# Power of the President <br> Political Party Competition in Presidential Systems 

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## Motivating Puzzle

- Spatial models of party competition have helped us understand parties incentives in where they ideologically place themselves.
- Prior research has taken place in the context of parliamentary regimes.
- Recent research shows that the separation of powers uniquely impacts legislative party systems.
- Question: How does presidentialism affect the ideological positioning of parties in legislative elections?


## Overview of Presentation

(1) Background
(2) EITM Framework
(3) Theory
(4) Data and Methods
(5) Results
(6) Conclusions
(7) Appendix

## Previous Research

Spatial Modeling

- Two-party/candidate elections lead to centrist positioning (Downs, 1957).
- Three or more party/candidate elections lead to non-centrist positioning (Cox, 1990; Shepsle, 1991).
- Probabilistic modeling brought in non-policy factors (Enelow and Hinich, 1989; Adams et al., 2005).
- Strong assumption in models: Elections are in parliamentary regimes.


## Previous Research

## Spatial Modeling



## Previous Research

Presidentialism

- In presidential regimes, parties organize around presidential candidates, not legislative candidates (Samuels, 2002; Samuels and Shugart 2010).
- Presidential elections produce coattail effects on legislative elections (Jones, 1994; Shugart, 1995).
- We can expect parties in presidential regimes to be more centrist than parties in parliamentary regimes.


## Regime Types

- Parliamentary: Head of government (prime minister) is indirectly elected by voters. Head of state (president or monarch) does not play a significantly active role in the political process.
- Semi-Presidential: Head of government (prime minister) is indirectly elected by voters, while a head of state (president) is directly elected by the voters. President can play an active role in the political process through formal or informal powers.
- Pure Presidential: Head of government (president) is directly elected by voters. President also takes the position of head of state.


## Previous Research

## Presidentialism



Percentage of Democratic Regimes by Executive-Legislature Structure, 1950-2005 (Samuels and Shugart, 2010).

## Why is This Important?

- Most of the world's democracies today directly elect presidents.
- Different institutions have implications in how voters perceive the democratic process (Anderson et al., 2005; Birch, 2008).
- Potential implications for income redistribution - Presidential regimes might redistribute less, since countries with majoritarian legislative elections redistribute less (Iversen and Soskice, 2006).
- Given that proportional systems lead to greater ideological gaps between voters and parties (Cox, 1997; Blais and Bodet, 2006), presidentialism can close the policy gap between voters and parties in proportional systems.


## EITM Framework Step One

- Theoretical Concept: Parties and presidential candidates choose ideological positions that will maximize their vote shares.
- Statistical Concept: Measurement error.


## EITM Framework

Step Two

- Behavioral Analogue: In a location game, parties and presidential candidates will position themselves on a spatial line in a manner that will maximize their vote shares.
- Statistical Analogue: Error-in-variables regression.


## EITM Framework

 Step Three- Through spatial modeling, I will show that parties will have incentives to move to more centrist locations when assumption of presidentialism is added to the model.
- Through data on party manifestos and the median voter, I will show that major parties in presidential regimes will be more centrist than parties in parliamentary regimes.


## Framework of Models

- Three types of actors:
- Voters
- Legislative parties
- Presidential candidates
- Strategy of voters: To vote for the party or candidate that is closest to them ideologically.
- Strategy of parties and candidates: To position themselves in a way that maximizes their vote shares.


## Framework of Models

Assumptions

- Voters are fully-informed and their votes are ideologically-driven.
- Voters are distributed uniformly in the population.
- Parties and candidates are purely office-seeking.
- Parties and candidates are aware of the location of their opponents and the location of the median voter.
- Issues contested on a single-dimension policy space.


## Explanation of Symbols

- $x_{p i}$ : Location of party $i$
- $x_{c i}$ : Location of candidate $i$
- $x_{m}$ : Location of the median voter
- $s_{p i}$ : Vote share of party $i$
- $s_{c i}$ : Vote share of candidate $i$
- $\delta$ : Any slight ideological shift by a party or candidate


## Standard Models of Party Compeition

Legislative Elections

*Equilibrium is not acheived in three-party proportional legislative elections.

## Standard Models of Party Compeition

Presidential Elections


Four-Candidate Runoff Presidential Elections

$$
x_{c 3}=x_{c 4}=\left[x_{m}, x_{m}+e\right] *
$$



$$
x_{c 1}=x_{c 2}=\left[x_{m}-e, x_{m}\right] *
$$

* e can take on any value from $[0,25)$.


## Modeling Party Competition in a World of Presidentialism

- New assumptions:
- Legislative elections are occuring under a presidential regime.
- Voters' votes in the legislative election are dependent on the locations of presidential candidates.
- The allocation of vote shares in legislative elections is different now: legislative parties' vote shares based on how close they are to their respective presidential candidates' positions.
- The strength of the coattail effect presidential elections have on vote shares in legislative elections is a function of two factors:
- Presidential powers (pure presidentialism vs. semi-presidentialism)
- Timing of elections (concurrent vs. non-concurrent elections)


## Modeling Party Competition in a World of Presidentialism

- z: The maximum vote share a party can attain in a legislative election
- $z=\frac{1}{\text { number of presidential candidates }}$
- Therefore, $s_{p i}=z-\left|x_{c i}-x_{p i}\right|$
- For legislative parties without a presidential candidate, $s_{p l}=1-s_{p i} \ldots+s_{p k}$ (for $k$ legislative parties with presidential candidates)


## Models of Party Competion Under Presidentialism

 Concurrent Elections in Plurality Presidential Regimes

Three-Party Proportional Legislative Elections

$$
x_{p 3}=[0,1]
$$



## Models of Party Competion Under Presidentialism

## Concurrent Elections in Plurality Presidential Regimes

Four-Party Proportional Legislative Elections

$$
x_{p 3}=x_{p 4}=[0,1]
$$



## Models of Party Competion Under Presidentialism

Concurrent Elections in Runoff Presidential Regimes


Four-Party Proportional Legislative Elections

$$
x_{c 3}=x_{c 4}=x_{p 3}=x_{p 4}=\left[x_{m}, x_{m}+e\right]
$$



$$
x_{c 1}=x_{c 2}=x_{p 1}=x_{p 2}=\left[x_{m}-e, x_{m}\right]
$$

## Models of Party Competion Under Presidentialism

 Semi-Presidentialism- z: The maximum vote share a legislative party with a candidate in the presidential election can attain in a legislative election when all parties are in equilibirum
(Assuming there are legislative parties without candidates in the presidential election)
- $z=\frac{.875}{\text { number of presidential candidates }}$
- Therefore:
- $s_{p i}=z-\left|\left(x_{c i}-.0625\right)-x_{p i}\right|$, if $x_{p i}=\left[0, x_{c i}-.0625\right)$
- $s_{p i}=z$, if $x_{p i}=\left[x_{c i}-.0625, x_{c i}+.0625\right]$
- $s_{p i}=z-\left|\left(x_{c i}+.0625\right)-x_{p i}\right|$, if $x_{p i}=\left(x_{c i}+.0625,1\right]$


## Models of Party Competion Under Presidentialism

 Semi-Presidentialism- Conversely, the maximum vote share a legislative party without a presidential candidate can receive with all parties in equilibrium is $\frac{.125}{\text { number of legislative parties without presidential candidates }}$
- For every $\delta$ that a party with a presidential candidate is away from their equilibrium position, all other parties receive an additional $\frac{\delta}{\text { number of parties in legislative election- } 1}$ to their vote share.


## Models of Party Competion Under Presidentialism

Concurrent Elections in Plurality Semi-Presidential Regimes
Three-Party Proportional Legislative Elections

$$
x_{p 3}=[0,1]
$$



Four-Party Proportional Legislative Elections

$$
x_{p 3}=x_{p 4}=[0,1]
$$



## Models of Party Competion Under Presidentialism

 Concurrent Elections in Runoff Semi-Presidential Regimes> Three-Party Proportional Legislative Elections

$$
x_{p 1}=x_{p 2}=x_{p 3}=\left[x_{m}-.0625, x_{m}+.0625\right]
$$



Four-Party Proportional Legislative Elections*

$$
x_{p 1}=x_{p 2}=[x_{m}-e-.0625, \overbrace{0}^{\left.x_{m}+.0625\right]} \overbrace{x_{c 1}=x_{c 2}=\underbrace{x_{p 3}=x_{p 4}}_{\left[x_{m}-e, x_{m}\right] \quad x_{c 3}=x_{c 4}=\left[x_{m}, x_{m}+e\right]}=\left[x_{m}-.0625, x_{m}+e+.0625\right]}^{1}
$$

* $x_{p j}$ must be no more than .0625 units away from $x_{c j}$ in order for Party $J$ to receive the maximum vote share possible.


## Models of Party Competion Under Presidentialism

 Non-Concurrent Elections- z: The maximum vote share a legislative party with a candidate in the presidential election can attain in a legislative election when all parties are in equilibirum
- $z=\frac{1-t}{\text { number of presidential candidates }}$, where $t=[0, .1]$
- Therefore:
- $s_{p i}=z-\left|\left(x_{c i}-\frac{t}{2}\right)-x_{p i}\right|$, if $x_{p i}=\left[0, x_{c i}-\frac{t}{2}\right)$
- $s_{p i}=z$, if $x_{p i}=\left[x_{c i}-\frac{t}{2}, x_{c i}+\frac{t}{2}\right]$
- $s_{p i}=z-\left|\left(x_{c i}+\frac{t}{2}\right)-x_{p i}\right|$, if $x_{p i}=\left(x_{c i}+\frac{t}{2}, 1\right]$
- Conversely, the maximum vote share a legislative party without a presidential candidate can receive with all parties in equilibrium is $\frac{t}{\text { number of legislative parties without presidential candidates }}$


## Models of Party Competion Under Presidentialism

Non-Concurrent Elections in Plurality Presidential Regimes

*For all $t$, assuming that $t=.1$, the maximum possible value of $t$.

## Models of Party Competion Under Presidentialism

Non-Concurrent Elections in Plurality Presidential Regimes (Continued)

Four-Party Proportional Legislative Elections

$$
x_{p 1}=x_{p 4}=[0,1]
$$



## Models of Party Competion Under Presidentialism

Non-Concurrent Elections in Runoff Presidential Regimes
Three-Party Proportional Legislative Elections

$$
x_{p 1}=x_{p 2}=x_{p 3}=\left[x_{m}-\frac{t}{2}, x_{m}+\frac{t}{2}\right]
$$



Four-Party Proportional Legislative Elections*

$$
\underbrace{x_{p 1}=}_{0} x_{p 2}=[x_{m}-e \overbrace{x_{c 1}=x_{c 2}=\overbrace{\left[x_{m}-e, x_{m}\right] \quad x_{c 3}=x_{c 4}=\left[x_{m}, x_{m}+e\right]}^{\left.e \frac{t}{2}, x_{m}+\frac{t}{2}\right] \quad x_{p 3}=x_{p 4}=\left[x_{m}-\frac{t}{2}, x_{m}\right.}+e+\frac{t}{2}]}^{1}
$$

[^0]
## Models of Party Competion Under Presidentialism

Non-Concurrent Elections in Semi-Presidential Regimes

- z: The maximum vote share a legislative party with a candidate in the presidential election can attain in a legislative election when all parties are in equilibirum
- $z=\frac{.875-t}{\text { number of presidential candidates }}$
- Therefore:
- $s_{p i}=z-\left|\left(x_{c i}-.0625-\frac{t}{2}\right)-x_{p i}\right|$, if $x_{p i}=\left[0, x_{c i}-.0625-\frac{t}{2}\right)$
- $s_{p i}=z$, if $x_{p i}=\left[x_{c i}-.0625-\frac{t}{2}, x_{c i}+.0625+\frac{t}{2}\right]$
- $s_{p i}=z-\left|\left(x_{c i}+.0625+\frac{t}{2}\right)-x_{p i}\right|$, if $x_{p i}=\left(x_{c i}+.0625+\frac{t}{2}, 1\right]$
- Conversely, the maximum vote share a legislative party without a presidential candidate can receive with all parties in equilibrium is $t+.125$ $\overline{\text { number of legislative parties without presidential candidates }}$


## Models of Party Competion Under Presidentialism

Non-Concurrent Elections in Plurality Semi-Presidential Regimes
Three-Party Proportional Legislative Elections

$$
x_{p 3}=[0,1]
$$



Four-Party Proportional Legislative Elections

$$
x_{p 3}=x_{p 4}=[0,1]
$$



## Models of Party Competion Under Presidentialism

Non-Concurrent Elections in Runoff Semi-Presidential Regimes

$$
\begin{aligned}
& \text { Three-Party Proportional Legislative Elections } \\
& x_{p 1}=x_{p 2}=x_{p 3}=\left[x_{m}-\frac{t}{2}-.0625, x_{m}+\frac{t}{2}+.0625\right] \\
& \text { Four-Party Proportional Legislative Elections } \\
& x_{p 1}=x_{p 2}=\left[x_{m}-e-\frac{t}{2}-.0625, x_{m}+\frac{t}{2}+.0625\right] \quad x_{p 3}=x_{p 4}=\left[x_{m}-\frac{t}{2}-.0625, x_{m}+e+\frac{t}{2}+.0625\right] \\
& {\stackrel{\underbrace{}}{x_{c 1}}=x_{c 2}=\overbrace{\left[x_{m}-e, x_{m}\right] \quad x_{c 3}=x_{c 4}=\left[x_{m}, x_{m}+e\right]}^{1}}_{1}
\end{aligned}
$$

* $x_{p j}$ must be no more than $.0625+\frac{t}{2}$ units away from $x_{c j}$ in order for Party $J$ to receive the maximum vote share possible.


## Recap of Models

## Pure Presidential Regimes

|  | No Presidential Election | Plurality | 3-Candidate Runoff | 4-Candidate Runoff |
| :---: | :---: | :---: | :---: | :---: |
| Majoritarian | Centrist | Centrist | Centrist | Centrist to Non-Centrist |
| 3-Party PR/MMP | No Equilibria | Centrist | Centrist | Centrist to Non-Centrist |
| 4-Party PR/MMP | Non-Centrist | Centrist | Centrist | Centrist to Non-Centrist |
| Non-Concurrent Majoritarian | - | Centrist to Slightly Non-Centrist | Centrist to Slightly Non-Centrist | Centrist to Non-Centrist |
| 3-Party <br> Non-Concurrent PR/MMP | - | Centrist to Slightly <br> Non-Centrist | Centrist to Slightly Non-Centrist | Centrist to Non-Centrist |
| 4-Party <br> Non-Concurrent PR/MMP | - | Centrist to Slightly Non-Centrist | Centrist to Slightly Non-Centrist | Centrist to Non-Centrist |

## Recap of Models

## Semi-Presidential Regimes

|  | No Presidential Election | Plurality | 3-Candidate Runoff | 4-Candidate Runoff |
| :---: | :---: | :---: | :---: | :---: |
| Majoritarian | Centrist | Centrist to Slightly Non-Centrist | Centrist to Slightly Non-Centrist | Centrist to Non-Centrist |
| 3-Party PR/MMP | No Equilibria | Non-Centrist <br> Centrist to Slightly <br> Non-Centrist | Centrist to Slightly <br> Non-Centrist | Non-Centrist <br> Centrist to Non-Centrist |
| 4-Party PR/MMP | Non-Centrist | Centrist to Slightly Non-Centrist | Centrist to Slightly Non-Centrist | Centrist to Non-Centrist |
| Non-Concurrent Majoritarian | - | Centrist to Slightly Non-Centrist | Centrist to Slightly Non-Centrist | Centrist to Non-Centrist |
| 3-Party <br> Non-Concurrent PR/MMP | - | Centrist to Slightly Non-Centrist | Centrist to Slightly Non-Centrist | Centrist to Non-Centrist |
| 4-Party <br> Non-Concurrent PR/MMP | - | Centrist to Slightly Non-Centrist | Centrist to Slightly Non-Centrist | Centrist to Non-Centrist |

## Hypotheses

- Hypothesis 1
- Distance of Parties from Each Other $=$ $\beta_{0}+\beta_{\text {Presidentialism }}+\beta_{\text {Majoritarian Legislative Elections }}+$ $\beta_{\text {Proportional }}$ Legislative Elections
- Distance of Parties from Median Voter $=$ $\beta_{0}+\beta_{\text {Presidentialism }}+\beta_{\text {Majoritarian Legislative Elections }}+$ $\beta_{\text {Proportional Legislative Elections }}$
- In countries where the head of state is directly elected, the major parties will be ideologically closer to each other (and the median voter) than the major parties in regimes where the head of state is not elected.


## Hypotheses

- Hypothesis 2
- Distance of Parties from Each Other $=$ $\beta_{0}+\beta_{\text {Concurrent Legislative Elections }}+$ $\beta_{\text {Non-Concurrent Legislative Elections }}+$ $\beta_{\text {Majoritarian Legislative Elections }}+\beta_{\text {Proportional Legislative Elections }}$
- Distance of Parties from Median Voter $=$ $\beta_{0}+\beta_{\text {Concurrent Legislative Elections }}+$ $\beta_{\text {Non-Concurrent Legislative Elections }}+$ $\beta_{\text {Majoritarian Legislative Elections }}+\beta_{\text {Proportional Legislative Elections }}$
- Among regimes in which the head of state is directly elected, the major parties will be ideologically closer to each other (and the median voter) during years in which the legislative election is concurrent with the presidential election.


## Hypotheses

- Hypothesis 3
- Distance of Parties from Each Other $=$ $\beta_{0}+\beta_{\text {Concurrent Legislative Elections under Plurality Regime }}+$ $\beta_{\text {Non-Concurrent Legislative Elections under Runoff Regime }}+$ $\beta_{\text {Concurrent Legislative Elections under Plurality Regime }}+$ $\beta_{\text {Non-Concurrent Legislative Elections under Runoff Regime }}+$ $\beta_{\text {Majoritarian Legislative Elections }}+\beta_{\text {Proportional Legislative Elections }}$
- Distance of Parties from Median Voter $=$

$$
\beta_{0}+\beta_{\text {Concurrent Legislative Elections under Plurality Regime }}+
$$ $\beta_{\text {Non-Concurrent Legislative Elections under Runoff Regime }}+$ $\beta_{\text {Concurrent Legislative Elections under Plurality Regime }}+$ $\beta_{\text {Non-Concurrent Legislative Elections under Runoff Regime }}+$ $\beta_{\text {Majoritarian Legislative Elections }}+\beta_{\text {Proportional Legislative Elections }}$

- Among regimes in which the head of state is directly elected, the major parties will be ideologically closer to each other (and the median voter) in regimes in which the head of state is elected through a plurality election than in regimes where the head of state is elected in a runoff election.


## Data

- Two sources of data:
- Comparative Manifestos Project (Budge, 2001)
- Median Voter Dataset (DeNeve, 2009)
- Elections during 1940s-2000s
- 440 Legislative Elections Total
- 130 in Presidential Regimes
- 31 Concurrent
- 99 Non-Concurrent
- Limitations in data forced me to combine pure presidentialism and semi-presidentialism into one category.


## Methods

- Dependent variables:
- Distance of the two major parties from each other
- Distance of the two major parties from the median voter
- Major Parties the largest party in terms of vote share on each side of the political spectrum


## Methods

Descriptive Statistics of Dependent Variables

|  | Distance of Parties <br> from Each Other | Distance of Parties <br> from Median Voter |
| :--- | :--- | :--- |
| Mean | 26.95 | 8.49 |
| Median | 22.62 | 4.27 |
| Minimum | 0.12 | 0.01 |
| Maximum | 97.9 | 118.2 |
| Standard Deviation | 19.55 | 12.16 |

## Methods

- Independent variables:
- Level 1 :
- Presidentialism
- Level 2:
- Concurrent Elections
- Non-Concurrent Elections
- Level 3:
- Concurrent Elections with Plurality Presidential Ballot
- Concurrent Elections with Runoff Presidential Ballot
- Non-Concurrent Elections with Plurality Presidential Ballot
- Non-Concurrent Elections with Runoff Presidential Ballot
- (Parliamentarism is the reference group at all levels)


## Methods

- Control variables: Legislative electoral system
- Majoritarian
- Proportional Representation
- Mixed-Member (reference group)
- Models are run using Prais-Winsten time-series estimation with semirobust standard errors, with parallel OLS regressions.


## Results

## Distance of the Major Parties From Each Other



## Results

## Distance of the Major Parties From Each Other


t-test on the two countries indicates $t=3.08 p<0.002$ (one-tailed)

## Results

## Distance of the Major Parties From Each Other


t-test on the two countries indicates $t=4.22 p<0.002$ (one-tailed)

## Results

## Distance of the Major Parties From the Median Voter



## Results

Distance of the Major Parties From the Median Voter

t-test on the two countries indicates $t=2.98 p<0.003$ (one-tailed)

## Results

Distance of the Major Parties From the Median Voter

t-test on the two countries indicates $t=2.45 p<0.022$ (one-tailed)

## Results

Distance of the Major Parties From the Median Voter in France


## Conclusions

- Key findings:
- Presidentialism causes parties to move closer to each other and the median voter.
- Within presidentialism, concurrent elections cause parties to move closer to each other and the median voter.
- Within non-concurrent elections, evidence that parties move closer to each other and the median voter in regimes where the president is elected by plurality vote.
- Models testing the distance of the parties from each other are mostly consistent with OLS counterparts, but less so for the models testing the distance of the parties from the median voter.


## Limitations

- Inability to distinguish between pure and semi-presidential regimes.
- Having a sample that includes more pure presidential regimes (i.e., Latin America) would help with this issue.
- Findings related to ballot used in presidential elections related to disparities in cases when distinguishing between regimes.
- Could be addressed by running a model comparing runoff countries to plurality countries, with concurrent and non-concurrent elections being control dummies.
- No positions of presidential candidates.
- Some surveys ask voters to place locations of parties and presidential candidates on the same ideological space (ANES), but these surveys are few and far-between.


## Appendix

Regression Results Used to Make Figure to Test Distance of the
Major Parties From Each Other

|  | Model 1a | Model 1b | Model 1c |
| :--- | :--- | :--- | :--- |
| Presidentialism | $-6.22(1.95)^{* * *}$ |  |  |
| Concurrent Elections |  | $-8.00(2.69)^{* * *}$ |  |
| Non-Concurrent Elections | $-5.63(2.33)^{* *}$ |  |  |
| Concurrent Elections with Plurality Ballot |  |  | $-6.84(3.04)^{* *}$ |
| Concurrent Elections with Runoff Ballot |  |  | $-13.36(4.70)^{* * *}$ |
| Non-Concurrent Elections with Plurality Ballot |  | $-13.63(4.03)^{* * *}$ |  |
| Non-Concurrent Elections with Runoff Ballot |  |  | $-5.22(2.43)^{* *}$ |
| Majoritarian | $5.19(2.78)^{* *}$ | $5.59(2.92)^{*}$ | $4.18(3.15)$ |
| Proportional | $7.13(2.59)^{* *}$ | $7.10(2.60)^{* * *}$ | $5.88(2.88)^{* *}$ |
| Constant | $22.89(2.44)^{* * *}$ | $22.79(2.47)^{* * *}$ | $23.97(2.67)^{* * *}$ |
| $N$ | 440 | 440 | 440 |
| $F$-statistic of model fit | $6.68^{* * *}$ | $5.66^{* * *}$ | $7.50^{* * *}$ |
| $R^{2}$ | 0.03 | 0.03 | 0.04 |

Cells report Prais-Winsten FGLS parameter estimates with semirobust standard errors in parentheses.
$* p<0.10 ; * * p<0.05 ; * * * p<0.01$ (two-tailed)

## Appendix

Regression Results Used to Make Figure to Test Distance of the Major Parties From the Median Voter

|  | Model 2a | Model 2b | Model 2c |
| :--- | :--- | :--- | :--- |
| Presidentialism | $-2.09(1.17)^{*}$ |  |  |
| Concurrent Elections |  | $-2.64(1.09)^{* *}$ |  |
| Non-Concurrent Elections | $-1.91(1.45)$ | $-2.19(1.10)^{* *}$ |  |
| Concurrent Elections with Plurality Ballot |  |  | $-4.74(3.02)$ |
| Concurrent Elections with Runoff Ballot |  |  | $-4.82(1.26)^{* * *}$ |
| Non-Concurrent Elections with Plurality Ballot |  | $-1.76(1.52)$ |  |
| Non-Concurrent Elections with Runoff Ballot |  |  | $1.72(1.39)$ |
| Majoritarian | $2.12(1.20)^{*}$ | $2.24(1.30)^{*}$ | $4.65(1.44)^{* * *}$ |
| Proportional | $5.11(1.30)^{* * *}$ | $5.10(1.30)^{* * *}$ | $5.73(1.20)^{* * *}$ |
| Constant | $5.33(1.10)^{* * *}$ | $5.30(1.13)^{* * *}$ | 440 |
| $N$ | 440 | 440 | $21.29^{* * *}$ |
| $F$-statistic of model fit | $6.38^{* * *}$ | $5.35^{* * *}$ | 0.03 |

Cells report Prais-Winsten FGLS parameter estimates with semirobust standard errors in parentheses. $* p<0.10 ; * * p<0.05 ; * * * p<0.01$ (two-tailed)

## Appendix

## OLS Results to Test Distance of Major Parties From Other

|  | Model 1a | Model 1b | Model 1c |
| :--- | :--- | :--- | :--- |
| Presidentialism | $-6.22(2.02)^{* * *}$ |  |  |
| Concurrent Elections |  | $-8.00(3.76)^{* *}$ |  |
| Non-Concurrent Elections |  | $-5.63(2.29)^{* *}$ |  |
| Concurrent Elections with Plurality Ballot |  |  | $-6.84(4.15)^{*}$ |
| Concurrent Elections with Runoff Ballot |  | $-13.36(8.74)$ |  |
| Non-Concurrent Elections with Plurality Ballot |  | $-13.63(8.54)$ |  |
| Non-Concurrent Elections with Runoff Ballot |  |  | $-5.22(2.35)^{* *}$ |
| Majoritarian | $5.19(3.45)^{*}$ | $5.59(3.52)$ | $4.18(3.73)$ |
| Proportional | $7.13(3.20)^{* *}$ | $7.10(3.20)^{* *}$ | $5.88(3.43)^{*}$ |
| Constant | $22.89(3.06)^{* * *}$ | $22.79(3.07)^{* * *}$ | $23.97(3.27)^{* * *}$ |
| $N$ | 440 | 440 | 440 |
| $F$-statistic of model fit | $4.97^{* * *}$ | $3.80^{* * *}$ | $2.76^{* *}$ |
| $R^{2}$ | 0.03 | 0.03 | 0.04 |

Cells report OLS parameter estimates with standard errors in parentheses.
$* p<0.10 ; * * p<0.05 ; * * * p<0.01$ (two-tailed)

## Appendix

OLS Results to Test Distance of Major Parties From the Median Voter

|  | Model 1a | Model 1b | Model 1c |
| :--- | :--- | :--- | :--- |
| Presidentialism | $-2.09(1.26)^{*}$ |  |  |
| Concurrent Elections |  | $-2.64(2.35)$ |  |
| Non-Concurrent Elections | $-1.91(1.43)$ | $-2.19(2.59)$ |  |
| Concurrent Elections with Plurality Ballot |  |  | $-4.74(5.46)$ |
| Concurrent Elections with Runoff Ballot |  |  | $-4.82(5.33)$ |
| Non-Concurrent Elections with Plurality Ballot |  | $-1.76(1.47)$ |  |
| Non-Concurrent Elections with Runoff Ballot |  |  | $1.72(2.33)$ |
| Majoritarian | $2.12(2.15)$ | $2.24(2.20)$ | $4.65(2.15)^{* *}$ |
| Proportional | $5.11(2.00)^{* *}$ | $5.10(2.00)^{* *}$ | $5.73(2.04)^{* * *}$ |
| Constant | $5.33(1.91)^{* * *}$ | $5.30(1.92)^{* * *}$ | 440 |
| $N$ | 440 | 440 | $2.15^{* *}$ |
| $F$-statistic of model fit | $4.14^{* * *}$ | $3.12^{* *}$ | 0.03 |

Cells report OLS parameter estimates with standard errors in parentheses.
$* p<0.10 ; * * p<0.05 ; * * * p<0.01$ (two-tailed)


[^0]:    * $x_{p j}$ must be no more than $\frac{t}{2}$ units away from $x_{c j}$ in order for Party $J$ to receive the maximum vote share possible.

