# How Do General Election Incentives Affect the Visible and Invisible Primary?[*]

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October 27, 2021

**Abstract:** Previous research finds that nominating more centrist candidates increases vote share and win probability at the general. Yet party primary elections often nominate non-centrist candidates, likely connected to political polarization in the United States. We develop a model of choice in nomination politics that shows when and how actors respond to incentives of the general election. We then combine 200 million contribution records with data on 22,400 candidates in 7,100 House primary elections from 1980 through 2016. We find that potential candidates and primary voters respond to general election incentives but that contributors and the winnowing process of the invisible primary do not, suggesting that actors in the invisible primary either place higher value on in-party candidate ideology or have different beliefs about the general election. Our evidence adds to a body of research that suggests primary voters are a larger moderating force than elites in American party politics.

**Keywords**: Primary elections; invisible primary; political coordination; political polarization; political parties; difference-in-differences.

Conventional wisdom holds that primary elections push the Republican party to the ideological right and the Democratic party to the ideological left. But political science evidence shows that extreme candidates are less successful in general elections (e.g., Ansolabehere, Snyder, and Stewart 2001; Canes-Wrone, Brady, and Cogan 2002; Hall 2015). Returns-to-moderation at the general election mean that actors in nomination contests face a trade off. They must decide whether to support a less centrist candidate and incur an increased risk that the other party's candidate wins the general election or support a more centrist candidate to increase their chances of winning the general election but at the cost of less preferred policy views (e.g., Aranson and Ordeshook 1972; Coleman 1971, 1972).

Some political elites, however, have expressed skepticism that there are returns-to-moderation at the general election. In the 2020 Democratic presidential primary, candidate Pete Buttigieg said, "It's true that if we embrace a far left agenda, they're going to say we're a bunch of crazy socialists. If we embrace a conservative agenda, you know what they're going to do? They're going to say we're a bunch of crazy socialists. Let's stand up for the right policy, go up there and defend it. (Basu 2019)" Evidence from Broockman et al. (2021) suggests local party officials agree with Buttigieg. Local political elites they surveyed reported there is no trade off between ideological purity and chances at the general election.

The choices made by political actors across thousands of primary elections determine the candidates nominated for office and, subsequently, the extent of political polarization between the parties in Congress and state legislatures. How much more these actors value extreme candidates over moderates and what they believe about the relative chances of each at the general election determines which candidate they support. While political scientists have offered evidence that actors in primary elections prefer more extreme candidates (e.g., Brady, Han, and Pope 2007; Hill 2015; Hill and Tausanovitch 2018; Rogowski and Langella 2015), we have to date much less evidence on the beliefs of primary actors about relative chances at the general election. It is the combination of the two that determines political choices.

In this article we study how beliefs about returns-to-moderation at the general election influence

the behavior of political actors in nomination politics. We start with a model of the choice faced by potential candidates, contributors, activists, and primary voters when deciding whom to nominate to face a known opponent of the other party. While most models of nomination politics consider two parties making nomination choices concurrently in anticipation of the general election, we model a setting where one party knows their general election opponent during the nomination contest. In practice, the vast majority of U.S. House districts have one candidate (the incumbent) known with near certainty (incumbents rarely lose primary contests, see e.g., Boatright 2013). This means the actors in the out-party primary know their general election opponent and must decide which candidate to support in anticipation of facing the incumbent at the general.

Our model shows that the general election has a moderating effect on primary elections only under certain combinations of beliefs and preferences. A moderate candidate gains support only if the voter, contributor, or activist believes the return-to-moderation is large, if their preference for an extreme nominee over a moderate nominee is not too great, or at some combination of the two.

In other words, the response of actors in primary elections to a more moderate or extreme opponent is ambiguous. While some political actors might always support an extremist or a moderate regardless of the opponent, the support of others might be contingent.

Political actors whose support in the primary is contingent, however, do not all follow the same strategy. Our model shows that while some choose to match the extremity of their opponent – supporting a moderate to face a moderate opponent and an extremist to face an extremist opponent – others choose to zag the extremity of their opponent – supporting an extremist against a moderate and a moderate against an extremist.

Actors who match the extremity of their opponent do so because, even though they would prefer that an extremist of their party represented them, an extremist's lower chances of winning the general election against a moderate opponent lead them to support a moderate to improve their chances at the general. When their opponent is an extremist, however, they believe they have a higher chance of winning the general election with their extremist and so are willing to take the gamble of nominating an extremist from their party.

Actors who zag the extremity of their opponent do so because, even though their extreme nominee is less likely to win the general election against a moderate opponent, they are willing to take the gamble on the extremist. If they win the general election, they get their more preferred representative. If they lose the general, the winner is a moderate from the other party. But if the incumbent is an extremist, the disutility of the incumbent winning reelection is large enough to induce actors who zag to support a moderate from their party in the primary.

Thus, our model shows that there can be a paradox of moderation. Even with a general electorate that prefers centrist candidates and actors in primary politics who know the general electorate prefers centrists, a centrist candidate on one side can cause the other party to support an extremist.

With model results in hand, we can draw inferences about the effect of the general election using empirical observation of primary actor response to moderate versus extreme incumbents. If we observe matching behavior, we can infer actors believe there are returns-to-moderation and that they do not have much greater disutility for an extreme versus moderate incumbent from the other party. In contrast, if we observe zagging behavior we can infer actors believe there are returns-to-moderation but that they do have much greater disutility to the other party's extremist. If we observe no response, we are less certain of its cause. It could be that the political actors do not believe there are returns-to-moderation. It could, alternatively, be that the actors' valuation of ideology dominates general election returns-to-moderation.

We gather new evidence to estimate how much incentives of the general election have influenced the choices of political actors in U.S. House primary elections. We marshal data on candidate entry, campaign finance, and election results for nearly all House primary and general elections from 1980 through 2016. We use 200 million individual contribution records to estimate primary candidate ideology for thousands of House candidates and difference-in-differences (DID) research designs to estimate how actors in party nominations respond to the ideology of their general election opponent.

We find that voters in primary elections respond to general election incentives with a matching strategy. Primary voters tend to support a more moderate candidate to face a more moderate oppo-

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nent and a more extremist candidate to face a more extremist opponent. This suggests that primary voters believe there are returns-to-moderation and that they do not dislike extremist opponents relative to moderate opponents. This implies that general elections do induce a moderating influence on the choices of primary election voters.

Prior to primary election day in the *invisible primary*, however, we find that only potential candidates respond to the general election incentive. We estimate that, on average, about one additional out-party congressional candidate enters the primary contest in response to an incumbent two standard deviations more centrist. We do not find evidence that other actors in the invisible primary respond to the general election incentive. We find no evidence that incumbent ideology influences patterns of primary election campaign finance nor the number of candidates receiving votes in the primary election (in contrast to filing paperwork with the FEC as a candidate). This suggests that the dynamics of the invisible primary do not materially change with different incentives implied by the general election opponent.

We also estimate if our results vary by district competitiveness (Hirano and Snyder 2019), party of primary, or nationalized versus pre-nationalized era (Bonica and Cox 2018). We do not find strong evidence of heterogeneity by any of these factors.

Our model and results speak to research on political polarization, campaign finance, nomination politics, candidate ambition, and voting behavior. Combining our evidence with our model indicates that ambitious candidates and voters in primary elections have a greater moderating influence on political polarization than do contributors and other political activists involved in candidate nominations. This result is consistent with the survey evidence of Broockman et al. (2021) that local party elites do not believe the general election opponent should influence their nomination choices. Our result also reinforces other evidence that campaign contributors behave more with expressive than instrumental motivation (e.g., Francia et al. 2003; Hill and Huber 2017; Magleby, Goodliffe, and Olsen 2018).

Second, we show that the general election returns-to-moderation do bind on choices in primary elections but that the effect is limited to only some actors. Although the general election can induce

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primary voters to support more centrist candidates and induce potential candidates to throw their hats into the ring, primary voters cannot nominate centrists if the invisible primary forces them to drop out of the contest by denying funds, endorsements, or support. This finding suggests need for future research on the dynamics of the invisible primary in congressional elections and on the different beliefs and preferences of primary voters versus political elites.

# 1 Strategy in primary elections

The political science of elections suggests important differences between voters in primary and general elections. Those who participate in party primary elections have preferences out of the mainstream, e.g., divergent from the median voter (e.g., Brady, Han, and Pope 2007; Hill 2015; Hill and Tausanovitch 2018; Rogowski and Langella 2015). At the same time, the political science of general elections finds returns-to-moderation. More centrist candidates win more general election votes and are more likely elected than more extreme candidates (e.g., Ansolabehere, Snyder, and Stewart 2001; Canes-Wrone, Brady, and Cogan 2002; Canes-Wrone and Kistner 2021; Hall 2015; Tausanovitch and Warshaw 2018).[1] Returns-to-moderation are consistent with estimates of the policy views of the full American population, who appear to tend centrist rather than extreme (Clinton 2006; Hill and Tausanovitch 2015).

For example, Ansolabehere, Snyder, and Stewart (2001) show that the relative centrism of the two major-party candidates predicts election results (their Table 3, Appendix B). They estimate that typical variation in the midpoint between the Democratic and Republican candidate in House elections is worth up to three percentage points in vote share. This shows that actors who want to maximize chances at the general election ought to account for the ideology of both candidates.

To date, political science lacks extensive empirical evidence on how actors in primary elections respond to the policy platform of their opponent. Hall and Thompson (2018) show that *general* electorates respond to nominee policy ideology. They find that a less centrist opponent causes voters who identify with the other party to increase turnout at the general. Hall (2015) shows that

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1. Tausanovitch and Warshaw also find that voters respond to the perceived ideological extremity of the party coalitions rather than the individual candidates, which would complicate the incentives faced by primary voters.

the magnitude of this general election response is substantively large. When an extreme candidate narrowly wins a primary nomination, the party's expected vote share in the general election falls by around 10 percentage points compared to if the more centrist candidate had been nominated. This decrease in vote share decreases the chance that party wins the seat by 35 to 54 percentage points.

Evidence also suggests that other features of primary elections can influence the general election outcome. Fouirnaies and Hall (2020), using data from runoff elections in the American south, estimate that divisive competition in primary elections leads to worse performance in the general election. Going to a runoff election decreases that party's chance of winning the general by around 21 percentage points.

Scholars have also examined when and why candidates choose to enter a primary contest as a function of local and national conditions. Powell (1982) argues that candidates tend to enter primaries when their policy views match those of their constituents and Thomsen (2014) suggests that moderate candidates are discouraged from running when they expect to be outside the usual ideological range of a party's candidates.

The existing research shows that the nomination contest has consequences at the general election and that electoral context influences candidate entry. What is less clear is how much, when, and in what direction different general election incentives influence the choices of potential candidates, the choices of campaign contributors to become involved in primary contests, the choices of activists and volunteers to support one candidate or another in primary contests, or the vote choices of those who turn out in primary elections.

## 2   A model of choice for actors in nomination politics

We develop a model of the choices that face actors in nomination politics to explain how and when the incentives of the general election might influence nomination politics. We model the choice for an out-party who nominates a candidate to run against a known incumbent in the upcoming election, imagining the setting of most U.S. House contests. The choice facing each actor in

primary election politics is: knowing what they know about the incumbent, which candidate from their own party should they support?

The parameters of the model are:

- $X_m, X_e, Y_m, Y_e \equiv$ profiles of the incumbent (X) and challenger (Y) candidates, moderate (m) or extreme (e).

- $p, q \equiv$ political actor beliefs about the probabilities that the challenger party wins the general election if they nominate an extremist ($Y_e$) against the general election opponent, p if that opponent is moderate $X_m$ and q if extreme $X_e$.

- $\delta_p, \delta_q \equiv$ political actor beliefs about additional returns-to-moderation when the challenger party nominates a moderate instead of an extremist. The probability of winning the general election is $p + \delta_p$ nominating a moderate against a moderate incumbent and $q + \delta_q$ when nominating a moderate against an extreme incumbent. Note that either $\delta_p$ or $\delta_q$ could be zero if political actors believe there are no returns-to-moderation (Broockman et al. 2021).

- $x_m, x_e, y_m, y_e \equiv$ the actor's utility for each candidate profile with $x_e < x_m < y_m < y_e$.

Each actor might have different utilities for the candidates and different beliefs about election probabilities and, so, different actors might support different candidates in the primary. Against a moderate incumbent $X_m$, an actor's expected utilities for each challenger candidate are

$$U(Y_e|X_m) = py_e + (1-p)x_m, \text{ and}$$

$$U(Y_m|X_m) = (p + \delta_p)y_m + (1-p-\delta_p)x_m,$$

and against an extreme incumbent $X_e$

$$U(Y_e|X_e) = qy_e + (1-q)x_e, \text{ and}$$

$$U(Y_m|X_e) = (q + \delta_q)y_m + (1-q-\delta_q)x_e.$$

These expected utilities make immediately clear the trade offs facing out-party political actors. Are the returns-to-moderation $\delta_p$ and $\delta_q$ large enough to offset the preference for the more extreme candidate of their party $Y_e$ over the more moderate candidate of their party $Y_m$? Alternatively stated, do they prefer the lottery in the first line with their extremist or the lottery in the second line with their moderate?[2]

The model allows a formal statement of this trade off, which we present in Propositions 1 and 2.

**Proposition 1** (Nomination strategy against a moderate incumbent). *An actor in primary politics supports the extreme candidate of their party against a moderate incumbent if and only if*

$$\delta_p/p \leq (y_e - y_m)/(y_m - x_m).$$

*Proof.* See Appendix Section A. ▢

The candidate supported depends upon comparison of two quantities. On the left is the proportional increase in general election probability from nominating a moderate over an extremist. For example, if the extremist's probability at the general election is 0.4 and the moderate's 0.6, the proportional increase is 0.2/0.4 = 50 percent. The righthand side is a fraction measuring the actor's relative preference for extremity. The numerator is the difference in utility between the party extremist and the party moderate. The denominator is the difference in utility between the party moderate and the incumbent moderate. For example, if their utility to the party extremist, party moderate, and opposing moderate are 5, 4, and 2, the ratio is (5-4)/(4-2) = 50 percent.

The actor compares the increment to election probability they gain from nominating the moderate to their relative preference for extremity. Naturally, the actor more likely supports the extremist the more likely the party extremist is to win the general election (increasing the denominator on the lefthand side), the less likely the moderate challenger is to win the general election (decreasing

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2. We have elected the simplicity of a non-parametric model, but one could alternatively model the choice in continuous space such as in a spatial model. For example, with quadratic utility and win probability following a normal distribution, the actor would trade off decreasing quadratic utility moving the challenger away from their ideal point for increasing win probability from a midpoint between a more centrist nominee and the incumbent.

the numerator on the lefthand side), the more the actor values their extremist candidate (increasing the numerator on the righthand side), and the less the actor values the moderate candidate of their own party (decreasing the numerator and increasing the denominator on the righthand side).

Proposition 1 also makes clear that the incumbent is relevant to the primary actor's choice. The greater the utility $x_m$ from the incumbent (decreasing the denominator on the righthand side), the more likely the actor is to support the extremist from their party, all else equal.

This bears repeating. The more that actors in nomination politics appreciate a moderate of the other party, the more likely they are to support an extremist in their primary election. This is a paradox of moderation where a more centrist candidate on one side can cause a more extremist candidate on the other, all else equal.

The strategic considerations facing a primary actor against an extremist incumbent parallel those above with the substitution of the parameters relevant to the extremist incumbent, summarized in Proposition 2.

**Proposition 2** (Nomination strategy against a extremist incumbent)**.** *An actor in primary politics supports the extreme candidate of their party against an extremist incumbent if and only if*

$$\delta_q/q \leq (y_e - y_m)/(y_m - x_e).$$

*Proof.* See Appendix Section A. □

The actor again compares the increment to election probability they gain from nominating the moderate to their relative preference for extremity, this time against the baseline of preference from the extreme incumbent $X_e$. When the actor expects a greater return in election probability from nominating the moderate than their relative preference for their party extremist over their party moderate, they support the moderate.

# 3   Connecting model to empirical results

The results in Propositions 1 and 2 allow us to draw inferences about the preferences and beliefs of actors in nomination politics from empirical observation of their choices. Actors might follow one of four strategy pairs against incumbents of different ideologies. They might match the ideology of the opponent (support moderate versus moderate and extremist versus extremist), zag the ideology of the opponent (support extremist versus moderate and moderate versus extremist), always support the moderate, or always support the extremist.

Actors in nomination politics match the ideology of the incumbent under the conditions of Proposition 3:

**Proposition 3** (Match ideology of the incumbent). *An actor in primary politics supports a moderate candidate versus a moderate incumbent and extremist candidate versus an extremist incumbent when*

$$(y_e - y_m)/(y_m - x_m) \leq \delta_p/p, \text{ and}$$
$$\delta_q/q \leq (y_e - y_m)/(y_m - x_e), \text{ and}$$
$$(y_m - x_e)\delta_q/q \leq (y_m - x_m)\delta_p/p.$$

*Proof.* See Appendix Section A. □

The first two inequalities are the conditions necessary for a matching strategy per Propositions 1 and 2. The third inequality describes the condition necessary such that both of the first two inequalities to hold. It says that the actor's difference in preference for their party moderate over the other party extremist weighted by the returns-to-moderation against the extremist must be less than the actor's difference in preference for their party moderate over the other party moderate weighted by the returns-to-moderation against the moderate. This can obtain if the other party's extremist is particularly distasteful relative to the other party's moderate or if the returns-to-moderation against the other party's moderate are greater than the returns-to-moderation against the other party's ex-

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tremist, or both.

In sum, Proposition 3 shows that there are three necessary conditions for actors in nomination politics to support a candidate that matches the extremity of the incumbent:

1. Against a moderate incumbent, the returns-to-moderation must be greater than their preference for the extremist over the moderate of their party relative to their preference for the moderate of their party over a moderate incumbent.

2. Against an extreme incumbent, their preference for the extremist over the moderate of their party relative to their preference for the moderate of their party must be greater than the returns-to-moderation.

3. The political actor much prefers the other party's moderate to the other party's extremist or the returns-to-moderation against a moderate incumbent are greater than the returns-to-moderation against an extremist incumbent.

The second strategy, zagging the ideology of the incumbent, has the opposite requirements of the matching strategy (see Proposition A1). To zag, the actor's difference in preference for their party moderate over the other party moderate weighted by the returns-to-moderation against the moderate must be less than the actor's difference in preference for their party moderate over the other party extremist weighted by the returns-to-moderation against the extremist. This can obtain if the other party's extremist is no more distasteful to the actor than the other party's moderate or if the returns-to-moderation against the other party's extremist are greater than the returns-to-moderation against the other party's moderate, or both.

Finally, actors in nomination politics always support extreme candidates for nomination if they believe the returns-to-moderation are at or nearly zero, or if their utility for their party moderate is very small, or if their utility to a moderate or disutility to an extreme incumbent is large (see Proposition A2). Actors always support moderate candidates for nomination if they both value their party moderate sufficiently more than the incumbent moderate, believe returns-to-moderation

are sufficiently greater than zero, and do not gain too much utility from a moderate incumbent (Proposition A2).

The model allows us to draw conclusions about primary actor preferences and beliefs from observation of how the choices of each respond to the ideology of the incumbent:

**Matching extremity** If primary actors support a moderate to face a moderate incumbent and an extremist to face an extremist incumbent it means the electoral benefits to nominating a moderate are not of huge magnitude and that the primary actors do not like the moderate incumbent of the other party close to as much as they do that of their own moderate candidate.

**Zagging extremity** If primary actors support a moderate to face an extremist incumbent and an extremist to face a moderate incumbent, it means they believe the electoral benefit to nominating a moderate is large and that they do not dislike the other party's moderate too much.

**No response to incumbent ideology** If primary actors do not respond to the ideology of their incumbent, it means either that they do not believe there are general election benefits to nominating a moderate, or that they have effectively no greater preference for the moderate candidate from their party than for the incumbent of the other party, or that the returns-to-moderation are so large that the small probability an extremist would defeat the incumbent does not outweigh the more likely gains of their party moderate over the incumbent.

## 4  Research designs and data

To inform the model and understand how general elections influence decision-making in primary election politics on the ground, we use a difference-in-differences (DID) design. When out-party primary actors face different incumbents in two elections, their strategic considerations diverge to the extent the incumbents differ in characteristics relevant to electoral choice. By holding fixed other elements but allowing incumbent ideology to change, we can examine how actors in nomination politics react to different incentives created by the general election.

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Our DID specification is

$$y_{ijt} = \alpha_{ij} + \delta_{jt} + \beta(\text{Incumbent centrism})_{ijt} + \varepsilon_{ijt}, \tag{1}$$

where y is a behavioral outcome by actors in the primary politics of district i, out-party j, year t, $\alpha_{ij}$ is a party-district-districting cycle fixed effect, $\delta_{jt}$ is a party-year fixed effect, $\beta$ is our coefficient of interest mapping incumbent centrism into the behavior of actors in out-party primary ijt, and $\varepsilon_{ijt}$ is a random error. We define districting cycle fixed effects by inter-censal years, e.g., the years 1992-2000 are one districting cycle.

The DID design controls for two potential sources of unobserved heterogeneity. First, each congressional district has party primary actors with likely-correlated ideological proclivities and political behaviors. The party-district-districting cycle fixed effect accounts for these average proclivities as well as any other fixed characteristics of the district in that districting cycle.

Second, the party-year fixed effects account for election-specific factors that might influence incumbent turnover or the behavior of out-party actors. For example, if there are commonly held expectations (Cox 1997) that a year will be "good for Democrats," we might see more retirements by incumbent Republicans *and* more Democratic contestants in primary elections. The party-year fixed effects account for any party-election average influences including wave elections and differences between presidential and midterm elections.

The party-year fixed effects also control for over time variation in factors that impact all districts such as polarization of parties or the nationalization of elections.

To account for district-specific trends in party support – which might be related to incumbent retirements and replacements – we include as a covariate two-party presidential vote in the congressional district; contemporaneous in presidential years and two-year prior presidential vote for midterm years. This variable offers statistical control for district-specific trends in party support.

## 4.1 Data and measurement

To evaluate the responsiveness of actors in nomination contests to the policy ideology of their opponent, we compile data from U.S. House elections. Our analysis considers behavior and consequence in congressional primaries by three classes of actors. First, we consider the actions of potential candidates. We use the Bonica (2013, DIME) compilation of Federal Election Commission (FEC) campaign finance records to count the number of candidates who file with the FEC (whether or not they raised money) in each party-district-election. We imagine that this variable measures the result of strategic calculations by ambitious challengers (Jacobson and Kernell 1983).

Second, we investigate how the parties themselves behave. For each party and election, we count the number of "party contributors" (Hassell 2015) who gave to any primary candidate in the district prior to the primary election date. We classify party contributors as those who gave to one or more of the Democratic National Committee, Republican National Committee, or any of the four party campaign committees for the House and Senate in that cycle. These donors are those who are most likely to be involved with the political party at the local level and likely to provide additional support in the form of volunteering or other resources (Hassell 2015). We imagine that this variable approximates the result of strategic calculations by local party elites, similar to those interviewed by Broockman et al. (2021).

We measure the net consequence of the invisible primary with an indicator variable taking the value one if more than one candidate received votes in the primary election (Hirano and Snyder 2019, data extended with Federal Election Commission results) and zero if only one candidate received votes. We imagine that this variable measures the winnowing effect of the invisible primary; if the party is active we should see fewer candidates in the primary receiving votes as candidates drop out and decline to contest on election day.

Finally we look at voter choices in primary elections. To do so, we measure the ideological profile of the eventual nominee of the party primary. We construct an estimate of each primary candidate's policy ideology using contributions made in the primary election cycle. Following the procedure of Hall (2015), we first impute to each contributor a pseudo-NOMINATE score

as the dollar-weighted average of the NOMINATE scores of congressional candidates to which they contribute in that election cycle. Second, for each primary candidate we compute a pseudo-NOMINATE score as the dollar-weighted average of the pseudo-NOMINATE scores of their pre-primary contributors. Constructing a pseudo-NOMINATE score for each primary candidate allows us to compare ideology to the incumbent on a roughly common scale, where our explanatory variable of congressional incumbent ideology is the DW-NOMINATE first-dimension estimate downloaded from voteview.com (Carroll et al. 2009).

## 5   Results: U.S. House

We present the results of estimating Equation 1 on the U.S. House data in Table 1. Each column presents coefficient estimates for the response by different primary actors. We cluster standard errors on the party-districting cycle-district.

To ease comparison, we standardize incumbent NOMINATE scores so that increasing values indicate the incumbent is increasingly centrist by multiplying Republican incumbent scores by negative one. We also divide this centrism score by two standard deviations measured within the sample of that column's specification.

Column one of Table 1 presents the estimated effect of incumbent centrism on the number of candidates who filed to run in the out-party primary in that cycle. We find that an incumbent two standard deviations more centrist induces one additional out-party challenger in about eight of every ten contests. Ambitious candidates for office are somewhat more likely to run when the incumbent in their district is more centrist.

Columns two and three present the effect of incumbent centrism on the (log) number of party-connected contributors and the winnowing effect of the invisible primary. Although the point estimates are suggestive, neither result is statistically significant. Actors in the invisible primary do not respond as consistently to incumbent centrism as do potential candidates and voters (column four).

Column four estimates voter response to incumbent ideology. In order to distinguish pref-

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Table 1: Response by primary actors to opponent centrism

| | (1) Number candidates in primary filed with FEC | (2) Log number campaign committee-connected contributors | (3) More than one candidate receives votes in primary | (4) Nominee centrism (standardized) |
|---|---|---|---|---|
| Incumbent centrism (standardized) | 0.786* | 0.272 | -0.100 | 0.045** |
| | (0.465) | (0.288) | (0.139) | (0.021) |
| Out-party presidential vote share in district | 0.598 | 0.916 | -0.074 | -0.037 |
| | (1.469) | (1.174) | (0.519) | (0.082) |
| | | | | |
| Observations | 2,793 | 2,751 | 3,440 | 741 |
| R-squared | 0.668 | 0.845 | 0.572 | 0.954 |
| Year-party FEs | ✓ | ✓ | ✓ | ✓ |
| Party-districting cycle-district FEs | ✓ | ✓ | ✓ | ✓ |
| Response variable standard deviation | | | | .15 |

** $p<0.05$, * $p<0.1$

*Note: Standardized incumbent centrism scores are NOMINATE score divided by two standard deviations within that estimation sample. All scores recoded so that increasing indicates more centrist.*

erences of primary voters from the effects of the invisible primary, we limit analysis to primary elections where at least two candidates remained on the ballot. That is, we want to observe how voters respond when given choice about whom to nominate.

Voters respond to a more centrist incumbent by nominating a more centrist challenger. The average effect is of smaller magnitude where an incumbent two standard deviations more centrist causes a nominee 0.05 standard deviations more centrist, on average.

The result in column four indicates that primary voters follow a matching rather than a zagging strategy. Instead, primary voters match the ideology of their opponent by nominating a more moderate challenger when the incumbent is more moderate and a less moderate challenger when the incumbent is less moderate.

The results of the DID analysis suggest that the general election incentives of incumbent ideology impact the choices of some actors in nomination politics but not others. The pool of potential challengers responds to a more centrist incumbent by being somewhat more likely to enter the primary contest. Voters at the primary election modestly match the ideology of the incumbent. In contrast, neither the participation of party-connected contributors in nomination politics nor the winnowing process of the invisible primary change in response to incumbents of different ideologies.

In Table A1, we present DID results on nominee centrism measuring centrism exclusively with contributions made prior to the primary date. We find a large effect of incumbent centrism on pre-primary ideology and otherwise-similar interaction effects.

## 6  Variability in response to incumbent ideology by district competitiveness

Hirano and Snyder (2019) argue general election competitiveness drives primary behavior. Table 2 estimates variation in responsiveness to incumbent ideology by competitiveness of the general election. We follow Hirano and Snyder (2019, p 38) and define a district competitive if the previous election vote margin was less than 15 percent, which is about 23 percent of the contests in our sample. We interact incumbent centrism with a competitive indicator.

Table 2: Response by primary actors to incumbent centrism, by district competitiveness

|  | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
|  | Number candidates in primary filed with FEC | Log number campaign committee-connected contributors | More than one candidate receives votes in primary | Nominee centrism (standardized) |
| Incumbent centrism (standardized) | 0.634 | 0.297 | -0.088 | 0.047** |
|  | (0.479) | (0.306) | (0.141) | (0.021) |
| Incumbent centrism*Competitive | 0.349 | 0.014 | -0.014 | -0.002 |
|  | (0.217) | (0.144) | (0.060) | (0.008) |
| Out-party presidential vote share in district | 0.592 | 0.740 | -0.085 | -0.067 |
|  | (1.492) | (1.190) | (0.525) | (0.087) |
| Out-party presidential share*Competitive | 0.873 | 0.169 | -0.008 | 0.002 |
|  | (0.561) | (0.332) | (0.163) | (0.017) |
| Observations | 2,757 | 2,713 | 3,400 | 727 |
| R-squared | 0.668 | 0.848 | 0.571 | 0.958 |
| Party-districting cycle-district FEs | ✓ | ✓ | ✓ | ✓ |
| Year-party FEs | ✓ | ✓ | ✓ | ✓ |
| Response variable standard deviation |  |  |  | .15 |

** p<0.05, * p<0.1

*Note: Standardized incumbent centrism scores are NOMINATE score divided by two standard deviations within that estimation sample. All scores recoded so that increasing indicates more centrist.*

We find little evidence that general election competitiveness drives results. None of the interaction terms are statistically distinct from zero at standard levels and the point estimates are of small magnitude except for the number of candidates filing with the FEC (column one). There the point estimate suggests competitive districts increase the rate of new entrants by around 50 percent.

That we do not find general election competitiveness of great influence on the behaviors of primary actors connects to our model results. The model says actors in nomination politics respond to incumbents of different ideologies either because of change in general election probabilities or because of differences in their utility for centrist versus extreme opponents. That we do not find variability in behavior by general election competitiveness suggests that the variability we do see – in the centrism of the challenger candidate voters select – is driven by the relative disutility of a centrist versus extremist opponent rather than by differential returns-to-moderation against a centrist versus extremist opponent.

## 7 Variability in response to incumbent ideology by party

In Table 3 we estimate how the effects of incumbent centrism varies by political party. We interact centrism with an indicator for the observation being a Democratic primary (and thus a Republican incumbent).

We do not find statistically significant differences by party. The point estimates, however, are of important substantive magnitudes. They suggest that the candidate entry effect is driven more by Republican potential challengers than by Democratic (column one, the negative point estimate on the Democratic interaction) and that, to the extent party-connected contributors respond, Democratic contributors are more responsive than Republican (column two, the point estimate on the interaction is an order of magnitude larger than the direct effect). The winnowing point estimate (column three) suggests slightly larger magnitude effects of Republican incumbent centrism on Democratic invisible primaries. Voter response (column four) appears to be driven by Republican nomination politics with the interaction point estimate fully cancelling out the positive direct effect. All of these point estimates have large standard errors and so should be interpreted with

Table 3: Response by primary actors to incumbent centrism, by party

| | (1)<br>Number<br>candidates<br>in primary<br>filed with FEC | (2)<br>Log number<br>campaign<br>committee-<br>connected<br>contributors | (3)<br>More than<br>one candidate<br>receives votes<br>in primary | (4)<br><br>Nominee<br>centrism<br>(standardized) |
|---|---|---|---|---|
| Incumbent centrism (standardized) | 1.143 | 0.052 | -0.088 | 0.047** |
| | (0.816) | (0.274) | (0.185) | (0.022) |
| Incumbent centrism*Democratic primary | -0.617 | 0.468 | -0.023 | -0.055 |
| | (0.952) | (0.589) | (0.263) | (0.042) |
| Out-party presidential vote share in district | 0.779 | 1.167 | 1.000 | -0.016 |
| | (2.020) | (0.990) | (0.696) | (0.106) |
| Out-party presidential share*Democratic primary | -0.512 | -0.554 | -2.357** | -0.085 |
| | (2.934) | (2.652) | (1.035) | (0.148) |
| | | | | |
| Observations | 2,793 | 2,751 | 3,440 | 741 |
| R-squared | 0.668 | 0.845 | 0.574 | 0.954 |
| Party-districting cycle-district FEs | ✓ | ✓ | ✓ | ✓ |
| Year-party FEs | ✓ | ✓ | ✓ | ✓ |
| Response variable standard deviation | | | | .15 |

** p<0.05, * p<0.1

*Note: Standardized incumbent centrism scores are NOMINATE score divided by two standard deviations within that estimation sample. All scores recoded so that increasing indicates more centrist.*

caution.

# 8  Variability in response to incumbent ideology over time

Bonica and Cox (2018) argue that, beginning in 1994, the political parties "strategically national-ized" congressional elections due to increasing electoral competitiveness (though see Canes-Wrone and Kistner 2021). They argue that strategic nationalization drew voter attention toward the contest between party coalitions and lessened the benefit to individual candidates of tailoring a district-specific ideology. In our model, this would seem to decrease the magnitude of the district-specific general election returns-to-moderation $\delta_p$ and $\delta_q$. This should generically increase the likelihood that political actors support extremists in nomination politics and decrease the responsiveness of primary elections to incumbent ideology.

In Table 4, we estimate variability by time period. We interact centrism with an indicator

Table 4: Response by primary actors to opponent centrism, by era

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| | Number candidates in primary filed with FEC | Log number campaign committee-connected contributors | More than one candidate receives votes in primary | Nominee centrism (standardized) |
| Incumbent centrism (standardized) | 1.037** | 0.308 | -0.196 | 0.046** |
| | (0.517) | (0.267) | (0.162) | (0.021) |
| Incumbent centrism*After 1994 | -0.356 | -0.048 | 0.135 | -0.001 |
| | (0.289) | (0.077) | (0.110) | (0.010) |
| Out-party presidential vote share in district | -0.334 | 0.434 | 1.158* | -0.072 |
| | (1.898) | (1.120) | (0.661) | (0.114) |
| Out-party presidential share*After 1994 | 1.411 | 0.567 | -1.459** | 0.036 |
| | (1.469) | (0.407) | (0.490) | (0.087) |
| | | | | |
| Observations | 2,793 | 2,751 | 3,440 | 741 |
| R-squared | 0.669 | 0.845 | 0.574 | 0.954 |
| Party-districting cycle-district FEs | ✓ | ✓ | ✓ | ✓ |
| Year-party FEs | ✓ | ✓ | ✓ | ✓ |
| Response variable standard deviation | | | | .15 |

** $p<0.05$, * $p<0.1$

*Note: Standardized incumbent centrism scores are NOMINATE score divided by two standard deviations within that estimation sample. All scores recoded so that increasing indicates more centrist.*

variable for the election taking place after 1994. We find no statistically significant interaction effects. The point estimates on the interactions are of small magnitude for number of candidates, party contributors, and vote choice (columns one, two, and four). The point estimates in column three for the winnowing effect, however, suggest that while incumbent centrism narrowed the field from 1980 to 1994 it did not influence the number of candidates on the primary ballot after 1994.

# 9    Conclusion

Previous research documents that (a) voters at general elections vote for more centrist candidates and (b) party activist and voters at primary elections prefer and often nominate more extreme candidates. These two empirical results suggest a tension where political actors in nomination politics must evaluate a trade off between what they want in the ideal and the gamble they must

take in practice. The dynamics of these contrasting incentives determine the representation attained by American voters.

In this essay, we bring more than 35 years of candidate filing, political contribution, and primary election data to bear to understand the response of actors in nomination politics to the ideology of their general election opponent. We find that some actors in nomination politics in the United States from the 1980s through the 2010s responded to general election incentives while others did not. The number of candidates filing to run and the centrism of the eventual nominee increased with a more centrist incumbent. The behavior of party contributors and the winnowing effect of the invisible primary, however, did not appear to respond to the ideology of their opponent.

These findings help explain why the American political parties have polarized even though voters in American general elections seem to prefer more centrist candidates. Our model of choice in nomination politics shows that nominating extremist candidates is not necessarily irrational for party actors. Instead, beliefs about the relative returns-to-moderation for a moderate as opposed to an extremist nominee might induce political actors in nomination politics to sometimes support an extremist even if they know the general electorate would more likely select a moderate.

Our model and results also help explain why a party might unilaterally polarize despite the electoral incentives to run moderates in the general election. A unilateral polarization might look something like the Republican party when Tea Party activists unseated centrist incumbents in primaries prior to the 2010 midterm elections (Skocpol and Williamson 2012). Change in the relative utility for a party's more extreme versus moderate candidates, or in the relative disutility for the other party's more extreme versus moderate candidates, or in beliefs about the relative returns-to-moderation can lead to change in choice by primary voters even without any change in the preferences of the general electorate.

One mechanism that could temper the incentives of general election returns-to-moderation is the absence of "common beliefs about viability (Cox 1997)." If actors in primary politics have divergent beliefs about which of the candidates offers the best value of viability and representation, primary elections might not converge on relatively centrist nominees. This might very well drive

our finding that voters and potential candidates respond to opponent ideology while contributors and the invisible primary do not. Further, Utych (2020b) and Utych (2020a) suggest the centrist incentives might be changing, which could produce (potentially accurate) divergent beliefs among primary electorates.

Second, actors in primary elections for legislative seats might anticipate the legislative institutions through which their representation is moderated. If general election voters believe that voting for a Democratic or Republican candidate in their district really means voting for the Democratic or Republican party coalition (e.g., Tausanovitch and Warshaw 2018), the policy ideology of *district* candidates might be of less import (Bonica and Cox 2018). If primary actors believe general election voters make choices in this way, they might conclude that returns-to-moderation are muted, tune out general election incentives, and make choices on other factors. Canes-Wrone and Kistner (2021) present evidence that general election vote share is now less responsive to challenger than to incumbent ideology.

These alternative mechanisms suggest important tasks for future research: Evaluating beliefs about returns-to-moderation among primary actors, understanding the relative valuation of party moderate and extreme candidates, and measuring the voting calculus of general election legislative voters with respect to selecting an individual representative against selecting a party coalition. Any of these mechanisms might help explain why only some actors in nomination politics appear to respond to the returns-to-moderation offered by general elections.

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# Appendix

## A  Analysis of the formal model

With the parameter and expected utility definitions from the main text, we can characterize the strategies for each political actor in the primary election.

### A.1  Proof to Proposition 1

*Proof.* The political actor supports the extreme candidate against the moderate incumbent when

$$
\begin{aligned}
&U(Y_m|X_m) \leq U(Y_e|X_m), \\
&(p + \delta_p)y_m + (1 - p - \delta_p)x_m \leq py_e + (1 - p)x_m, \\
&\delta_p(y_m - x_m) \leq p(y_e - y_m), \\
&\delta_p/p \leq (y_e - y_m)/(y_m - x_m).
\end{aligned}
\tag{A1}
$$

□

### A.2  Proof to Proposition 2

*Proof.* The political actor supports the extreme candidate against the extreme incumbent when

$$
\begin{aligned}
&U(Y_m|X_e) \leq U(Y_e|X_e), \\
&(q + \delta_q)y_m + (1 - q - \delta_q)x_e \leq qy_e + +(1 - q)x_e, \\
&qy_m + \delta_q y_m - \delta_q x_e \leq qy_e, \\
&\delta_q/q \leq (y_e - y_m)/(y_m - x_e).
\end{aligned}
\tag{A2}
$$

□

### A.3  Proof to Proposition 3

*Proof.* The actor matches the ideology of the opponent when the relevant conditions of Propositions 1 and 2 both hold:

$$
\begin{aligned}
&(y_e - y_m)/(y_m - x_m) \leq \delta_p/p, \text{ and} \\
&\delta_q/q \leq (y_e - y_m)/(y_m - x_e).
\end{aligned}
$$

Rearranging terms, we require

$$
\begin{aligned}
&(y_e - y_m) \leq (y_m - x_m)\delta_p/p, \text{ and} \\
&(y_m - x_e)\delta_q/q \leq (y_e - y_m). \\
&\rightarrow (y_m - x_e)\delta_q/q \leq (y_m - x_m)\delta_p/p.
\end{aligned}
\tag{A3}
$$

□

### A.4  Proposition A1

**Proposition A1** (Zag ideology of the incumbent). *An actor in primary politics supports an extremist candidate versus a moderate incumbent and moderate candidate versus an extremist incumbent*

*when*

$$\delta_p/p \leq (y_e - y_m)/(y_m - x_m), \text{ and}$$
$$(y_e - y_m)/(y_m - x_e) \leq \delta_q/q, \text{ and}$$
$$(y_m - x_m)\delta_p/p \leq (y_m - x_e)\delta_q/q.$$

*Proof.* The actor matches the ideology of the opponent when the relevant conditions of Propositions 1 and 2 both hold:

$$\delta_p/p \leq (y_e - y_m)/(y_m - x_m), \text{ and}$$
$$(y_e - y_m)/(y_m - x_e) \leq \delta_q/q.$$

Rearranging terms, we require

$$(y_m - x_m)\delta_p/p \leq y_e - y_m, \text{ and}$$
$$y_e - y_m \leq (y_m - x_e)\delta_q/q.$$
$$\rightarrow (y_m - x_m)\delta_p/p \leq (y_m - x_e)\delta_q/q.$$

$\square$

## A.5 Proposition A2

**Proposition A2** (Always support challenger of one ideology). *An actor in primary politics always supports an extremist candidate when*

$$\delta_p/p \leq (y_e - y_m)/(y_m - x_m), \text{ and}$$
$$\delta_q/q \leq (y_e - y_m)/(y_m - x_e), \text{ and}$$
$$y_m(\delta_p/p + \delta_q/q) \leq 2(y_e - y_m) + x_m\delta_p/p + x_e\delta_q/q.$$

*An actor in primary politics always supports a moderate candidate when*

$$(y_e - y_m)/(y_m - x_m) \leq \delta_p/p, \text{ and}$$
$$(y_e - y_m)/(y_m - x_e) \leq \delta_q/q, \text{ and}$$
$$2(y_e - y_m) + x_m\delta_p/p + x_e\delta_q/q \leq y_m(\delta_p/p + \delta_q/q).$$

*Proof.* The actor always supports an extremist candidate when the relevant conditions of Propositions 1 and 2 both hold:

$$\delta_p/p \leq (y_e - y_m)/(y_m - x_m), \text{ and}$$
$$\delta_q/q \leq (y_e - y_m)/(y_m - x_e).$$

Rearranging terms, we require

$$(y_m - x_m)\delta_p/p - y_e + y_m \leq y_e - y_m - (y_m - x_e)\delta_q/q,$$
$$y_m(1 + \delta_p/p) - x_m\delta_p/p \leq 2y_e - (1 + \delta_q/q)y_m + x_e\delta_q/q,$$
$$y_m(\delta_p/p + \delta_q/q) \leq 2(y_e - y_m) + x_m\delta_p/p + x_e\delta_q/q.$$

The actor always supports a moderate candidate when:

$$(y_e - y_m)/(y_m - x_m) \leq \delta_p/p, \text{ and}$$
$$(y_e - y_m)/(y_m - x_e) \leq \delta_q/q.$$

Rearranging terms, we require

$$y_e - y_m - (y_m - x_m)\delta_p/p \leq (y_m - x_e)\delta_q/q - y_e + y_m,$$
$$x_m\delta_p/p - y_m(1 + \delta_p/p) \leq (1 + \delta_q/q)y_m - 2y_e - x_e\delta_q/q,$$
$$2(y_e - y_m) + x_m\delta_p/p + x_e\delta_q/q \leq y_m(\delta_p/p + \delta_q/q).$$

$\square$

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Table A1: Response by primary voters to opponent centrism, nominee ideology measured with pre-primary contributions only

| | (1) Nominee centrism (pre-primary ideology) (standardized) | (2) Nominee centrism (pre-primary ideology) (standardized) | (3) Nominee centrism (pre-primary ideology) (standardized) |
|---|---|---|---|
| Incumbent centrism (standardized) | 0.099** (0.045) | 0.101* (0.052) | 0.123** (0.057) |
| Incumbent centrism*Competitive | | 0.005 (0.026) | |
| Out-party presidential vote share in district | -0.458 (0.434) | -0.546 (0.475) | -0.750 (0.499) |
| Out-party presidential share*Competitive | | 0.024 (0.065) | |
| Incumbent centrism*After 1994 | | | -0.025 (0.054) |
| Out-party presidential share*After 1994 | | | 0.305 (0.382) |
| Observations | 624 | 611 | 624 |
| R-squared | 0.949 | 0.954 | 0.950 |
| Year-party FEs | ✓ | ✓ | ✓ |
| Party-districting cycle-district FEs | ✓ | ✓ | ✓ |
| Response variable standard deviation | .2 | .2 | .2 |

$**\ p<0.05,\ *\ p<0.1$

## B   Ideology scores using only pre-primary contributions

In Table A1 we present the effect of incumbent centrism on nominee ideology where we measure ideology using only contributions made prior to the date of the primary. This cuts our sample size by about 15 percent but the measure is not influenced by post-nomination contributions. Of course, in many contests where it is clear who the nominee will be, pre-nomination contributions are made without uncertainty in a fashion similar to post-nomination contributions.

Our results are similar to those presented in the main text with a larger magnitude effect of centrism on nominee ideology. In each specification, we find that a two standard deviation increase in incumbent centrism causes a one-tenth of a standard deviation increase in nominee centrism. This is about twice the estimated effect of incumbent centrism on nominee centrism measured using pre- and post-primary contributions.

Also similar to results in the main text, we find little evidence of variability in the effect by district competitiveness or pre- versus post-1994.[3] The point estimate on the interaction between incumbent centrism and the post-1994 indicator suggests a smaller effect of centrism in more recent years.

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3. Due to the smaller sample size, we are unable to estimate the by-party interaction term.