Ideological extremists in the U.S. Congress:

Out of step but still in office*

by

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First draft: March 18, 2014; This draft: March 6, 2017

Abstract

In the last generation, congressional moderates have become ideologically more extreme over the course of their careers. We explain this "ideological migration" of moderates as a side effect of close partisan competition for control of the US House since 1994. Competition for the House caused activists, donors and, indirectly, voters to focus on the battle for majority status. Increased attention to partisan competition reduced individual members' ability to escape blame for their parties' actions. Equivalently, it meant that members could deviate from their district preferences and pay a lower electoral penalty; they would be blamed in any event. Our empirical analysis shows that party-centeredness abruptly and dramatically increased after 1994, with the electoral penalty members paid for being out of step with their constituents correspondingly declining. This contributed to an important, albeit complicated, shift from local/personal to national/party representation. Word Count: 9,715

* We thank Bruce Cain, Simon Jackman, Gary Jacobson, Doug Rivers and seminar participants at Stanford University, UC Davis and UCSD for their comments.

As widely noted, the congressional parties have polarized since the 1970s. The gap between the average ideology scores of the parties has widened (Jacobson 2000, p 13; McCarty, Poole and Rosenthal 2006) and the frequency of party votes has increased (Bond and Fleisher 2000, p. 3; Roberts and Smith 2003).

Investigations by Theriault (2006; 2008) and Bonica (2014a) show that approximately 60% of the total increase in the ideological gap separating the parties has stemmed from the *replacement* of older and more moderate members by newer and more extreme legislators, with the remaining 40% due to *ideological migration*—that is, the movement of moderate members toward their respective parties' means over the course of their careers. Roberts and Smith (2003) find that increases in party voting can be parsed into similarly-sized effects due to replacement and behavioral change.

Bonica (2014a) has also shown that replacement drives polarization from the early 1970s through the mid-1990s, after which ideological migration drives the bulk of polarization. In this paper, we consider why ideological migration began when it did. Why were congressional moderates ideologically consistent until the mid-1990s (per Poole 2007)? Why did they thereafter begin to vote more often with their respective parties' means (per Theriault 2008 and Bonica 2014a)?[1]

Previous investigations suggest that moderates polarized because the House majority party increasingly manipulated the legislative agenda to highlight votes that divided the parties; and both parties increasingly pressured their moderate members to toe the party line (Roberts and Smith 2003; Theriault 2008). In contrast, we argue that moderates polarized after 1994 mainly because

[1] Poole acknowledges that moderates after 1994 began moving toward their parties' means (personal communication).

competition for majority status in the House intensified after that date, which focused donors', activists', and leaders' attention on the partisan battle for control of Congress. Politically engaged voters began voting more often to put a particular party in control of the House, rather than to elect a particular candidate. Even less engaged voters began to "vote for a party," influenced by opinion leaders who had become sharply more concerned with congressional control.

As more voters cast their votes in order to affect which party controlled the House, the penalty incumbents paid for voting with their parties and against their districts necessarily declined. The more party-centered voters are, the more representatives will be "freed" to vote with their parties—since voters pay less attention to individual candidates' voting behavior when casting their votes. By the same token, more party-centered voters might hold parties more accountable for their collective actions. We return to this issue, considering how one should view representation in contemporary America, in the conclusion.

Previous literature: The puzzle of party pressure

The previous literature offers three main explanations for why moderate members of Congress have migrated toward their respective parties' means.[2] First, some argue that how often a moderate votes with his/her party depends on the issues scheduled for a vote (e.g., Snyder 1992; Roberts and Smith 2003). If the agenda includes only issues that divide the parties, then moderates will compile voting records indistinguishable from those of their more extreme co-partisans.

Second, several scholars (e.g., Roberts and Smith 2003; Lee 2009, 2013) have argued that

[2] Extensive recent reviews include those provided by Layman, Carsey and Horowitz (2006), Theriault (2008), and Fiorina, Pope and Abrams (2010).

Newt Gingrich's strategy of opposing the vast bulk of the majority Democrats' agenda pushed the two parties' moderates apart. As Gingrich convinced more colleagues of the strategic merit of his oppositional approach, pressure mounted on Republican moderates to vote against the majority's bills, which in turn forced the Democrats to secure more unified support from their own moderates. The net result was a polarization in the observed voting behavior of the two parties' centrists.

A third explanation of ideological migration can be viewed as a more general version of the second. For some reason(s), including but not limited to Gingrich's strategy of opposition, the two parties increasingly pressured their moderate members to toe the party line (Roberts and Smith 2003; Theriault 2008).

The first of the explanations just reviewed is not equally plausible for both measures of polarization. "Artificial extremism" certainly can arise when polarization is measured by the frequency of party votes. Indeed, Roberts and Smith (2003) have documented its existence and we do not question their findings. However, our measure of polarization (described below) is largely insensitive to the congressional agenda, because our ideology scores are not based on roll call votes at all.

As to the second and third explanations, we believe party pressure is an important part of any explanation of ideological migration. However, if moderates were induced to vote with their parties and against their districts, they should have paid an electoral penalty. Voting out of step with one's constituents has typically been a prelude to being out of office (e.g., Canes-Wrone, Brady and Cogan 2002; Carson et al. 2010). Thus, one must ask two questions: To the extent that it sought majority status, why would any party pressure its moderates to compile more extreme voting records than would be electorally optimal for them? To the extent that they sought reelection, why would moderates acquiesce to such pressure?

Gingrich had an answer to the first question. By pressuring Republican moderates to vote against the Democrats' agenda, the Republicans could force Democratic moderates to support the entire agenda. If Republicans could then "nationalize" the election, making it a referendum on competing party agendas rather than a series of independent contests, they could potentially wrest control of the chamber from the Democrats. But why would the Democrats cooperate with this plan by forcing their own moderates to support an agenda that was "too liberal?" Why not pursue a more centrist agenda, so that Democratic moderates were not electorally imperiled, and perpetuate the party's majority at the expense of some moderation in policy?

As regards why moderates would acquiesce to their party's pressure, it makes sense that each party would compensate them for casting tough votes, by distributing pork-barrel projects (Carroll and Kim 2010) or money from party leaders' Political Action Committees (Jenkins and Monroe 2012). Such compensation would enable moderates to "buy back" some of the support they lost due to voting with their parties. However, party compensation makes sense throughout the period under study. No one has suggested that the volume of compensation abruptly increased in 1994.

All told, extant arguments that the two parties increasingly pressured their moderates to toe the party line do not fully explain why the parties wanted to pressure their moderates into compiling more extreme voting records. Nor do they fully explain why reelection-seeking moderates would have bowed to such pressure. Thus, key parts of the story remain to be told.

Our explanation: The strategic nationalization of American politics

Our explanation of why ideological migration stepped up in the mid-1990s hinges on the parties' electoral strategies. After winning the Senate for the first time in a generation in 1980,

Republicans renewed their long-dormant efforts to capture control of the House (Lee 2017). Newt Gingrich, who pushed his colleagues throughout the 1980s to draw sharp partisan contrasts with the Democrats, famously sought to turn the 1994 midterm elections into a referendum on the national Democratic party's leaders and policies. Against the advice of intra-party rivals who argued that "all politics is local," Gingrich articulated the first national platform that either congressional party had promulgated for many years—The Contract With America—and got over 300 Republican candidates to sign it. In addition, he encouraged his followers to tie their local Democratic opponents to unpopular national leaders (mainly Bill Clinton) and policies, exploiting the new message operations that the party had recently set up (Evans 2001, pp. 219-20).

The specific content of the Contract seems to have had little impact (Jacobson 1996, p. 209) but tying congressional Democrats to Bill Clinton was a winner. Many southern Republican candidates took advantage of the national party's new media center in Washington to make television ads linking their Democratic opponents to Clinton and "fully 44 percent of [sampled] white southern males said that their House vote was a vote against Clinton" (Jacobson 1996, p. 208).

Immediately after the Republicans' historic victory, the two House parties substantially increased staff support for their leaders. Trendless between 1981 and 1994, leadership staff levels jumped roughly 25 percent (or three standard deviations) in both 1995 and 1996, as the two parties' competing message operations girded for battle (Lee 2017, Figure 6.2b).

Since 1994, competition for control of the House has been consistently closer than it was during the period of Democratic hegemony (Lee 2017; Wand 2013). To illustrate this sea change, Figure 1 plots the *Minimum Uniform Swing Distance*, defined as the smallest uniform vote swing the minority party would have needed in the last House election in order to win a majority

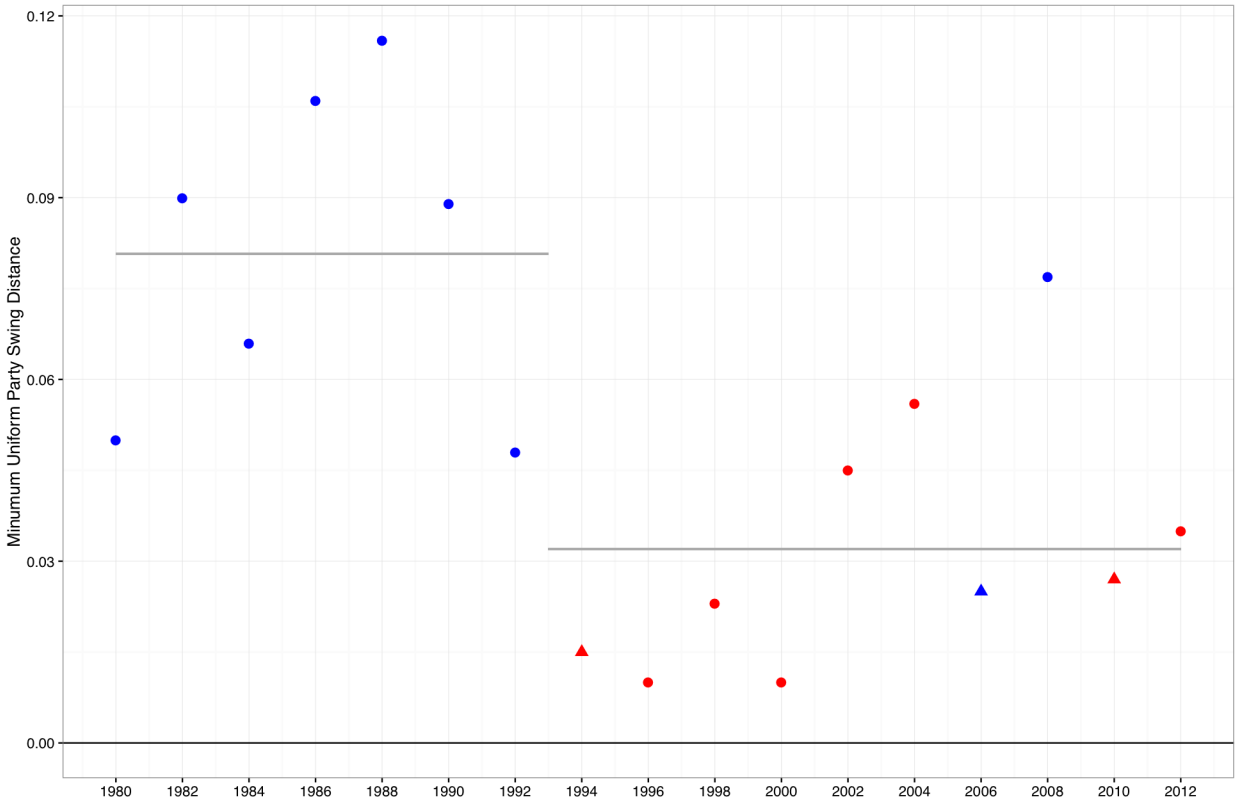

Figure 1: Minimum Uniform Swing Distance
Note: The triangles indicate election years in which the minority party regained the majority.

(Feigenbaum *et al*. 2015). Prior to 1994, the Republicans needed a swing of about 0.08, which was a large ask relative to the standard deviation of 0.03 in the two-party vote share in this period. Even in 1980, when Republicans gained 0.03 points in vote share, they were still 0.05 points short of the swing needed to win a majority. After 1994, in contrast, the losing party regularly found itself within striking distance of a majority.

We argue that parties responded to their newly competitive environment by engaging in the "strategic nationalization" of congressional elections. To explain, consider a hypothetical district in which the Republicans reckon they would get 55% of the vote if all voters voted for their preferred party; but only 45% if all voters voted for their preferred candidate. Perhaps the local

Democrat is the incumbent and has built up a "personal vote" by voting conservatively—and against her party—on selected issues of concern to her district. In this scenario, the Republicans will wish to "nationalize" the contest, framing it as a choice between parties. The Democrats, meanwhile, will wish to "localize" the contest, framing it as a choice between candidates.

Should such "framing contests" have been common? As the national parties polarized from the 1970s on, more and more districts should have had median voters located between the two parties' mean locations. If local candidates adopted the position of their district's median voter, then one party would necessarily want to nationalize the contest, while the other would want to keep it local. (The only exception would be districts with medians exactly half way between the party means.) Thus, the *opportunity* for framing contests should have been growing during the era during which replacement drove polarization.[3]

Would-be nationalizing parties always had the *means* to influence how voters thought about their choices. They could, for example, bombard the district with media ads, highlighting the targeted candidate's connections with unpopular national leaders and policies. Localizing parties could fight back by stressing their candidate's independence and service to the district.

If the means to wage framing contests had always been available, and the opportunity to initiate them was steadily increasing, what about the parties' motives? In the era before 1994, when no one thought the Republicans had a realistic shot at winning control of Congress, the value (to either party) of winning an individual seat was just the value of occupying that seat. After 1994, winning a seat improved a party's chance of winning a majority much more than before. Since

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[3] One need not assume that local candidates fully converged on their district medians to reach this conclusion. If candidates adopted positions that were weighted averages of their party's position and their district median's position, then the same conclusion would follow.

majority status was a big prize, even small pivot probabilities sufficed to substantially increase the expected value of winning a single seat. For example, if winning a majority was 100 times more valuable than winning a marginal seat, then a pivot probability of only .01 would double the value of winning a seat.[4]

When the *majority pivot probability*—the probability that one more seat would change which party had a majority—increased, the parties became willing to spend more to win a seat in a given marginality class. That is, if we sort seats into groups based on their *local pivot probabilities* (the probability that one more vote would change the result in a given district), the parties became more willing to spend in order to win seats in each stratum. Moreover, as we explain in the appendix, total expenditures should have been an interactive function of the local and majority pivot probabilities.

To summarize, after 1994 the payoff to successfully nationalizing—or localizing—House contests abruptly increased, making both parties more willing to spend on "framing wars." Both parties accordingly beefed up their "communications" operations and systematically targeted swing districts where their national brand was relatively more popular than their local standard-bearer (Evans 2001; Lee 2017). In the resulting wave of framing contests, each district's nationalizing party had significant advantages over its localizing opponent—because opinion leaders understood the importance of majority status and could rally their followers simply by drawing links between local candidates and their unpopular national leaders. Such links, even if

[4] The literature does not have a canonical estimate of the value of majority status relative to that of a single seat. However, we take it as established by previous research that the majority party in the House has had substantially greater negative agenda-setting power since the adoption of Reed's Rules (Cox and McCubbins 2005); and that the majority party's positive agenda-setting powers increased substantially in the 1970s (Rohde 1991). Thus, a sufficient condition for actors caring about majority status—viz., that it substantially affected the legislative outcome—was met throughout the time period we consider.

mostly symbolic, would often be hard to dispute; and the act of disputing them would in any event keep the conversation focused on national rather than local politics.[5]

In the remainder of the paper, we test two empirical implications of our theory. The first, concerning whether voters voted for candidates or for parties, occupies most of our attention. The second, concerning whether parties spent more to win House seats of a given marginality, comes later.

The puzzle of party pressure redux

Our account views candidates (and parties) as relatively immobile during election campaigns. They cannot substantially change their ideological stripes without incurring substantial costs.[6] Thus, their competition turns into a series of framing contests in swing districts.

We have argued that increased competition for majority status should have led the parties to engage in more such framing contests. Given the inherent advantages enjoyed by the nationalizing party (outlined above), such contests should have increased the fraction of party-centered voters. More party-centered voters, however, would necessarily reduce the cost to an incumbent of voting marginally more with his/her party (and against the district median). Thus, more members should have accepted the compensatory side payments offered by their parties, even if these did not increase in value. In other words, ideological migration should have increased, as a consequence of increased competition for majority status, even if party pressure remained

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[5] Note that our account does not imply voter information will change as much as voter behavior. Some voters may begin to cast party-centered votes simply because their cue-givers become party-centered (cf. Lazarsfeld, Berelson and Gaudet 1944). Such individuals will not become more informed about who currently controls Congress but will nonetheless begin casting party-centered ballots.

[6] Various reasons for costly spatial mobility have been suggested in the literature—e.g., Bernhardt and Ingberman (1985); Besley and Coate (1997).

constant.

Of course, it is possible that parties pressured their moderates even more after 1994. The minority party's tactic of strategic opposition, described by Gilmour (1995), Lee (2009) and others, should have reduced the agenda the majority party could pursue. If the remaining agenda consisted of bills that were more widely agreed within the majority, then the party's "willingness to pay" for them might have increased (while the minority's determination to block them would also increase). To the extent this was true, ideological migration would have been driven both by the lower electoral cost of extremism and the higher benefits offered by party leaders.[7]

Modeling the party and candidate vote components

In this section, we explain how the parties in our model estimate their vote shares in a purely party-centered contest ($V_{n|party}$) and a purely candidate-centered contest ($V_{n|candidate}$). In particular, we consider a model in which voters can come in two pure types—candidate-centered and party-centered—and various mixtures thereof.

To illustrate how candidate-centered voters behave, consider a district j which at time t is composed entirely of candidate-centered voters. Let the Democratic candidate's position on the left-right spectrum be x_{Djt} and the Republican candidate's position be x_{Rjt}. Assume the voters' ideal points are distributed normally with mean μ_{jt} and standard deviation 1. In this case, every voter to the left of the midpoint between the two candidates' positions votes for the Democrat; and every voter to the right of the midpoint votes for the Republican. Thus, the Democratic vote share is V_{Djt}

[7] Our empirical analysis directly measures the electoral costs of extremism and shows that they declined. We are not able to directly measure party pressures, however.

$= \Phi[(x_{Djt}+x_{Rjt})/2 - \mu_{jt}]$, where Φ is the standard normal cumulative distribution function.[8]

To illustrate how party-centered voters behave, consider a district j which at time t is composed entirely of party-centered voters. Let the Democratic party's position be x_{Dt} and the Republican party's position be x_{Rt}. Again assume the voters' ideal points are distributed normally with mean μ_{jt} and standard deviation 1. In this case, every voter to the left of the midpoint between the two parties' positions votes for the Democrat; and everyone to the right of the midpoint votes for the Republican. Thus, the Democratic vote share is $V_{Djt} = \Phi[(x_{Dt}+x_{Rt})/2 - \mu_{jt}]$.

Now consider a more general case. The fraction of voters in district j, year t, who behave in a party-centered fashion is α_{jt}, with a complementary fraction $1-\alpha_{jt}$ behaving in a candidate-centered fashion. Thus, the Democratic vote share is

$$V_{Djt} = \alpha_{jt}\Phi[(x_{Dt}+x_{Rt})/2 - \mu_{jt}] + (1-\alpha_{jt})\Phi[(x_{Djt}+x_{Rjt})/2 - \mu_{jt}] \qquad (1)$$

We will eventually add some control variables to the specification but to begin with we discuss the pure model.[9]

Predecessors

Equation (1) generalizes some well-known previous models. For example, the standard candidate-centered Downsian model emerges as the special case in which $\alpha_{jt} = 0$, while the standard party-centered Downsian model emerges as the special case in which $\alpha_{jt} = 1$.

Less obviously, the Downs-inspired model used by Canes-Wrone, Brady and Cogan (2002)

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[8] If the Democrats are the nationalizing party in a particular district-year, then $V_{n|party} = V_{Djt}$.

[9] An alternative interpretation of our model is that each voter in district j, year t has a probability α_{jt} of behaving in a party-centered fashion and a complementary probability $1-\alpha_{jt}$ of behaving in a candidate-centered fashion. The Democratic vote share in district j, year t, can thus be approximated as in equation (1). The relationship is only approximate because, after Nature divides the electorate into candidate-centered and party-centered sub-populations, the location of the median voter in each sub-population may deviate from μ_{jt}.

to measure the electoral penalty that members pay when they are "out of step" with their districts also emerges as a special case. These authors assumed $\alpha_{jt} = 0$ and substituted the incumbent candidate's position for the midpoint between the two candidates' positions. The latter substitution was justified because, under the median voter theorem, both candidates should converge on the district median. Thus, the incumbent candidate's position would reveal the candidate midpoint.

We are in the fortunate position of not having to use the incumbent's position as a proxy for the candidate midpoint. Our dataset is constructed from the Database on Ideology, Money and Politics, and Elections (DIME) (Bonica 2013). The DIME scores (also known as "common-space CFscores"), which are recovered from campaign contribution data, provide estimates of the ideological locations of *both* candidates from each House and Senate contest in each year, 1980-2012. The measure strongly correlates with roll call based measures, including the widely used DW-NOMINATE scores (Poole and Rosenthal 2007).[10] In terms of the notation above, we have estimates of both x_{Djt} and x_{Rjt}. Thus, we can directly estimate the candidate midpoint.

Our model is also related to previous models—such as Calvert and Isaac (1981), Sniderman and Stiglitz (2012), and Peskowitz (2013)—in which voters perceive candidates to be located at a weighted average of their own and their parties' positions.[11] Indeed, we shall use such models in our robustness checks. Finally, our approach is similar to, and complements, Krasa and Polborn (2014). None of the studies just cited focuses, as we do, on the issue of change over time in how

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[10] As a robustness check on the CFscores, we include results in the supplemental appendix based on a set of measures that use supervised machine learning methods to infer DW-NOMINATE scores from campaign contributions (Bonica, 2016). These measures provide a near perfect mapping onto the future DW-NOMINATE scores of non-incumbents based on fundraising activity prior to entering office. See the discussion regarding robustness tests for additional details.

[11] Woon and Pope (2008) voters do not know challengers' individual positions and thus infer them using the mean and standard deviation of the NOMINATE scores of incumbents in the challenger's party.

party-centered voters are.

Predictions about electoral accountability

What happens to the Democratic vote share if the Republican candidate becomes more extreme? Assuming that Democrats are never to the right of Republicans ($x_{Djt} \leq x_{Rjt}$ for all jt),[12] and that each party's location coincides with the mean position of its candidates ($x_{Dt} = (1/n)\sum_k x_{Dkt}$, $x_{Rt} = (1/n)\sum_k x_{Rkt}$), we see from equation (1) that

$$\frac{\partial V_{Djt}}{\partial x_{Rjt}} = \alpha_{jt}\varphi[\frac{x_{Dt} + x_{Rt}}{2} - \mu_{jt}](1/2n) + (1-\alpha_{jt})\varphi[\frac{x_{Djt} + x_{Rjt}}{2} - \mu_{jt}](1/2) > 0.$$

In other words, the Republican candidate will pay a positive electoral penalty for moving his/her position toward the extreme (rightward). A similar result of course holds for Democrats moving left.

If we assume that the local candidates are no worse at catering to the median voter in their respective districts than are the national parties ($|\frac{x_{Djt} + x_{Rjt}}{2} - \mu_{jt}| \leq |\frac{x_{Dt} + x_{Rt}}{2} - \mu_{jt}|$), then it follows that $\frac{\partial^2 V_{Djt}}{\partial x_{Djt}\partial \alpha_{jt}} < 0$. In other words, as the fraction of party-centered voters (α_{jt}) increases, the marginal penalty for extremism declines.

These simple predictions—that extremism is costly; but that it is decreasingly costly as voters become more party-centered—are the main focus of our empirical investigation.[13] Many previous studies have tackled the first of our predictions, examining how much being out of step

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[12] Sniderman and Stiglitz (2012) show that this assumption is well grounded empirically.
[13] Similar predictions follow if each voter attaches some weight to both party and candidate positions (as in Calvert and Isaac 1981; Sniderman and Stiglitz 2012; Peskowitz 2013).

with district opinions harms a candidate's vote share (see Canes-Wrone, Brady and Cogan 2002 and Carson et al. 2010 for recent examples and reviews). None, however, have considered whether the electoral cost of extremism has changed over time in response to changes in how party-centered voters are.[14]

Before proceeding, we should note that party system fragmentation also affects the electoral penalty for extremism. For example, when the Republicans split into mainstream and Tea Party factions, the optimal response for Democrats was to call their opponents Tea Partiers whenever that label might plausibly stick. This prevented Tea Partiers from "pooling" with the more moderate overall mean position of the right-wing alliance; and thereby allowed general-election voters to mete out an electoral penalty. Recent work by Hall (2014) shows that the penalty was quite stiff.[15]

The drivers of party-centeredness

We consider three different factors that could have affected the fraction (α_{jt}) of party-centered voters in each district. The first we have already discussed above: before 1994, the payoff to winning a competitive seat was occupying that seat; afterwards, winning also increased the victor's chance of securing a majority in the House. Thus, after 1994, both parties assiduously mounted nationalizing attacks in competitive districts where their party brand was more popular

[14] Ansolabehere, Snyder and Stewart (2001) estimate the electoral benefit of moderation in five periods between 1874 and 1996. They find (Table 4, p. 152) that moderation significantly boosts a candidate's vote share in both 1952-74 and 1976-96. The estimated benefit of moderation declines a bit from 1952-74 to 1976-96 but the decline does not appear to be statistically significant. One might view the increased benefit of moderation from the earliest periods they study to the last two as reflecting the growing candidate-centeredness of elections.

[15] At the same time, even after a fragmentation into three "parties" or "voter types," ideological migration of moderates within any given "party" would continue to be less punished as voters became more "party"-centered.

than their local candidate. In our econometric specification below, we thus allow the fraction of party-centered voters to shift after 1994.[16]

A second factor that might have affected how party-centered voters were is the informational value of the party label (cf. Downs 1957, Cox and McCubbins 1993, Snyder and Ting 2002). We know the parties became steadily more polarized and homogeneous from the mid-1970s on, thereby making the party labels steadily more informative. From this perspective, we might expect an upward *linear trend* in α_{jt} over the time period we study (1980-2013).[17] We allow for this possibility in our econometric specification below.

A third factor that might have affected how party-centered voters were was the nature of the election. Many have argued previously that candidates for the US Senate can develop personal reputations more readily than can candidates for the US House. Thus, in our empirical work—which includes both House and Senate elections—we allow α_{jt} to depend on whether the contest is for the House or Senate.

Reflecting the factors just discussed, we assume that

$$\alpha_{jt} = \text{logit}^{-1}[\psi_0 + \psi_1 I[t \geq 1994] + \psi_2 t + \psi_3 \text{Senate}_{jt})] \qquad (2)$$

In other words, we allow the level of party-centeredness to have different intercepts before and after 1994, to have a trend, and to differ between House and Senate elections.[18] Our main

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[16] One might ask why we focus on the onset of close competition for the *House* (after 1994), rather than on the onset of close competition for the *Senate* (after 1980). There are two main reasons. First, unified government—the ultimate prize—was not in reach for the Republicans until after 1994. Second, procedural power, and especially positive agenda control, was substantially less concentrated in the hands of the majority leadership in the Senate than in the House. Thus, renewed competition for the Senate alone after 1980 should have had a much smaller effect than the onset of competition for both chambers after 1994.

[17] Recent experiments support the hypothesis that more informative labels promote party-based choices. Druckman, Peterson and Slothuus (2013), for example, show that when experimental subjects are told the two parties are highly polarized on a particular issue, they become more likely to rely on their partisan affiliations in making decisions about those issues. See also Sniderman and Stiglitz (2012).

[18] We include other variables that might affect party-centeredness in our robustness checks.

prediction is that party-centeredness should step up after 1994 (i.e., $\alpha_1 > 0$), due to the onset of close competition for majority status in the US House.

Data and estimation

Our estimation strategy is to view equation (1) as a finite mixture model (FMM), with mixing parameters $\{\alpha_{jt}\}$, and to estimate it along the lines detailed by Imai and Tingley (2012). As Imai and Tingley explain, finite mixture models offer an attractive framework for empirically assessing the relative contributions of rival theories.

An FMM approach is feasible for us because Bonica's CFscores (2014b) provide empirical estimates of the locations of *all* candidates (i.e., both x_{Djt} and x_{Rjt}), from which we can also compute the mean locations of the two parties' candidates (i.e., both x_{Dt} and x_{Rt}). This means that we have direct estimates of the midpoints between the candidates in each district-year, and the midpoint between the parties' means in each year, which we calculate based on the ideal points of current members of Congress.[19]

The model is specified as a finite mixture of two normal components

$$f(y_{ij}) = \alpha_{jt}\Phi\left(y_{ij}|\,\pi_1, \sigma_1^2\right) + (1 - \alpha_{jt})\Phi(y_{ij}|\pi_2, \sigma_2^2), \quad (3.1)$$

where

$$\pi_1 = \delta_0 + \delta_1 \text{Midpoint}_{C_{jt}} + \beta_1 \mu_{jt} + \beta_{-1} Z_{jt}, \quad (3.2)$$

$$\pi_2 = \gamma_0 + \gamma_1 \text{Midpoint}_{P_t} + \beta_1 \mu_{jt} + \beta_{-1} Z_{jt}, \quad (3.3)$$

$$\alpha_{jt} = logit^{-1}(\psi_0 + \psi_1 Post1994_{jt} + \psi_2 Cycle_{jt} + \psi_3 Senate_{jt}), \quad (3.4)$$

[19] In the supplemental appendix, we estimate a model with party means based solely on the ideal points of Congressional party leaders (defined as those in official leadership positions and committee chairs/ranking members). The results are robust.

y_{jt} is the Democratic share of the two-party congressional vote in district j in cycle t; $Midpoint_C$ is the candidate midpoint; $Midpoint_P$ is the party midpoint; and μ_{jt} is a measure of each district's location.

The district locations can be modeled in various ways. Our main approach is to construct measures of district partisanship based on a model developed by Levendusky, Pope, and Jackman (2007) that normalizes the two-party presidential vote share and controls for short-term national-level electoral swings and home-state effects of presidential candidates. Intuitively, districts with larger Democratic presidential vote shares should be positioned further to the right (i.e., $\beta_1 > 0$). In addition, various other factors (Z_{jt}) might affect the district's expected vote. In our main specification, these other factors are those considered by Canes-Wrone, Brady and Cogan. We fit the model using the *flexmix* R package (Gruen and Leisch 2008).

As is typical for this class of model, we constrain the coefficients on the control variables (β) to be constant across the component models.[20] Later, we relax this constraint by permitting the coefficients for the control variables to vary across models as a robustness check. For a race to be included in the sample, we require that the general-election candidates from both parties have raised funds from at least 10 distinct donors.[21] We later show that our main results hold for various other donor thresholds.

[20] Absent this constraint, the estimated parameters for the control variables are free to take on different values. This can make interpreting the model more difficult, especially if the optimal values for the control variables change over time. See Table A1 in the supplemental appendix for a results with this constraint relaxed.

[21] The same threshold for inclusion is used by Hall (2014). The requirement of at least 10 donors excludes about 25% of the otherwise usable sample.

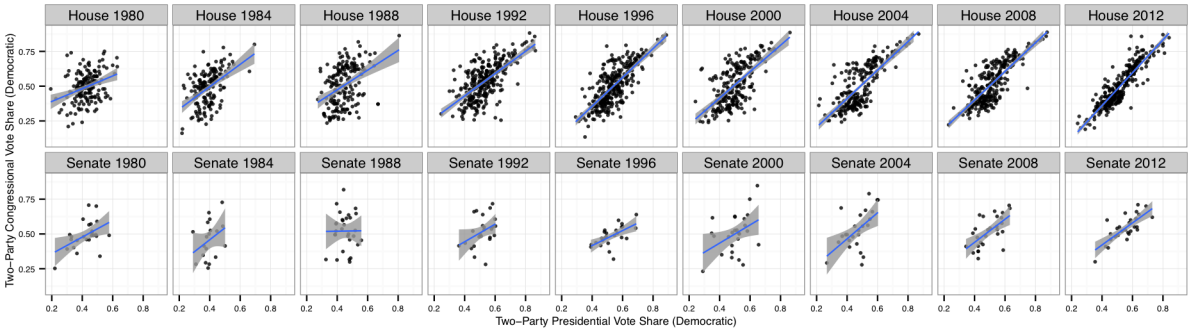

Figure 2: The Association Between Two-Party Vote Shares in Congressional and Presidential Elections Has Strengthened In Recent Decades

Note: The samples for each election cycle are limited to those districts in which both parties fielded candidates, each of whom raised funds from at least 10 donors.

Descriptive statistics

Before presenting the model results, we present descriptive statistics on trends relating to partisan voting and polarization. Figure 2 displays the relationship between two-party vote shares for congressional and presidential candidates for the past nine presidential election cycles. The association between congressional and presidential vote shares clearly increases with time. Where the correlation stood at $\rho = 0.34$ in 1980, it reached $\rho = 0.86$ by 2012.[22] This is consistent with a substantial shift away from candidate-centered towards party-centered voting.

[22] The respective correlations for a complete sample of congressional districts (including seats that are uncontested or where one party runs a non-competitive candidate) are $\rho = 0.59$ for 1980 and $\rho = 0.87$ for 2012.

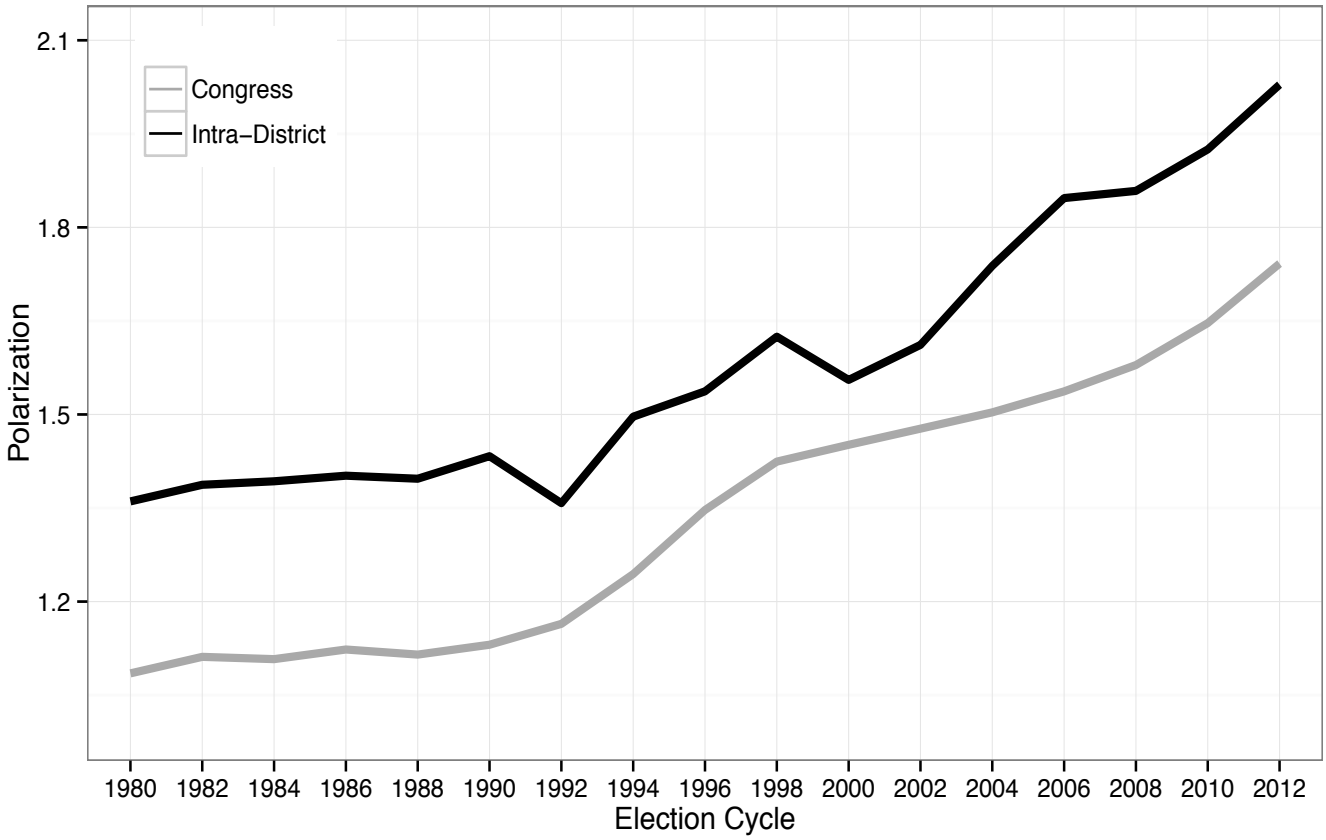

Figure 3: Intra-district and Congressional Polarization
Note: The sample used to construct the Intra-District trend line is again limited to districts in which both parties fielded candidates, each of whom raised funds from at least 10 donors.

Figure 3 displays the trends for congressional polarization (measured as the absolute distance between the two parties' means) and intra-district polarization (measured as the average distance between the two parties' candidates in contested seats). To our knowledge, no one has previously measured intra-district polarization across such a wide time span. Figure 3 confirms that polarization in the candidate pool has kept pace with Congressional polarization. It also shows that polarization in the candidate pool was more or less flat from 1980 through 1992 but then trended upwards starting in 1994. The increased within-district differentiation between the parties' candidates gibes with the strengthening relationship between Congressional and Presidential two-party vote shares documented in Figure 2.

Results

Results from the finite mixture model are shown in Table 1. The component models yield results broadly similar to those previously reported by Canes-Wrone, Brady and Cogan (2002). For our purposes, the most noteworthy coefficients are those on the midpoints.

In the candidate-centered model, moving the midpoint between the two candidates rightward one unit (on a scale that is normalized by its standard deviation to total length of 0.28 or roughly $1/8$ the distance between party means) increases the Democratic vote share (among candidate-centered voters) by 2.82 percentage points. This implies a positive reward for moderation or, equivalently, a penalty for extremism. The size of this penalty can be expressed as follows. Were the Democrat to move one standard deviation (of the candidate positions) to the left, with the Republican candidate's position held fixed, the Democratic vote share (among candidate-centered voters) would decline by approximately 4.5 percentage points. This compares with Canes-Wrone, Brady and Cogan's estimate that a one standard deviation move to the left by a Democrat would decrease the Democratic vote share by 1-3 percentage points.

Model Components		
	Candidate-Centered	Party-Centered
(Intercept)	40.77	38.99
	(0.39)	(0.54)
Candidate Midpoint	2.82	
	(0.28)	
Party Midpoint		4.31
		(2.11)
Incumbent	9.56	9.56
	(0.33)	(0.33)
Open Seat	3.81	3.81
	(0.32)	(0.32)
District Partisanship	10.21	10.21
	(0.29)	(0.29)
ln(Dem. Spending) - ln(Rep. Spending)	3.17	3.17
	(0.08)	(0.08)
Candidate Quality (Dem.)	1.13	1.13
	(0.25)	(0.25)
Candidate Quality (Rep.)	-1.11	-1.11
	(0.26)	(0.26)
Dem. President	1.38	1.38
	(0.48)	(0.48)
GDP Growth	-0.11	-0.11
	(0.07)	(0.07)
Midterm	1.98	1.98
	(0.30)	(0.30)
Pres. Approval	-0.04	-0.04
	(0.01)	(0.01)
Dem. President * GDP Growth	-0.93	-0.93
	(0.20)	(0.20)
Dem. President * Midterm	-3.51	-3.51
	(0.49)	(0.49)
Dem. President * Pres. Approval	0.20	0.20
	(0.02)	(0.02)
Concomitant Model ($\boldsymbol{\alpha}$)		
(Intercept)	-0.95	
	(0.42)	
Election	-0.00	
	(0.04)	
Post-1994	2.24	
	(0.43)	
Senate	-0.61	
	(0.36)	
BIC	25384	
Num obs	3957	

Table 1: Parameter Estimates and Standard Errors for the Components and Concomitant Equation of the Mixture Model

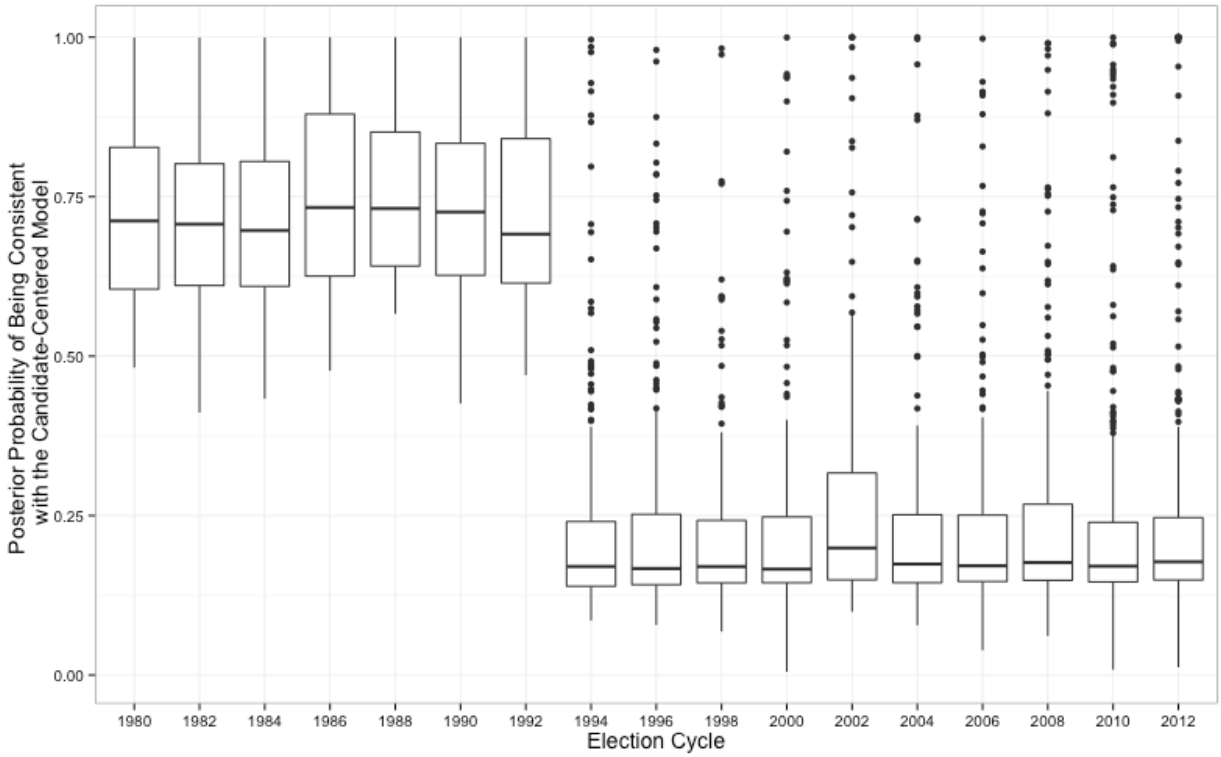

Figure 4: Estimated Posterior Probability That Observations are Consistent with the Candidate-Centered Model.

In the party-centered model, moving the midpoint between the two parties rightward one unit (on a scale that is again normalized to total length of 0.28) increases the Democratic vote share (among party-centered voters) by 4.31 percentage points. This implies the parties each pay a penalty for extremism. For example, were an entire party to move one standard deviation (of the candidate positions) toward its extreme, that party would lose an estimated 7 percentage points among party-centered voters.

Although the results of the component models are of intrinsic interest, here we are mainly interested in the concomitant equation (2). The results for this equation reveal that the fraction of party-centered voters increased dramatically after 1994, was lower in Senate than in House contests, and exhibited no significant trend.

Figure 4 displays box-and-whisker plots of our posterior estimates of the fraction of

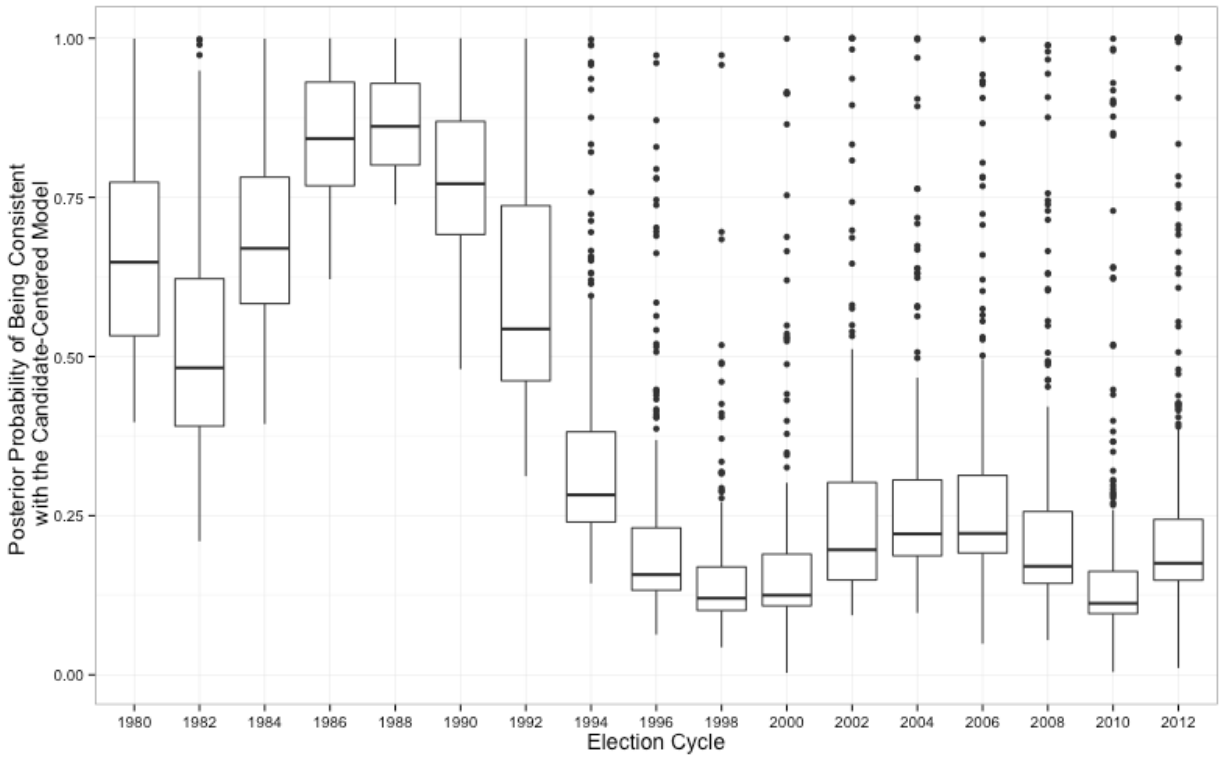

Figure 5: Estimated Posterior Probability That Observations are Consistent with the Candidate-Centered Model (Polynomial specification)

candidate-centered voters in each district from 1980 to 2012. The dramatic drop in candidate-centeredness after 1994 is evident.

We should note that our model does not predict that swings should have become more uniform after 1994. We do expect strategic allocation of expenditures—in particular, spending more in close districts where one's presidential candidate had won but one's local candidate was losing (cf. Jacobson 1996). But such expenditures might or might not increase the uniformity of swing in any particular election year.

Is it really 1994?

Our baseline model of party-centeredness in the electorate (given in equation 2) allows

only a linear trend and a shift in 1994. To probe whether the break really occurs in 1994, we re-ran our analysis, substituting a sixth-degree polynomial in time for the linear trend. The posterior estimates, displayed in Figure 5, provide strong evidence that the watershed years were 1992 and 1994. By 1996, the transition was complete.

As an additional robustness check, we estimate a series of models in which we vary the cycle of the pre/post-indicator. These analyses, which are reported in Table 2, tell much the same story as our sixth-order polynomial results: the change is sharp and occurs in 1994, not before and not after.

	1988	**1990**	**1992**	**1994**	**1996**	**1998**	**2000**
(Intercept)	-1.46	-1.87	-1.83	-0.95	-0.90	-1.28	-1.98
	(0.43)	(0.56)	(0.57)	(0.42)	(0.36)	(0.40)	(0.49)
Election	0.18	0.15	0.11	-0.00	0.07	0.17	0.28
	(0.03)	(0.03)	(0.03)	(0.04)	(0.04)	(0.05)	(0.06)
Post-Cycle	0.12	0.93	1.39	2.24	1.27	0.19	-0.84
	(0.39)	(0.47)	(0.47)	(0.43)	(0.40)	(0.40)	(0.43)
Senate	-0.42	-0.43	-0.43	-0.61	-0.48	-0.43	-0.35
	(0.34)	(0.35)	(0.35)	(0.36)	(0.35)	(0.34)	(0.34)
Num obs.	3957	3957	3957	3957	3957	3957	3957
Log-Lik	-12614.76	-12612.42	-12608.56	-12596.81	-12608.57	-12614.49	-12613.38
BIC	25420.03	25415.35	25407.62	25384.13	25407.66	25419.49	25417.27

Table 2: Varying Pre-Post Cycle Indicators
Note: Each model specifies a different election cycle as the pre-post indicator.

Did polarization cause party-centered voting?

Did the polarization of elites cause voters to base their decisions more on newly informative party cues? Or did the party-centeredness of voters induce polarization (in the form of ideological migration)? Our analyses allow some discounting of the first process.

First, although congressional elites polarized beginning in the late 1970s (see, e.g., Figure

3), the ideological diversity of the two parties' candidate pools has not declined. In fact, within-party variance among general election candidates has increased over this period, even as parties in Congress have become more homogenous. In 1980, the standard deviation for Republican general election candidates' CFscores was 0.31. By 2012, this had grown to 0.38. The trend is similar for Democratic general election candidates, with the standard deviation increasing from 0.39 to 0.52 over the same period.[23] In other words, the ideological positions adopted by the parties' candidates did not homogenize, which should have reduced voters' incentives to concentrate on the parties.

Second, if voters were responding to elite polarization, then we should have seen a linear increase in party-centeredness. But the linear term in the concomitant model (Table 1) is not significant. Moreover, when a sixth-order polynomial in time is employed, there is no evidence of any steady voter response to the steady polarization in Congress (see Figure 5).

We think these points argue strongly against any model in which voters simply respond to ideological polarization in Congress. The only thing that changes abruptly enough to explain our results is competition for majority status.

How much did the voters know about it?

As noted above, our theory does not imply that each voter who became party-centered began keeping close tabs on the parties' competition. Given the prevalence of two-step flows of influence, voters' *information* may not have changed as much as their *behavior* did.

That said, the public did become better informed about party competition after 1994. First,

[23] The interquartile differences for Republican general election candidates declined slightly from 0.41 to 0.37 but increased for Democrats from 0.41 to 0.61.

Pew data show that 46% of respondents knew which party controlled Congress in 1992, versus 59% in 1994, and a median of 57% in 10 surveys thereafter (1995-2007) (Pew Research Center for the People and Press 2007). Second, when asked whether they cared which party controlled Congress, on average 59 percent of self-reported voters said "yes" during the 1980-1992 election cycles, versus 75 percent during the 1994-2004 election cycles (ANES 2012). The transition, moreover, was quite sudden. The percent of self-reported voters saying majority control of Congress mattered to them increased from 62 percent in 1992 to 74 percent in 1994.[24]

Two other testable implications

If voters really did become more party-centered, then the incumbency advantage should have declined. After all, party-centered voters would view candidates of the same party as equivalent, so replacing an incumbent with another candidate would not affect their decision-making. Consistent with this observation, Jacobson (2015, p. 863) shows that the incumbency advantage has indeed declined dramatically since 1994, with estimated advantages in 2012-2014 approximating those observed in the 1950s.[25]

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[24] The percent of self-reported voters saying it mattered which party won the presidency also increased—from an average of 72 percent during the 1980-1992 presidential election cycles to an average of 88 percent during the 1996-2004 presidential election cycles. This increase is to be expected under our account because (a) once the Democratic lock on the House had been broken, unified control of government was more often in play; and (b) the value to each party of winning the presidency is higher, when unified government is in play. Note also that the percent of voters casting split tickets in presidential years dropped on average by 2.2 percentage points every four years over the period 1980-2012. The two quadrennia exhibiting unusually large declines—over twice the average—were 1992-1996 and 2008-2012.

[25] Our theory does not predict a sudden change in the incumbency advantage. To see why not, consider those Democratic incumbents who survived 1994 but were in districts whose partisan balance was increasingly unfavorable. Let p denote the probability that the Republicans will mount a serious nationalizing challenge to such an incumbent if they seek reelection; and q = 1 be the probability they will run a serious nationalizing campaign if the incumbent retires. If p is low enough, then some number of incumbents will survive long enough to retire. Each retirement will be followed by a large adjustment in votes, because the Republicans will nationalize the ensuing campaign. Thus, the retirement slump will remain large for those incumbents who were first elected in the more candidate-centered era.

Another implication of our argument is that the parties should have been willing to spend more in order to win a House seat after 1994. More precisely, as explained in the appendix, our theory implies that total spending in a district should have been an interactive function of the local pivot probability and the majority pivot probability.

A test of this idea can be conducted by regressing the total campaign expenditures reported to the Federal Elections Commission in each House district (*Total Expenditures*) on a measure of the local pivot probability (*Local Pivot*), an indicator for the period after 1994 (*Post-1994*), and an interaction term (*Post-1994* × *Local Pivot*). The indicator *Post-1994* provides a crude measure of the majority pivot probability—allowing it to take one value before 1994 and another one afterwards. We use two different operational measures of the local pivot probability—one based on the realized margin of victory in each district and one on Congressional Quarterly's forecasts of how competitive each district would be. Our analyses focus on the period 1982-2000 and control for a linear trend in expenditures, as well as for district fixed effects.[26]

Our results (see the supplemental materials, A.8) show the following. First, there was an upward trend in spending during this period. Second, spending increased with the local pivot probability both before and after 1994. However, the effect was significantly larger afterwards—83% larger when closeness is measured based on the realized margin of victory, 69% larger when it is measured by Congressional Quarterly ratings of race competitiveness. These results remain qualitatively similar if a wider range of years is included in the analysis or random effects are used instead of fixed effects. In summary, when the majority pivot probability increased, the value of

[26] District fixed-effects account for redistricting.

winning a seat increased, and the parties became willing to spend more chasing seats (local pivot probability held constant).

Robustness checks

We performed two further types of robustness checks: changing the specification of the concomitant equation (to probe whether our main finding is model-dependent); and changing the sample used in the analysis. We discuss each of these in turn.

We changed the concomitant equation by removing the constraint that the coefficients on control variables must be equal in the candidate-centered and party-centered models. This allows for the possibility that the median of the party-centered electorate differs from the median of the candidate-centered electorate. However, making this change did not significantly alter our findings.

We additionally estimated the model using dynamic ideal points for candidates rather than static ideal points. The dynamic ideal points are recovered by applying the one-period-at-a-time estimation procedure developed by Nokken and Poole (2004) to the CFscores (see Bonica 2014b for details on estimation.) The technique estimates independent period-specific ideal points for candidates based on contributions received in each period, with the contributor ideal points held static. This allows candidate ideal points to move freely from one cycle to the next. Relaxing this constraint has no discernable effect on the estimated coefficients. The coefficient for *Post-1994* is essentially unchanged at 2.22 in the dynamic model versus 2.24 in the static model.

	(1)	(2)	(3)	(4)
(Intercept)	-2.26	-0.98	-2.26	-15.70
	(0.63)	(0.41)	(0.63)	(3.15)
Election	0.02	-0.02	0.02	-0.03
	(0.04)	(0.04)	(0.04)	(0.05)
Post-1994	1.97	1.96	1.97	1.80
	(0.44)	(0.42)	(0.44)	(0.44)
Senate	-0.28	-1.66	-0.28	-2.90
	(0.36)	(0.49)	(0.36)	(0.75)
Ln(Total $ Spent)	2.28			1.06
	(0.70)			(0.23)
Pct. Out of State		3.60		0.88
		(1.06)		(0.78)
Pct. Out of District			2.28	2.45
			(0.70)	(1.28)
BIC	25381.3	25379.3	25381.3	25365.9
Num obs.	3,957	3,957	3,957	3,957

Table 3: Parameter Estimates and Standard Errors for Alternatively Specified Concomitant Equations

We then modified the concomitant equation to include additional controls. First we controlled for log total spending (in 2012 dollars) in each district.[27] Total spending proxies for how close elite actors viewed a given contest to be and, as noted above, we expect more competitive districts should have been more party-centered. Second, we controlled for the proportion of funds in each race raised from donors residing outside of the district (and then for donors residing out-of-state). The amount of out-of-district (out-of-state) money in a race indicates the extent to which a contest has been nationalized. As shown in Table 3, the new controls exhibit highly significant coefficients with the expected signs. More importantly for our purposes, the coefficient of *Post-1994* is robust to these changes.

As regards the sample, we first repeated the analysis for northern races alone. Our

[27] The spending amounts are adjusted for inflation.

substantive findings remained unchanged. Thus, our results are not being driven primarily by regional realignments or the decline of conservative southern Democrats. Next, we changed the threshold for the number of distinct donors each candidate in a race must fundraise from to be included in the sample. In particular, we re-estimated the model for each of the following threshold values: 5, 10, 15, 25, 35, and 50. Our results remain similar, regardless of the cutoff value. (See our supplemental appendix for results from robustness tests not reported above.)

Another point to consider is that estimated ideal points are informed by contributions to candidates competing in partisan primaries, not just by contributions made in the general elections. Re-estimating the model with ideal points estimates based solely on contributions received during the primaries yields results that are in line with those from the main estimation. Again, the coefficient for *Post-1994* is essentially unchanged at 2.16. The results continue to hold even after we subset on districts where one or both general election candidates faced contested primaries. As party-centered giving tends not to apply in the context of partisan primaries, this offers additional evidence that the results are not being driven by a change in behavior of donors.

Lastly, we re-estimate the model using roll call based measures of candidate ideology. The candidate positions for incumbents are measured using DW-NOMINATE scores. In place of the CFscores, we use a set of challenger estimates that are mapped directly onto the first dimension of DW-NOMINATE using supervised machine learning methods (Bonica 2017). This supervised approach predicts future DW-NOMINATE scores for non-incumbents with a high-degree of accuracy based on their fundraising activity prior to entering office.[28] Because the supervised

[28] The out-of-sample estimates reported in the paper correlate with DW-NOMINATE at 0.98 overall. The within party correlations are similarly strong at 0.87 for Democrats and 0.86 for Republicans.

measures can be interpreted as being identical to roll call voting measures, this should further guard against concerns that the estimates could be sensitive to changes that might have occurred in the behavior campaign contributors. We report results from a model with the supervised measures in the supplemental appendix. The estimated coefficient for *Post-1994* remains highly significant at 2.59 with a standard error of 0.58.[29]

Party representation?

Strategic nationalization raises a question: by whom are American citizens now represented? They are less well represented by their local congresspersons, because the latter have become more consistent supporters of their parties. Have they been compensated for the decline in local representation by a closer approximation to responsible party government?

The structural challenges to building responsible parties in the US, such as presidentialism and decentralized control of nominations, have long been recognized (APSA 1950). In the last few years, the majority Republicans have repeatedly failed to reach internal agreement on how aggressively to wield the power of the purse when dealing with an opposition president. This has led to shutting down the government for two weeks in 2013, to internecine primary-election fights (such as that toppling Majority Leader Eric Cantor in 2014), and to Speaker John Boehner's resignation in 2015. Thus, the cohesive parties envisioned by theorists of responsible party government have not yet emerged.

Although the parties have not been perfectly cohesive, we can still estimate the penalty for

[29] One limitation of the supervised approach is that provides estimates for a smaller number of candidates, reducing the sample size to 2,700 contests.

mean extremism that the parties have paid at the national level over time. These estimates also show a (less precisely estimated) *decline* after 1994. That is, divergence between the mean location of a party's candidates and the mean location of voters nationwide costs a party less after 1994. Possible explanations of this decline include the sharper partisan consequences of the 'natural gerrymander' against urban—increasingly Democratic—voters (Erikson 1972; Chen and Rodden 2013) and the increased role of money in politics. In any event, voters may still be waiting for party representation to replace their lost local representation.

The reason that the internal battles within the Republican conference have recently toppled their top leaders is partly that power has been concentrated in their hands. This suggests that leadership instability could be addressed by reallocating some of the Speaker's powers to the committee chairs, as indeed the Tea Party has recently proposed.[30] Their likely rationale is that they would secure a share of the committee chairs and would thus possess some independently wieldable agenda power. The resulting committee baronies would harken back to the dual-veto system under which the US Congress operated when the majority Democrats were deeply divided and in need of a way to credibly share agenda power between their Southern and Northern factions (Cox and McCubbins 2005, pp. 56, 65-66). Of course, were agenda power to be decentralized, then donors, activists and voters would pay more attention to factions and committee barons, and more candidate-centered elections would re-emerge.

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[30] See http://www.teaparty.org/conservatives-push-trim-speakers-power-124163/.

Conclusion

The midterm election of 1994 marked a watershed in American politics. For perhaps forty years before that election, the Republicans' chance of winning a majority in the House of Representatives had been consistently remote. Afterwards, however, majority status was almost always in play.

The emergence of a competitive House unleashed a series of reactions. First, elite actors focused a much greater fraction of their efforts on winning the partisan battle for congressional control. Donors sharply altered their pattern of giving, in order to maximize their favored party's chance of capturing a majority (Wand 2013). Parties redirected their staff resources toward partisan messaging (Evans 2000; Lee 2017) and commenced a campaign of what we call "strategic nationalization."

Elites who believed they had a better chance of winning a straight party fight in their districts than a candidate-centered fight had always had incentives to nationalize. However, the payoff to donors and other actors outside the district remained small before 1994. Afterwards, tipping a handful of competitive districts could convert a party from minority to majority status. Thus, efforts to nationalize contests became much better funded, with each party going after incumbents of the other party who sat in districts that leaned the wrong way.

In this paper, we have focused on two consequences of the strategic nationalization of congressional elections after 1994. First, voters—some because they appreciated the importance of party competition, others because they followed the advice of opinion leaders who had become more partisan—began to act in a substantially more party-centered fashion. To document the voter-level behavioral changes, we have estimated the fraction of party-centered voters in each district-year during the period 1980-2012. Our estimates document a sea change after 1994. Before 1994,

the median fraction of candidate-centered voters was roughly 75%; afterwards, it was roughly 25%.

Second, the sharp decline in candidate-centered voting led to an increased willingness of surviving moderates in Congress to vote with their parties. Moderates migrated toward their parties' means partly because those that remained were type-2 (they could vote with their party and still be more likely to win than lose) and partly because the penalty for voting with their party necessarily declined as voters became more party-centered. Thus, the sharp increase in ideological migration by moderates—which contributed substantially to the continuing polarization of congressional politics—was a natural consequence of strategic nationalization after 1994.

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Supplemental Materials

A model of strategic nationalization

Imagine a district in which the parties' and candidates' previous actions have established their respective ideological positions. Assume, contra the typical Downsian model, that the various actors' positions are prohibitively costly to change during the election campaign. In this case, one party will do better if the election turns into a straight party fight, while the other party will do better if the contest turns into a purely local contest between individual candidates. (We ignore the possibility of a tie, in which the Democrats' expected vote share in a straight party fight exactly equals their expected vote share in a pure candidate-centered contest.) Thus, the parties will compete over the frame that voters (or their opinion leaders) use when they cast their votes. The "nationalizing" party will push voters (or their opinion leaders) to view the contest as between the two national parties, while the "localizing" party will push them to view the contest as between two local candidates.

Let the nationalizing party's vote share in the focal district, $V_n(z_n,z_l)$, be

$$V_n(z_n,z_l) = \alpha(z_n,z_l)V_{n|party} + [1-\alpha(z_n,z_l)]V_{n|candidate}. \quad \text{(A.1)}$$

Here, $V_{n|party}$ represents the vote share the nationalizing party expects in a straight party fight (given the fixed ideological positions of the two parties); and $V_{n|candidate}$ represents its expected vote share in a purely local contest (given the fixed ideological positions of the two candidates). The term $\alpha(z_n,z_l)$ denotes the fraction of voters in a given district who behave in a party-centered fashion, given "effort" $z_n \geq 0$ exerted by the nationalizing party,

and "effort" $z_l \geq 0$ exerted by the localizing party. The remaining fraction (1- $\alpha(z_n,z_l)$) of voters behave in a candidate-centered fashion.

The nationalizing party wins the focal seat with probability $P_n(z_n,z_l) = \Pr[V_n(z_n,z_l) + \varepsilon > .5]$, where ε represents an exogenous shock to its expected vote share. Let b represent the value of winning a seat and denote the parties' costs of effort by $c_n(z_n)$ and $c_l(z_l)$, respectively. Each party seeks to maximize its expected office benefits, net of costs:

The nationalizing party: $\max_{z_n} P_n(z_n, z_l)b - c_n(z_n)$

The localizing party: $\max_{z_l} [1 - P_n(z_n, z_l)]b - c_l(z_l)$

A party's payoff b from winning a seat has two components. First, the party attaches a value, b_{seat}, to having its victorious candidate occupy the seat in question. Second, winning a competitive seat improves the victorious party's chance of securing a majority in the House. Let p denote the probability that winning an additional seat will give the party a majority in the House; and let b_{maj} denote the value of majority status. Then we can express the overall value of winning a seat as $b = b_{seat} + pb_{maj}$. Note that b_{maj} is not the value of majority status to the particular candidate seeking office in the focal district. Rather, it represents the aggregate value of gaining majority status to all the party's members. One might think of it as the party's willingness to pay for majority status.

The main result we wish to highlight is an intuitive comparative static result on p, the majority pivot probability. If we denote the total equilibrium expenditure in a given district by $z^* = z_n^* + z_l^*$, the result is that $\partial z^*/\partial p \geq 0$. In other words, when the value of a seat increases, due to an increase in p, the total effort that the parties expend weakly increases. This result follows fairly generally when the cost functions c_n and c_l are both

convex increasing and $c_n(0) = c_l(0) = 0$. The response will be strictly positive except when a district is very safe, in the sense that $\partial P_n/\partial z_j(0,0)b \leq \partial c_n/\partial z_j(0,0)$ for $j = n, l$. Note also that the marginal benefit of effort, $\partial P_n/\partial z_j[b_{seat} + pb_{maj}]$ is an interactive function of the local pivot probability ($\partial P_n/\partial z_j$) and the majority pivot probability (p).

Robustness Checks

A.1 Varying Component Coefficients

Model Components		
	Candidate-Centered	**Party-Centered**
(Intercept)	41.34	38.05
	(0.75)	(0.80)
Candidate Midpoint	2.40	
	(0.24)	
Party Midpoint		4.30
		(3.76)
Incumbent	9.28	9.53
	(0.62)	(0.56)
Open Seat	3.90	3.79
	(0.63)	(0.50)
District Partisanship (μ)	10.46	10.46
	(0.29)	(0.29)
ln(Dem. Spending) - ln(Rep. Spending)	3.55	2.96
	(0.21)	(0.13)
Candidate Quality (Dem.)	1.67	0.46
	(0.53)	(0.39)
Candidate Quality (Rep.)	0.21	-1.98
	(0.51)	(0.38)
Dem. President	-1.50	3.56
	(1.14)	(0.81)
GDP Growth	-0.42	0.33
	(0.15)	(0.14)
Midterm	1.71	1.30
	(0.72)	(0.49)
Pres. Approval	-0.03	-0.08
	(0.01)	(0.01)
Dem. President * GDP Growth	0.18	-1.77
	(0.49)	(0.35)
Dem. President * Midterm	-4.33	-2.47
	(1.23)	(0.79)
Dem. President * Pres. Approval	0.10	0.26
	(0.05)	(0.03)
Concomitant Model (α)		
(Intercept)	-2.42	
	(0.78)	
Election	0.07	
	(0.04)	
Post-1994	2.40	
	(0.62)	
Senate	-0.65	
	(0.37)	
Num obs.	3957	
BIC	25442.41	

Table 1A: Parameter Estimates and Standard Errors for the Components and Concomitant Equation of the Mixture Model

A.2 Restricting Sample by Region and Chamber

	Northern Only	Southern Only	House Only	Senate Only
(Intercept)	-1.36	2.09	-1.26	0.35
	(0.62)	(1.15)	(0.51)	(0.91)
Election	0.01	-0.14	0.01	-0.05
	(0.05)	(0.12)	(0.04)	(0.11)
Post-1994	2.61	2.26	2.34	1.46
	(0.59)	(1.18)	(0.47)	(1.05)
Senate	-1.02	0.28		
	(0.43)	(0.83)		
Num obs.	3074	883	3529	428
BIC	19683	5795	22572	2912

Table 2A: Parameter Estimates and Standard Errors for Concomitant Equations for Specified Sub-samples.

A.3 Sensitivity to Threshold Values

	N >=5	**N>=10**	**N>=15**	**N>=25**	**N>=35**	**N>=50**
(Intercept)	-0.77	-0.95	-0.51	0.23	0.31	1.28
	(0.36)	(0.42)	(0.41)	(0.40)	(0.42)	(0.55)
Election	-0.00	-0.00	-0.02	-0.05	-0.03	-0.11
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.06)
Post-1994	2.36	2.24	2.15	1.94	1.65	2.29
	(0.41)	(0.43)	(0.43)	(0.44)	(0.44)	(0.57)
Senate	-0.40	-0.60	-0.58	-0.53	-0.46	-0.68
	(0.39)	(0.36)	(0.34)	(0.31)	(0.31)	(0.32)
Num obs.	4505	3957	3591	3185	2902	2581
BIC	29164.10	25384.22	22982.36	20340.31	18497.14	16411.17

Table 3A: Parameter Estimates and Standard Errors for Concomitant Equations With Varying Threshold Values for The Minimum Number of Distinct Donors Giving to Each Candidate Required for Inclusion.

A.4 Dynamic CFscores

Model Components		
	Candidate-Centered	**Party-Centered**
(Intercept)	40.77	39.06
	(0.39)	(0.53)
Candidate Midpoint	2.86	
	(0.30)	
Party Midpoint		4.23
		(2.05)
Incumbent	9.53	9.53
	(0.34)	(0.34)
Open Seat	3.77	3.77
	(0.32)	(0.32)
District Partisanship ($\boldsymbol{\mu}$)	10.21	10.21
	(0.30)	(0.30)
ln(Dem. Spending) - ln(Rep. Spending)	3.17	3.17
	(0.08)	(0.08)
Candidate Quality (Dem.)	1.16	1.16
	(0.25)	(0.25)
Candidate Quality (Rep.)	-1.12	-1.12
	(0.26)	(0.26)
Dem. President	1.29	1.29
	(0.48)	(0.48)
GDP Growth	-0.12	-0.12
	(0.07)	(0.07)
Midterm	2.02	2.02
	(0.30)	(0.30)
Pres. Approval	-0.04	-0.04
	(0.01)	(0.01)
Dem. President * GDP Growth	-0.90	-0.90
	(0.20)	(0.20)
Dem. President * Midterm	-3.57	-3.57
	(0.49)	(0.49)
Dem. President * Pres. Approval	0.20	0.20
	(0.02)	(0.02)
Concomitant Model (α)		
(Intercept)	-0.81	
	(0.43)	
Election	-0.01	
	(0.04)	
Post-1994	2.22	
	(0.43)	
Senate	-0.57	
	(0.36)	
Num obs.	3957	
BIC	25397.29	

Table 4A: Parameter Estimates and Standard Errors for the Components and Concomitant Equation of the Mixture Model. Midpoints calculated from dynamic CFscore estimates.

A.5 Primary-only CFscores

Model Components		
	Candidate-Centered	**Party-Centered**
(Intercept)	40.87	38.09
	(0.54)	(0.69)
Candidate Midpoint	3.60	
	(0.52)	
Party Midpoint		7.78
		(2.93)
Incumbent	9.20	9.20
	(0.42)	(0.42)
Open Seat	3.86	3.86
	(0.41)	(0.41)
District Partisanship ($\boldsymbol{\mu}$)	10.44	10.44
	(0.37)	(0.37)
ln(Dem. Spending) - ln(Rep. Spending)	3.14	3.14
	(0.11)	(0.11)
Candidate Quality (Dem.)	1.17	1.17
	(0.32)	(0.32)
Candidate Quality (Rep.)	-1.33	-1.33
	(0.32)	(0.32)
Dem. President	2.31	2.31
	(0.65)	(0.65)
GDP Growth	-0.04	-0.04
	(0.09)	(0.09)
Midterm	1.90	1.90
	(0.37)	(0.37)
Pres. Approval	-0.06	-0.06
	(0.01)	(0.01)
Dem. President * GDP Growth	-1.36	-1.36
	(0.28)	(0.28)
Dem. President * Midterm	-2.83	-2.83
	(0.63)	(0.63)
Dem. President * Pres. Approval	0.22	0.22
	(0.02)	(0.02)
Concomitant Model (α)		
(Intercept)	-0.48	
	(0.54)	
Election	-0.01	
	(0.05)	
Post-1994	2.21	
	(0.52)	
Senate	-0.53	
	(0.40)	
Num obs.	2379	
BIC	15251	

Table 5A: Parameter Estimates and Standard Errors for the Components and Concomitant Equation of the Mixture Model. Midpoints calculated from CFscore estimates based solely on contributions raised during the primaries.

A.6 Supervised Measures of Candidate Ideology from Bonica (2017) (DW-NOMINATE)

Model Components		
	Candidate-Centered	**Party-Centered**
(Intercept)	41.62	40.86
	(0.66)	(0.53)
Candidate Midpoint	3.29	
	(0.62)	
Party Midpoint		-0.67
		(0.96)
Incumbent	9.18	9.18
	(0.35)	(0.35)
Open Seat	3.52	3.52
	(0.35)	(0.35)
District Partisanship ($\boldsymbol{\mu}$)	9.70	9.70
	(0.43)	(0.43)
ln(Dem. Spending) - ln(Rep. Spending)	3.11	3.11
	(0.13)	(0.13)
Candidate Quality (Dem.)	1.13	1.13
	(0.29)	(0.29)
Candidate Quality (Rep.)	-1.05	-1.05
	(0.29)	(0.29)
Dem. President	-0.00	-0.00
	(0.60)	(0.60)
GDP Growth	-0.12	-0.12
	(0.08)	(0.08)
Midterm	1.98	1.98
	(0.37)	(0.37)
Pres. Approval	-0.04	-0.04
	(0.01)	(0.01)
Dem. President * GDP Growth	-0.33	-0.33
	(0.22)	(0.22)
Dem. President * Midterm	-4.56	-4.56
	(0.56)	(0.56)
Dem. President * Pres. Approval	0.16	0.16
	(0.02)	(0.02)
Concomitant Model (α)		
(Intercept)	0.98	
	(0.53)	
Election	-0.10	
	(0.06)	
Post-1994	2.69	
	(0.58)	
Senate	-0.22	
	(0.36)	
Num obs.	2,700	
BIC	17263.9	

Table 6A: Parameter Estimates and Standard Errors for the Components and Concomitant Equation of the Mixture Model
Note: Candidate midpoints are calculated from a set of supervised measures from Bonica (2017).

A.7 Constructing Party Means Based on Party-Leaders

	Party Means Based on Party Leaders	Party Means Based on Incumbent MCs
(Intercept)	-2.10	-0.94
	(0.71)	(0.42)
Election	0.01	-0.00
	(0.04)	(0.04)
Post-1994	3.03	2.24
	(0.63)	(0.43)
Senate	-0.94	-0.61
	(0.37)	(0.36)
Num obs.	3957	3957
Log-Likelihood	-12574.8	-12596.8
BIC	25340.1	25384.1

Table 7A: Parameter Estimates and Standard Errors for the Components and Concomitant Equation of the Mixture Model.
Note: Party means in column 1 are calculated based on members in leadership positions and committee chairs/ranking members. Party means in column 2 are calculated based on all members of Congress.

A.8 Evidence of an Interactive Effect on Local Pivot Probability and Majority Pivot Probability on Total Spending in House Races

Local Pivot Probability	|Vote Margin|		CQ Rating	
	(1)	**(2)**	**(3)**	**(4)**
|Vote Margin|	344.1***	273.0***		
	(44.6)	(56.6)		
Competitive Seat (CQ)			549.9***	550.2***
			(33.9)	(44.2)
Post-1994	-104.9**	503.6**	-164.5***	229.1
	(48.2)	(219.9)	(44.3)	(192.2)
|Vote Margin|×Post-1994	592.9***	226.0***		
	(71.09)	(87.3)		
Competitive Seat (CQ) ×Post-1994			580.3***	381.8***
			(52.4)	(69.0)
Time-Trend (Cycle)	91.6***	104.1***	99.21***	109.2***
	(7.6)	(10.4)	(6.78)	(9.14)
(Intercept)	148.4***	-158.1	58.0*	-162.7*
	(39.4)	(103.0)	(35.1)	(89.9)
Random Effects	√		√	
Fixed Effects		√		√
Num obs.	2,913	2,913	2,989	2,989
R^2	0.	0.66	0.	0.73

Table 8A: Total Combined Spending by Major Party Candidates in House Elections

Note: Local Pivot probality is measured in two ways. In columns 1 and 2, it is measured as the absolute value of the vote share margin, $|v_d - 0.5|$. In columns 3 and 4, we construct and indicator variable for competitive and non-competitve seats using the Congressional Quarterly ratings of race competitiveness for House elections. If the CQ rated a seat as Leans Democrat, Tossup, or Leans Republican, Competitive Seat (CQ) is assigned a value of 1. If the CQ rates a seat as Safe Democratic, Likely Democratic, Likely Republican, or Safe Republican, Competitive Seat (CQ) is assigned a value of 0.