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JOSH M. RYAN* & JEFFREY LYONS**

*Bradley University, USA; **University of Colorado at Boulder, USA

ABSTRACT *Reformers advocate the use of commissions rather than legislatures to redistrict as a way of promoting less partisan districts and ideologically moderate congressional members. Much of the evidence in political science suggests that gerrymandering is not a cause of congressional polarization, but whether or not commissions produce different types of districts or members remains an important and unanswered question, especially now that many states have adopted reforms. This article examines whether commissions reduce district partisanship or ideological extremity using time-series-cross-sectional data. We find that bipartisan districts promote member moderation, but there is no evidence that commissions have distinct effects on districts or members as compared to districts drawn by legislatures, consistent with the notion that limiting gerrymandering is not a solution for polarization. These conclusions call into question the appropriateness of redistricting reform, especially when one considers the undemocratic nature of commissions.*

Partisan redistricting occurs when state legislatures redraw district lines every ten years with sophisticated technology which allows them to serve partisan political purposes such as maximizing the number of seats for their party or protecting incumbents. Partisan redistricting results in a lack of competition for congressional seats, the argument goes, which in turn allows members of Congress to move away from the center and toward the ideological edge. McDonald and Altman summarize this claim by saying: "[f]igures from both major parties tilt the electoral playing field so much that one party is essentially assured of winning a given district, controlling the state legislature or winning the most seats in the state's congressional delegation. In other words, the democratic process is subverted. In this system, politicians select voters rather than voters electing politicians" (McDonald & Altman, 2010).

Recently, independent or bipartisan commissions have been touted by many as a solution to the problem of gerrymandering. Elected officials have begun to champion reform, and states with the initiative process often ask voters to take redistricting away from state legislators. Polls reveal that large segments of American voters see the redistricting process as unfair and believe redistricting should be done by independent or bipartisan commissions rather than state legislatures (Fougere et al., 2010).[1] A host of non-partisan public advocacy groups have also joined the independent commission movement, including Common Cause, the Public Interest Research Group, and the NAACP Legal Defense Fund. Despite the increasing popularity of commissions amongst elected officials, the public, and advocacy groups, we know little about whether they deliver on their promises.

This article examines the effects of commission-drawn districts in order to sort out competing claims made by reformers and political scientists. Most recent work suggests gerrymandering is not a cause of polarization, though some suggest that non-partisan methods can increase district competitiveness.

This leaves open the question of how commissions influence congressional member extremity, as there is little direct empirical testing of these increasingly prominent redistricting institutions. Time-series-cross-sectional data are used to determine whether states which use bipartisan commissions have different types of districts and members, as measured through district-level presidential vote share and the ideology of congressional representatives. We find evidence of a connection between the type of district and the type of member, but there is no evidence that commissions create more mixed partisan districts, nor is there evidence that states with commissions and bipartisan districts have more moderate members. Commission-based redistricting is not a solution to partisan districts or member extremity and reformers serious about encouraging moderation among districts and members are better off directing their energy elsewhere, especially if one considers the inherently undemocratic nature of commission-based redistricting.

1 Redistricting Effects and Reform Proposals

Concerns about redistricting have recently increased as stronger party attachments and computer technology have conspired to allow map-makers to draw districts to precise specifications based on political considerations. When political actors purposely draw districts to help their party, it is argued that they do so at the expense of electoral competition – lines are drawn so that a district contains a sufficient number of partisan voters which, because of the important role of party identification in congressional races (Bartels, 2000; Campbell et al., 1960), ensures one party always wins the seat.[2] Once the seat is no longer competitive, the member may pursue highly ideological and partisan policy positions because a strong electoral challenge from a member of the other party is unlikely and, in many cases, the greatest threat to a candidate is from a more extreme member of their own party during the primary (Brady et al., 2007). While our article focuses on district and member

characteristics, it is important to note that arguments about ideological extremity are a function of the lack of electoral competitiveness within the district.[3]

There are reasons to be skeptical that redistricting reform achieves its intended purpose. While the theoretical story that partisan redistricting causes extremity is intuitively attractive, research on both competitiveness and ideology as a result of gerrymandering has failed to find a clear connection. As Gelman and King (1994) point out, partisan redistricting creates incentives to both protect incumbents and maximize the number of seats for a party, what Cain (1985) calls maximizing the "efficiency of majority party strength." Strategies like "cracking" or "packing" voters of the opposition party into districts are used by legislators when their goal is securing additional seats for their party. Or, legislators may create districts designed to protect incumbents, especially if neither party has a monopoly on redistricting. California's safe districts from 2000 until 2010 are often said to be the result of a concerted effort by both parties to protect incumbents. According to the "All About Redistricting" website which promotes independent commissions as a solution to redistricting problems, in California, "after the 2000 census, the major political parties effectively decided to call a truce, and to keep the congressional incumbents of both parties safe from effective challenges."[4] These two political motives, maximizing seats and protecting incumbents, work at cross purposes – the more the party attempts to maximize seats, the lower the level of protection for incumbents and vice versa.

There is some evidence that legislatures reduce district competitiveness as compared to commissions (Carson & Crespin, 2004). The effect of partisan redistricting on ideology was tested by Carson et al. (2007) using data from 1962 (the year of the *Baker* v. *Carr* decision which allowed courts to intervene in redistricting) to 2002. The authors find that members became more extreme as the geography of the districts changed more. However, more recent research, notably McCarty et al. (2009), finds that rather than redistricting being the primary cause of congressional polarization, increasing ideological extremity is due to the behavioral differences of Democrats and Republicans given the same set of constituents.

We ask a slightly different question that augments and extends McCarty et al. (2009) – not does gerrymandering produce polarization, but do commissions draw districts in a different way than state legislatures? Their analysis provides strong evidence against the gerrymandering-polarization hypothesis, but they do not explicitly compare outcomes produced by different redistricting methods. And, as they show, the greatest ideological differences between Republicans and Democrats are among those in ideologically homogenous districts. If commissions reduce the number of highly partisan districts, it will not solve the polarization problem, but it may reduce its effects. McCarty et al. (2009) also find mixed evidence for what they term "sorting," where Republicans and Democrats become more likely to represent ideologically congruent districts due to gerrymandering, as a cause of polarization. The authors point out that sorting may not occur from gerrymandering alone, but the use of commissions may undo many of these effects by splitting voters without regard to partisan or demographic considerations. In fact, setting aside arguments about ideological polarization, those pushing for reform claim that

commissions are more likely to mix different types of voters together. This basic claim is a necessary first condition for a reduction in extremity and it may be true even if more heterogenous districts do not translate into more moderate members (though we test both claims).

Commissions may have no effect because, while their motives are different than those of a legislative body, they face the same sets of constraints. Limitations on bipartisan redistricting include the partisan distribution of voters as well as geographical and community concerns. In heterogeneous states, drawing balanced bipartisan and compact districts may be a relatively straightforward task, but in more homogenous environments pursuing a goal of bipartisan district boundaries is likely to be met with difficulty barring some very creative line-drawing. Regardless of who is drawing the lines and what their motivations are, it is hard to imagine a redistricting scheme in Utah or Hawaii that results in dramatically different constituencies (Abramowitz et al., 2006b). These limitations are lessened as states become more moderate and heterogeneous, but the fact that motivations are not the sole factor in redistricting outcomes, and that state characteristics constrain the ability of even bipartisan officials to draw "fair" lines raises questions about the degree to which one should observe much of an effect from the commission approach.

It is important to take claims made about commissions seriously because states are implementing them based on the belief that reforming the redistricting process will lead to more competitive elections and less ideologically extreme Representatives, despite clear empirical evidence (Cain, 2011). In his review of the redistricting literature, La Raja (2009: 215) cites Carson and Crespin (2004) as the one example of an empirical study on the effects of commissions, and their work investigated competitiveness rather than ideology. La Raja says: "Most other analyses rely on broad-brush case studies or comparisons based on anecdotal evidence. Thus, there is critical need for systematic, comparative studies over time to assess the consequences of institutional differences" (Butler & Cain, 1992). If we find that commissions produce less partisan districts or result in lower average levels of ideological extremity, it would suggest that commissions reduce some of the most pernicious effects of sorting and result in fewer extreme members, despite the behavioral differences between Republicans and Democrats, an outcome consistent with the claims of reformers and much of the academic literature.

Normative concerns also motivate the need for a better understanding of redistricting methods. Commissions, by definition, are composed of appointed officials who serve for a limited time and with relatively little oversight – their decisions may be challenged in court, but are often not subject to approval by a representative body or the public. Creating an undemocratic, unaccountable institution to do something as important as redistricting should be undertaken only if there are clear benefits.

2   Testing the Effects of Different Redistricting Mechanisms

We conduct straightforward empirical tests using time-series-cross-sectional data on district partisanship and member ideology within states, where the state's use of a

non-partisan redistricting method should produce a significant effect on both the average partisan makeup of districts and the average ideological composition of the congressional delegation. The analysis also accounts for party control of the redistricting process (i.e. unified versus divided party control), and an interaction between states with commissions and bipartisan districts.

Our approach differs from previous work in a number of ways. Rather than estimating member ideology at the district- or individual-level, we use a measure of average extremity at the state-level. The method used to redistrict varies *across* states, and *within* states *across* time, but is constant within a state at a given time. By leveraging the variation in redistricting methods across states we can compare the effects of legislature- and commission-drawn districts after three apportionment cycles to determine whether or not different forms of redistricting affect member ideology in different ways. This method allows us to control for alternative causes of state-level ideology, both within states and across time, bypassing many of the problems associated with estimating district-level effects. The most notable problem is attempting to determine how geographically different districts become over time. For example, a district may become more conservative because the lines are drawn to include more conservative voters or because district voters became more conservative.

Another reason for studying redistricting effects at the state-level concerns the implications of switching to commission-based systems for state policymakers. Redistricting method is a state institution so the most informative piece of information for policymakers weighing such a transition is what effects it will have for the state as a whole. If adopting the commission method results in moderation and bipartisanship for the entire state on average, then it could be a prudent move, but if there is no effect for the state as a whole, then it may not be. This focus on state-level outcomes goes to the heart of the controversy over redistricting and informs the policy debate occurring within states right now.

The analysis explores whether states with commissions create districts that are, on average, more closely divided between Democrats and Republicans and if commissions have an effect on representative ideology. The null hypothesis is that there are no differences between district partisanship and average member extremity in states where commissions redistrict as compared to states where the legislature redistricts. We test the following alternative hypotheses: 1) commission redistricting significantly increases bipartisan congressional districts as compared to legislative redistricting, *ceteris paribus*; 2) commission redistricting significantly reduces ideological extremity as compared to legislative redistricting, *ceteris paribus*; 3) commission redistricting significantly reduces ideological extremity as compared to legislative redistricting during periods of unified or divided party control of the redistricting process; and 4) the negative effect of commissions on member extremity is conditional on whether the commission has produced bipartisan districts. In none of the above tests can the null hypothesis be rejected – there is no evidence that districts are more bipartisan in commission states, nor is there evidence that commission-based redistricting produces more moderate House members.

2.1 *Data and Measurement*

We discuss the sample in more detail shortly, but the dependent variables are measured from 1983 through 2007, or three different redistricting cycles (1981, 1991 and 2001.) The dependent variable for the first set of empirical tests is a measure of how closely a state's congressional districts reflect national partisan preferences using district-level presidential vote share (Jacobson, 2009). Presidential vote share varies only every fourth year, but is a common way of assessing how partisan or ideological a district is compared to the rest of the country (Abramowitz et al., 2006a; Bishop, 2009, Canes-Wrone et al., 2002; McDonald, 2006). Partisan districts are those that vote for either the Democratic or Republican candidate at a very high or low rate relative to the rest of the country.

For each district, a measure of partisanship was calculated by taking the absolute difference between the Democrat's share of the presidential vote in the district and the Democrat's national share in the election. Subtracting the national vote share is standard practice and is done to minimize national year-specific effects on partisanship such as the campaign, state of the economy, or other variables that might affect national partisanship (Sinclair, 2006). Because the level of analysis is the state, partisanship scores are averaged across all districts in the state. Formally, the dependent variable is equal to:

$$
\begin{aligned}
&\textit{Mean District Partisanship in State j at year t} = \\
&\Sigma(|\textit{Democratic Pres. Vote Share in District i of State j at year t} \\
&\underline{- \textit{National Pres. Democratic Vote Share at year t}|)} \\
&\quad\quad\quad \textit{Number of Districts in State j at year t}
\end{aligned} \tag{1}
$$

The average district partisanship in the dataset is 9.36, the state-year with the least partisan districts is New Hampshire in 2000 with an average district partisanship of one, and the state-year with the highest average district partisanship is Utah in 2004 with a value of 22.05. If commissions produce less partisan or extreme districts *on average* within a state, district partisanship will be significantly lower than in states where the legislature redistricts. In sum, commissions should have a negative effect on the average district partisanship within a state.

The second set of empirical models measures the effect of bipartisan commissions on mean member ideology within a state. To determine member extremity, the absolute value of the distance from each member's adjusted ADA score (Anderson & Habel, 2009; Groseclose et al., 1999) was taken from the sample mean (approximately 42) such that increasingly liberal and conservative members have higher values. These values were averaged within states by year such that the dependent variable is the average level of extremity among all members of the state's congressional delegation. Adjusted ADA scores are used rather than NOMINATE scores because ADA scores vary every year, while NOMINATE scores vary only every Congress, effectively cutting the number of observations in half. Further, adjusted ADA scores and NOMINATE scores are both valid measures of ideology and are highly correlated with each other (Bishin, 2003). NOMINATE scores are available

for a slightly longer time period, until 2010, but because there are substantially fewer observations, the reduction in the number of observations decreases the power of the models and may bias the results toward the null hypothesis.[5] Similar to district partisanship, the dependent variable is equal to:

$$
\begin{aligned}
&\textit{Mean Member Extremism in State j at year } t = \\
&\frac{\Sigma(|\textit{ADA Score of Member i in State j at year } t - \textit{Sample ADA Score}|)}{\textit{Number of Members in State j at year } t}
\end{aligned}
\tag{2}
$$

Note that the dependent variable does not measure whether members are liberal or conservative, but rather whether members are extremists, either on the left or right. The state-year with the lowest member extremity value is 0.135 (Minnesota in 2006), the average is 16.34, and the maximum average district extremity is 58.84 (Hawaii in 1994.)

A caveat about the dependent variables is necessary. Some states, those that have more partisan voters and are homogenous, will have higher baseline values. For example, Utah will always appear to have more polarized districts and more extreme representatives because Utah is predominantly Republican and it would be nearly impossible to draw bipartisan districts in the state. Our research design accounts for this in two ways. First, the independent variables predict overall state ideology using state-fixed effects so the relativity extremity of states like Utah will be held constant when determining the effect of commissions. Second, because the data is time-series-cross-sectional, the models predict differences not just across states, but also within states over time, accounting for states with different baselines by comparing the changes within a state to itself over time. Evidence that the introduction of the commission reduced partisanship or member extremity within a state across time would be provide strong support that commissions matter, regardless of the baseline level of extremity.

2.2 *Redistricting Data and Predictors*

Redistricting method was coded using two books published by Congressional Quarterly (CQ Press, 1994, 2003) for three periods: 1983–1992, 1993–2002, and 2003–2007. During a redistricting cycle, a census is taken (1980, 1990, 2000), the redistricting process is completed by the midterm congressional election (1982, 1992, 2002), and the members begin representing their new districts in the third year (1983, 1993, 2003). The CQ books list redistricting method, provide a brief background on the politics of redistricting within each state, and the parties in power of the relevant institutions. Table 6 in Appendix A lists the redistricting method for each state, as well as whether both chambers of the legislature and the governor's office were controlled by the same party. Some states used a commission appointed by the judicial branch and these were also coded as commissions. For example, during the 1990 redistricting cycle in California, lines were drawn by a group of "Special Masters" appointed by the California Supreme Court.[6] Approximately 18.5% of the sample falls under the category of commission-based redistricting.

Though there is substantial variation in how commissions are designed, there is virtually no way to categorize commissions as being more or less independent. In fact, proponents of reform do not agree on what characterizes a "good" redistricting method and there is little *a priori* theory specifying a clear set of institutional rules that leads to non-partisanship. McDonald (2007) cites Arizona's commission as one generally lauded by reformers while Iowa's is not, despite a history of competitive elections in the state. We conceptualized redistricting methods in several different fashions – dichotomizing between commissions or courts and legislatures, and commissions and legislatures. A challenge is the degree of overlap between some of these methods and the extent to which partisan processes can enter the court and commission. Some commissions are appointed by the legislature (potentially injecting political biases), while others are appointed by courts or advisory panels (presumably insulating the process from politics). In some cases these courts are explicitly partisan while in others they are not, raising questions of how capable they are of removing politics from the equation. Beyond the appointment process, there are differences in how commissions adjudicate district lines. Some, such as Iowa, are not allowed to utilize partisan or electoral considerations when drawing lines, raising issues of heterogeneity within conditions. These factors present difficult questions about the variable construction here, but they are also the motivation behind our model which interacts commissions and bipartisan districts.

Court-based redistricting, where the lines were drawn explicitly by a judge or the federal court system, are excluded from the analysis. The research question concerns comparing commissions to legislatures and it is theoretically unclear what effect courts are likely to have on redistricting. Much of the time, court redistricting results from alleged civil rights violations or the inability of the legislature and governor to agree on a redistricting plan. Both federal and state court judges are involved in redistricting, many of whom may have political motivations to consider because, for example, state judges are often elected or subject to retention elections (Hall, 2001). To capture the effects of one common situation in which courts may intervene if districts are drawn to diminish minority representation, the models include a variable indicating whether certain jurisdictions or the entire state was subject to preclearance by the Department of Justice under the Voting Rights Act of 1965.

The possible universe of cases consists of all 50 states from 1983 to 2007. We limit our analysis to this period for practical and theoretical concerns; 1983 is the first year of the post-1981 redistricting cycle and is near the start of the modern era of polarization while the sample is limited to 2007 because it is the last year for which adjusted ADA data is available. Six states are not subject to redistricting and Montana lost its second district during the 1991 redistricting cycle, resulting in 180 lost observations (six states x 28 years, and one state for 14 years). An additional 24 states used court redistricting for at least one redistricting cycle and Nebraska is excluded from the sample due to its unicameral legislature. The resulting models have 834 observations when no covariates are included and 790 observations when covariates are included. The reason for this is that 2006 is the last year Pacheco's (2011) state citizen ideology

is measured and the citizen ideology data is not available for Hawaii until 1994, thus the revised models are equal to the original 834 minus 33 observations for 33 state-years in 2007 and the 11 missing for Hawaii.[7]

For the models estimating district partisanship we limit our sample to presidential election years from 1984 to 2008. This results in 343 possible observations, with 49 states (Nebraska is excluded) and seven presidential election years. Excluding the six one-district states, and Montana after the 1991 cycle, there are 53 missing observations. When court redistricting is also excluded there are 267 total observations in the bivariate model and because the citizen ideology variable is not available for 2008 and for the first four presidential elections in Hawaii, the final sample including variables has 233 observations.

The models include a number of other variables used to predict the average district partisanship and member extremity within a state. Because each variable is at the state level, each seeks to measure the ideological makeup of the electorate across all congressional districts within a state during a given year. In this respect, the state-level analysis has an important advantage – we do not measure the competitiveness of individual races, the number of members running unopposed, and other district-level characteristics because these variables are endogenous to member behavior, whereas variables at the state level are not. The variables identify factors that indicate if a state is more or less ideological, on average, as these states will produce less moderate and more extreme congressional districts and representatives relative to national sentiment. A continuous variable is included for the percent of both the lower and upper chamber of the state legislature controlled by one party such that a legislature dominated by Democrats or Republicans has higher values. This variable is independent of congressional districts but is also a good proxy for the number of partisan voters within a state. States with one party dominance in the legislature will have more partisan congressional districts and more extreme members. Also included is Ranney's measure of party competition (Ranney, 1965), a folded measure of how many state offices are controlled by one party and for how long. It is commonly used to gauge electoral competition in the states and we expect that the more competition, the less partisan districts will be and the more moderate members will be (Holbrook & Van Dunk, 1993).[8] Overall state citizen ideology is measured using Pacheco's (2011) measure, also folded so that high values are for ideologically extreme states with a high population of liberals or conservatives. States with more districts have higher populations and perhaps better sorted ideological voters (Bishop, 2009), providing more opportunities to create partisan districts, so the number of districts in a state for a given year is controlled for. As mentioned above, a variable for preclearance is included (coded 0 if none required, 0.5 if at least one state jurisdiction must receive preclearance, and one if the entire state is subject to preclearance), as is the one-party share of the two-party state presidential vote, consistent with Carson and Crespin (2004). Table 1 shows the descriptive statistics for these measures.

Table 1. Descriptive statistics for variables used in analysis and state example

Variable	Average	Std. Dev.	Minimum	Maximum
State Member Extremity	16.34 (IA 2000)	12.23	0.135 (MN 2006)	58.84 (HI 1994)
District Partisanship	9.29 (NJ 2004)	4.01	1 (NH 2000)	22.07 (UT 2004)
Pct. of One Party in Leg.	13.73 (PA 2004)	10.31	0.04 (WA 1992)	44.31 (ID 2002)
One Party Pres. Vote Share	6.76 (OK 1988)	4.98	0.1 (KS 1992)	22.45 (RI 1996)
Pacheco's State Ideology	0.0262 (CT 1996)	0.0193	0.0002 (WI 1992)	0.095 (MA 2002)
Ranney's Party Competition	0.856 (NM 1994; Others)	0.096	0.669 (AR 1996; Others)	0.998 (PA 2006; Others)
Number of Districts	9.64 (MA 2004; Others)	9.77	2 (RI 1988; Others)	53 (CA 2007)

Note that ideology and partisan variables are folded such that high values represent extremism, either liberal or conservative, while low values represent moderation. States shown are examples, "others" indicate other state-years have the same values.

2.3 *Modeling Technique*

We employ a unique modeling technique that allows us to assess two different kinds of changes that can occur as a result of using commission-based redistricting. Hybrid panel regression (Allison, 2009: 23–27) uses elements of both fixed- and random-effects regression, and allows the estimation of both *within* and *between* unit changes. What this means intuitively is that we are able to test whether states that use commissions have less ideologically extreme congressional delegations (this is an across-units comparison analogous to a cross-sectional test), as well as whether a given state that changes from legislative redistricting to commission-based redistricting over the course of time becomes less extreme (this is a within-unit comparison over time). Being able to test both of these differences allows us to speak to several different components of the story.

If we find across state differences, it suggests that states which use commissions have less extreme delegations. This would provide some support for the claims made by reformers, but would raise questions about whether selection effects are at play. That is, it could be that certain kinds of states (i.e. less extreme ones) are more likely to adopt redistricting commissions. However, finding that states which change from legislative redistricting to a commission-based method become less extreme after the change (which is what the within-unit coefficient demonstrates) tells a much stronger causal story that for a given state, a change to commissions produced a decline in extremity. In sum, by estimating both an across and within unit coefficient through hybrid panel regression we are able to more completely test commission effects.

The data is arranged in time-series-cross-sectional format. In order to estimate hybrid panel models per Allison (2009) the first step is to calculate the across unit

differences (also called the observation-specific deviation from the overall observation mean). In order to do this we take the average for each state, j, at all time periods, t, across a vector of independent variables x.[9]

$$Across\ Effect = Mean(x_j) \qquad (3)$$

Note that because the data measure the cross-sectional effect, time is not accounted for when creating this variable. This independent variable allows one to determine if the use of commissions to redistrict in a state results in a corresponding decrease in the dependent variables compared to those states which use legislatures to redistrict.

The second step is to produce an independent variable that explains changes in the dependent variable given a change within a state across time, or what is referred to as the as the observation specific deviation at time t from the overall observation mean. This is found by taking the difference between each observation's value on an independent variable at time t from the overall state-specific mean.

$$Within\ Effect = x_{jt} - (Mean(x_j)) \qquad (4)$$

This part of the independent variable allows one to determine whether the use of a commission within state j at time t results in a corresponding decrease in the dependent variables.[10] For clarity, we refer to state mean variations as the "across" state effect and state changes over time as the "within" state effect.

This process of computing across and within unit deviations is repeated for every time varying measure in the model, resulting in two coefficients that are estimated for each variable. This method provides fixed-effects estimation of the time-varying predictors and random-effects estimation of the time-invariant predictors. The random effects are an observation-specific error term that models unobserved heterogeneity between observations while the fixed effects model the variation within observations across time. With this approach, we are also able to include time-invariant variables in the model, unlike with standard fixed effects regression. This "hybrid" approach is advocated by Allison because it offers "the inclusion of predictor variables that do not vary within individuals and random coefficients for those predictors that vary within individuals" (Allison, 2009: 26). We estimate random effects by Congress nested within state as Congresses represent the relevant unit of time in which there is likely to be clustering – members' behavior may differ across Congresses due to the effects of party leadership, public mood, or some other unobserved variable.

3   The Effect of Commissions on District Partisanship and Member Extremity

The first results are descriptive analyses of the dependent variables and their correlations with commissions. Figure 1 shows the average across all states for each of the two dependent variables. The left panel shows district partisanship in each presidential election year and the right panel shows average member extremity across all states for each year from 1980 to 2007. The squares are the average district
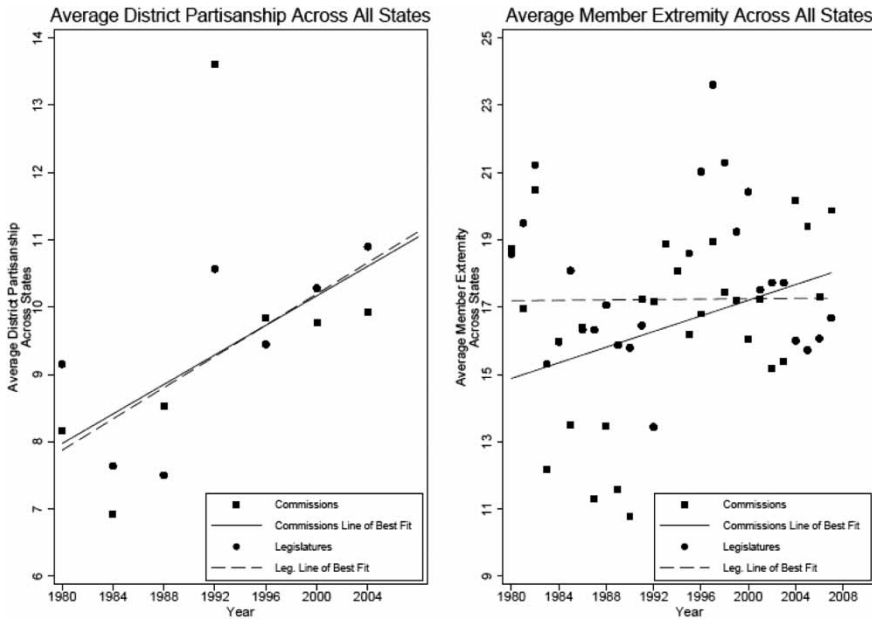
Figure 1.   Average District Partisanship and Member Extremity in Commission and Legislature Re-districted States Across Time

partisanship and member extremity for commission-redistricted states and the circles represent legislature-redistricted states while the solid and dashed lines are lines of best fit for each. As the left panel shows, district partisanship has steadily increased from 1980, but there are no discernible differences between states with commissions and states with legislatures. There are some differences in member extremity between commission-drawn states and legislature-drawn states. In general, states with commissions had, on average, less extreme members throughout the 1980s and mid 1990s, but by the late 1990s, there is virtually no difference in average member extremity between the two. The pattern in both panels shows a general increase in both district partisanship and member extremity, as one would expect, which lends additional validity to our measures.

Table 2 presents difference of means tests for commission and legislature redistricted states for the two dependent variables, average district partisanship and member extremity. In neither case is there a statistically significant difference between states in which a commission drew district lines and those in which the state legislature redistricted. We also repeated the difference of means test for member extremity by limiting the sample to just the 1990s and for just the 2000s (results not shown). Again, the differences between redistricting methods are statistically insignificant.

The results for commissions' effects on district partisanship and member extremity are shown in Table 3. To ensure that the results are not model specific, we show the

Table 2.   Difference of means tests – commission and legislature redistricting states

Group	Observations	Average District Partisanship		
		Mean	**Std. Error**	**Std. Dev.**
Commission States	66	9.65	0.325	4.2
Legislature States	167	9.95	0.484	3.93
Combined	233	9.73	0.27	4.12
		PR(T>t)=0.30	*PR(T=t)=0.61*	*PR(T<t)=0.70*
		Average Member Extremity		
Group	**Observations**	**Mean**	**Std. Error**	**Std. Dev.**
Commission States	293	16.24	0.817	12.64
Legislature States	595	16.39	0.504	12.29
Combined	834	17.03	0.401	12.46
		PR(T>t)=0.56	*PR(T=t)=0.88*	*PR(T<t)=0.44*

results from a simple hybrid regression with only the across, within, and random-effects modeled and without any control variables, and the full hybrid model with fixed and random effects and a full set of control variables. Recall that the dependent variables are structured such that high values indicate the state, in a given year, has more partisan districts or more extreme members.

The district partisanship models estimate the effect commissions have on average district partisanship within a state. There is very little evidence that commissions reduce district partisanship. In both the trivariate and full models, the "across" coefficients, which explain variation across states, are positive, as are the "within" coefficients, which explain variation within a state over time. Not only does redistricting method seem to be an insignificant predictor of district partisanship or member extremity, but the coefficients are positively signed, the opposite direction one would expect.

A number of other variables significantly predict district partisanship however, and all operate in the expected direction. One-party dominance in the state legislature both cross-sectionally and temporally increases district partisanship. Across states, a one standard deviation increase in one party control of the legislature results in a 0.18 standard deviation increase in district partisanship, while the within-state effect is an increase of about 0.08 of a standard deviation. Additionally, the more one party out performs their national average in the presidential vote, the more partisan districts are within the state. According to the "across" variable, a 1% increase in one party's share of the presidential vote increases district partisanship by 0.499, about 0.34 of a standard deviation, as compared to all other states in a given year. The "within" variable suggests that a one standard deviation increase over time in a state results in an increase of district partisanship by 0.518 of a standard deviation in district partisanship, a substantial effect. States with more districts and states that add districts over time also tend to have more partisan districts. A one district increase across states increases average district partisanship by 0.422 of a standard deviation, a relatively

Table 3. The effect of commissions on district partisanship and member extremity

Variable	District Partisanship				Member Extremity			
	No Controls		Full Model		No Controls		Full Model	
Leg. or Court Commission	(Across)	.039 (1.03)	(Across)	.003 (.673)	(Across)	−2.01 (3.66)	(Across)	1.28 (2.5)
	(Within)	.794 (.759)	(Within)	.051 (.631)	(Within)	−1.99 (1.34)	(Within)	−1.44 (1.34)
Pct. of One Party in Legislature			(Across)	.096[#] (.053)			(Across)	.249 (.2)
			(Within)	.053[#] (.027)			(Within)	.198* (.058)
One Party Pres. Vote Share			(Across)	.499* (.101)			(Across)	.939* (.401)
			(Within)	.518* (.037)			(Within)	.05 (.077)
Pacheco's State Ideology			(Across)	20.4 (22.32)			(Across)	363.68* (89.02)
			(Within)	−6.63 (8.43)			(Within)	49.94* (17.81)
Ranney's Party Competition			(Across)	−1.45 (4.57)			(Across)	−2.22 (18.03)
			(Within)	−1.58 (4.2)			(Within)	−3.48 (8.87)
Number of Districts			(Across)	.191* (.029)			(Across)	−.381* (.11)
			(Within)	.229* (.199)			(Within)	−.53 (.445)

(*Continued*)

Table 3.   (*Continued*)

Variable	District Partisanship		Member Extremity	
	No Controls	Full Model	No Controls	Full Model
Preclearance (1=Yes)		−4.08*		8.1
		(1.35)		(5.18)
Fixed Effects for Year		(Included)		(Included)
Constant	7.34*	1.53	13.7*	−.226
	(.638)	(4.423)	(2.19)	(17.53)
Random Effects Parameters				
Var(Congress)	.063	.149	.979	1.1
	(.033)	(.051)	(.296)	(.319)
Var(Constant)	603.13	1580.0	9927.22	11797.79
	(346.79)	(544.88)	(3035.46)	(3423.85)
Cov(Congress, Constant)	−6.15	−15.35	−98.25	−113.62
	(3.4)	(5.29)	(29.95)	(33.01)
Var(Residual)	7.52	2.61	52.66	44.09
	(.84)	(.345)	(2.72)	(2.35)
Wald χ^2	49.82*	438.78*	61.78*	196.26*
AIC	1239.31	893.11	5937.84	5484.01
N	233	197	834	790

*p<.05, [#]p<.1. Maximum likelihood-estimation with random intercepts and random slopes for Congress by state and an unstructured covariance matrix.

large effect. When states add a district, partisanship increases about 0.05 of a standard deviation, a much smaller effect. States rarely add more than that one district after a census, so the creation of additional districts is not responsible for much of the increase in district partisanship. These results mean states with more districts tend to have more partisan ones, and that as states gain districts, they also tend to become more partisan. Ranney's party competition variable is negative in each model, as expected because party competition reduces district partisanship, although the variable is insignificant. States subject to preclearance also have more moderate members, likely because map-makers have more limited discretion to draw lines based on partisan purposes and instead must consider other factors like race. It is also the case that the data covers the period throughout the 1980s and early 1990s when a large number of southern Congress members were still conservative Democrats, making those states more moderate.

The second set of models predicts member extremity using the same set of variables. Again, there is no evidence that commissions have any significant effect on member extremity. The "across" states commission variable, which compares states which use a commission in a given year to those that do not, is positive in the full model. The other commission variables are negative, and in the expected direction, but none of the three in the two models predicting extremity approaches statistical significance.

Other factors which increase member extremity are an increase in the one-party dominance of the state legislature within a state across time, a cross-sectional increase in the one-party presidential vote share, and an increase in state ideology, both across states and within a state across time. As the legislative dominance of one party increases by a standard deviation within a state, there is an increase of 1.51 in the adjusted ADA extremity score, about 0.12 of a standard deviation. An increase in state ideology of one standard deviation increases member extremity by about 3.64 adjusted ADA points, a large increase equal to about 0.28 standard deviations. Within a state, an increase in ideology increases extremity by about 0.614 points, or 0.05 of a standard deviation. Interestingly, states with more districts tend to have more moderate members of Congress, though the effect of the number of districts is not significant within states. The effect is a decrease in extremity of about 3.51 adjusted ADA points, or 0.26 of a standard deviation, for a one standard deviation increase in the number of districts (about nine districts). This is the opposite effect that an increase in districts has on district partisanship. It is possible that a greater number of districts encourages at least a few members to be more moderate, even if many members of the state delegation are more extreme.

3.1 *Institutional Control and Redistricting*

The approach above is useful for parsing out the average differences between the two redistricting methods, but different types of party control of redistricting institutions (i.e. unified control versus divided control) may vary the effect of legislative redistricting. As a result, it is possible that our null finding were not a function of

commissions being ineffective, but instead using a heterogenous comparison category which minimizes the cases where legislatures create safe districts.

Our investigation of political control is also driven by the substantial literature which shows significant effects in the context of partisan advantage. Unified political control helped generate more seats for the party in power after the 1970 and 1980 redistricting cycles, though the effects degraded over the course of the decade (Abramowitz, 1983; Niemi & Winsky, 1992). Interestingly, there seemed to be little effect of seats won by the party in power after the 1990 redistricting cycle as a result of unified control of redistricting institutions (Niemi & Abramowitz, 1994; Swain et al., 1998).

Unified control may allow one party to maximize the number of seats while ensuring that members of its party are protected from competition. This may be a recipe for ideological extremism. Alternatively, when legislation is subject to a compromise due to shared partisan control of the chambers and the governorship, the parties may agree to protect incumbents as happened in California, thus increasing extremity. There is little evidence to adjudicate between these contrasting theories, but the effect of partisan control is an empirical question that can be answered with our data. We compare commission-drawn districts to unified and divided redistricting methods to determine if districts are more extreme under one condition, and if commission-drawn districts reduce ideological extremity or district partisanship as compared to unified or divided party control of redistricting.

The estimates in Table 4 are coefficients from a hybrid regression model using the same variables as the previous models, except a unified government variable is interacted with the legislative or court commission variable. The interaction term should be negative if commissions reduced the ideological extremity of members or districts as compared to unified government redistricting, while the commission redistricting component term would be negative if commissions had an effect as compared to divided government redistricting. These models are an explicit comparison between commission-based redistricting and partisan control of the redistricting process in legislature-based states.

As with the previous models, there is no evidence that commissions create different types of districts than legislatures during divided or unified control. However, there are some interesting results in the model predicting member extremity with a full set of control variables. First, the component term is negative and significant (at the 0.1 level). Because the term is included in an interaction, it can be interpreted as a reduction in extremity as compared to periods of divided control of the chambers. Note also that the "within" unified government variable is significant as well, indicating that when a state moves from divided to unified legislative redistricting control, there is a reduction in member extremity. Both these findings support the notion that divided government increases member extremity, possibly because bipartisan compromise leads to incumbent protection.

The "across" interaction term is positive and significant, meaning that commission-based redistricting actually increases ideological extremity as compared to unified government. This implies that legislative redistricting and unified control actually produces more moderate members than commission-drawn districts. This result is

Table 4. The effect of commissions on district partisanship and member extremity compared to unified and divided party control of redistricting institutions

Variable	District Partisanship				Member Extremity			
	No Controls		Full Model		No Controls		Full Model	
Leg. or Court Commission	(Across)	2.29	(Across)	1.05	(Across)	−7.67	(Across)	−9.26[#]
		(2.36)		(1.39)		(8.35)		(5.1)
	(Within)	.786	(Within)	.044	(Within)	−2.03	(Within)	−1.77
		(.762)		(.634)		(1.35)		(1.35)
Unified Government	(Across)	3.02	(Across)	2.33	(Across)	1.59	(Across)	−5.64
		(2.46)		(1.91)		(9.06)		(7.35)
	(Within)	.16	(Within)	−.113	(Within)	−.393	(Within)	−1.58*
		(.455)		(.327)		(.681)		(.665)
Unified Government x Leg. or Court Commission	(Across)	−4.64	(Across)	−2.58	(Across)	16.8	(Across)	26.33*
		(5.04)		(3.03)		(18.28)		(11.11)
	(Within)	1.09	(Within)	.307	(Within)	2.42	(Within)	.892
		(1.71)		(1.17)		(2.48)		(2.35)
Pct. of One Party in Legislature			(Across)	.101[#]			(Across)	.261
				(.052)				(.195)
			(Within)	.056			(Within)	.229*
				(.027)				(.059)
One Party Pres. Vote Share			(Across)	.473*			(Across)	1.01*
				(.102)				(.005)
			(Within)	.522*			(Within)	.048
				(.037)				(.077)
Pacheco's State Ideology			(Across)	33.67			(Across)	351.72*
				(25.12)				(95.32)
			(Within)	−6.65			(Within)	49.8*
				(8.44)				(17.73)

(*Continued*)

Table 4.   (*Continued*)

Variable	District Partisanship				Member Extremity			
	No Controls		Full Model		No Controls		Full Model	
Ranney's Party Competition		(Across)	1.92			(Across)	2.04	
			(5.62)				(21.23)	
		(Within)	−1.59			(Within)	−5.03	
			(4.29)				(8.91)	
Number of Districts		(Across)	.184*			(Across)	−.344*	
			(.028)				(.106)	
		(Within)	.219			(Within)	−.523	
			(.2)				(.443)	
Preclearance (1=Yes)			−4.05*				5.82	
			(1.34)				(5.0)	
Fixed Effects for Year			(Included)				(Included)	
Constant	5.82*		−2.6		12.98*		−1.3	
	(1.36)		(5.87)		(4.88)		(22.18)	
Random Effects Parameters								
Var(Congress)	.063		.153		.959		1.11	
	(.034)		(.053)		(.291)		(.32)	
Var(Constant)	606.79		1622.76		9763.5		11927.32	
	(348.54)		(558.17)		(2991.08)		(3453.24)	
Cov(Congress, Constant)	−6.18		−15.75		−96.4		−114.76	
	(3.42)		(5.41)		(29.46)		(33.24)	
Var(Residual)	7.52		2.59		52.61		43.64	
	(.842)		(.343)		(2.71)		(2.33)	
Wald χ^2	51.91*		448.54*		65.02*		220.73*	
AIC	1245.37		899.43		5942.76		5480.55	
N	233		197		834		790	

*$p<.05$, #$p<.1$. Maximum likelihood-estimation with random intercepts and random slopes for Congress by state and an unstructured covariance matrix.

opposite to what reformers expect and suggests, counterintuitively, that the ideal situation to create more moderate members is to use legislative redistricting when one party controls the process. Legislators and governors of the same party, it seems, maximize the number of possible seats their party can win at the expense of electoral safety. Caution should be used when interpreting these results given that only one model of the four shows a significant relationship, but for our research question, the result is clear: commissions do not reduce ideological extremity or district partisanship even when compared to unified and divided party control of the redistricting process in legislatures. In fact, our results suggest the opposite may be true with respect to unified party control.

3.2 *Identifying Effective Commissions*

Extremity is a second order effect and might be determined by how partisan districts are *and* by the method of redistricting. To test this hypothesis, we use district bipartisanship as a predictor of extremity and interact it with commissions, a specification which serves two purposes. First, it allows us to determine whether safe districts are a significant factor in the ideological extremity of representatives, verifying both the measure's validity and the basic claim that more moderate districts will produce more moderate members. Second, it allows us to distinguish between different types of commissions (i.e. truly independent vs. partisan) by focusing only on those states with more bipartisan districts. As discussed above, it is very difficult to classify commissions as apolitical or not *a priori* so we test whether the combination of commission-based redistricting in states with bipartisan districts produce an independent, significant effect on ideology. The results are shown in Table 5.

First, there is strong support that an increase in district bipartisanship reduces member extremity. In both of the models, within-state district bipartisanship has a negative effect on member extremity, reducing extremity by about 1.61 on the ADA scale in the first model, a reduction of about 0.12 of a standard deviation. The effect in the second model, which includes the interaction terms, is about 0.18 of a standard deviation. Within a state over time, as districts become more heterogenous, members become more moderate. Across all states, district bipartisanship also decreases member extremity, and the effect is nearly triple the "within" decrease. Importantly, this is exactly what reformers hope will happen, and what should happen if the voting behavior of members is associated with their district constituents. In the interaction model, district bipartisanship increases extremity across all states, but because this is a component of an interaction, it must be interpreted as conditional on legislative redistricting. Thus, district bipartisanship increases extremity only in those states where the legislature redistricts. It is unclear why this is the case, but there may be a selection effect where members behave more ideological knowing their districts were the result of a political process. The second model interacts the within and across commission and bipartisanship variables to determine if there is a statistically significant effect for those states with commissions *and* moderate districts. While the direction is negative, neither variable is significant and, notably, the

Table 5. The effect of district partisanship x commissions on member extremity

Variable		Base Model		District Interaction
District Bipartisanship	(Across)	$-1.21^{\#}$	(Across)	$1.12^{\#}$
		(.683)		(.609)
	(Within)	$-.481^{*}$	(Within)	$-.723^{*}$
		(.228)		(.304)
Leg. or Court Commission	(Across)	-2.04	(Across)	-10.0
		(14.33)		(8.83)
	(Within)	$-4.05^{\#}$	(Within)	-2.98
		(2.32)		(2.4)
Commission x Competitiveness	(Across)	$-.212$	(Across)	-1.45
		(1.55)		(.964)
	(Within)	$-.132$	(Within)	$-.03$
		(.946)		(.902)
Pct. of One Party in	(Across)	$.518^{*}$		
		(.187)		
	(Within)	$.107^{*}$		
		(.096)		
One Party Pres. Vote Share			(Across)	$.519^{*}$
				(.191)
			(Within)	$-.18$
				(.212)
Pacheco's State Ideology			(Across)	330.09^{*}
				(78.65)
			(Within)	36.1
				(39.68)
Ranney's Party Competition			(Across)	3.88
				(16.35)
			(Within)	11.66
				(15.46)
Number of Districts			(Across)	$-.155$
				(.139)
			(Within)	$-.763$
				(.638)
Preclearance (1=Yes)				-2.75
				(5.34)
Fixed Effects for Year		(Included)		(Included)
Constant		4.13		.146
		(6.68)		(16.09)
Random Effects Parameters				
Var(Congress)		.043		.002
		(.083)		(.001)
Var(Constant)		177.58		5.78
		(551.96)		
Cov(Congress, Constant)		-2.75		$-.118$
		(6.96)		
Var(Residual)		58.67		65.95
		(4.22)		(7.52)
Wald $\chi2$		23.84^{*}		158.74^{*}
AIC		1518.58		1453.02
N		200		197

$^{*}p<.05$, $^{\#}p<.1$. Maximum likelihood-estimation with random intercepts and random slopes for Congress by state and an unstructured covariance matrix.

competitiveness component term remains significant, indicating that even when the legislature redistricts, bipartisanship promotes moderation within the state across time at a statistically significant level. The claim that commissions in states with bipartisan districts have an additional effect on ideology is not supported. (These results, and those from the previous models, are duplicated using NOMINATE scores, found in the Supplemental Information, and the findings are very similar.)

Despite the null results, we perform another test designed to capture any possible effects of truly independent commissions. As discussed above, the ambiguity associated with the institutional factors which promote bipartisan or independent commissions make it difficult to design a commission that achieves the goals of reformers, which generates doubts about the usefulness of reform efforts. However, in an attempt to identify bipartisan or independent commissions, we developed a classification scheme using 1) our reading of Congressional Quarterly's "Guide to 1990 Congressional Redistricting" to classify schemes in the 1990 cycle, and 2) McDonald's (2004) typology along with CQ's "Congressional Districts in the 2000s" to classify schemes in the 2000 redistricting cycle. (For the 1990 cycles, the states are: Florida, New Jersey, and Washington. For the 2000 cycle the states are Arizona, Connecticut, Hawaii, and Idaho.) The effects of commissions in these states, on district bipartisanship and member extremity, are compared to legislative redistricting states. (Results are shown in Table 4 of Appendix B—Supplemental Information (http://dx.doi.org/10.1080/17457289.2013.876425).) There is little evidence these states have more bipartisan districts or less ideological members. In most specifications, the commission redistricting variable is negative, but only the across-commission variable using adjusted ADA scores reaches statistical significance in the bivariate model predicting extremity. When the control variables are included, or when DWNOMINATE scores are used, neither the across nor within variables approach significance.

3.3   *Robustness Checks*

As decisions about whether to adopt redistricting commissions are done at the state level, we have defined the unit of analysis as the state-year. While we argue that this design is the most direct way of answering the policy question states must address regarding their redistricting institutions, a drawback to using state averages is that they can mask different patterns occurring at the congressional district level. For example, by having one very extreme district and a few moderate districts, the average district partisanship or member extremity may appear high as a function of a single district. To ensure this is not the case, we conduct two robustness checks.

For the first check, we analyze whether commissions produce different distributions of extremity and district partisanship using the standard deviation of each dependent variable within a state. It is possible that in commission states, a subset of districts or members are made more bipartisan or moderate at the cost of creating a few extreme districts. These moderate and extreme districts may balance each other out, and wash out any observed changes in the delegation mean. To account for such a

situation, we measure the variance in districts using the standard deviation of state district partisanship and member ideology, allowing us to capture the spread within districts and members within a state. If states with commissions create many competitive districts and moderate members while also creating a few extreme districts and members, there should be a positive effect of commissions on the standard deviation. If the partisan and ideological distributions are not affected by redistricting method, we can rule out distributional differences as the reason for a null relationship between commission redistricting and average district partisanship or member extremity. In fact, we find no significant differences in the standard deviation of legislative and commission redistricting states, using t-tests, trivariate regression (including both the "within" and "across" variables), or multivariate regression with the predictors previously used.

The second robustness check explores how commission redistricting rules influence extremity at the district level. By pooling all districts, we transform the unit of analysis into the district-year, where all districts within the sample are identified as redrawn by a commission or legislature across our sample time period.[11] As a first cut, we look at whether districts drawn by commissions are more moderate than districts in states where redistricting is done by the legislature. Simple t-tests suggest that this is not the case. Pooling the data and looking across all districts in all years, districts in commission states are slightly *more* extreme than those in states with legislative redistricting. (The results discussed in this section are shown in Table 5 in Appendix B (http://dx.doi.org/10.1080/17457289.2013.876425).)

Turning to the measure of district partisanship, there is a significant difference between legislature and commission plans at the $p < 0.05$ level, but legislative districts are *less* partisan than commission-drawn districts. These two analyses show that across all districts in all years, there is not any evidence that districts in states with commissions are less extreme than districts in states with legislatures. If anything, there appears to be some suggestive evidence that districts in states with commissions are more extreme. This finding could be a function of the non-random assignment of commission redistricting schemes if states adopt a commission plan because they have more extremity in their districts. If this is the case it is still possible that, once adopted, commissions reduce the extremity that occurs at the district level.

To explore this possibility we incorporate time into the district-level analysis, and use the same within and across unit measures of commission or legislative redistricting schemes as used above. This tests whether there is a difference between districts in states that have commission or legislative redistricting over time, as well as whether the adoption of a commission plan influences extremity in subsequent Congresses at the district level. In the models we only include the measures of within- and between-district commission or legislative rules along with fixed effects for Congress. As this is a robustness check, we want to maximize the chances of finding evidence that our state average conclusions are wrong (i.e. there is an effect of commissions on reducing extremity at the district level). To that end, we include no control variables in the models that could reduce the effect of commission redistricting plans. (The results of these models are shown in the bottom half of Table 5 of Appendix B (http://dx.doi.org/10.1080/17457289.2013.876425).) The time series

analyses yield no evidence to question our substantive conclusions. There is an insignificant effect of commissions on ideological extremity within districts, meaning that when a state adopts a commission redistricting plan, there is not a significant change in the ideological extremity of the districts in the state. Between districts, there is a significant, *positive* effect of commissions, meaning that there is more extremity in commission districts than there is in legislature-drawn districts. These findings are consistent across models where fixed effects for Congress are not included and when the control variables used above are included. Turning to the results for district partisanship we see that there is no effect of either across or within district commission redistricting.

Taken as a whole, the robustness checks performed here lend confidence that our primary conclusions are not simply a product of the level of analysis. Exploring the effects of redistricting commissions on extremity at the district level suggests that commissions do not reduce the ideological extremity of elected representatives. If anything, there is some evidence that districts under commission redistricting plans are actually more extreme than those where legislatures draw the lines, though these findings are not borne out when using the state-level data or when other control variables are included. However, these findings lend credence to our results at the state level that commissions are not instruments of ideological moderation.

4 Conclusion

Despite the hope that bipartisan commissions will reduce congressional polarization through the creation of more bipartisan districts, there have been few empirical tests of the effects of different redistricting methods. The article tested four different conditions under which redistricting completed by a bipartisan commission may have an effect: all states in which a legislature or commission redistricted, states with unified or divided party control of the redistricting process, and states with both a commission and bipartisan districts. Time-series-cross-sectional data was used in models with no controls and a full set of controls in an attempt to find evidence that bipartisan commissions achieve their intended effect. There is no evidence that bipartisan redistricting has a significant effect on district partisanship or the average level of extremism in a state's congressional delegation.

Importantly, there is evidence that members of Congress will moderate if they represent a more bipartisan district. This conclusion is consistent with the claims of reformers, who argue that partisan districts promote extremism. On the other hand, the results also show that commissions do not create more bipartisan districts than legislatures, nor do commissions create more ideologically moderate members, even in states with commissions where the precondition of bipartisan districts is met. Similarly, when the analysis is restricted to commission schemes identified as "independent" by observers, no independent effects exist. Perhaps better identification and agreement on the commission structures which are most effective at reducing polarization and increasing competitiveness would lead to greater observed differences between redistricting methods. Or, perhaps constraints on redistricting,

discussed earlier, result in the same types of districts even if commissions have different motivations than their political counterparts.

The article's analysis is limited to a comparison between commissions and legislatures. Court-based redistricting was excluded due to space constraints and theoretical considerations. Very little research has examined the effect of court redistricting, and as discussed above, it is unclear exactly how courts are likely to affect district bipartisanship and member extremity. We note that in nearly all our models, states which are subject to preclearance have significantly more bipartisan districts than other states. While required review by the Justice Department is not exactly the same as court redistricting, the result offers some evidence that when states are forced to explicitly account for race and the threat of court redistricting is salient, districts tend to become heterogenous. It is also the case that accusations of racial discrimination in redistricting plans is a common reason for redistricting lawsuits.[12] Developing a theoretical story and explicitly examining the role of courts in promoting competition, bipartisanship, and member moderation should be pursued in future research.

The empirical results lead us to conclude that if reformers are serious about reducing congressional polarization, their efforts are better spent elsewhere. How state districts are drawn is more than an academic argument. Reformers may argue that even if bipartisan commissions have no effect, there is no good reason not to implement them. However, using independent commissions may violate certain democratic ideals. There is little recourse for voters if commissioners draw districts in a way that seems unfair, arbitrary, or violates some other democratic norm. They cannot be removed by voters, nor is there any way for voters to express their displeasure after the fact (i.e. through an election). In a republican government such as ours, some may argue, taking power away from a democratically-empowered institution such as a legislature and giving it to a set of experts should only be done for a compelling reason.

The unusual election results in 2012 may offer one such justification, as Republicans maintained control of the House while losing the national popular vote by nearly 1.5 million votes. One positive (from a reform perspective) effect of commissions may be their ability to reduce the partisan bias of national elections. As noted above, there is a trade-off between district homogeneity and the number of safe districts. Districts dominated by one party are less likely to win other districts because their voters are inefficiently distributed or concentrated into a smaller number of districts. If commissions reduce some of this bias, especially by spreading out Democratic voters, the national partisan bias may be reduced. In the aftermath of the 2012 elections, a number of observers claimed that partisan redistricting was responsible for the disparity between House seats and vote shares, though this claim is controversial. Democrats, because of their high concentration in urban areas tend to be distributed less efficiently, thus giving Republicans a structural advantage (Chen & Rodden, 2013). Assigning causality to either mechanism is difficult and is not tested here, but it may offer a strong, and legitimate, justification for using commissions. Though commissions, on average, may produce districts no more or less

competitive, their willingness to split voting groups into different districts may alleviate the Republicans' efficiency advantage.[13]

Acknowledgments

Notes

1. In 2010, Amendment 6 in Florida, designed to reduce the power of the legislature to gerrymander districts, passed with 62% of the vote, while Oklahoma State Question 748, intended to make the commission which draws legislative districts more bipartisan, passed with 58% of the vote. Proposition 20 in California, which created a redistricting commission, passed with 61% of the vote, while a similar proposition, New Jersey's Public Question 1, was supported by 56% of voters in 1995. In 2012, the *Redistricting Reform Task Force in Ohio* held public meetings throughout the state to generate support for a ballot proposition which would remove redistricting from the state legislature and create a commission-based redistricting process. (available at <http://www.dispatch.com/content/stories/local/2012/04/27/leadersoptimistic-about-redistricting-reform.html> (accessed June 6, 2012)).
2. While we focus on congressional representatives, similar claims have been made about the redistricting process for state house members and state senators (Abramowitz et al., 2006b).
3. Other commonly cited causes of congressional polarization include the sorting of like-minded voters into districts (Abramowitz et al., 2006b; Brewer et al., 2002), the breakdown of the New Deal Coalition, especially in the South (Jacobson, 2000; Rohde, 1991; Theriault, 2008), increasing divisions over cultural issues (Layman & Carsey, 2002; Layman et al., 2006), increasing income inequality (McCarty et al., 2006), and the incentives created by special interest groups and big-money donors (Fiorina et al., 2005; Sinclair, 2006).
4. <http://redistricting.lls.edu/why.php> (accessed June 7, 2012).
5. We replicate all results using NOMINATE scores, and the models are included in the Supplemental Information. The Supplemental Information can be found in the online Appendix available at https://bradley.academia.edu/JoshRyan.
6. According to Johnson (2005) these Masters drew districts based on factors, "from the Federal Law; Article XXI, Section I of the California Constitution; and the California Supreme Court's decision in Legislature v. Reinecke (1973)."
7. Berry et al.'s (1998) measure of state liberalism was also used, and the results are nearly identical to the those generated by the Pacheco measure. However, Pacheco's measure is more appropriate because Berry's measure uses congressional vote totals, a component of the dependent variable. We also note that the 109th Congress is the second Congress after the 2001 redistricting so any evidence of changes in member ideology caused by redistricting are likely to be apparent. Further, the models were run without the Pacheco measure and include the 110th Congress and the results are substantively identical.
8. The data was taken from the State Politics and Policy Quarterly Data Resource located at <http://academic.udayton.edu/sppq-TPR/tpr_data_sets.html>. The dataset was compiled by Lindquist (2007).
9. In Stata, the code to compute these means is egen mvarname= mean(varname), by(state)
10. The Stata code to compute the within-unit variables is: egen dvarname=varname-mvarname, where "mvarname" is the state-specific mean that was calculated in step 1.
11. All district-year level extremity results are analyzed using DW-NOMINATE scores. The number of observations is no longer a concern, and it is much easier to connect DW-NOMINATE scores to district numbers than adjusted ADA scores which are attached to the member rather than the district.

12. Most notably, the Texas legislature's 2012 redistricting plan was taken to Federal Court by the Justice Department.
13. We thank an anonymous reviewer for making this point.

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Appendix A

Table 6. State redistricting methods and party control of redistricting

State	1981 Method	1991 Method	2001 Method	Unified Control?
Alabama	L	C	L	1981 (D), 2001 (D)
Alaska	—	—	—	
Arizona	L	C	M	
Arkansas	L	L	L	1991 (D)
California	L	M	L	1981(D), 2001(D)
Colorado	C	M	C	
Connecticut	L	M	M	1981(D)
Delaware	—	—	—	
Florida	L	M	L	1981(D), 1991(D), 2001(R)
Georgia	L	L	L	1981(D), 1991(D), 2001(D)
Hawaii	M	M	M	1981(D), 1991(D), 2001(D)
Idaho	L	L	M	2001(R)
Illinois	C	C	M	
Indiana	L	M	M	1981(R)
Iowa	M	M	M	1981(R)
Kansas	C	L	L	2001(R)
Kentucky	L	L	L	1981(D), 1991(D)
Louisiana	L	L	L	1991(D)
Maine	L	C	C	
Maryland	L	L	M	1981(D), 1991(D), 2001(D)
Massachusetts	L	L	L	1981(D)
Michigan	C	C	L	2001(R)
Minnesota	C	C	M	
Mississippi	C	L	C	1981(D), 2001(D)
Missouri	C	L	L	
Montana	M	—	—	
Nebraska	L	L	L	
Nevada	L	L	L	1991(D)
New Hampshire	L	L	L	1991(R)
New Jersey	M	M	M	
New Mexico	L	L	C	1981(D), 1991(D)
New York	M	C	L	
North Carolina	L	L	L	1981(D), 2001(D)
North Dakota	—	—	—	
Ohio	M	L	L	2001
Oklahoma	L	L	C	1981(D), 1991(D)
Oregon	L	M	C	
Pennsylvania	M	C	L	1981(R), 2001(R)
Rhode Island	M	L	L	1981(D), 1991(D)

(*Continued*)

Table 6. (*Continued*)

State	1981 Method	1991 Method	2001 Method	Unified Control?
South Carolina	L	C	C	1981(D)
South Dakota	—	—	—	
Tennessee	L	L	L	1991(D)
Texas	C	L	C	1991(D)
Utah	L	L	L	1991(R), 2001(R)
Vermont	—	—	—	
Virginia	L	L	L	1981(D), 1991(D)
Washington	M	M	C	1981(R), 2001(D)
West Virginia	L	L	L	1981(D), 1991(D), 2001(D)
Wisconsin	L	L	L	
Wyoming	—	—	—	

L=Legislative Redistricting. C=Court Redistricting. M=Court-Appointed or Bipartisan Commission. All methods identified through a reading of CQ's redistricting books, (CQ Press 1994, CQ Press 2003). States with missing entries are one district states and not subject to redistricting.