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## Technical Appendix

# Open Primaries

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## Introduction

The California legislature's February 19, 2009, budget deal unexpectedly pushed primary reform to the top of the policy agenda. In exchange for Abel Maldonado's decisive vote in the Senate, the legislature placed a "top-two vote getter" (TTVG) initiative on the June 2010 ballot. The reform community had already been contemplating an effort to put TTVG on the November 2010 ballot, but the deal with Senator Maldonado shortened the time line.

TTVG is an expansive form of "open" primary. In a classic open primary, voters can choose their primary on election day but they vote only for candidates in the party whose primary they select. By contrast, TTVG would allow primary voters to select any candidate, regardless of party. For each office, the two candidates who receive the most votes—again, regardless of party—compete against each other in the fall campaign.<sup>1</sup>

Advocates of an open primary system argue that it would encourage turnout by offering more choices, free legislators from the influence of interest groups, and make elections more competitive. But the most frequently cited goal of reform is to elect more moderates to public office by making it easy for voters to cross party lines in the primary. Advocates for reform argue that California's current primary system—where the parties can allow decline-to-state voters but not voters registered with different parties to participate—tends to weight the primary electorate toward ideological purists and party activists. This homogeneous electorate then selects candidates on the left (Democrats) or right (Republicans), giving moderate voters no palatable choice in the general election. Supporters of TTVG argue that by removing the barriers to cross-party voting, TTVG would make it easier for a candidate to build a true cross-party coalition of Democrats, Republicans, and decline-to-state voters.

My research aims to determine if open primaries do in fact lead to more moderate representation.<sup>2</sup> As a result, it has nothing to say about other potential benefits of reform mentioned above, which will be left to future research. The evidence will come from two sources: (1) California's brief experience with the blanket primary, and (2) congressional elections nationally over a broader range of time. In both cases, existing research has found that open primaries sometimes have an effect on moderation. This paper will expand and, in some cases, improve on the existing research to develop a more thorough set of evidence.

The results suggest that open primaries have at best a modest and conditional effect on representation. There are some signs of moderation in California under the blanket primary, mostly in the Assembly. In the U.S. House, the effect is inconsistent and generally absent. These findings contradict previous research and raise important questions about existing models of representation and parties.

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<sup>1</sup> The California version of TTVG would require a run-off in a general election after the primary, whether or not a single candidate received more than 50 percent of the vote; indeed, there would be a run-off even if the second-place candidate received just a single vote.

<sup>2</sup> This report does not take a position on whether more moderation would be a good thing or bad thing for California; it only seeks to determine whether open primaries will produce more moderation.

## Background

### A Moderating Effect?

The theoretical literature on primaries generally suggests that they have a polarizing effect on representation (Aldrich 1983; Aranson and Ordeshook 1972; Cadigan and Janeba 2002; Owen and Grofman 2006). The basic logic is simple: if the average registered Democrat or Republican is more extreme than the electorate as a whole, then any nomination process that only allows party registrants to participate is likely to select candidates who are similarly extreme.

It stands to reason, then, that opening a primary to independents and even opposing partisans will lead to more moderate representation. Voters will tend to “cross over” — to vote outside their party identification—only to support candidates who are relatively moderate, and these candidates will be more likely to advance to the fall campaign and ultimately win election to office. This, in turn, would encourage moderate candidates to run in the first place. Donors and activists would also be more willing to support these candidates, since their moderate positions will make them more viable in both the primary and the fall campaign.

It is tempting to assume that an open primary will make representatives more “responsive” to the district median in a generic sense. But an open primary does not make either the district or the primary median clearer to candidates; it simply moves the primary median toward the opposing party. For example, Democratic candidates to the left of their primary median might move toward the center under an open primary system, as their primary median moves in the same direction. But Democratic candidates to the right of the Democratic median should not move at all—the median is already moving toward them. The same is true in the opposite direction for Republicans: Republicans to the right of their median might move to the center, but those to the left should not move at all. In effect, relatively conservative Democrats and liberal Republicans have already escaped the centrifugal pressures of the closed primary, so an open primary should make little difference to their ideological positioning. Thus, responsiveness to the district median will only improve in an open primary with candidates who are too extreme, and changes in candidate positions should occur in a moderating direction.<sup>3</sup>

In theory, the size of the moderating effect also depends on the partisanship of the district. To take an extreme example, in a district populated entirely by voters of a single party, an open primary would have no effect at all; in this circumstance, the general electorate is equivalent to the primary electorate, so the open primary makes no difference. As a district becomes more balanced between the parties, more voters can potentially cross over into the dominant party’s primary, opening the way for larger changes in the primary electorate on each side.

Despite its intuitive appeal, there are a number of reasons to doubt the link between open primaries and moderation. First, it is not clear that primary electorates are as extreme as they are sometimes believed to be (Geer 1988; Norrander 1989). The evidence on this point is based on presidential elections and has grown somewhat old, but it underscores the danger of assuming too much about patterns of registration and turnout.

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<sup>3</sup> It is also possible that mischief voting—where voters cross over to select the weakest candidate of the opposing party, in order to clear the way for their own party’s nominee—could pull the primary median farther to the extreme, but this might actually make responsiveness worse, not better.

Second, the logic behind a link between open primaries and moderation is not as clear-cut as it might appear. Formal models of open primaries and multi-candidate races do not always produce stable expectations about the ideology of the winning candidate, and extreme candidates can win even when the median voter in the primary electorate is moderate (Cooper and Munger 2000; Cox 1987; Oak 2006; Chen and Yang 2002).

Third, crossover voting in and of itself rarely determines the outcome of an election. It is true that crossover rates are sometimes quite high, and the great majority of voters who cross party lines do so sincerely—that is, they select the candidate they most prefer (Alvarez and Nagler 2002; Kousser 2002; Sides et al. 2002). But for crossover voters to alter the outcome of a primary election, three criteria must be met: (1) the margin between the candidates among party registrants must be small; (2) the crossover rate must be high; and (3) the crossover voters must vote differently from the regular party registrants.<sup>4</sup> It is not impossible to meet all three conditions, but it is difficult, and there is not much evidence that it commonly occurs (Alvarez and Nagler 2002; Southwell 1991).

In fact, it is not even clear that crossover voters necessarily choose the candidate who is closest to them ideologically. Instead, they are generally attracted to salient candidates first, and only then to the one they like the best. This saliency factor often benefits incumbents, but it can also benefit any candidate with the resources necessary for self-promotion (Alvarez and Nagler 2002; Salvanto and Wattenberg 2002). In either case, the ultimate nominee need not be moderate.

Finally, the assumption that elite actors such as activists, wealthy donors, and “kingmakers” will gravitate to a moderate candidate simply because the primary is open may be flawed. New theories of parties emphasize that these actors tend to be ideologically extreme and primarily concerned with a candidate’s ideological purity. Moreover, these actors can play a significant, possibly decisive role in shaping the positions of the candidates they support (Masket 2009). The money and volunteer efforts that come from these supporters enable candidates to promote themselves to the primary electorate, whatever their ideology might be. Politics favors the organized, and the organized might tilt toward ideological extremes.

In short, though the logic of a causal link between open primaries and moderation is compelling, there are many reasons to doubt the strength of the connection.

### Primary Systems in the United States

Before we can consider whether open primaries encourage moderate representation, we must consider which types of open primaries are most likely to produce the moderating effect. Open primaries in the United States differ on a number of dimensions:

1. *Independents vs. all voters*: Is participation by non-members limited to independents or is it extended to members of opposing parties as well?
2. *Public vs. private*: Is the decision to cross over into another party’s primary one that must be made publicly, or is it left to the privacy of the voting booth? A public decision might discourage voters from crossing over because it would leave them open to solicitation by parties and candidates.
3. *Registration requirement*: If the decision to cross over is public, does it require registration with the party whose primary the voter chooses to join? Switching registration is always an option,

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<sup>4</sup> Strictly speaking, crossover voters need not be numerous nor significantly different from party members if the margin between the candidates among party registrants is small. But as a practical matter, both a high rate of crossover voting and a significant difference are required.

of course, and some states allow it on election day. But registration involves a psychological commitment to the party that some voters might not be willing to make. It can also create a new default condition that needs to be changed if future crossover voting is to occur, since some states offer election-day registration only to independents.

4. *Choosing parties vs. choosing candidates*: Can crossover voters choose candidates of different parties in different races, or must they commit to voting only for candidates of one party?
5. *Blanket vs. top-two vote-getter*: Do systems that allow voters to choose candidates of any party in any race advance the winners within each party (blanket primary) or the top two winners overall (top-two vote-getter)?

The literature provides little consistent guidance on what to expect from this variation. Theoretical approaches tend to assume that voters are either allowed to cross over or not—and so they make no predictions about the effects of variations 2 and 3 above. Moreover, this research typically assumes an election with only one race, which rules out the distinctions in variations 4 and 5 as well (Chen and Yang 2002; Kang 2007; Oak 2006). Empirical and experimental work has factored in more distinctions, but to varying degrees. For instance, Kanthak and Morton (2001) distinguish between both public and private crossover decisions and blanket and top-two vote-getter systems, but Gerber and Morton (1998) and Cherry and Kroll (2003) do not. I am not aware of any research that explores the effect of a registration requirement.

Previous research tends to combine the dimensions of difference to produce five primary types<sup>5</sup>:

1. *Pure closed*—only voters who are registered with a party can participate in its primary.
2. *Semi-closed*—independents, but only independents, are allowed to participate in partisan primaries
3. *Semi-open*—all voters can participate in any primary, but they must choose a party publicly.
4. *Pure open*—all voters are allowed to participate in any primary, and their choice is private.
5. *Nonpartisan*—in each race on the ballot, all voters may select a candidate from any party.

Despite the monotonic relationship between “openness” and moderation that is implied by these names, predictions from the literature are more complicated. Research generally finds that pure closed primaries elect relatively extreme candidates, at least if one assumes that voters in each primary electorate are relatively extreme as well (Cherry and Kroll 2003; Gerber and Morton 1998; Kanthak and Morton 2001; Oak 2006). The research also agrees that semi-closed and nonpartisan systems produce relatively moderate candidates in most circumstances (Gerber and Morton 1998; Kanthak and Morton 2001), though some experimental evidence casts doubt on this prediction for nonpartisan systems (Cherry and Kroll 2003).

Pure open systems produce mixed predictions and results. Formal models sometimes predict relatively extreme representation from such systems, and some empirical research has confirmed this prediction (Gerber and Morton 1998; Oak 2006). This counterintuitive result depends on a fair amount of “raiding”: crossing over to vote for the *weakest* candidate in the opposing party’s primary to ensure the easiest path to victory for the candidate from one’s own party.<sup>6</sup> Since this weak candidate could easily be relatively

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<sup>5</sup> Only Kanthak and Morton (2001) make a distinction between semi-open and open, though the National Conference of State Legislatures separately identifies those states that require crossover voters to publicly declare their decision (Intorcio 2008).

<sup>6</sup> Raiders are typically certain of their own party’s nominee or indifferent about the candidates of their party who are most likely to win nomination.

extreme, raiding might lead to greater polarization of nominees. Moreover, in a pure open primary, raiders who cross over to create mischief in one race are forced to remain in that party's primary, and so might create mischief in other races as well.<sup>7</sup>

Kanthak and Morton (2001) contend that these predictions conflate semi-open and pure open systems, and that only the latter consistently produce more extreme candidates. This claim appears to hinge on the notion that the public nature of crossover voting in semi-open systems shame potential raiders into sticking with their party. However, empirical studies suggest that raiding is rare anyway, perhaps because it requires complicated coordination among voters if it is to be successful (Alvarez and Nagler 2002; Sides et al. 2002). Overall, it is fair to say that the predictions of a nonlinear effect are fragile and dependent on assumptions that may not be realistic in practice.

My research design requires some variation over time in a state's primary system for analytical leverage. This makes it difficult to analyze semi-open and pure open primaries separately, since no state has adopted or abandoned the semi-open system during the study period and only one state (Washington) has adopted the pure open system. Virtually all states that changed their primary systems have shifted from a closed to a semi-closed system or vice versa, and almost all of the states that shifted to a semi-closed system have eschewed a registration requirement. However, it is possible to describe nonpartisan systems, since three states—Alaska, California, and Washington—were forced to abandon the blanket primary by the U.S. Supreme Court's decision in *California Democratic Party v. Jones* 2000.<sup>8</sup>

For these reasons, I have compared outcomes in nonpartisan systems and in semi-closed systems without a registration requirement to outcomes in all others. Fortunately, theoretical and empirical research has identified semi-closed and nonpartisan systems as most likely to produce moderation, and the model I adopt (described below) controls for any differences among the remaining primary systems that collectively serve as the reference category. Thus, the analysis loses very little explanatory power.

## Data and Research Design

This project draws on two sources of data. The first consists of roll-call scores for the California state legislature before, during, and after implementation of the blanket primary. I use four measures of roll-call voting for the legislature from the years 1997 through 2008: Chamber of Commerce scores, which measure a member's positions on economic and business regulation issues; League of Conservation Voter scores, which measure positions on environmental issues; Planned Parenthood scores, which measure positions on abortion and reproductive rights issues; and party loyalty measures, which capture the percentage of the time a legislator voted with the Democratic party on bills that divided a majority of Democrats from a majority of Republicans.

I regress these measures of ideology and issue positions on the district vote for the legislator, the district's partisan registration, a dummy variable for open seats, and a dummy for the years in which the blanket primary was in effect. Since moderation means moving in a liberal direction for Republicans and a conservative direction for Democrats I also run these regressions separately by partisan identification.

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<sup>7</sup> Oak (2006) also envisions a scenario where moderate voters in one party cross over in large numbers to support a moderate candidate in the other, thus leaving their own party's nomination process to the remaining extremist voters. However, under this scenario one party nominates an extremist and the other nominates a moderate, so the result should be a moderate victory in the fall.

<sup>8</sup> A complete accounting of the primary systems in each state in each election year can be found in Tables 10 and 11.

The larger the effect of this blanket primary variable, the more we can say that the blanket primary increased moderation independent of other factors.<sup>9</sup>

California's experience with the blanket primary is useful for understanding how an open primary might interact with particular features of California's political landscape. But there are limitations to an analysis of California alone. Conclusions from such an analysis are necessarily based on a limited number of races and a blanket primary that was implemented over a narrow range of time. Moreover, the experience of a single state is rarely dispositive; other developments that influence moderation may have coincided with the implementation of the blanket primary in California.

A more systematic approach using a wider range of states helps to supplement the evidence from California's experience. The best source for such data is House elections. House races are numerous (435 each year) and encompass the full range of primary systems in the United States today. Much like the California data, House data include multiple years as well as multiple districts, encompassing instances where states changed their primary systems. This offers analytical leverage that analysis of a single year cannot provide.

This analysis of the House draws on three roll-call measures for votes cast from 1983 through 2008. The first is first-dimension DW-NOMINATE scores, which capture basic ideological distinctions as derived from virtually all contested roll-call votes and which correct for changes in the public agenda over time by using legislators who serve in more than one legislature as reference anchors for estimation. The second is party loyalty scores, calculated in the same way as for the California legislature. The final measure consists of scores from the liberal activist group Americans for Democratic Action (ADA). Like the interest group scores from California, ADA scores capture the percentage of the time a member of Congress supported the group's position on bills it considered important. The only difference is that these scores have been adjusted, in much the same way as the DW-NOMINATE scores, to reflect changes in the issue agenda over time (Anderson and Habel 2009b; Groseclose et al. 1999).

Other studies have analyzed ADA scores in a panel design of this type (Gerber and Morton 1998; Kanthak and Morton 2001). But these studies estimate a model that omits state and year fixed effects and examines a period of time with essentially no change in primary systems. At best, these models include a partitioned error term for states, which corrects for problems of panel autocorrelation but by design credits the primary systems with most of the explanatory power (Stimson 1985). These models resemble the following design:

$$\text{IDEO}_{(ist)} = \mathbf{P}_{(st)}\boldsymbol{\beta} + \mathbf{X}_{(ist)}\boldsymbol{\lambda} + \mathbf{Z}_{(st)}\boldsymbol{\phi} + e_{(ist)} \quad (1)$$

In this design, IDEO is the politician's ideology,  $\mathbf{P}$  is a vector of dummy variables for different primary systems,  $\mathbf{X}$  is a vector of district-level explanatory variables,  $\mathbf{Z}$  is a vector of state-level explanatory variables,  $e$  is the error term, and  $i$ ,  $s$ , and  $t$  index districts, states, and election years respectively. The model is run separately for Democrats and Republicans.

The potential for bias in this design is substantial. It compares the ideology of candidates from states with open primaries to those without open primaries, and assumes that any remaining differences between

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<sup>9</sup> One limitation of this approach is that the comparison category includes the results of both closed (1996) and semi-closed (2002–2006) elections. This decision was dictated by the desire to offer a consistent range of years for all dependent variables, since the Planned Parenthood scores were not recorded prior to the 1997–98 legislature. The 1996 election could of course be omitted, but it offers a useful comparison within the same redistricting cycle. Theoretically, it should exaggerate the effect of the blanket primary, since closed primary elections should exhibit the largest centrifugal tendencies.



these different states are captured by either **X** or **Z**. The conclusions derived from this model are at times unexpected and counterintuitive. For instance, the results suggest that certain types of open primaries can make candidates more extreme in one party and more moderate in the other, with little theoretical explanation for why we might see such a divergence (Kanthak and Morton 2001).

A better approach uses state and year fixed effects (again, run separately for Democrats and Republicans):

$$IDEO_{(ist)} = \mathbf{S}_{(s)}\boldsymbol{\delta} + \mathbf{Y}_{(t)}\boldsymbol{\gamma} + \mathbf{P}_{(st)}\boldsymbol{\beta} + PV_{(ist)}\alpha + e_{(ist)} \quad (2)$$

This offers a classic “difference-in-difference” design (Ashenfelter and Card 1985), where **β** is a vector of coefficients that estimate the impact of different open primary laws independent of other characteristics of the states (**S**), general change over time (**Y**), and the presidential vote in the district. The presidential vote accounts for district partisanship, the most important district-level influence on candidate ideology apart from party identification, which is itself controlled by running the equation separately for each party caucus.

To be fair, earlier research could not employ the full difference-in-difference design because primary systems were relatively static throughout the 1980s. But the 1990s and early 2000s witnessed a number of changes in primary laws, some of them exogenously imposed by courts (more will be said about these changes below). These changes offer analytical leverage for assessing the impact of open primary laws and constitute an important reason for updating the earlier analysis.

The use of roll-call scores to measure moderation necessarily has limitations. It presumes that the bills that come up for a floor vote in each chamber accurately reflect the full range of issues on which legislators disagreed. In reality, many battles between moderates and extremists might be waged in the drafting stage, and bills that would otherwise divide a caucus might be revised or even killed in committee. As a result, the overall output of a legislative body might become more “moderate” without any apparent change in patterns of roll-call voting on the floor. That said, if the majority party manages to bring a less ideologically extreme set of bills to the floor, those bills should capture greater support from the minority party, especially if open primaries have produced more moderate representatives on that side of the aisle. Thus, the measures employed here do capture moderation in one particular sense: cross-party collaboration. With few exceptions, the more a member votes with the opposing party, the more likely it is that that member will appear to be moderate on these measures.<sup>10</sup>

## Analysis

### California Legislature

The California roll-call analyses can be found in Tables 1–4. In Tables 1 and 2, the coefficient of interest is the one associated with the blanket primary dummy, which indicates whether moderation was higher during the two election years when California implemented this reform. I have recoded the dependent variables so a positive coefficient on the blanket primary dummy signifies greater moderation in every

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<sup>10</sup> It is possible that open primaries would diminish the influence of interest groups that traditionally dominate each party’s primary. Then again, candidates running in an open primary might seek support from a different set of interest groups, rather than avoiding interest groups entirely.



case.<sup>11</sup> Tables 3 and 4 contain models that interact the blanket primary with district party registration, to test the idea that the blanket primary has a larger effect in competitive districts; in these models the interaction term is the coefficient of interest. All models use ordinary least squares with standard errors clustered by district.

The results for the models without interaction terms suggest that the blanket primary did have the moderating effect expected, but only in the Assembly and mostly for Democrats. In the Assembly (Table 1), Democrats were 7.1 points more conservative and Republicans 2.5 points more liberal on Chamber of Commerce issues under the blanket primary. Democrats were also more conservative on Planned Parenthood scores by 3.6 points.<sup>12</sup> The results for the State Senate are generally smaller and statistically uncertain (see Table 2), though Republicans in the Senate appear to be slightly more moderate (2.1 points) on Chamber of Commerce issues under the blanket primary.

**Table 1.**  
Explaining roll-call scores, California Assembly, 1997–2008

	Chamber of Commerce		League of Conservation Voters		Planned Parenthood		Party Loyalty	
	Democrats	Republicans	Democrats	Republicans	Democrats	Republicans	Democrats	Republicans
Blanket primary	7.131*** (1.827)	2.472** (0.680)	2.050 (2.311)	-1.565 (2.016)	3.615* (1.399)	-3.900 (3.468)	-0.421 (0.508)	0.525 (1.216)
Democratic vote share	-0.281** (0.094)	0.006 (0.030)	-0.145 (0.098)	0.042 (0.067)	-0.107# (0.060)	0.069 (0.141)	-0.080** (0.029)	0.042 (0.040)
District party registration	-0.023 (0.077)	0.138* (0.066)	-0.071 (0.081)	0.658*** (0.141)	0.055 (0.050)	0.146 (0.199)	0.000 (0.017)	0.552*** (0.094)
Open seat	-3.327* (1.452)	-1.550** (0.568)	-1.589 (1.536)	-1.742 (1.675)	-1.834 (1.105)	-0.652 (2.928)	-0.874* (0.359)	-0.224 (1.217)
Intercept	43.894***	4.104**	21.531**	16.834***	7.949#	18.917**	8.089**	13.863***
R <sup>2</sup>	0.152	0.182	0.043	0.209	0.076	0.016	0.098	0.297
Root MSE	12.724	4.232	14.580	12.722	7.492	19.918	3.247	8.416
N	284	195	284	195	284	195	284	195

NOTES: Independent variables reflect characteristics of the election prior to the legislature in which the roll-call votes were cast. Models use OLS with standard errors clustered by district.

#p<0.10 \*p<0.05 \*\*p<0.01 \*\*\*p<0.001.

<sup>11</sup> Specifically, I have subtracted the Chamber of Commerce scores from 100 for Republicans and subtracted all others from 100 for Democrats. This ensures that every variable measures greater moderation on that issue for that party.

<sup>12</sup> I ran these Assembly models using DW-NOMINATE scores as the dependent variable. The effect of the blanket primary was statistically and substantively insignificant in both the base model and the interaction with district partisanship. This measure was only available for the Assembly and only through 2004. The results are in Table 12 below.

**Table 2.**  
**Explaining roll-call scores, California Senate, 1997–2008**

	Chamber of Commerce		League of Conservation Voters		Planned Parenthood		Party Loyalty	
	Democrats	Republicans	Democrats	Republicans	Democrats	Republicans	Democrats	Republicans
Blanket primary	-0.790 (2.659)	2.144* (0.845)	-3.070 (2.834)	-2.378 (2.857)	0.217 (1.112)	-5.069 (3.547)	-1.812* (0.823)	-3.429 (2.590)
Democratic vote share	-0.097 (0.089)	0.023 (0.024)	-0.057 (0.106)	-0.092 (0.100)	-0.024 (0.085)	-0.152 (0.129)	-0.078* (0.030)	-0.047 (0.077)
District party registration	-0.129 (0.080)	0.068 (0.052)	-0.050 (0.093)	0.891# (0.441)	-0.066 (0.053)	0.675# (0.378)	-0.015 (0.037)	0.736* (0.275)
Open seat	-0.314 (2.824)	-0.576 (0.773)	-1.339 (2.954)	2.612 (2.558)	-0.569 (1.272)	3.065 (2.760)	-0.664 (1.055)	-0.045 (2.718)
Intercept	33.246***	3.224*	15.285#	19.953*	6.532	26.646**	9.607***	21.443***
R <sup>2</sup>	0.056	0.162	0.026	0.368	0.015	0.204	0.066	0.260
Root MSE	12.411	3.505	13.022	12.261	10.184	13.774	5.640	13.142
N	149	90	149	90	149	90	149	90

NOTES: Independent variables reflect characteristics of the election prior to the legislature in which the roll-call votes were cast. Models use OLS with standard errors clustered by district.

#p<0.10 \*p<0.05 \*\*p<0.01 \*\*\*p<0.001.

Tables 3 and 4 contain the models that interact the blanket primary with district party registration. In order for the expectations to be confirmed, the interaction term should be negative for Democrats and positive for Republicans. However, almost none of these terms are statistically significant in either chamber. There is only one effect that is at least marginally statistically significant and correctly signed: Republican Chamber of Commerce scores in the Senate. Otherwise, the interaction model receives little support.

**Table 3.**  
Explaining roll-call scores with interactions for party registration, California Assembly, 1997–2008

	Chamber of Commerce		League of Conservation Voters		Planned Parenthood		Party Loyalty	
	Democrats	Republicans	Democrats	Republicans	Democrats	Republicans	Democrats	Republicans
Blanket X party registration	0.063 (0.104)	0.096 (0.088)	0.171 (0.132)	-0.115 (0.189)	0.113 (0.105)	-0.107 (0.424)	0.010 (0.027)	-0.089 (0.135)
Blanket primary	7.130*** (1.831)	2.422** (0.683)	2.047 (2.300)	-1.506 (1.952)	3.612* (1.390)	-3.845 (3.499)	-0.421 (0.509)	0.571 (1.173)
Democratic vote share	-0.277** (0.092)	0.007 (0.030)	-0.135 (0.093)	0.041 (0.067)	-0.101 <sup>#</sup> (0.058)	0.069 (0.141)	-0.079** (0.029)	0.041 (0.040)
District party registration	-0.050 (0.078)	0.109* (0.052)	-0.145 (0.089)	0.693*** (0.152)	0.007 (0.031)	0.178 (0.209)	-0.004 (0.023)	0.579*** (0.090)
Open seat	-3.236* (1.422)	-1.594** (0.565)	-1.343 (1.508)	-1.689 (1.698)	-1.672 (1.059)	-0.603 (3.010)	-0.859* (0.360)	-0.184 (1.240)
Intercept	42.960***	2.715*	18.742*	10.291**	8.925 <sup>#</sup>	17.477**	8.045**	8.370***
R <sup>2</sup>	0.153	0.190	0.051	0.211	0.089	0.017	0.098	0.298
Root MSE	12.736	4.222	14.452	12.746	7.451	19.965	3.252	8.430
N	284	195	284	195	284	195	284	195

NOTES: Independent variables reflect characteristics of the election prior to the legislature in which the roll-call votes were cast. Models use OLS with standard errors clustered by district.

<sup>#</sup>p<0.10 \*p<0.05 \*\*p<0.01 \*\*\*p<0.001.

**Table 4.**  
**Explaining roll-call scores with interactions for party registration,**  
**California Senate, 1997–2008**

	Chamber of Commerce		League of Conservation Voters		Planned Parenthood		Party Loyalty	
	Democrats	Republicans	Democrats	Republicans	Democrats	Republicans	Democrats	Republicans
Blanket X party registration	0.123 (0.142)	0.112 <sup>#</sup> (0.060)	0.114 (0.159)	0.540 (0.391)	0.131* (0.060)	0.835 (0.533)	0.032 (0.046)	0.388 (0.279)
Blanket primary	-0.756 (2.622)	2.019* (0.782)	-3.038 (2.822)	-2.975 (2.846)	0.253 (1.098)	-5.992 <sup>#</sup> (3.286)	-1.803* (0.818)	-3.858 (2.517)
Democratic vote share	-0.098 (0.089)	0.030 (0.022)	-0.059 (0.107)	-0.060 (0.076)	-0.026 (0.084)	-0.103 (0.091)	-0.078* (0.030)	-0.024 (0.066)
District party registration	-0.186* (0.090)	0.021 (0.057)	-0.103 (0.113)	0.666* (0.316)	-0.127 <sup>#</sup> (0.068)	0.327 (0.219)	-0.030 (0.054)	0.575 (0.248)
Open seat	-0.494 (2.781)	-0.497 (0.771)	-1.507 (2.874)	2.990 (2.725)	-0.761 (1.252)	3.650 (2.884)	-0.711 (1.011)	0.227 (2.631)
Intercept	30.267***	2.244*	14.219 <sup>#</sup>	9.870**	5.093	17.764***	9.274**	13.280***
R <sup>2</sup>	0.061	0.186	0.031	0.402	0.025	0.286	0.068	0.278
Root MSE	12.420	3.475	13.039	11.996	10.172	13.127	5.654	13.058
N	149	90	149	90	149	90	149	90

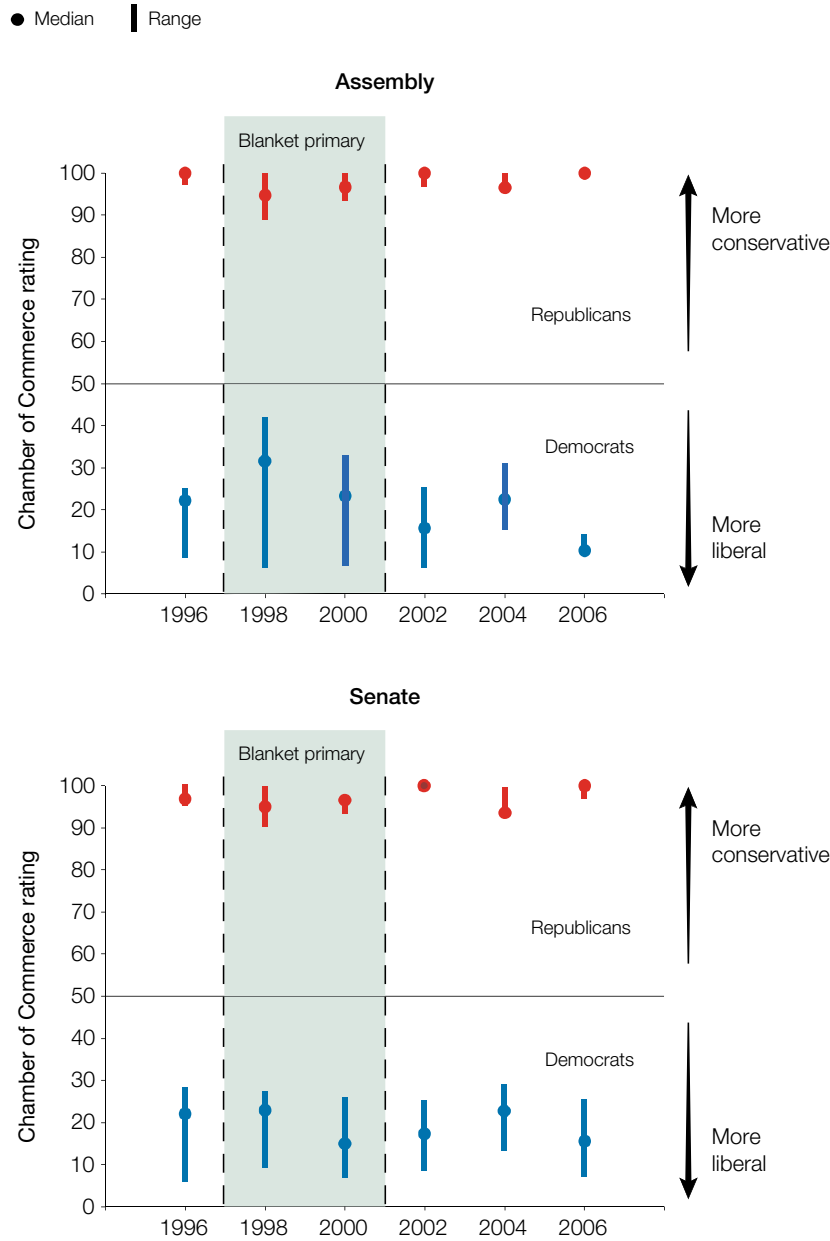
NOTES: Independent variables reflect characteristics of the election prior to the legislature in which the roll-call votes were cast. Models use OLS with standard errors clustered by district.

<sup>#</sup>p<0.10 \*p<0.05 \*\*p<0.01 \*\*\*p<0.001.

How large are these effects? (I work here with the results for the model without interactions.) The 7-point effect for Democratic Chamber scores in the Assembly is about half the difference between the average Chamber scores of Democrats from the Central Valley—long known for more moderate Democrats—and all others. The other effects are not as large, but they are substantial in relation to the range of opinions within each party: roughly equal in each case to the difference between a legislator in the most extreme quarter of the party and one in the direct middle.

To get an even better sense of these magnitudes, Figure 1 plots Chamber of Commerce scores for the Assembly and Senate from 1997 through 2008. Chamber of Commerce scores track issues of business regulation that are often considered a critical dividing line between the parties, and they also showed the largest effects in the models of Tables 1 and 2. Thus, these graphs display some of the largest effects from the blanket primary, both statistically and substantively. The graph offers a sense of both the location and the distribution of Chamber scores: the vertical lines represent the minimum to the 75th percentile for Democrats and the 25th percentile to the maximum for Republicans. Anything beyond that range is omitted from the graph.

**Figure 1.**  
**Range of Chamber of Commerce Scores in the California Legislature**



NOTES: The Chamber of Commerce tends to have a conservative perspective on economic and business regulation issues, so higher scores suggest a more conservative legislator on those subjects. The dots in the graph represent the median (50th percentile) Chamber score of each party caucus. The vertical lines give a sense of the distribution in each caucus: for Democrats, they range from the lowest score to the 75th percentile; for Republicans, they range from the 25th percentile to the highest score.

The moderating effect of the blanket primary for Democrats in the Assembly is clearly visible here, but it takes a very particular form: the range of scores for the Democrats became significantly more moderate, but the median shifted only slightly. The same pattern is visible, to a smaller extent, for both Assembly and Senate Republicans. The blanket primary did not make every legislator more moderate; it made some much more moderate while leaving many others unchanged. Figure 1 also makes clear that the gap between the parties shrank considerably only in the Assembly, and that Democrats were responsible for the great majority of this bipartisanship.

In addition to the models presented here, I also interacted the blanket primary with several other explanatory variables to test a variety of alternative hypotheses. First, the blanket primary might have had a larger moderating effect on open-seat candidates, who were less burdened by previous political commitments and more likely to face a challenge in the primary. There is some evidence of this effect for Republicans in the Assembly, but the evidence also suggests that incumbent Republicans were *more* conservative during the blanket primary years (see Tables 13 and 14 below). Second, for similar reasons the effect might have been present only for candidates in contested primaries. An interaction with an uncontested primary dummy suggests the blanket primary did, in fact, moderate Republican party loyalty in the Assembly (where the result had previously been null). But it also suggests that Assembly Republicans who were unopposed in the primary were significantly more *conservative* than similarly unopposed Republicans under other systems (see Tables 15 and 16 below). Third, the results are null if uncontested primaries are dropped and the margin of victory for candidates in contested primaries is the interaction term instead (see Table 17; only in the Assembly were there were only enough cases to allow for this analysis). Fourth, I interacted the blanket primary with a dummy for termed-out members on the assumption that lame ducks would feel less need to moderate because they did not have to run in the upcoming primary. This interaction was inconsistently signed and statistically insignificant (see Tables 18 and 19). Finally, I interacted the blanket primary with the share of a district's voters who registered as decline-to-state (DTS), to test the possibility that a larger share of DTS voters would introduce more uncertainty and so encourage a candidate to moderate. If anything, this interaction term suggested that higher DTS registration made members more extreme under the blanket primary (see Tables 20 and 21).

It is difficult to know how much to make of the moderating effect in the Assembly. Robert Hertzberg, who served as Assembly speaker for the years the blanket primary was in effect, was widely considered a champion for the moderate branch of his caucus. The generally null results for the State Senate are consistent with a leadership effect of this type. In contrast, the Senate during this period was led by John Burton, who is generally known as a strong partisan.

Of course, it is unlikely that Hertzberg could have led Democratic members of the legislature toward greater moderation if they had not been willing to follow him. Moreover, other research has measured moderation prior to the casting of roll-call votes and found that moderates were more likely to be nominated for the Assembly under the blanket primary (Gerber 2002). If we believe that an open primary does not *guarantee* victory for moderate candidates but only makes it *more likely*, then it makes sense that we would see moderation only in the Assembly. Also, the smaller number of races in the Senate (only 20 in each election year) might retard the rate of change in that body and make the effect of the blanket primary more difficult to see.

## U.S. House of Representatives

Table 5 contains the results of the analysis for the U.S. House. I have coded each score so a positive coefficient for a primary system always means greater moderation for every party and every dependent variable.<sup>13</sup> The results generally suggest no effect for either semi-closed or nonpartisan primaries. Under nonpartisan systems, Republicans are less loyal to their party by 6.2 percentage points and more liberal on ADA scores by 5.4 points. Their party loyalty is also lower by 1.8 points under semi-closed systems (though this effect is only marginally significant). Democrats are also more conservative on ADA scores

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<sup>13</sup> Specifically, I multiplied DW-NOMINATE scores by -1 for Republicans, and subtract the party loyalty and ADA scores from 100 for Democrats.

by 4.2 percentage points under semi-closed systems and by 4.1 percentage points under nonpartisan systems. Apart from these effects, however, there are no other statistically significant coefficients.<sup>14</sup>

How large are the effects that do reach statistical significance? To put them in perspective, the southern wing of the Republican Party—which is often considered more conservative—has been about 8 points more conservative on ADA scores and about 6 points more loyal.<sup>15</sup> So the effects cited above are on the order of this regional difference. However, the same regional gap in the Democratic Party is much larger—about 10 points for party loyalty and 20 points for ADA scores—so the primary system effects cannot explain more than a small portion of that difference. A better analogy for Democrats would be the difference between a district that voted 50 percent Democratic for president and one that voted 57 percent Democratic: a real difference, to be sure, but not enormous.

**Table 5.**  
Explaining moderation in roll-call scores, U.S. House, 1983–2008

	DW-NOMINATE		Party Loyalty		Adjusted ADA	
	Democrats	Republicans	Democrats	Republicans	Democrats	Republicans
Semi-closed	0.002 (0.018)	0.003 (0.024)	1.730 (1.078)	1.782 <sup>#</sup> (1.053)	4.194** (1.618)	-0.102 (1.260)
Nonpartisan	0.031 (0.019)	0.029 (0.020)	-0.043 (0.985)	6.188** (1.868)	4.064* (1.676)	5.414*** (1.601)
Democratic presidential vote in district	-0.829*** (0.035)	0.603*** (0.081)	-39.873*** (2.941)	38.627*** (6.466)	-59.204*** (4.344)	47.889*** (6.730)
(State and year fixed effects)						
Intercept	0.201***	-0.558***	46.264***	0.489	84.710***	-6.546**
R <sup>2</sup>	0.606	0.554	0.462	0.556	0.533	0.486
Root MSE	0.114	0.119	9.536	8.537	13.532	9.700
N	3060	2636	3060	2633	3010	2601

SOURCES: Adjusted ADA scores come from Anderson and Habel (2009a) (<http://dvn.iq.harvard.edu/dvn/dv/sanderson/faces/study/StudyPage.xhtml?studyId=37955>). ADA scores for the 2007–2008 Congress include scores from 2007 votes only. DW-NOMINATE and party loyalty scores come from Keith Poole (<http://voteview.com>).

NOTE: Models use OLS with standard errors clustered by district.

<sup>#</sup>p<0.10 \*p<0.05 \*\*p<0.01 \*\*\*p<0.001.

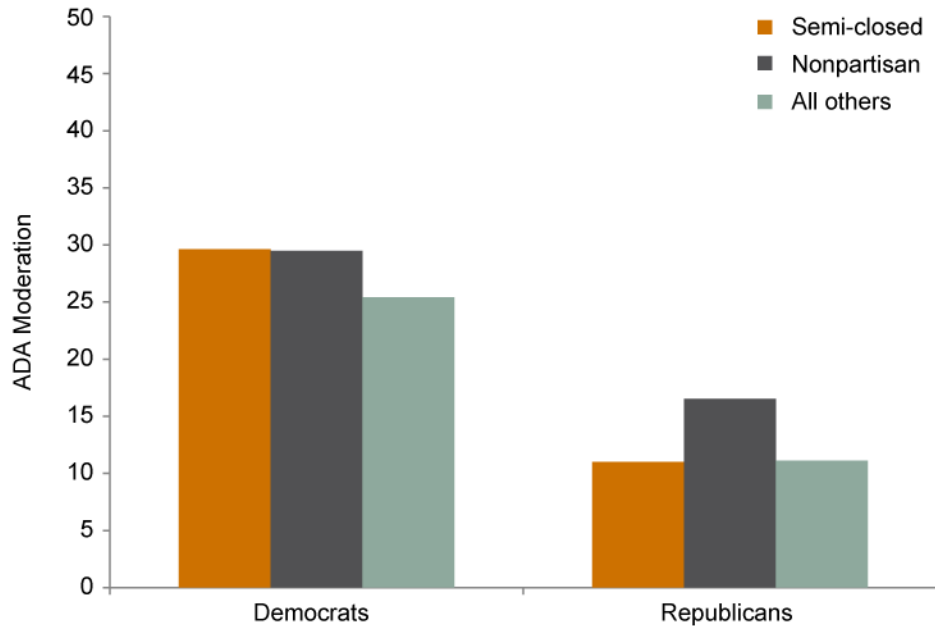
<sup>14</sup> The models in Table 5 all use OLS with standard errors clustered by district to account for panel autocorrelation across districts. Regressions that instead use error components (Table 22) or district fixed effects (Table 23) can be found in “Tables: Alternative Models,” below. The results are broadly similar, and if anything suggest a weaker effect for open primaries.

<sup>15</sup> These regional differences omit nonpartisan systems and semi-closed systems without registration requirements.



Figure 2 charts predicted values from the ADA equation for both parties. I have chosen ADA because it generally exhibited the largest effects. Placing both parties in the same graph makes clear that each party tends to reside at the extremes, and that the influence of primaries on this partisan gap is relatively small. Democrats tend to be more moderate than Republicans overall, and this difference alone dwarfs any effect from primary systems.

**Figure 2.**  
**Predicted moderation in ADA scores by party, 1983–2008**



NOTE: Graph shows predicted values, as calculated from the "Adjusted ADA" model in Table 3.

What about the possibility that the effect of open primaries is conditional on the partisanship of the district? To test this hypothesis I interacted the district presidential vote with each primary system dummy. The results of these interactions are in Table 6. The interactions should still be negative for Democrats and positive for Republicans if the above prediction is to be confirmed.<sup>16</sup> Each presidential vote variable is mean-deviated within each party, so the main effects of the primary systems represent their impact for the average district presidential vote in each party.

These interactions produce the expected negative coefficients for Democratic party loyalty and DW-NOMINATE scores in nonpartisan systems, but otherwise fail to produce consistent and theoretically predictable results. The interactions do make the main effect of nonpartisan systems statistically significant and correctly signed for Democratic DW-NOMINATE scores, whereas it had not been significant in Table 5. Yet the interactions for the semi-closed system generally suggest the wrong relationship. In fact, a district does not need to be very competitive before many of these coefficients suggest that representation in semi-closed systems is more extreme, not less.

<sup>16</sup> The variable is the Democratic presidential vote, which is correlated negatively with moderation for Democrats and positively for Republicans. Thus, a negative interaction means a larger effect for Democrats and a smaller one for Republicans.

**Table 6.**  
**Explaining moderation in roll-call scores, U.S. House, 1983–2008—interactions**  
**with district presidential vote**

	DW-NOMINATE		Party Loyalty		Adjusted ADA	
	Democrats	Republicans	Democrats	Republicans	Democrats	Republicans
Semi-closed X presidential vote	0.183 (0.137)	-0.006 (0.274)	27.712** (9.657)	-16.225 (14.953)	66.092*** (10.729)	-17.818 (19.086)
Nonpartisan X presidential vote	-0.293** (0.111)	-0.370 (0.233)	-29.761** (11.025)	10.862 (34.180)	-14.909 (15.534)	-2.617 (20.357)
Semi-closed	-0.002 (0.018)	0.004 (0.024)	1.131 (1.037)	1.751 (1.065)	2.863 <sup>#</sup> (1.569)	-0.084 (1.279)
Nonpartisan	0.045* (0.020)	0.034 (0.021)	1.410 (1.210)	6.068*** (1.566)	5.216** (1.861)	5.488** (1.597)
Democratic presidential vote in district	-0.821*** (0.037)	0.629*** (0.085)	-39.448*** (3.061)	38.647*** (6.661)	-60.952*** (4.594)	48.927*** (7.091)
(State and year fixed effects)						
Intercept	-0.197***	-0.291***	25.677***	20.133***	56.452***	9.711***
R <sup>2</sup>	0.608	0.565	0.468	0.553	0.540	0.483
Root MSE	0.113	0.119	9.482	8.566	13.437	9.722
N	3060	2636	3060	2633	3010	2601

SOURCES: Adjusted ADA scores come from Anderson and Habel (2009a) (<http://dvn.iq.harvard.edu/dvn/dv/sanderson/faces/study/StudyPage.xhtml?studyId=37955>). ADA scores for the 2007–2008 Congress include scores from 2007 votes only. DW-NOMINATE and party loyalty scores come from Keith Poole (<http://voteview.com>).

NOTES: If open primaries have a stronger effect in competitive districts, then the interaction terms should be negative for Democrats and positive for Republicans. Democratic presidential vote in the district is mean deviated, so the “main” effects of each primary system represent the effect for a district with the average presidential vote for that party in each year. Models use OLS with standard errors clustered by district.

<sup>#</sup>p<0.10 \*p<0.05 \*\*p<0.01 \*\*\*p<0.001.

In addition to these basic models, I also ran three alternative specifications (see “Tables: Alternative Models,” below). First, I combined semi-closed systems with a registration requirement with the semi-closed systems without a requirement from Table 3 (see Table 24). The moderating effect of primary systems was statistically indistinguishable from the results in Table 3—if anything it was often smaller.

Second, I interacted the primary system with a dummy for open seats. My goal was the same as it was with the California legislature: to see whether new candidates for office might feel less encumbered by past political commitments and so more likely to respond to the moderating influence of an open primary. This is a particularly important idea to test for the House: open seats are less common there than in the California legislature, where term limits routinely force candidates from office. If the effect is felt only in open-seat races, the weak findings so far would be explicable, and suggest that greater

moderation is likely to emerge over time in open primary states. However, these interaction terms were mostly statistically insignificant, and where significant, they suggested that open seat candidates in nonpartisan primary states were slightly more extreme (see Table 25).

Finally, there has clearly been a polarization trend in Congress over time, and it is possible that open primary systems weaken that trend. To test this idea, I interacted each primary system with time (see Table 26). The main effects in these models capture the impact of open primaries in 1983–84, the earliest Congress in the data. Since the dependent variable is moderation and polarization has increased over time, the time trends should be negative and the interaction terms positive if open primaries have a weakening effect. There are indeed signs of a weaker trend in these models, though they are not consistent across measures and parties. The strongest positive interactions are for both party loyalty and ADA scores among Democrats, where in each case a polarizing trend is completely reversed and turned into one that leads to greater moderation. However, in each case it appears that Democrats in semi-closed systems were much more polarized to start with, so the moderating trend mostly brought them in line with the rest of the country. The same is true for Republican ADA scores in nonpartisan systems, but in the opposite direction: they started more moderate and became more extreme over time. The only effect in these models that is statistically significant, correctly signed, and suggests that an open primary produces moderation in recent years is Republican party loyalty in semi-closed systems. In that case, the estimates suggest that Republicans were 3.5 points more extreme in 1982 but about 3.4 points more moderate in 2007–08. On the whole, however, the results are inconsistent and weak.

In short, this analysis of U.S. House representation suggests that the effect of open primaries is ambiguous. Semi-closed or nonpartisan systems can have moderating effects for certain measures and certain parties, but the effect is never consistent across parties or measures. At best, these results should temper expectations about the size of the effect of a TTVG law in California.

## Endogeneity

Does this research design truly address the possible endogeneity of open primary systems? States might adopt primary reforms in response to or coincident with unmeasured variables that also cause the ideological moderation or extremity of the candidates. This endogeneity could take several forms:

1. The states that have the most moderate (or extreme) politicians could also be the ones that have open primaries.
2. Broader changes in moderation might coincide with changes to primary laws in specific states.
3. There might be unmeasured dynamics within states over time. For example, all voters in a particular state (including registered partisans) might become frustrated with polarized politicians. This might lead them to both select more moderate candidates *and* force a change in primary law, when selecting moderate candidates alone would have led to more moderate representation.
4. States that open their primaries might have been trending toward polarized representatives much faster than other states. An open primary could slow their rate of change but still leave the state more polarized than others on average.<sup>17</sup>

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<sup>17</sup> The opposite might also be true: states with representatives who were already trending toward moderation might adopt open primaries to solidify their position. However, this scenario would not explain the null findings produced thus far.

The first two scenarios are already addressed by the difference-in-difference design, which controls for differences in candidate moderation due either to fixed characteristics of states or to general changes over time that affect all candidates equally. The third scenario is unlikely because it requires partisans to prefer moderate candidates as much as independents do; otherwise, it is unlikely that a change in moderation could be produced by changes in the voting behavior of partisans alone. However, the fourth type of endogeneity is a more serious concern: states that have adopted open primaries might have been rapidly polarizing already, leading the two effects (polarization and moderation) to cancel each other out. This might explain the generally null effect in the analysis so far.

To address the possibility of endogeneity, I turned to court decisions for exogenous leverage. Several changes in primary systems were the product of lawsuits, and so did not stem from the political dynamics of the states where they were implemented. Three primary changes fit this description in particular: the abandonment of the blanket primary in California and Washington in response to the Supreme Court's 2000 decision in *California Democratic Party v. Jones*; and the adoption of a semi-closed system in Nebraska pursuant to the Court's 1986 decision in *Tashjian v. Republican Party of Connecticut*.<sup>18</sup> For each case, I identify the system the state switched to after the decision and then conduct a difference in difference analysis using those states that always employed that system as comparison cases. For example, California used a blanket primary in 1998 and 2000 and then switched to a semi-closed system, so I compare California to the nine states that used a semi-closed system continuously from 1998 through 2006. The approach is not perfect, since the benefits of exogeneity come at a cost of discarded information, but it does offer an important test of the effects of open primaries that should be considered as part of the overall picture.<sup>19</sup>

The California analysis continues to be separated by party, but there were not enough cases in Washington and Nebraska to maintain this practice, so I combined the Democratic and Republican representatives into a single analysis. The critical variable in each case is the dummy for the primary system, which is always coded 1 for a more open system; thus, a positive coefficient always means that a more open primary led to greater moderation. The results can be found in Tables 7, 8, and 9. Consistent with the findings so far, the change in primary system generally has no effect; the only exception is for Republicans in California, where party loyalty was 4.2 percentage points lower and ADA scores were 7.4 percentage points more moderate under the blanket primary.

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<sup>18</sup> The *Jones* decision also forced Alaska to abandon its blanket primary, a system the state's Supreme Court had earlier required the Republican Party to adopt. Unfortunately, the state's lone U.S. Representative does not provide enough analytical leverage for analysis.

<sup>19</sup> The decision of whether to analyze the system each state abandoned or the one it adopted was made largely by the data. It is impossible to use blanket primaries as a comparison case after 2000, when the Supreme Court banned them. Thus, California and Washington are both compared to states that always used the system each state adopted. By a quirk of fate, no other state used Nebraska's brand of semi-closed primary (which has no registration requirement) both before and after Nebraska adopted it. Thus, I have compared Nebraska only to states that used the pure closed system Nebraska abandoned.

**Table 7.**  
The effect of open primaries on the California U.S. House delegation, 1999–2008

	DW-NOMINATE		Party Loyalty		Adjusted ADA	
	Democrats	Republicans	Democrats	Republicans	Democrats	Republicans
Blanket primary in California	-0.017 (0.038)	0.005 (0.053)	-1.204 (1.900)	4.159 <sup>#</sup> (2.348)	1.271 (2.321)	7.398* (3.242)
Democratic presidential vote in district	-0.797*** (0.112)	0.427 <sup>#</sup> (0.238)	-23.285*** (6.111)	62.912 <sup>#</sup> (34.782)	-19.453*** (6.413)	46.421* (19.893)
(State and year fixed effects)						
Intercept	0.104	-0.694***	25.408***	-21.557	27.639***	-18.360*
R <sup>2</sup>	0.446	0.340	0.186	0.379	0.159	0.360
Root MSE	0.108	0.126	7.480	7.705	7.783	9.354
N	307	207	307	207	297	204

SOURCES: Adjusted ADA scores come from Anderson and Habel (2009a) (<http://dvn.iq.harvard.edu/dvn/dv/sanderson/faces/study/StudyPage.xhtml?studyId=37955>). DW-NOMINATE and party loyalty scores come from Keith Poole (<http://voteview.com>).

NOTE: ADA scores for the 2007–08 Congress include scores from 2007 votes only. Models use OLS with standard errors clustered by district.

<sup>#</sup>p<0.10 \*p<0.05 \*\*p<0.01 \*\*\*p<0.001.

**Table 8.**  
The effect of open primaries on the Washington U.S. House delegation, 1983–2008

	DW-NOMINATE moderation	Party defection	ADA moderation
Blanket primary in Washington	-0.017 (0.043)	-1.956 (2.687)	-1.581 (3.791)
Presidential vote in district	0.555*** (0.112)	9.567 <sup>#</sup> (5.416)	28.300*** (7.616)
Representative's party identification	0.044* (0.022)	7.985*** (1.567)	-1.849 (1.840)
(State and year fixed effects)			
Intercept	-0.611***	11.574**	11.914*
R <sup>2</sup>	0.301	0.294	0.159
Root MSE	0.142	9.552	12.104
N	694	693	687

SOURCES: Adjusted ADA scores come from Anderson and Habel (2009a) (<http://dvn.iq.harvard.edu/dvn/dv/sanderson/faces/study/StudyPage.xhtml?studyId=37955>). DW-NOMINATE and party loyalty scores come from Keith Poole (<http://voteview.com>).

NOTES: ADA scores for the 2007–08 Congress include scores from 2007 votes only. Models use OLS with standard errors clustered by district.

<sup>#</sup>p<0.10 \*p<0.05 \*\*p<0.01 \*\*\*p<0.001.

**Table 9.**  
**The effect of open primaries on the Nebraska U.S. House delegation, 1983–2008**

	DW-NOMINATE moderation	Party defection	ADA moderation
Semi-closed primary in Nebraska	-0.073 (0.054)	-4.391 (4.679)	-3.300 (3.510)
Presidential vote in district	0.578*** (0.044)	28.033*** (4.041)	53.790*** (5.370)
Representative's party identification	0.014 (0.014)	5.853*** (1.300)	-9.048*** (1.454)
(State and year fixed effects)			
Intercept	-0.665***	2.472	0.331
R <sup>2</sup>	0.385	0.268	0.329
Root MSE	0.132	11.469	14.825
N	1587	1585	1565

SOURCES: Adjusted ADA scores come from Anderson and Habel (2009a) (<http://dvn.iq.harvard.edu/dvn/dv/sanderson/faces/study/StudyPage.xhtml?studyId=37955>). DW-NOMINATE and party loyalty scores come from Keith Poole (<http://voteview.com>).

NOTES: ADA scores for the 2007–2008 Congress include scores from 2007 votes only. Models use OLS with standard errors clustered by district.

\*p<0.10 \*\*p<0.05 \*\*\*p<0.01 \*\*\*\*p<0.001.

As before, I ran the same models with interactions between the type of primary and the presidential vote in the district. These results can be found in Tables 27 through 29 (below). The results produce the correct interaction effect for party loyalty with California Democrats, and for party loyalty and ADA scores with California Republicans, though the estimates have large standard errors that suggest they are based on a small number of cases. Outside these effects, however, the findings are either wrongly signed (e.g., party loyalty and ADA scores in Washington) or small and statistically insignificant.

The number of comparison cases is often small—in these data, only 18 representatives were elected in Washington under a pure open primary and only 9 in Nebraska under a pure closed primary—so the power of the test is weak. Nonetheless, the findings suggest the effect of an open primary will be conditional at best.

## Conclusion

This study has examined the available roll-call evidence to determine the effect that open primaries have on representation. The results suggest that most of these systems have little effect on moderation. In U.S. House races, neither a semi-closed system that allows independents to participate in party primaries nor a nonpartisan system that offers maximum flexibility to choose candidates has produced a consistently moderating effect on roll-call voting.

In California state legislative races, the nonpartisan blanket primary appears to have encouraged moderation in the Assembly but not the State Senate, and mostly for business regulation issues tracked by the Chamber of Commerce. These results are dependent on roll-call measures that do not take into account changes in the legislature's agenda over time, so they are perhaps less rigorous than an analysis that corrected for such differences. On the other hand, if the goal is to produce more moderation, then a change in the agenda that brings Republicans and Democrats closer together may be just as valuable as an actual change in moderation itself.

It is also difficult to distinguish this result in the Assembly from what we might expect due to changes in the leadership of the Assembly that occurred during that time. Thus, to attribute the difference to the primary system, we must presume that the leadership change facilitated a greater role for moderates who had just won election. While this is plausible, it is only an assumption based on the evidence presented here.

It is difficult to say precisely why the effect of open primaries is so weak. The logical basis for a moderating effect is simple and plausible: if voters closer to the middle of the ideological spectrum are allowed or encouraged to participate in a primary election, they will vote for relatively moderate candidates and the winning nominee will be moderate.

Where might this logic go awry? First, the level of crossover voting might not be large enough to produce moderating effects, notwithstanding the evidence from the blanket primary in California. It is also possible, as formal models have suggested, that the logic of an open primary is more complicated than it appears, since a moderating effect is dependent on a number of assumptions about the distribution of voter ideology and the pattern of candidate emergence in each race.

Perhaps the most compelling explanation for the null finding comes from recent theories of parties. These theories emphasize the critical role of donors and party activists, who have perspectives that may be more extreme than the average party registrant. Because these supporters can provide the critical resources necessary to wage competitive campaigns, they draw potential candidates to their more extreme positions. When one considers that voters must hear about a candidate before they will vote for that person, it becomes clear that the absence of moderate sources of campaign funds and volunteer activity may hamper moderate candidates far more than the composition of the primary electorate. Open primaries give voters the option to cross party lines, but partisan actors give candidates the means to convince voters that they should do so.



## Tables: Primary Systems

Table 10.  
Democratic primary systems for congressional elections, 1982–2006

	1982	1984	1986	1988	1990	1992	1994	1996	1998	2000	2002	2004	2006
Alabama	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
Alaska	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	SO	SO	SO
Arizona	C	C	C	C	C	C	C	C	C	SC	SC	SC	SC
Arkansas	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
California	C	C	C	C	C	C	C	C	NP	NP	SC	SC	SC
Colorado	C	C	C	C	C	C	C	C	C	C	C	C	C
Connecticut	C	C	C	C	C	C	C	C	C	C	C	C	C
Delaware	C	C	C	C	C	C	C	C	C	C	C	C	C
Florida	C	C	C	C	C	C	C	C	C	C	C	C	C
Georgia	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
Hawaii	O	O	O	O	O	O	O	O	O	O	O	O	O
Idaho	O	O	O	O	O	O	O	O	O	O	O	O	O
Illinois	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
Indiana	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
Iowa	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
Kansas	C	C	C	C	C	SC	SC	SC	SC	SC	SC	SC	SC
Kentucky	C	C	C	C	C	C	C	C	C	C	C	C	C
Louisiana	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Maine	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC
Maryland	C	C	C	C	C	C	C	C	C	C	C	C	C
Massachusetts	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC
Michigan	O	O	O	O	O	O	O	O	O	O	O	O	O
Minnesota	O	O	O	O	O	O	O	O	O	O	O	O	O
Mississippi	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
Missouri	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
Montana	O	O	O	O	O	O	O	O	O	O	O	O	O
Nebraska	C	C	C	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC
Nevada	C	C	C	C	C	C	C	C	C	C	C	C	C
New Hampshire	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC
New Jersey	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC
New Mexico	C	C	C	C	C	C	C	C	C	C	C	C	C
New York	C	C	C	C	C	C	C	C	C	C	C	C	C
North Carolina	C	C	C	C	C	C	C	SC	SC	SC	SC	SC	SC
North Dakota	O	O	O	O	O	O	O	O	O	O	O	O	O
Ohio	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
Oklahoma	C	C	C	C	C	C	C	C	C	C	C	C	C
Oregon	C	C	C	C	C	C	C	C	SC	SC	C	C	C
Pennsylvania	C	C	C	C	C	C	C	C	C	C	C	C	C
Rhode Island	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC
South Carolina	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO

	1982	1984	1986	1988	1990	1992	1994	1996	1998	2000	2002	2004	2006
South Dakota	C	C	C	C	C	C	C	C	C	C	C	C	C
Tennessee	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
Texas	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
Utah	C	C	C	C	C	C	C	C	C	C	C	C	C
Vermont	O	O	O	O	O	O	O	O	O	O	O	O	O
Virginia	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
Washington	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	O	O
West Virginia	C	C	C	C	C	C	C	C	C	C	C	C	C
Wisconsin	O	O	O	O	O	O	O	O	O	O	O	O	O
Wyoming	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO

SOURCES: Secretaries of state and state parties; Kanthak and Morton (2001).

NOTES: C = Closed, SC = Semi-closed, SO = Semi-open, O = Open, NP = Nonpartisan. Colorado and Utah only use an elected primary if the closed party caucus is divided, so these systems are coded as closed.

**Table 11.**  
**Republican primary systems for congressional elections, 1982–2006**

	1982	1984	1986	1988	1990	1992	1994	1996	1998	2000	2002	2004	2006
Alabama	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
Alaska	NP	NP	NP	NP	NP	SC	SC	NP	NP	NP	SC	SC	SC
Arizona	C	C	C	C	C	C	C	C	C	SC	SC	SC	SC
Arkansas	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
California	C	C	C	C	C	C	C	C	NP	NP	SC	SC	SC
Colorado	C	C	C	C	C	C	C	C	C	C	C	C	C
Connecticut	C	C	C	C	C	C	C	C	C	C	C	C	C
Delaware	C	C	C	C	C	C	C	C	C	C	C	C	C
Florida	C	C	C	C	C	C	C	C	C	C	C	C	C
Georgia	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
Hawaii	O	O	O	O	O	O	O	O	O	O	O	O	O
Idaho	O	O	O	O	O	O	O	O	O	O	O	O	O
Illinois	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
Indiana	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
Iowa	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
Kansas	C	C	C	C	C	SC	SC	SC	SC	SC	SC	SC	SC
Kentucky	C	C	C	C	C	C	C	C	C	C	C	C	C
Louisiana	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Maine	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC
Maryland	C	C	C	C	C	C	C	C	C	SC	C	C	C
Massachusetts	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC
Michigan	O	O	O	O	O	O	O	O	O	O	O	O	O
Minnesota	O	O	O	O	O	O	O	O	O	O	O	O	O
Mississippi	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
Missouri	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
Montana	O	O	O	O	O	O	O	O	O	O	O	O	O
Nebraska	C	C	C	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC
Nevada	C	C	C	C	C	C	C	C	C	C	C	C	C
New Hampshire	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC
New Jersey	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC
New Mexico	C	C	C	C	C	C	C	C	C	C	C	C	C
New York	C	C	C	C	C	C	C	C	C	C	C	C	C
North Carolina	C	C	C	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC
North Dakota	O	O	O	O	O	O	O	O	O	O	O	O	O
Ohio	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
Oklahoma	C	C	C	C	C	C	C	C	C	C	C	C	C
Oregon	C	C	C	C	SC	SC	C	C	C	C	C	C	C
Pennsylvania	C	C	C	C	C	C	C	C	C	C	C	C	C
Rhode Island	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC
South Carolina	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
South Dakota	C	C	C	C	C	C	C	C	C	C	C	C	C
Tennessee	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO

	1982	1984	1986	1988	1990	1992	1994	1996	1998	2000	2002	2004	2006
Texas	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
Utah	C	C	C	C	C	C	C	C	C	C	C	C	C
Vermont	O	O	O	O	O	O	O	O	O	O	O	O	O
Virginia	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO
Washington	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	O	O
West Virginia	C	C	C	SC	SC	SC	SC	SC	SC	SC	SC	SC	SC
Wisconsin	O	O	O	O	O	O	O	O	O	O	O	O	O
Wyoming	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO	SO

SOURCES: Kanthank and Morton (2001); various secretaries of state.

NOTES: C = Closed, SC = Semi-closed, SO = Semi-open, O = Open, NP = Nonpartisan. Colorado and Utah only use an elected primary if the closed party caucus is divided, so these systems are coded as closed.

## Tables: Alternative Models

Table 12.  
Explaining moderation in DW-NOMINATE scores,  
California Assembly, 1997–2004

	Base model		Interaction model	
	Democrats	Republicans	Democrats	Republicans
Blanket X party registration	--	--	0.000 (0.001)	0.000 (0.003)
Blanket primary	0.018 (0.016)	-0.006 (0.030)	0.018 (0.016)	-0.006 (0.030)
Democratic vote share	-0.004*** (0.001)	0.002 (0.002)	-0.005** (0.001)	0.002 (0.002)
District party registration	0.001 (0.001)	0.007*** (0.002)	0.001 (0.001)	0.007*** (0.002)
Open seat	-0.065*** (0.016)	0.038 (0.032)	-0.066*** (0.017)	0.038 (0.032)
Intercept	-0.318**	-0.548***	-0.315**	-0.548***
R <sup>2</sup>	0.180	0.187	0.181	0.187
Root MSE	0.120	0.187	0.120	0.188
N	186	130	186	130

SOURCES: DW-NOMINATE data provided by Seth Maskett of the University of Denver.

NOTES: Independent variables reflect characteristics of the election prior to the legislature in which the roll-call votes were cast. Models use OLS with standard errors clustered by district.

\*p<0.10 \*\*p<0.05 \*\*\*p<0.001

**Table 13.**  
**Explaining roll-call scores with interactions for open seats,**  
**California Assembly, 1997–2008**

	Chamber of Commerce		League of Conservation Voters		Planned Parenthood		Party Loyalty	
	Democrats	Republicans	Democrats	Republicans	Democrats	Republicans	Democrats	Republicans
Blanket X open seat	0.948 (3.304)	-0.368 (1.405)	-1.239 (3.490)	6.731 <sup>#</sup> (3.399)	-1.979 (2.324)	10.924 <sup>#</sup> (6.437)	-0.529 (0.710)	4.788 <sup>#</sup> (2.749)
Blanket primary	6.783* (2.568)	2.610* (1.063)	2.506 (2.941)	-4.089 <sup>#</sup> (2.144)	4.342* (2.018)	-7.996* (3.740)	-0.226 (0.691)	-1.269 (1.559)
Democratic vote share	-0.282** (0.095)	0.007 (0.030)	-0.143 (0.099)	0.026 (0.067)	-0.104 <sup>#</sup> (0.060)	0.043 (0.139)	-0.079** (0.029)	0.030 (0.041)
District party registration	-0.021 (0.076)	0.138* (0.066)	-0.074 (0.081)	0.656*** (0.142)	0.051 (0.048)	0.143 (0.197)	-0.001 (0.017)	0.551*** (0.097)
Open seat	-3.641* (1.756)	-1.430** (0.454)	-1.178 (1.781)	-3.922* (1.780)	-1.177 (0.962)	-4.191 (3.084)	-0.698 (0.430)	-1.775 <sup>#</sup> (1.052)
Intercept	44.087***	4.033**	21.280**	18.134***	7.547 <sup>#</sup>	21.028**	7.982**	14.788***
R <sup>2</sup>	0.152	0.182	0.043	0.221	0.079	0.031	0.099	0.308
Root MSE	12.745	4.242	14.604	12.664	7.492	19.816	3.251	8.638
N	284	195	284	195	284	195	284	195

NOTES: Independent variables reflect characteristics of the election prior to the legislature in which the roll-call votes were cast. Models use OLS with standard errors clustered by district.

<sup>#</sup>p<0.10 \*p<0.05 \*\*p<0.01 \*\*\*p<0.001.

**Table 14.**  
**Explaining roll-call scores with interactions for open seats,**  
**California Senate, 1997–2008**

	Chamber of Commerce		League of Conservation Voters		Planned Parenthood		Party Loyalty	
	Democrats	Republicans	Democrats	Republicans	Democrats	Republicans	Democrats	Republicans
Blanket X open seat	-4.715 (5.156)	0.693 (1.401)	-4.501 (5.702)	2.379 (3.237)	1.069 (3.823)	3.221 (3.236)	-1.288 (1.593)	3.216 (4.205)
Blanket primary	1.717 (4.214)	1.820 (1.181)	-0.676 (4.790)	-3.490 (2.967)	-0.352 (2.398)	-6.574 <sup>#</sup> (3.661)	-1.127 (1.126)	-4.932 (3.738)
Democratic vote share	-0.112 (0.091)	0.025 (0.024)	-0.072 (0.104)	-0.086 (0.101)	-0.021 (0.077)	-0.144 (0.135)	-0.082 <sup>**</sup> (0.029)	-0.039 (0.081)
District party registration	-0.113 (0.075)	0.068 (0.052)	-0.035 (0.084)	0.891 <sup>#</sup> (0.444)	-0.070 (0.052)	0.675 <sup>#</sup> (0.380)	-0.011 (0.034)	0.736 <sup>*</sup> (0.275)
Open seat	1.232 (2.838)	-0.796 (0.884)	0.137 (2.894)	1.855 (2.394)	-0.920 (2.186)	2.040 (2.808)	-0.241 (1.385)	-1.069 (3.302)
Intercept	33.315 <sup>***</sup>	3.270 <sup>*</sup>	15.352 <sup>#</sup>	20.113 <sup>*</sup>	6.516	26.862 <sup>**</sup>	9.626 <sup>***</sup>	21.659 <sup>**</sup>
R <sup>2</sup>	0.063	0.164	0.033	0.369	0.016	0.207	0.069	0.262
Root MSE	12.405	3.522	13.026	12.321	10.217	13.834	5.651	13.197
N	149	90	149	90	149	90	149	90

NOTES: Independent variables reflect characteristics of the election prior to the legislature in which the roll-call votes were cast. Models use OLS with standard errors clustered by district.

<sup>#</sup>p<0.10 <sup>\*</sup>p<0.05 <sup>\*\*</sup>p<0.01 <sup>\*\*\*</sup>p<0.001.



**Table 15.**  
**Explaining roll-call scores with interactions for uncontested primaries,**  
**California Assembly, 1997–2008**

	Chamber of Commerce		League of Conservation Voters		Planned Parenthood		Party Loyalty	
	Democrats	Republicans	Democrats	Republicans	Democrats	Republicans	Democrats	Republicans
Blanket X uncontested primary	0.492 (3.779)	-0.402 (1.445)	0.572 (4.278)	-10.536** (3.874)	0.454 (2.216)	-18.628* (7.220)	0.740 (0.873)	-8.648** (2.833)
Blanket primary	6.751* (2.853)	2.731** (0.772)	1.577 (3.757)	4.047 (3.063)	3.329* (1.492)	6.229 (5.936)	-0.914 (0.769)	5.201* (2.159)
Democratic vote share	-0.259** (0.096)	0.009 (0.030)	-0.112 (0.095)	-0.006 (0.065)	-0.104 (0.063)	0.005 (0.138)	-0.067* (0.028)	0.009 (0.040)
District party registration	-0.039 (0.086)	0.136* (0.066)	-0.096 (0.089)	0.672 (0.140)	0.052 (0.051)	0.157 (0.199)	-0.010 (0.019)	0.559*** (0.096)
Uncontested primary	-3.162 (4.715)	1.288 (0.776)	-4.811 (5.226)	-0.518 (2.106)	-0.524 (1.215)	5.079 (4.333)	-1.842 (1.296)	1.561 (1.837)
Open seat	-5.569 (3.467)	-0.688 (0.832)	-5.047 (3.931)	-4.523 (2.503)	-2.111 (1.347)	-1.134 (4.222)	-2.064* (0.979)	-1.037 (1.945)
Intercept	45.581***	2.928#	24.105	19.942	8.211#	18.478*	9.050**	14.448***
R <sup>2</sup>	0.156	0.190	0.051	0.247	0.076	0.063	0.112	0.338
Root MSE	12.737	4.235	14.565	12.480	7.518	19.544	3.219	8.207
N	284	195	284	195	284	195	284	195

NOTES: Independent variables reflect characteristics of the election prior to the legislature in which the roll-call votes were cast. Models use OLS with standard errors clustered by district.

#p<0.10 \*p<0.05 \*\*p<0.01 \*\*\*p<0.001.

**Table 16.**  
**Explaining roll-call scores with interactions for uncontested primaries,**  
**California Senate, 1997–2008**

	Chamber of Commerce		League of Conservation Voters		Planned Parenthood		Party Loyalty	
	Democrats	Republicans	Democrats	Republicans	Democrats	Republicans	Democrats	Republicans
Blanket X Uncontested primary	5.083	-0.259	3.337	0.155	-1.385	-1.187	0.859	-1.525
	5.188	2.074	5.400	4.491	4.391	4.935	1.478	4.519
Blanket primary	-3.642	2.353	-5.110	-2.928	0.999	-4.660 <sup>#</sup>	-2.296*	-2.797
	2.943	1.860	3.842	4.036	2.766	2.650	1.038	3.140
Democratic vote share	-0.116	0.023	-0.059	-0.047	-0.019	-0.095	-0.081**	0.015
	0.091	0.024	0.101	0.096	0.078	0.142	0.030	0.082
District party registration	-0.080	0.069	-0.047	0.847 <sup>#</sup>	-0.079	0.622 <sup>#</sup>	-0.008	0.679*
	0.087	0.051	0.089	0.422	0.055	0.362	0.035	0.251
Uncontested primary	1.887	0.018	-1.661	5.500	-0.426	7.263 <sup>#</sup>	0.286	7.928*
	4.387	1.064	5.502	4.315	2.004	3.651	1.817	3.569
Open seat	1.939	-0.590	-1.534	4.725	-1.132	5.743 <sup>#</sup>	-0.302	2.860
	3.519	0.896	4.099	3.353	1.804	3.179	1.515	3.171
Intercept	31.154***	3.237 <sup>#</sup>	16.601	12.915	7.020	17.548 <sup>#</sup>	9.284**	11.545 <sup>#</sup>
R <sup>2</sup>	0.075	0.162	0.030	0.387	0.017	0.234	0.069	0.296
Root MSE	12.372	3.557	13.090	12.219	10.246	13.672	5.672	12.969
N	149	90	149	90	149	90	149	90

NOTES: Independent variables reflect characteristics of the election prior to the legislature in which the roll-call votes were cast. Models use OLS with standard errors clustered by district.

<sup>#</sup>p<0.10 \*p<0.05 \*\*p<0.01 \*\*\*p<0.001.

**Table 17.**  
**Explaining roll-call scores with interactions for margin of victory in the primary,**  
**California Assembly, 1997–2008**

	Chamber of Commerce		League of Conservation Voters		Planned Parenthood		Party Loyalty	
	Democrats	Republicans	Democrats	Republicans	Democrats	Republicans	Democrats	Republicans
Blanket X Primary margin	-0.232	0.041	-0.244	0.035	-0.048	-0.026	-0.077	0.030
	0.212	0.046	0.256	0.162	0.059	0.231	0.058	0.118
Blanket primary	12.365**	1.811	7.540	3.112	4.682 <sup>#</sup>	6.911	1.026	4.092
	4.296	1.135	5.497	5.094	2.429	8.854	0.948	3.246
Democratic vote share	-0.558***	0.042	-0.194	-0.031	-0.108 <sup>#</sup>	0.244	-0.148**	0.038
	0.150	0.030	0.168	0.093	0.059	0.186	0.053	0.056
District party registration	0.163	0.063	-0.070	0.653**	0.028	-0.011	0.049	0.621***
	0.131	0.052	0.157	0.189	0.052	0.340	0.036	0.132
Primary margin of victory	0.310	-0.014	0.231	-0.092	-0.035	-0.004	0.068	-0.097 <sup>#</sup>
	0.201	0.020	0.252	0.076	0.050	0.116	0.057	0.049
Open seat	1.582	-0.299	0.449	-7.889 <sup>#</sup>	-3.650	-0.560	-1.424	-4.769
	3.868	1.167	7.142	4.358	3.664	7.740	1.440	3.210
Intercept	47.007***	0.975	18.923	25.645***	11.342 <sup>#</sup>	7.471	10.775**	19.533***
R <sup>2</sup>	0.308	0.245	0.102	0.207	0.131	0.038	0.252	0.363
Root MSE	11.482	3.0975	15.648	12.571	5.901	20.276	3.221	8.361
N	113	83	113	83	113	83	113	83

NOTES: Estimates based only on incumbents who were opposed in the last primary. Independent variables reflect characteristics of the election prior to the legislature in which the roll-call votes were cast. Models use OLS with standard errors clustered by district.

<sup>#</sup>p<0.10 \*p<0.05 \*\*p<0.01 \*\*\*p<0.001.

**Table 18.**  
**Explaining roll-call scores with interactions for termed-out members,**  
**California Assembly, 1997–2008**

	Chamber of Commerce		League of Conservation Voters		Planned Parenthood		Party Loyalty	
	Democrats	Republicans	Democrats	Republicans	Democrats	Republicans	Democrats	Republicans
Blanket X termed out	-0.199 (3.788)	2.929 (2.017)	-0.207 (4.112)	-1.399 (4.917)	-0.892 (2.269)	-1.599 (8.207)	-0.546 (0.740)	-0.048 (3.366)
Blanket primary	7.228*** (1.771)	1.400* (0.604)	2.174 (2.414)	-1.190 (2.618)	3.840** (1.368)	-3.278 (4.654)	-0.267 (0.530)	0.401 (1.340)
Democratic vote share	-0.283** (0.093)	-0.003 (0.029)	-0.149 (0.097)	0.039 (0.070)	-0.107# (0.061)	0.076 (0.144)	-0.081** (0.029)	0.035 (0.042)
District party registration	-0.020 (0.076)	0.147* (0.065)	-0.067 (0.079)	0.660*** (0.140)	0.056 (0.050)	0.139 (0.201)	0.001 (0.017)	0.559*** (0.096)
Termed out	1.928 (1.804)	0.835 (0.887)	3.020 (2.075)	0.903 (2.291)	-0.199 (0.961)	-0.809 (3.029)	0.574 (0.564)	1.344 (1.530)
Open seat	-2.583# (1.469)	-0.640 (0.498)	-0.411 (1.650)	-1.584 (1.677)	-2.031# (1.080)	-1.310 (2.605)	-0.716# (0.390)	0.379 (1.154)
Intercept	43.193***	3.991**	20.429*	16.663***	8.055#	19.040**	7.898**	13.631***
R <sup>2</sup>	0.155	0.224	0.049	0.210	0.077	0.017	0.101	0.299
Root MSE	12.748	4.144	14.586	12.785	7.514	20.013	3.253	8.444
N	284	195	284	195	284	195	284	195

NOTES: "Termed out" refers to those members of the Assembly serving their third term since passage of the term limits law in 1990. Independent variables reflect characteristics of the election prior to the legislature in which the roll-call votes were cast. Models use OLS with standard errors clustered by district.

#p<0.10 \*p<0.05 \*\*p<0.01 \*\*\*p<0.001.

**Table 19.**  
**Explaining roll-call scores with interactions for termed-out members,**  
**California Senate, 1997–2008**

	Chamber of Commerce		League of Conservation Voters		Planned Parenthood		Party Loyalty	
	Democrats	Republicans	Democrats	Republicans	Democrats	Republicans	Democrats	Republicans
Blanket X termed out	8.148 (6.325)	-0.270 (1.479)	5.806 (6.959)	-4.993 (4.450)	-0.880 (3.974)	-9.470* (4.278)	2.043 (1.680)	-6.275 (5.145)
Blanket primary	-4.114 (3.013)	2.206* (0.922)	-5.402 <sup>#</sup> (2.823)	-0.205 (3.518)	0.615 (1.837)	-1.174 (3.919)	-2.647* (1.057)	-0.811 (2.716)
Democratic vote share	-0.104 (0.087)	0.028 (0.022)	-0.071 (0.107)	-0.075 (0.100)	-0.033 (0.085)	-0.103 (0.137)	-0.079* (0.030)	-0.017 (0.089)
District party registration	-0.116 (0.079)	0.070 (0.052)	-0.032 (0.087)	0.904 <sup>#</sup> (0.450)	-0.058 (0.053)	0.706 <sup>#</sup> (0.369)	-0.013 (0.035)	0.756** (0.272)
Termed out	-5.633 (5.927)	2.401* (0.881)	-1.186 (4.099)	4.508 (6.166)	3.611 (2.725)	17.316** (5.230)	-1.498 (1.993)	10.007 <sup>#</sup> (5.322)
Open seat	-2.946 (5.899)	1.392* (0.587)	-0.756 (3.693)	5.054 (6.083)	2.326* (1.044)	15.157** (4.839)	-1.398 (1.754)	6.719 (4.113)
Intercept	37.496***	1.089	16.233*	16.368*	3.864	11.961	10.735***	13.032*
R <sup>2</sup>	0.081	0.187	0.036	0.376	0.022	0.283	0.074	0.289
Root MSE	12.328	3.493	13.045	12.328	10.223	13.232	5.655	13.047
N	149	90	149	90	149	90	149	90

NOTES: "Termed out" refers to those senators serving their second term since passage of the term limits law in 1990. Independent variables reflect characteristics of the election prior to the legislature in which the roll-call votes were cast. Models use OLS with standard errors clustered by district.

\*p<0.10 \*\*p<0.05 \*\*\*p<0.001.

**Table 20.**  
**Explaining roll-call scores with interactions for decline-to-state registration,**  
**California Assembly, 1997–2008**

	Chamber of Commerce		League of Conservation Voters		Planned Parenthood		Party Loyalty	
	Democrats	Republicans	Democrats	Republicans	Democrats	Republicans	Democrats	Republicans
Blanket X Decline-to-state	-0.759 (0.468)	0.344 (0.306)	-1.188* (0.595)	-0.100 (1.036)	-1.023* (0.442)	2.568 (1.790)	-0.063 (0.134)	-0.718 (0.773)
Blanket primary	15.431* (7.193)	-1.643 (3.871)	17.087 <sup>#</sup> (9.901)	-0.694 (13.370)	17.474* (7.279)	-34.669 (21.423)	-0.242 (2.307)	9.883 (9.713)
Democratic vote share	-0.137 (0.085)	-0.011 (0.030)	-0.026 (0.077)	0.061 (0.067)	-0.052 (0.047)	-0.058 (0.136)	-0.042* (0.019)	0.044 (0.040)
District party registration	-0.134 <sup>#</sup> (0.074)	0.168* (0.071)	-0.165* (0.077)	0.619*** (0.156)	0.010 (0.042)	0.362 <sup>#</sup> (0.203)	-0.029 <sup>#</sup> (0.015)	0.562*** (0.110)
District decline-to-state registration	-0.923** (0.289)	0.190* (0.078)	-0.618 <sup>#</sup> (0.337)	-0.302 (0.256)	-0.160 (0.107)	1.380*** (0.365)	-0.282** (0.090)	0.191 (0.198)
Open seat	-2.947* (1.343)	-1.501* (0.590)	-1.275 (1.450)	-1.862 (1.739)	-1.690 <sup>#</sup> (1.013)	-0.303 (2.981)	-0.773* (0.337)	-0.074 (1.248)
Intercept	51.654***	2.314	25.553*	20.079***	7.762	5.964	10.750***	11.108**
R <sup>2</sup>	0.264	0.206	0.118	0.213	0.164	0.088	0.226	0.302
Root MSE	11.89	4.190	14.048	12.759	7.152	19.284	3.017	8.426
N	284	195	284	195	284	195	284	195

NOTES: Independent variables reflect characteristics of the election prior to the legislature in which the roll-call votes were cast. Models use OLS with standard errors clustered by district.

\*p<0.10 \*\*p<0.05 \*\*\*p<0.001

**Table 21.**  
**Explaining roll-call scores with interactions for decline-to-state registration,**  
**California Senate, 1997–2008**

	Chamber of Commerce		League of Conservation Voters		Planned Parenthood		Party Loyalty	
	Democrats	Republicans	Democrats	Republicans	Democrats	Republicans	Democrats	Republicans
Blanket X decline-to-state	-1.282** (0.467)	0.471 (0.351)	-1.117 (0.906)	1.542 (1.744)	0.090 (0.402)	2.110 (1.951)	-0.278 (0.249)	1.947 (1.166)
Blanket primary	15.432* (7.211)	-3.638 (4.573)	11.405 (14.620)	-21.002 (21.243)	-2.324 (5.437)	-29.448 (23.364)	2.185 (3.792)	-27.510 <sup>#</sup> (14.812)
Democratic vote share	0.005 (0.088)	0.006 (0.022)	0.017 (0.113)	-0.161 (0.129)	0.030 (0.067)	-0.289 <sup>#</sup> (0.164)	-0.077* (0.032)	-0.113 (0.090)
District party registration	-0.184* (0.075)	0.092* (0.045)	-0.091 (0.094)	0.996* (0.464)	-0.094 (0.056)	0.911* (0.365)	-0.017 (0.033)	0.822** (0.273)
District decline-to-state registration	-0.735** (0.225)	0.155 (0.096)	-0.500 (0.323)	0.758 (0.636)	-0.539 (0.353)	1.918** (0.671)	0.042 (0.190)	0.507 (0.632)
Open seat	0.420 (2.581)	-0.733 (0.784)	-0.855 (2.857)	1.972 (2.304)	0.033 (1.196)	1.750 (2.331)	-0.727 (0.969)	-0.628 (2.733)
Intercept	39.028***	1.959	18.964*	13.000	11.861	7.219	8.907**	17.724 <sup>#</sup>
R <sup>2</sup>	0.164	0.200	0.085	0.406	0.053	0.372	0.069	0.262
Root MSE	11.760	3.466	12.712	12.028	10.058	12.383	5.651	13.197
N	149	90	149	90	149	90	149	90

NOTES: Independent variables reflect characteristics of the election prior to the legislature in which the roll-call votes were cast. Models use OLS with standard errors clustered by district.

\*p<0.10 \*\*p<0.05 \*\*\*p<0.01 <sup>#</sup>p<0.001.

**Table 22.**  
**Explaining moderation in roll-call scores, U.S. House, 1983–2008**  
**(error components model)**

	DW-NOMINATE		Party loyalty		Adjusted ADA	
	Democrats	Republicans	Democrats	Republicans	Democrats	Republicans
Semi-closed	-0.005 (0.011)	-0.023 <sup>#</sup> (0.011)	1.230 (1.047)	-0.645 (1.034)	3.494* (1.475)	-0.962 (1.192)
Nonpartisan	0.009 (0.009)	0.009 (0.010)	-0.165 (0.991)	2.363* (0.983)	1.931 (1.349)	2.928* (1.148)
Democratic presidential vote in district	-0.560*** (0.028)	0.173*** (0.043)	-32.751*** (2.374)	22.245*** (3.663)	-45.317*** (3.432)	25.717*** (4.212)
(State and year fixed effects)						
Intercept	0.063 <sup>#</sup>	-0.575***	42.521***	-0.324	71.796***	-4.530
Overall R <sup>2</sup>	0.584	0.543	0.457	0.547	0.526	0.475
$\chi^2$ (df=62/63)	1213.80***	1195.87***	1257.95***	1241.32***	1076.97***	813.93***
$\rho^+$	0.809	0.554	0.621	0.651	0.672	0.623
District N	821	714	821	714	812	714
District-in-year N	3060	2636	3060	2633	3010	2601

SOURCES: Adjusted ADA scores come from Anderson and Habel (2009a) (<http://dvn.iq.harvard.edu/dvn/dv/sanderson/faces/study/StudyPage.xhtml?studyId=37955>). DW-NOMINATE and party loyalty scores come from Keith Poole (<http://voteview.com>). States with runoff elections were identified from [www.instantrunoffvoting.us/runoffelections.html](http://www.instantrunoffvoting.us/runoffelections.html).

NOTES: ADA scores for the 2007–2008 Congress include scores from 2007 votes only.

<sup>+</sup> = the proportion of the total variance that can be attributed to otherwise unmodeled variance across districts.

<sup>#</sup>p<0.10 \*p<0.05 \*\*p<0.01 \*\*\*p<0.001.



**Table 23.**  
**Explaining moderation in roll-call scores, U.S. House, 1983–2008**  
**(district fixed effects)**

	DW-NOMINATE		Party Loyalty		Adjusted ADA	
	Democrats	Republicans	Democrats	Republicans	Democrats	Republicans
Semi-closed	-0.001 (0.012)	-0.024* (0.012)	0.826 (1.415)	-1.204 (1.240)	2.990 1.899	-0.310 1.457
Nonpartisan	0.004 (0.009)	0.005 (0.010)	-0.358 (1.020)	0.635 (1.006)	1.439 1.376	1.593 1.182
Democratic presidential vote in district	-0.087* (0.042)	-0.017 (0.051)	0.072 (4.999)	-1.154 (5.136)	-0.956 6.695	-7.143 6.109
(District and year fixed effects)						
Intercept	-0.305***	-0.417***	13.789***	13.259***	25.714***	13.715***
Overall R <sup>2</sup>	0.375	0.001	0.026	0.007	0.001	0.063
ρ <sup>+</sup>	0.917	0.925	0.806	0.845	0.849	0.818
District N	821	714	821	714	812	714
District-in-year N	3060	2636	3060	2633	3010	2601

SOURCES: Adjusted ADA scores come from Anderson and Habel (2009a) (<http://dvn.iq.harvard.edu/dvn/dv/sanderson/faces/study/StudyPage.xhtml?studyId=37955>). DW-NOMINATE and party loyalty scores come from Keith Poole (<http://voteview.com>). States with runoff elections were identified from [www.instantrunoffvoting.us/runoffelections.html](http://www.instantrunoffvoting.us/runoffelections.html).

NOTES: ADA scores for the 2007–2008 Congress include scores from 2007 votes only.

<sup>+</sup>ρ the proportion of the total variance that can be attributed to otherwise unmodeled variance across districts.

\*p<0.10 \*p<0.05 \*\*p<0.01 \*\*\*p<0.001.

**Table 24.**  
**Explaining moderation in roll-call scores, U.S. House, 1983–2008**  
**(combining registration and non-registration in “semi-closed”)**

	DW-NOMINATE		Party Loyalty		Adjusted ADA	
	Democrats	Republicans	Democrats	Republicans	Democrats	Republicans
Semi-closed	0.013 (0.021)	0.002 (0.023)	1.754 (1.300)	2.393* (1.032)	1.881 (1.853)	0.675 (1.194)
Nonpartisan	0.034 <sup>#</sup> (0.019)	0.029 (0.020)	-0.060 (0.976)	6.376** (1.870)	3.411* (1.659)	5.640*** (1.601)
Democratic presidential vote in district	-0.829*** (0.035)	0.603*** (0.081)	-39.824*** (2.941)	38.763*** (6.463)	-59.063*** (4.338)	47.937*** (6.726)
(State and year fixed effects)						
Intercept	0.200***	-0.558***	46.285***	0.504	84.646***	-6.490**
R <sup>2</sup>	0.606	0.564	0.462	0.557	0.532	0.486
Root MSE	0.114	0.119	9.537	8.532	13.552	9.699
N	3060	2636	3060	2633	3010	2601

NOTES: Adjusted ADA scores come from Anderson and Habel (2009a) (<http://dvn.iq.harvard.edu/dvn/dv/sanderson/faces/study/StudyPage.xhtml?studyId=37955>). DW-NOMINATE and party loyalty scores come from Keith Poole (<http://voteview.com>).

NOTES: “Semi-closed” in this model includes states that allow independents to register with a party on election day. ADA scores for the 2007–2008 Congress include scores from 2007 votes only. Models use OLS with standard errors clustered by district.

<sup>#</sup>p<0.10 \*p<0.05 \*\*p<0.01 \*\*\*p<0.001.

**Table 25.**  
**Explaining moderation in roll-call scores, U.S. House, 1983–2008**  
**(open seat interactions)**

	DW-NOMINATE		Party Loyalty		Adjusted ADA	
	Democrats	Republicans	Democrats	Republicans	Democrats	Republicans
Semi-closed X open seat	0.003 (0.032)	-0.016 (0.035)	2.654 (2.304)	1.133 (1.356)	6.136 (4.381)	0.669 (1.403)
Nonpartisan X open seat	-0.050* (0.025)	0.037 (0.026)	-3.393 <sup>#</sup> (2.036)	2.567 (1.619)	-3.146 (3.431)	2.421 (2.621)
Semi-closed	0.002 (0.018)	0.002 (0.024)	1.587 (1.063)	1.575 (1.039)	3.833* (1.622)	-0.269 (1.277)
Nonpartisan	0.035 <sup>#</sup> (0.020)	0.024 (0.021)	0.223 (1.031)	5.865** (1.917)	4.387* (1.710)	5.120** (1.652)
Democratic presidential vote in district	-0.830*** (0.035)	0.612*** (0.081)	-39.874*** (2.938)	39.192*** (6.467)	-59.117*** (4.333)	48.402*** (6.743)
Open seat	0.005 (0.007)	-0.043*** (0.007)	-0.420 (0.568)	-2.580*** (0.519)	-2.641** (0.851)	-2.245*** (0.562)
(State and year fixed effects)						
Intercept	0.188***	-0.496***	44.203***	7.063**	84.120***	-6.596**
R <sup>2</sup>	0.606	0.570	0.462	0.560	0.535	0.488
Root MSE	0.114	0.118	9.535	8.506	13.513	9.681
N	3060	2636	3060	2633	3010	2601

SOURCES: Adjusted ADA scores come from Anderson and Habel (2009a) (<http://dvn.iq.harvard.edu/dvn/dv/sanderson/faces/study/StudyPage.xhtml?studyId=37955>). DW-NOMINATE and party loyalty scores come from Keith Poole (<http://voteview.com>).

NOTES: If open primaries have a larger effect in open seats, then the interaction terms should be positive for both Democrats and Republicans. ADA scores for the 2007–2008 Congress include scores from 2007 votes only. Models use OLS with standard errors clustered by district.

<sup>#</sup>p<0.10 \*p<0.05 \*\*p<0.01 \*\*\*p<0.001.

**Table 26.**  
**Explaining moderation in roll-call scores, U.S. House, 1983–2008**  
**(time trend interactions)**

	DW-NOMINATE		Party Loyalty		Adjusted ADA	
	Democrats	Republicans	Democrats	Republicans	Democrats	Republicans
Semi-closed X year counter	0.007 (0.007)	0.004 (0.005)	1.528** (0.479)	0.529# (0.294)	1.606* (0.695)	0.545 (0.404)
Nonpartisan X year counter	-0.001 (0.004)	-0.001 (0.004)	-0.329 (0.468)	-0.776* (0.342)	0.103 (0.541)	-1.202# (0.636)
Semi-closed	-0.068 (0.070)	-0.034 (0.045)	-13.825** (4.799)	-3.521 (3.016)	-11.923 (7.338)	-5.620 (3.937)
Nonpartisan	0.042 (0.041)	0.035 (0.039)	2.525 (3.790)	12.181*** (3.246)	3.310 (4.580)	14.653** (5.485)
Democratic presidential vote in district	-0.829*** (0.035)	0.604*** (0.081)	-39.939*** (2.942)	38.543*** (6.490)	-59.290*** (4.351)	47.701*** (6.775)
Year counter	0.001 (0.001)	-0.022*** (0.001)	-0.373*** (0.075)	-1.166*** (0.103)	-0.573*** (0.125)	-0.583*** (0.124)
(State and year fixed effects)						
Intercept	0.188***	-0.477***	44.540***	7.938***	84.709***	-6.352**
R <sup>2</sup>	0.606	0.565	0.464	0.559	0.535	0.490
Root MSE	0.114	0.119	9.516	8.519	13.522	9.666
N	3060	2636	3060	2633	3010	2601

NOTES: Adjusted ADA scores come from Anderson and Habel (2009a) (<http://dvn.iq.harvard.edu/dvn/dv/sanderson/faces/study/StudyPage.xhtml?studyId=37955>). DW-NOMINATE and party loyalty scores come from Keith Poole (<http://voteview.com>).

NOTES: If open primaries attenuate trends toward extremism, then the interaction terms should be positive for both Democrats and Republicans. ADA scores for the 2007–2008 Congress include scores from 2007 votes only. Models use OLS with standard errors clustered by district.

#p<0.10 \*p<0.05 \*\*p<0.01 \*\*\*p<0.001.

**Table 27.**  
**The effect of open primaries on the California House delegation,**  
**interactions with district presidential vote, 1999–2008**

	DW-NOMINATE		Party Loyalty		Adjusted ADA	
	Democrats	Republicans	Democrats	Republicans	Democrats	Republicans
Blanket primary X district presidential vote	-0.066 (0.218)	0.560 (0.446)	-19.413 <sup>#</sup> (11.586)	140.327* (60.416)	-18.663 (12.938)	94.307** (30.460)
Blanket primary in California	-0.014 (0.039)	-0.015 (0.052)	-0.421 (1.983)	-0.876 (2.618)	2.026 (2.540)	4.011 (3.128)
Democratic presidential vote in district	-0.774*** (0.150)	0.190 (0.303)	-16.483* (7.772)	3.606 (11.087)	-12.631 <sup>#</sup> (7.548)	5.903 (18.761)
(State and year fixed effects)						
Intercept	-0.408***	-0.509***	10.165***	6.141***	14.872***	2.056
R <sup>2</sup>	0.446	0.349	0.196	0.522	0.168	0.406
Root MSE	0.108	0.125	7.446	6.775	7.755	9.040
N	307	207	307	207	297	204

SOURCES: Adjusted ADA scores come from Anderson and Habel (2009a) (<http://dvn.iq.harvard.edu/dvn/dv/sanderson/faces/study/StudyPage.xhtml?studyId=37955>). DW-NOMINATE and party loyalty scores come from Keith Poole (<http://voteview.com>).

NOTES: ADA scores for the 2007–2008 Congress include scores from 2007 votes only. Models use OLS with standard errors clustered by district.

<sup>#</sup>p<0.10 \*p<0.05 \*\*p<0.01 \*\*\*p<0.001.

**Table 28.**  
**The effect of open primaries on the Washington House delegation,**  
**interactions with district presidential vote, 1983–2008**

	DW-NOMINATE moderation	Party defection	ADA moderation
Blanket primary X district presidential vote	-0.175 (0.354)	-35.105 <sup>#</sup> (19.674)	-47.531* (24.045)
Blanket primary in Washington	0.063 (0.176)	14.157 (10.223)	20.206 (12.917)
Presidential vote in district	0.572*** (0.117)	13.104* (5.599)	33.072*** (8.015)
Representative's party identification	0.045* (0.022)	8.089*** (1.551)	-1.704 (1.820)
(State and year fixed effects)			
Intercept	-0.365***	15.721***	24.347***
R <sup>2</sup>	0.302	0.304	0.173
Root MSE	0.142	9.492	12.016
N	694	693	687

SOURCES: Adjusted ADA scores come from Anderson and Habel (2009a) (<http://dvn.iq.harvard.edu/dvn/dv/sanderson/faces/study/StudyPage.xhtml?studyId=37955>). DW-NOMINATE and party loyalty scores come from Keith Poole (<http://voteview.com>).

NOTES: ADA scores for the 2007–2008 Congress include scores from 2007 votes only. Models use OLS with standard errors clustered by district.

<sup>#</sup>p<0.10 \*p<0.05 \*\*p<0.01 \*\*\*p<0.001.

**Table 30.**  
**The effect of open primaries on the Nebraska House delegation,**  
**interactions with district presidential vote, 1983–2008**

	DW-NOMINATE moderation	Party defection	ADA moderation
Semi-closed primary X presidential vote in district	-0.158 (0.131)	-2.405 (9.291)	-5.323 (15.066)
Semi-closed primary in Nebraska	-0.012 (0.052)	-3.464 (6.436)	-1.249 (6.504)
Presidential vote in district	0.580*** (0.044)	28.054*** (4.081)	53.836*** (5.427)
Representative's party identification	0.014 (0.014)	5.849*** (1.305)	-9.056*** (1.461)
(State and year fixed effects)			
Intercept	-0.418***	14.422***	23.260***
R <sup>2</sup>	0.385	0.268	0.329
Root MSE	0.132	11.473	14.829
N	1587	1585	1565

SOURCES: Adjusted ADA scores come from Anderson and Habel (2009a) (<http://dvn.iq.harvard.edu/dvn/dv/sanderson/faces/study/StudyPage.xhtml?studyId=37955>). DW-NOMINATE and party loyalty scores come from Keith Poole (<http://voteview.com>).

NOTES: ADA scores for the 2007–2008 Congress include scores from 2007 votes only. Models use OLS with standard errors clustered by district.

\*p<0.10 \*\*p<0.05 \*\*\*p<0.001.

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