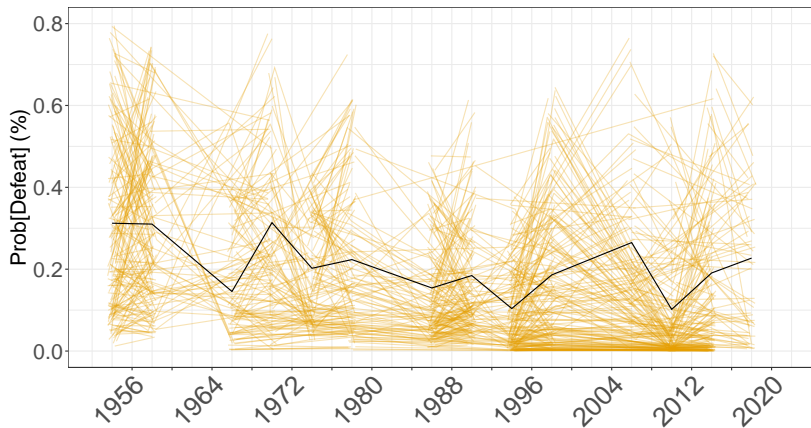
Prob(Defeat) for Individual Incumbents

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Prob(Defeat) for Individual Incumbents

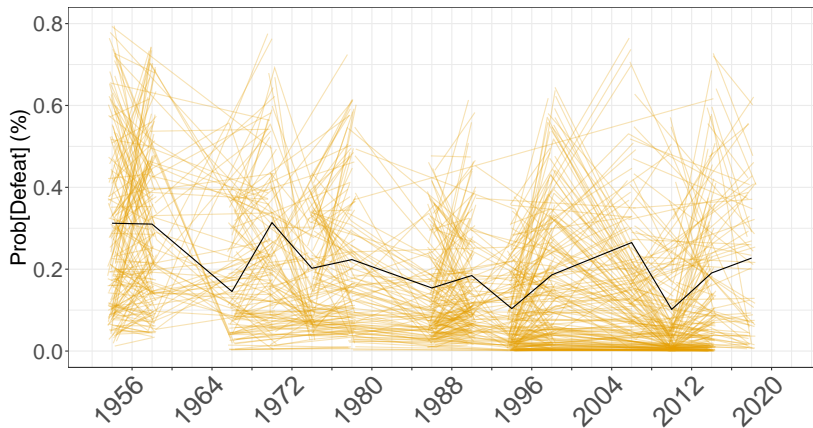
In Party, Midterm



Mean: High

Prob(Defeat) for Individual Incumbents

In Party, Midterm

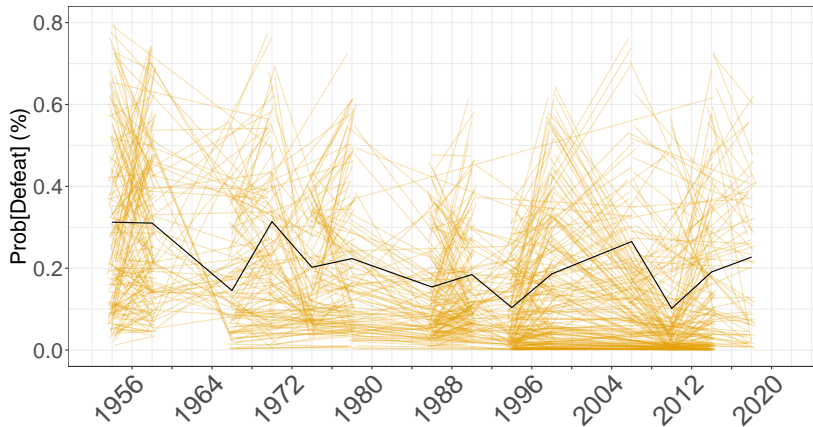


Mean: High

Trends: None

Prob(Defeat) for Individual Incumbents

In Party, Midterm



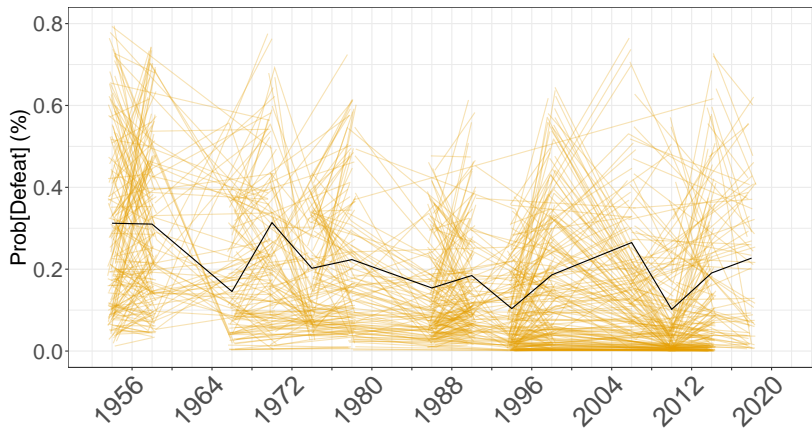
Mean: High

Trends: None

Individual Variation: Massive

Prob(Defeat) for Individual Incumbents

In Party, Midterm



Mean: High

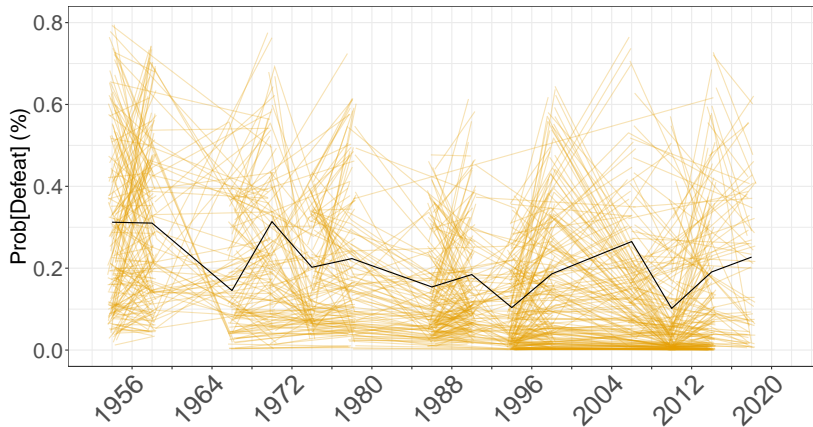
Trends: None

Individual Variation: Massive

Job security?

Prob(Defeat) for Individual Incumbents

In Party, Midterm



Mean: High

Trends: None

Individual Variation: Massive

Job security? Random terror!

The Plan

Model Validation: Out-of-sample tests

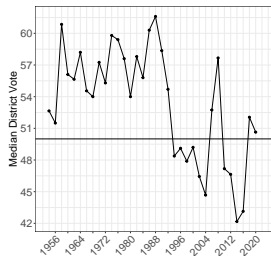
Prob(Incumbent Defeat): High Mean, No Trend

Intermediate Variables: Massive Change

How No Change Leads to Massive Change

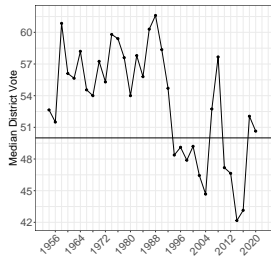
Massive Political Change [With Prob(Defeat) constant?]

Massive Political Change [With Prob(Defeat) constant?]

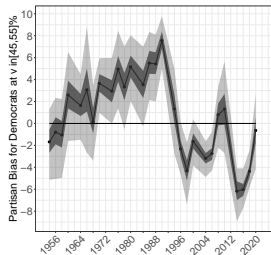


Median District Vote

Massive Political Change [With Prob(Defeat) constant?]

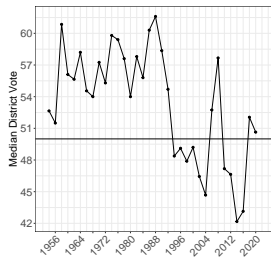


Median District Vote

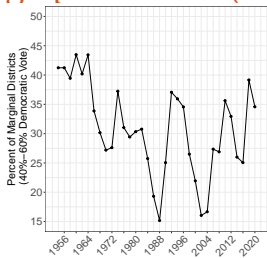


Partisan Bias

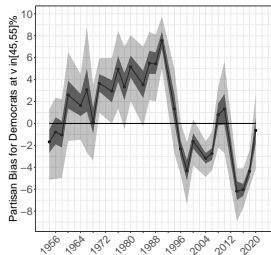
Massive Political Change [With Prob(Defeat) constant?]



Median District Vote

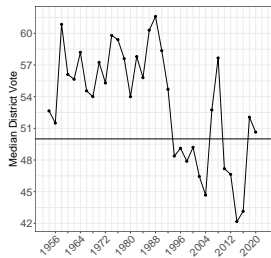


Electoral Marginals

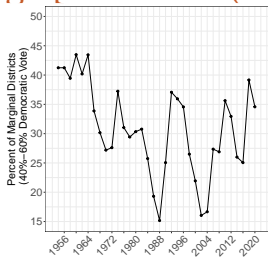


Partisan Bias

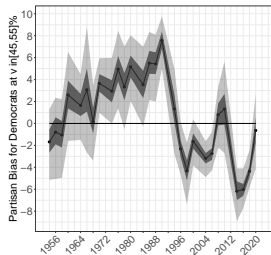
Massive Political Change [With Prob(Defeat) constant?]



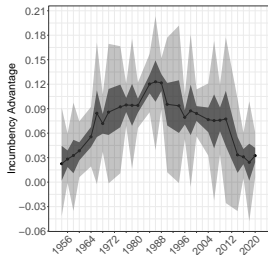
Median District Vote



Electoral Marginals

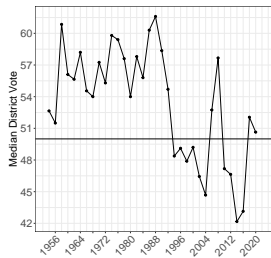


Partisan Bias

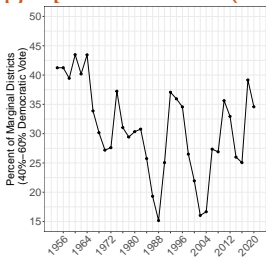


Incumbency Advantage

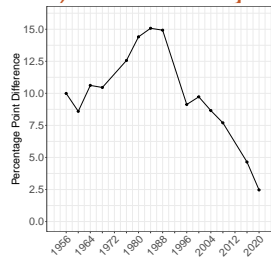
Massive Political Change [With Prob(Defeat) constant?]



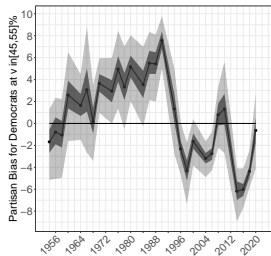
Median District Vote



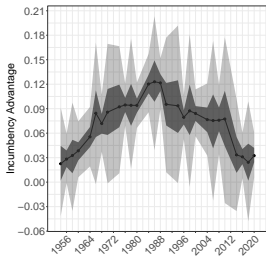
Electoral Marginals



Split Ticket Voting

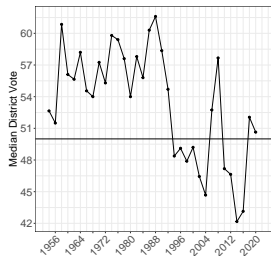


Partisan Bias

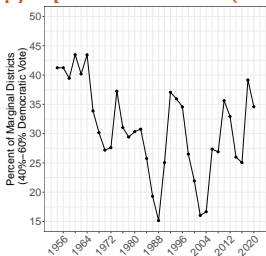


Incumbency Advantage

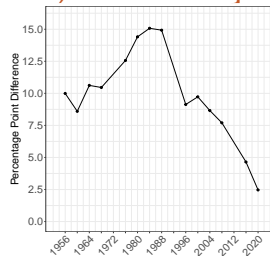
Massive Political Change [With Prob(Defeat) constant?]



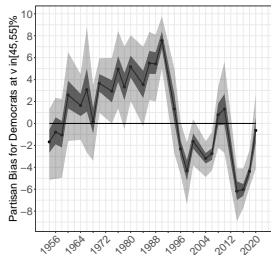
Median District Vote



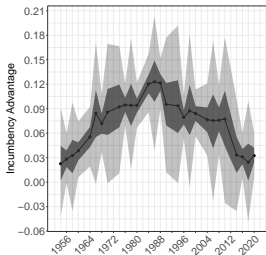
Electoral Marginals



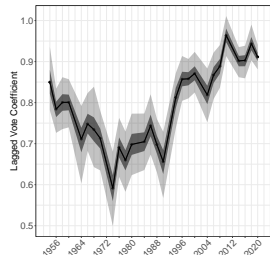
Split Ticket Voting



Partisan Bias



Incumbency Advantage



Lagged Vote

The Plan

Model Validation: Out-of-sample tests

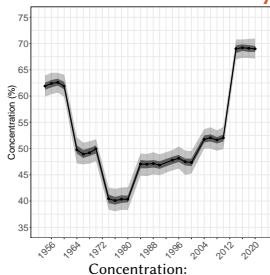
Prob(Incumbent Defeat): High Mean, No Trend

Intermediate Variables: Massive Change

How No Change Leads to Massive Change

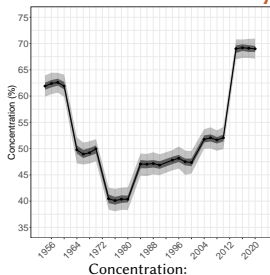
More than Central Tendency: Variation Matters

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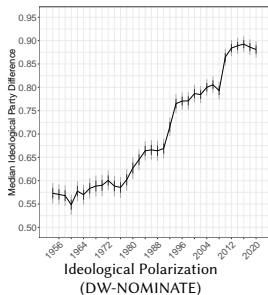
$$\int_{45}^{55} p(v|E[v] = 50)dv$$

More than Central Tendency: Variation Matters

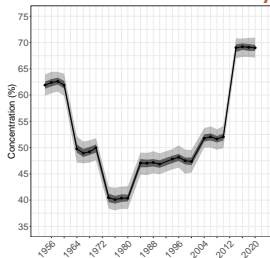


Concentration:

$$\int_{45}^{55} p(v|E[v] = 50)dv$$

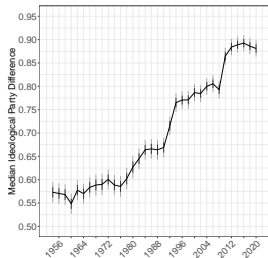


More than Central Tendency: Variation Matters

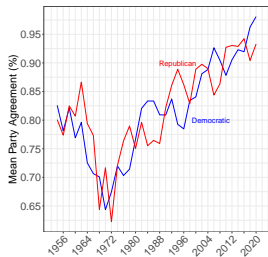


Concentration:

$$\int_{45}^{55} p(v|E[v] = 50)dv$$

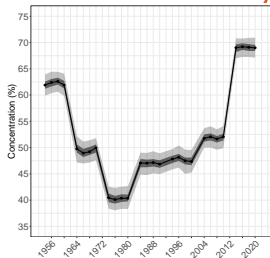


Ideological Polarization
(DW-NOMINATE)



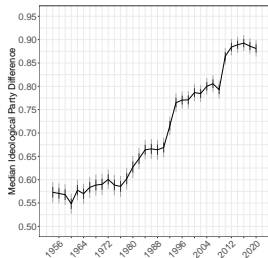
Legislator-Leader Party Agreement (Roll calls)

More than Central Tendency: Variation Matters

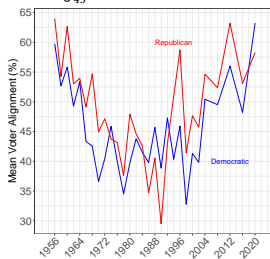


Concentration:

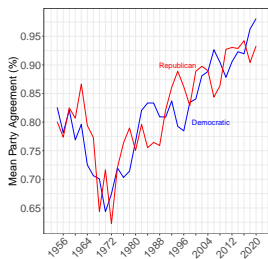
$$\int_{45}^{55} p(v|E[v] = 50)dv$$



Ideological Polarization
(DW-NOMINATE)



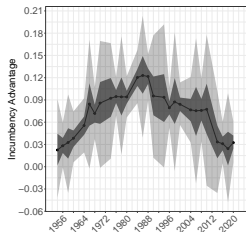
Party ID-Vote Agreement (ANES)



Legislator-Leader Party Agreement (Roll calls)

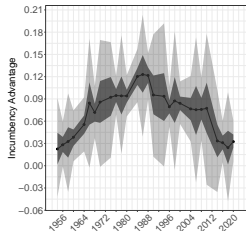
“Adding” it up

“Adding” it up



Incumbency
Advantage

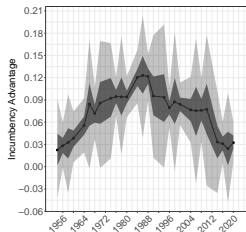
“Adding” it up



+

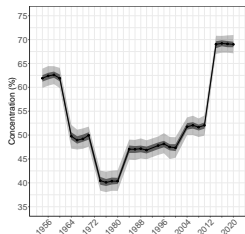
Incumbency
Advantage

“Adding” it up



Incumbency
Advantage

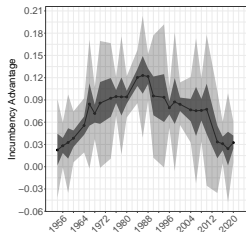
+



Concentration:

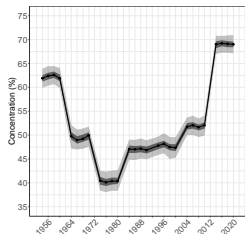
$$\int_{45}^{55} p(v|E[v] = 50)dv$$

“Adding” it up



Incumbency
Advantage

+

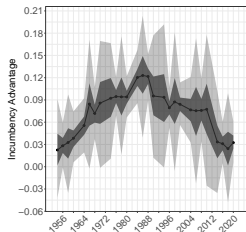


=

Concentration:

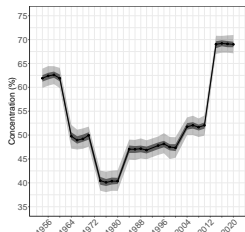
$$\int_{45}^{55} p(v|E[v] = 50)dv$$

“Adding” it up



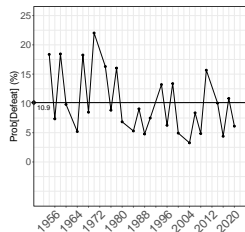
Incumbency
Advantage

+



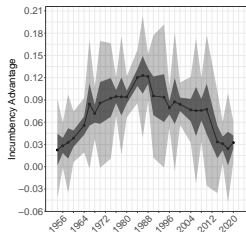
Concentration:
$$\int_{45}^{55} p(v|E[v] = 50)dv$$

=



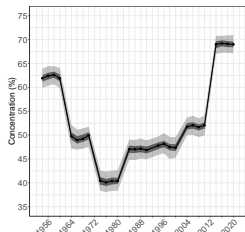
Mean Prob(Defeat)

“Adding” it up



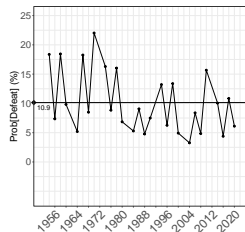
Incumbency
Advantage

+



Concentration:
$$\int_{45}^{55} p(v|E[v] = 50)dv$$

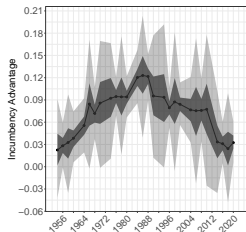
=



Mean Prob(Defeat)

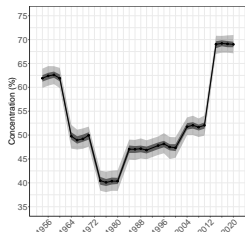
We find

“Adding” it up



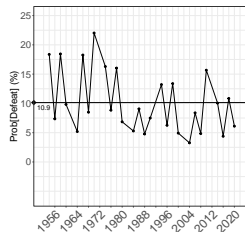
Incumbency
Advantage

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Concentration:
$$\int_{45}^{55} p(v|E[v] = 50)dv$$

=

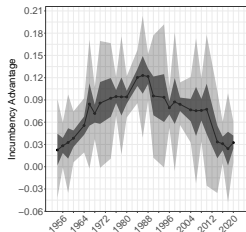


Mean Prob(Defeat)

We find

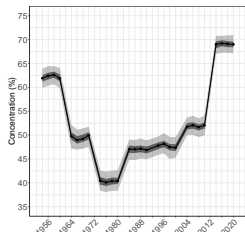
- Prob(defeat) high, constant over > 2/3rds century

“Adding” it up



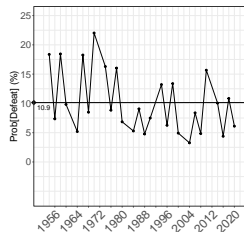
Incumbency
Advantage

+



Concentration:
$$\int_{45}^{55} p(v|E[v] = 50)dv$$

=

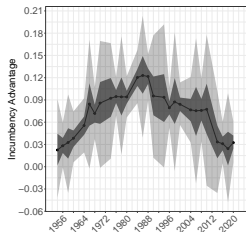


Mean Prob(Defeat)

We find

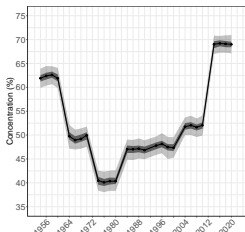
- Prob(defeat) high, constant over > 2/3rds century
- Different combos of {Polarization, Partisanship, IncAd, Marginals, Gerrymandering bias} \leadsto the same Prob(Defeat)

“Adding” it up



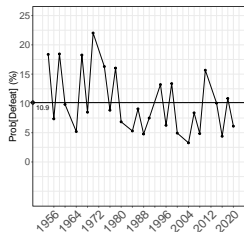
Incumbency
Advantage

+



Concentration:
$$\int_{45}^{55} p(v|E[v] = 50)dv$$

=



Mean Prob(Defeat)

We find

- Prob(defeat) high, constant over > 2/3rds century
- Different combos of {Polarization, Partisanship, IncAd, Marginals, Gerrymandering bias} \leadsto the same Prob(Defeat)
- (This part of) American democracy actually seems to work

Papers, slides, software, data

GaryKing.org

