

**Gerrymanders and Theories of Lawmaking:
A Study of Legislative Redistricting in Illinois**

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Abstract

Redistricting politics in Illinois provide a novel opportunity for testing competing theories of lawmaking. With this in mind, we demonstrate that the post-2000 Census redistricters in Illinois, dominated by Democrats, strategically reshuffled district demographic profiles in an attempt to convert relatively liberal Republican districts to conservative Democratic districts in the state Senate while decreasing and increasing the ideological diversity of the Democrats and Republicans, respectively, in the House. Such reshufflings suggest that legislative politics in Illinois are conducted in a manner consistent with vote-buying theories of coalition formation.

Introduction

In almost every state controversy arises following a decennial census over who, or which political party, creates new legislative districts to accommodate the distribution of a state's population. Notwithstanding the requirement of equal district sizes as dictated by *Reynolds v. Sims* (1964), redistricters can promulgate maps in accordance with any number of objectives. Possibilities include insulating incumbent legislators against electoral challenges and diluting or accentuating the electoral influence of different political or ethnic groups. Redistricting can also ostensibly be used to alter the ideological composition of a legislature to shape the electorally-induced preferences of a legislature's median voter or other relevant pivotal voters.

We address this latter possibility by considering the post-2000 Census state legislative redistricting process in Illinois. This process, which was controlled by a majority Democrat commission, culminated in an election in which the Democratic Party increased the size of its majority in the Illinois House and took control from the Republican Party of the state Senate. The Illinois redistricting plan, and in fact the many state legislative redistricting plans implemented across the country in recent years, offer numerous opportunities for research on lawmaking. The key to linking theories of lawmaking and redistricting is identifying the strategies employed by redistricters, in our case Illinois Democrats, and the technique we propose is general. Our applying it to Illinois is largely a function of data availability and of Illinois's dynamic political environment.

We begin by characterizing the relationship between Illinois General Assembly district demographics and legislator ideology, and we then determine for both chambers in the bicameral Assembly how legislator ideologies were predicted to change following redistricting. Once we understand how Illinois redistricters attempted to influence the distribution of legislator

preferences with a new district map, we then link the strategy used by these officials to the organization of legislative politics in Illinois. Because various theories of lawmaking have implications for redistricter behaviors, we can use observed behaviors to understand which theory most accurately characterizes Illinois legislative politics.

When using redistricting outcomes to test competing theories of lawmaking, it is appropriate to focus at the state level rather than on Congressional redistrictings. Makers of state legislative maps operate independently of one another: for any redistricting plan in a given state, there is a plausible relationship between the plan and changes in the state's legislature which presumably translates into policy outputs. This relationship is not contingent on the decisions of other state actors, i.e., Illinois redistricters do not condition their behavior on anticipated redistricting in, say, Ohio, and a redistricting map's influence on the Illinois legislature is independent of the choices made by Ohio redistricters. A similar analytical strategy that focused on the Congress, where any change in either chamber is the product of redistricting strategies and elections in fifty states (which may or may not be coordinated) would not be fruitful.

Our findings indicate that the Democratically-dominated post-2000 redistricting in Illinois was not designed to have a strong effect on the median Illinois Representative or Senator. Nonetheless, we identify notable shifts in expected post-redistricting Democratic and Republican Party medians in the Illinois Senate and expected increases and decreases in the ideological diversity of Republicans and Democrats, respectively, in the Illinois House. As we show later, these latter changes made House members of both parties who were located near the legislative median more amenable to Democratic preferences. Moreover, in the Senate redistricters sought to convert relatively liberal Republican districts to relatively conservative Democratic districts, thus shifting the median Democrat and Republican in a conservative direction, while in the

House, redistricters focused attention on trying to pull legislators of both parties that were near the legislative median in a leftward direction.

This type of redistricting strategy does not reflect simple seat maximization by Democratic redistricters and it is not obviously consistent with key implications of conventional majoritarian or strong party theories. However the strategy that we believe Illinois redistricters adopted is consistent with certain implications of “vote-buying” theories of lawmaking that allow for side-payments between members in exchange for votes.

We now briefly discuss how our work contributes to existing literature on redistricting, we consider competing theories of lawmaking, and we provide a description of the politics of the post-2000 Census state legislative redistricting process in Illinois. We then discuss data collection and statistical methods and present results. We conclude with caveats and a discussion of the implications of our results for research on parties in legislatures.

Previous Research

A wide body of research examines how parties have tried to enhance their seat shares through redistricting. Abramowitz (1983) and Campagna and Grofman (1990), for example, show how parties that control redistricting processes tend to experience higher swing ratios than out parties in elections following redistricting.¹ Gilligan and Matsusaka (1999) develop a formal model of the efficient partisan gerrymander and demonstrate empirically that the amount of partisan bias in a redistricting plan is positively related to the size of the voting population but negatively related to the available number of legislative seats. Cain’s (1985) study of the 1980 redistricting in California identifies cases in which Democrats (who controlled the redistricting process) systematically converted marginally Republican districts to Democratic districts.²

While it seems plausible that benefits would accrue to those parties in control of redistricting, this matter remains debatable.³ Niemi and Jackman (1991) and Niemi and Abramowitz (1994) directly challenge Abramowitz's earlier redistricting studies in arguing that party swing ratios are not consistently related to redistricting politics. Basehart and Comer (1991) and Glazer, Grofman, and Robins (1987) also question the relationship between redistricting control and seat ratios.

Such contradictory views highlight the possibility that the partisan benefits of redistricting process control might manifest themselves in a more subtle form than seat switches. This suggests that one might investigate the ways in which redistricting affects the preferences, or ideal points, of elected legislators as opposed to their partisan affiliations. Such an analytical strategy is consistent with recent scholarship that describes how variations in district demographics influence legislator roll call voting.

Sharpe and Garand (2001), for example, identify how an increase in a legislator's African-American constituency contributes to liberal movements in his/her roll call-based ideal point; Cameron, Epstein, and O'Halloran (1996) argue that African-American substantive representation can be maximized by concentrating African-Americans into districts that are less than 50% majority African-American in the South and spreading them evenly throughout congressional districts in non-southern states; and, Epstein and O'Halloran (1999) demonstrate that packing African-Americans into the maximum number of majority-minority districts can actually produce conservative legislative medians. Shotts (2002) develops a formal model of gerrymandering in which demographic manipulation influences the preferences of elected representatives and subsequent legislative policy outputs.⁴ These findings collectively illustrate how redistricting (racial or otherwise) contributes to changes in legislator policy preferences.⁵

Studying Redistricting to Test Theories of Lawmaking

As theories of legislative politics have become more sophisticated, scholars have recognized the need for tests of the theories that do not rely exclusively on roll call voting.⁶ Recent contributions in this vein have focused on roll rates (Cox and McCubbins 2002), voting cutpoints (Krehbiel, Meirowitz, and Woon 2005), committee assignments (Krehbiel 1993, Krehbiel and Wiseman 2001), and comparative historical analysis (Jenkins 1999).

It is in this tradition that we advocate the use of redistricting data as a new avenue for theory testing. By stepping outside the legislature and identifying how one party tried to influence legislative composition and legislator preferences through redistricting, we can infer the party's expectations regarding the conduct of legislative politics; this informs us about how parties interact with their elected members. In advancing this approach we assume that partisan redistricters, like legislators, have well-defined policy preferences that are single-peaked with an ideal point that is generally more extreme than the median legislator of their parties. We also assume that these redistricters correctly understand how legislative policies are created.⁷ If there is a relationship between district demographics and legislator preferences, then any particular redistricting plan will induce the election of particular types of legislators leading to the creation of particular types of public policies. If a redistricter has expectations regarding how district maps translate into policies, one might ask, how will a partisan redistricter try to restructure districts to achieve his/her policy goals? The way that a redistricter would answer this question hinges on how lawmaking occurs, and we explore the implications of this by considering three theories of legislative politics: majoritarian, strong party, and "vote-buying."

Majoritarian Theories. We posit first a purely majoritarian model of lawmaking in the sense of Black (1958), where legislators have single-peaked preferences over a unidimensional policy

space and all policy matters are considered under open amendment rules. As illustrated in Figure 1, for any status quo policy that comes up for consideration in a majoritarian legislature, the new policy outcome associated with that status quo will be located at the legislative median's ideal point. If parties are policy motivated, with Democrats to the left of Republicans (where D_r and R_r denote the ideal points of the Democratic and Republican redistricters, respectively) then a majoritarian model predicts that the party in control of redistricting (Illinois Democrats in our case) will seek to move the legislative median towards its policy interests, e.g. leftward, from m to m' . Hence, one would predict that chamber medians in the post-redistricting, 2003-04 Illinois General Assembly would be more left-leaning than they were in the pre-redistricting, 2001-02 General Assembly. More formally,

$$H_{majoritarian} : \text{New Chamber Median} < \text{Old Chamber Median} ,$$

where "New" refers to post-redistricting and "Old," pre-redistricting.

Strong Party Theory. In contrast to majoritarian theories, Cox and McCubbins (2002, 2005) posit that parties in the U.S. House (and presumably, other legislatures) have an active role in legislative policymaking, that the majority party leadership exercises agenda control by deciding what issues come up for votes, and that bills are considered under open amendment rules. In this setting, a majority party can ensure that its more favored policies do not converge to the chamber median by simply keeping them off of the agenda, i.e., by exercising *negative* agenda control.

Central to Cox and McCubbins's thesis is that parties acquire and maintain majority status, which provides them with agenda control. With respect to redistricting, then,

$$H_{strong\ party}^1 : \text{The party that controls redistricting should acquire and/or maintain majority status.}$$

Beyond this primary prediction, one can extract several auxiliary hypotheses relevant to strong party theories. As illustrated in Figure 2 (top), the scope of a majority party’s agenda setting power per Cox and McCubbins is positively related to the distance between the majority party median (D) and chamber median (m): the greater this distance, the larger the range of policies that the majority party can keep off of the agenda. Assuming that partisan redistricters are more ideologically extreme than the median legislators of their party, then these individuals would be concerned with making the chamber median more amenable to their interests so that new policies enacted at the median favor their preferences; they would also seek to expand the scope of influence the majority party had over the agenda to ensure that a wider range of favored policies could be kept from floor consideration altogether rather than be relocated to the median voter’s ideal point.⁸ Taken together, Democratic redistricters should seek several specific changes for a post-redistricting legislature. First, the new chamber median should be more left-leaning than the previous median; second, the new Democratic Party median should be more left-leaning than the previous Democratic median; and third, the distance between the Democratic Party median and the chamber median should be greater than the distance between these two pivotal members. As illustrated in Figure 2 (bottom), such changes ensure that the scope of the majority party’s agenda setting power increases and that outcomes are more left-leaning (due to a more left-leaning chamber and Democratic party median) in a new General Assembly than in the old.⁹ Formally,

- $H^2_{strong\ party}$: New Chamber Median < Old Chamber Median
- $H^3_{strong\ party}$: New Majority Party Median < Old Majority Party Median
- $H^4_{strong\ party}$: | New Majority Party Median - New Chamber Median | > | Old Majority Party Median - Old Chamber Median |

Vote-Buying: Unlike a majoritarian theory that provides no explicit role for parties and Cox and McCubbins's theory wherein a majority party exercises agenda control, Snyder's (1991) model of legislative vote-buying analyzes political interactions in which members vote based on their policy preferences and the amount of favors provided to them by vote "recruiters," who could be party leaders.¹⁰ More specifically, let legislator i 's utility function be

$$U_i = -(x_i - x)^2 + b,$$

where x_i is legislator i 's scalar ideal point, x is a policy under consideration, and $b \geq 0$ is the amount of transfers that the legislator receives from a vote-recruiter who prefers a new policy over the status quo.¹¹ Hence, legislator i will vote for the new policy a over the status quo q if

$$-(x_i - a)^2 + b \geq -(x_i - q)^2 \Rightarrow b \geq 2x_i(q - a) + a^2 - q^2.$$

If the key vote-buyer in the General Assembly is the Democratic party leader, it is obvious that, if the status quo policy is right of center as illustrated in Figure 3 (top), for any left-leaning policy a advocated by the Democratic leadership the vote-buyer will purchase the votes of all members who have ideal points between $[\frac{a+q}{2}, x_m]$ where x_m is the median voter's ideal point.¹² Furthermore, the total amount of bribes paid out is increasing in the distance between the left-leaning a and the chamber median and is also increasing in the number of legislators located between $\frac{a+q}{2}$ and x_m , with those closest to the median receiving the largest payments.

To minimize costs associated with vote-buying, a Democratic redistricter would try to decrease the distance between the chamber median and any left-leaning policy a (which yields an identical prediction as what follows from majoritarianism). Following redistricting, then, the new chamber median should be more left-leaning than the old. Formally,

$$H^1_{\text{vote-buying}} : \text{New Chamber Median} < \text{Old Chamber Median} .$$

In addition, as seen in Figure 3 (bottom), a redistricter can also decrease vote-buying costs by decreasing the number of members whose votes are necessary to *buy* or by making them less *expensive* by making those legislators located between $\frac{a+q}{2}$ and x_m more liberal in the new legislature. To the extent that legislators whose preferences lie within this interval are Democrats or Republicans, shifting their preferences leftwards will lead to changes in the ideological cohesiveness of the parties whereby *ceteris paribus* Democrats become more ideologically compact while Republicans will become more dispersed.¹³ Formally,

$$H^2_{\text{vote-buying}} : \text{New Democratic Party Std. Dev.} < \text{Old Democratic Party Std. Dev.}$$

$$H^3_{\text{vote-buying}} : \text{New Republican Party Std. Dev.} > \text{Old Republican Party Std. Dev.}$$

Further extensions of vote-buying, discussed below, allow for legislators' reservation prices to be influenced by their party affiliations.

Summary. Having extracted a number of competing hypotheses, two caveats are in order. First, our hypotheses focus on redistricters who pursue legislative policy outputs that can be ordered on a left-right, unidimensional ideological spectrum. We do not, that is, consider the possibility that there are benefits apart from policy consequences that come with a party acquiring majority status. In light of the focus within contemporary Congressional studies on parties as legislative coalitions organized around policy choices, we consider this view appropriate.

Second, a potential concern with our hypotheses is that the theories motivating them address legislative interactions that occur in one discrete time period, i.e., a legislative session. As such, extracting temporal implications about the goals of partisan redistricters in influencing legislative composition transcends their direct implications. That being said, the theories are sufficiently explicit that one can identify variables correlated with increases in majority party

utility. Hence, the hypotheses we present are valid implications for the goals of redistricters if a legislature operates in a manner analogous to a majoritarian, strong party, or vote-buying model.¹⁴ Our hypotheses are summarized in Table 1 where the top row identifies a theory and the left-hand column identifies a summary statistic predicted to change in a post-redistricting legislature. Because none of the hypotheses directly contradict one theory in favor of another, evidence pertaining to them can support several theories simultaneously; this can be viewed both as a weakness of our approach and a statement about the inherent difficulty in distinguishing among the theories which are currently used to characterize modern legislative processes. Moreover, results motivated by the hypotheses in Table 1 might actually be enlightening in that they could allow us to identify how real world legislative politics are actually influenced by several theoretically-relevant interests rather than one exclusive interest.

The Post-2000 Redistricting Process in Illinois

On September 5, 2001 Illinois Secretary of State Jesse White reached into a replica of Abraham Lincoln's stovepipe hat, removed an envelope, and revealed that Democrat Michael Bilandic would be the ninth member of the Illinois Legislative Redistricting Commission. From that point onward the Democratic Party controlled the General Assembly redistricting process.

As discussed in Wheeler (2002), the 1970 Illinois Constitution establishes a timeline for adopting a new state legislative redistricting policy whereby the General Assembly has the default authority to develop a new plan by June 30 following a decennial census. If no plan is agreed to by such date, an eight-member bipartisan panel, called the Legislative Redistricting Commission, has until the following August 30 to propose a plan that receives at least minimal majority support on the panel. If this latter deadline is not met, the Illinois Supreme Court nominates two individuals of different political parties to be the potential tie-breaking vote. The

actual tie-breaker is selected via lottery by September 5, and a final plan must be filed by the Legislative Redistricting Commission with the Illinois Secretary of State by October 5. The Commission operates by majority rule; thus, a five to four advantage of one party over another can have drastic consequences.¹⁵ Republicans won the tie-breaker in 1992, which presumably influenced the legislative status quo whereby Democrats held a six-seat majority in the House, 62-56, but were underdogs in the Senate, 27-32.

Population growth and demographic shifts between 1990 and 2000 provided a variety of opportunities for politically biased redistricting. During the last decade of the 20th Century, Illinois's total population increased by almost nine percent, and because of unequal population growth across the state, districts in 2001 ranged from approximately 80,000 to almost 190,000 residents. Furthermore, much of Illinois's population growth had occurred in suburban regions, leading to several urban districts, particularly those that were majority African-American, being far from parity with the rest of the state (Wheeler 2002, p. 7).

Promulgation of the Democratic plan prompted Republicans to file state and federal lawsuits arguing that the proposed district map was invalid on grounds ranging from district compactness to allegations of racial gerrymandering. As of May, 2002 all such lawsuits were decided in favor of the Democrats. Despite the claim of one legislator (Cowlshaw 2001), that “[T]he process [was] arbitrary, abhorrently partisan, and a matter of raw power rather than fairness for Illinois citizens,” the Democratic plan governed the 2002 general election.

Data and Methods

To understand how the 2002 redistricting plan was expected to affect the ideological composition of the Illinois General Assembly, we first consider how legislator ideologies map into pre-redistricting district demographics. Once we establish a pattern between district

demographics and legislator preferences, we then estimate how changes in district demographics were expected to influence legislator preferences in 2002, and consider the implications of our estimates for expected changes in various variables of interest. More formally, we begin by estimating a model of the form:

$$\text{Legislator } i\text{'s Ideology} = f(\text{Legislator } i\text{'s District Demographics}, \theta) \quad (1)$$

Because district demographics are of course related to the redistricting plan in place (i.e., $\text{Legislator } i\text{'s District Demographics} = g(\text{Legislator } i\text{'s District Map})$), estimating model (1) is tantamount to analyzing the following model:

$$\text{Legislator } i\text{'s Ideology in 2000} = f(g(\text{Legislator } i\text{'s District Map in 2000}), \theta) \quad (1a).$$

Once we have estimated $\hat{\theta}$, we can then use these estimates combined with the district demographics from the redistricting maps to generate predicted and projected ideal points for legislators elected to the General Assembly before and after the 2002 redistricting, respectively:

$$\text{Legislator } i\text{'s predicted ideology for 2000} = f(g(\text{Legislator } i\text{'s 2000 district map}), \hat{\theta}) \quad (2a).$$

$$\text{Legislator } i\text{'s projected ideology for 2002} = f(g(\text{Legislator } i\text{'s 2002 district map}), \hat{\theta}) \quad (2b).$$

The predicted ideal points (i.e., scores) generated from 2a capture redistricters' beliefs about the relationship between district demographics and legislator preferences in 2000, while the scores generated from 2b capture redistricters' expectations for the new redistricting plan.

Our data on Illinois General Assembly district demographics are drawn from manipulations of publicly available census data at the block group level, found in Census Summary File 3. Block groups are the smallest units of aggregation for which the census publishes data gleaned from long-form questionnaires. In accordance with Public Law 94-171, the census reports various racial demographics for Illinois state legislative districts that existed in

2000. These data do not, however, include many other demographic variables, such as age and income figures, tabulated at the block group level for state legislative districts.

Thus, to generate income, age, and other demographics for our Illinois General Assembly districts (118 in the House, 59 in the Senate) we overlay electronic maps of Illinois block groups and pre-redistricting House districts. We then aggregate block group demographics to the House district level by area.¹⁶ The number of Illinois Block Groups (9850) is much larger than 118, and thus the majority of block groups in our analysis lie completely inside single Illinois House districts. We carry out a similar overlay of block groups and post-redistricting House districts. We need not have a separate electronic overlay for Senate districts because Illinois state legislative districts are set up so that two House districts together constitute one Senate district, e.g., House Districts 1 and 2 comprise Senate District 1.

Our political variables are drawn from several sources. Data on electoral outcomes and vote shares are from 2002 and 2004 editions of the *Almanac of Illinois Politics* (Van Dyke-Brown 2002, 2004). To form ideology measures for Illinois legislators we use the NOMINATE algorithm (Poole and Rosenthal 1997) to scale the roll call votes cast in the 92nd Illinois General Assembly for those House members and Senators who were elected and sitting in 2000. This procedure creates ideal point estimates that are analogous to Congressional NOMINATE (technically W-NOMINATE) scores. We ignore so-called “hurrah” votes that had fewer than 2.5% of voters supporting a minority position.

We estimate all House and Senate NOMINATE scores in a common space, and this allows us to compare House and Senate scores. Our common space is based on a collection of 158 non-hurrah *joint votes* that occurred in both the House and Senate on the same legislative matters.¹⁷ Combining these with 491 non-hurrah, *House-only* votes and 68 non-hurrah, *Senate-*

only votes allows us to generate common space ideal point estimates for all members of the Illinois General Assembly in 2000. For the purposes of scaling we treat the 92nd House and Senate as a single legislative chamber and normalize our scores so that negative scores are associated with what we consider liberal voting records (usually these are Democratic). Figures A1a-c and A2a-c in the Appendix present histograms of NOMINATE scores for House and Senate members, respectively.

Estimation

We begin our analysis by estimating a linear regression model for our scaled, common space NOMINATE scores with results in Table 2. Since our collection of legislative districts has a natural spatial component—each Illinois Senate district contains exactly two House districts—we also estimated our regression model with a spatial lag. Our spatial weight matrix treats House district i and House district j as neighbors if both districts i and j are in the same Senate district, and it treats House district i and Senate district j as neighbors if i is contained in j . Test results (available from the authors) show spatial effects at the boundary of statistical significance, i.e., typical p-values between 0.05 and 0.10. Since estimated regression slopes are highly similar regardless of whether we include a spatial lag, we present non-spatial results.¹⁸

Our NOMINATE scores lie in the interior of the NOMINATE policy space, and thus we do not use a censored regression model.¹⁹ Recall that low NOMINATE scores represent liberal preferences; thus, the negative and statistically significant estimate of African-American in Table 2 implies that the more heavily African-American a General Assembly district, the more left-leaning the district's legislator. The Latino estimate has a similar interpretation. Table 2 also shows that urban districts and those with many young residents produce liberal legislators.

Drawing on our regressions we now estimate how the Democratic redistricting plan sought to change the ideological composition of the Illinois House and Senate.²⁰ As noted earlier, the Democrats maintained control of the House and won control of the Senate following the 2002 elections. New party breakdowns were 66-52 and 32-26 in favor of Democrats in the House and the Senate, respectively (with one Independent in the Senate). Table 3 (panel A) presents descriptive statistics of predicted NOMINATE scores for members elected in 2000 using the estimated coefficients from Table 2 and the demographic data from the district plan in effect in 2000; panel B presents projected NOMINATE scores using the same coefficients and the district demographics under the redistricting plan for 2002. Note that in panel A House Republicans appear more homogenous than the Democrats, with predicted Republican NOMINATE scores having a standard deviation of 0.143 in contrast to the Democrats with 0.334, which is consistent with the actual distributions of the Democratic and Republican NOMINATE scores as shown in the Appendix.

The remainder of Table 3 presents an analysis of the differences between the 2000 predicted and 2002 projected ideal points of the variables of interest with bootstrap confidence intervals (panel C). We define differences as 2002 values minus 2000 values. Thus, positive differences in the locations of chamber and party medians connote politically rightward movement, and a positive difference between majority party and chamber medians connotes an expansion in the interval between these two pivotal actors. Finally, a positive difference in a party's standard deviation connotes an increase its ideological heterogeneity between General Assemblies. Table 4 presents analogous results for predicted changes in the Illinois Senate.

Assessing Party Motives

Several points are evident regarding the impact of the 2002 redistricting. First, following implementation of the Democratic redistricting plan Democrats expanded their control of the House and took control of the Senate. Hence, some might argue that, consistent with the most fundamental implication of Cox and McCubbins, the party controlling redistricting acquired and maintained majority status, thereby presumably enabling it to exert negative agenda control. The crucial question for our analysis, however, is “was this the party’s primary intention?” Were the Democrats effectively acting like pure seat maximizers? To identify whether Democratic redistricters developed a plan primarily aimed at securing and maintaining majority status, we conducted the following analysis. For all 177 Illinois General Assembly districts we estimated a probit regression where the dependent variable indicated whether a Democrat held the seat in 2000; corresponding independent variables were the district demographics analyzed in Table 2 (results presented in Table A1 in the Appendix). Second, for each post-redistricting General Assembly district we calculated the probability that the district would have a Democrat in it based on post-redistricting district demographics. Our analysis reveals that the estimated number of post-redistricting Senate Democrats was approximately 32, and the estimated number of post-redistricting House Democrats, approximately 64. Hence, based solely on point estimates, the Democratic redistricters expected to gain 5 Senate seats (giving them the majority) and gain 2 House seats (expanding their majority).

To assess the statistical significance of these findings, we calculated bootstrap 95% confidence intervals for expected post-redistricting seat shares, and the intervals were relatively wide. For the Senate (recall, 59 total seats), the expected number of Democratic legislators was between 25 and 33 and for the House (118 total seats) the expected number of Democrats was

between 54 and 67. This means that we cannot reject the null hypothesis that the redistricting plan was not expected to increase Democratic Party seat share in each chamber.

Similarly, based on our bootstrap iterations, we calculated 95% bootstrap confidence intervals for the probability that the Senate and House would be under Democratic control post-redistricting. Both such confidence intervals spanned the entire unit interval, i.e., zero through one. Again, this suggests that seat maximization cannot explain Illinois redistricters' choices. Hence, while the Democratic Party clearly gained control of the Senate and expanded their control of the House following redistricting, it is not clear that these results followed from a concerted effort on the part of the redistricters.

Moving beyond the party control/seat maximization hypothesis, the results in Tables 3 and 4 identify several predicted changes in the ideological makeup of both chambers. First, the House median was predicted to move slightly leftward (become more liberal) in the 2002 General Assembly, which is consistent with majoritarian, strong party, and vote-buying theories; second, the standard deviations of the Democratic and Republican parties were predicted to decrease and increase, respectively, which is consistent with the implications of vote-buying; and third, while the Democratic Party median was predicted to move leftward, consistent with the implications of strong party theory, the difference between the majority party median and the chamber median was predicted to *decrease* in the 2002 General Assembly. Hence, while the Democratic Party median was predicted to move leftward, the range of policies that the Democratic leadership could keep from floor consideration would be narrower than prior to redistricting, and this runs counter to a secondary implication of strong party theory.²¹

In considering the extent to which the above changes are significant, note that the value of zero is contained in both 95% and 90% bootstrapped confidence intervals for changes in the

chamber and party medians. In other words, there is no compelling evidence that there were expected changes in their locations between the 2000 and 2002 General Assemblies. In contrast, changes in the standard deviations of both House Democrats and Republicans are significant, indicating that redistricters sought to make Democrats and Republicans more and less ideologically cohesive, respectively, following redistricting. As noted in Figure 3, such changes are consistent with the implications of vote-buying in that redistricters would seek to make potential vote-recruits as amenable to generic left-leaning policies as possible, in order to minimize bribes paid.

In turning to the Senate, we see in Table 4c that, similar to the House, the Senate median was predicted to move leftward, the standard deviation of the Democratic Party was predicted to decrease, and the distance between the Democratic Party and Senate median was predicted to contract. Moreover, the Senate Democratic Party median was predicted to move *rightward*, and the standard deviation of the Senate Republican Party was predicted to *increase*. Furthermore, from a statistical standpoint, many of the predicted Senate changes are significant by conventional standards. In particular, predicted rightward movement of the Democratic Party median and contraction of the distance between the Democratic median and the Senate median are significant. The change in the overall Senate median, similar to the House, is of marginal significance, and unlike the House, changes in party standard deviations are insignificant.

Similar to the House, these results neither support nor refute majoritarian theories but they, particularly rightward movement in the Democratic Party median, are potentially problematic for strong party theory. Unlike our House results, our Senate findings do not offer obvious support for vote-buying theories as we are unable to reject the null that there were no changes in any of our quantities of interest. Insight can be gleaned, however, by considering

predicted changes in party medians, both of which were predicted to move rightward as noted in Table 4c. Given the purported stability of the overall chamber medians, these shifts in party medians suggest that, while Democrats gained membership due in part to the post-2000 redistricting, they did not gain members who were expected to be particularly left-leaning. That is, by picking off the most moderate (left-leaning) members of the Republican Party, Democrats effectively fattened up their ranks with legislators who were Republicans in everything but name.

While not obvious, such a strategy is consistent with vote-buying to the extent that one believes that it is *cheaper* for party leaders to buy the votes of members of their own party rather than those of the other party. More formally, assume that a legislator's preferences over policy and bribes can be expressed as the following: $U_i = -(x_i - x)^2 + \alpha b$, where $\alpha > 1$ if the legislator is of the same party as the vote-buyer and $0 \leq \alpha \leq 1$ if the legislator is of the opposing party as the vote-buyer. To minimize total bribes paid, a vote-buyer might no longer seek to bribe all members between the status quo cutpoint $\frac{a+q}{2}$ and x_m as some members to the right of x_m might be less costly than some legislators in the interior of this interval, depending on their party affiliations. As illustrated in the top of Figure 4, a partisan gerrymanderer would be concerned not only with the location of the median voter vis-à-vis left-leaning policies but also about the party affiliation of members around the median. Hence, holding ideological positions constant, a Democratic gerrymanderer would be most interested in converting those members on the left-hand tail of the distribution of the Republican Party to Democrats, leading to rightward shifts in both party medians, precisely what we observed in the Illinois Senate.

A glance at several legislative races supports this perspective. One of the most hotly contested Senate races in 2002 occurred in an affluent, northern suburb of Chicago (Northbrook) in Senate District 29, where incumbent Republican Kathleen Parker ran against Susan Garret, a

Democrat. Both parties donated heavily to the race, with Republicans contributing over \$650,000 to Parker's re-election efforts and Democrats contributing nearly \$695,000 to Garret's campaign. Parker was defeated by Garret, 56% to 44 %, and consistent with our arguments Parker was the most liberal Republican senator in 2000 with a predicted NOMINATE of 0.214. Furthermore, given the district demographics following redistricting, Garret was predicted to be one of the most conservative Democratic Senators with a NOMINATE score of 0.217.

Similarly, the 47th Senate seat race between incumbent Republican Laura Kent Donahue and Democrat John M. Sullivan was also very tight (51.5% to 48.5%, with Sullivan winning). Moreover, Donahue was among the most centrist Republicans, with a predicted NOMINATE score of 0.290, whereas our model predicts that Sullivan would be among the most conservative Democrats, with a projected NOMINATE of 0.324. These and other races paint a picture of liberal Republicans being systematically targeted for replacement by conservative Democrats.

Further consideration of the Illinois political system lends additional support to our claim that legislative vote-buying occurs. Illinois parties contribute substantial amounts of hard money directly to candidates' campaigns, and large amounts of cash are funneled through leadership campaign committees directly into candidates' campaign war chests.²² Hence, potential vote-recruiters have resources with which to buy votes, and these resources are more valuable to members of their own party than the competing party--the Democratic Party would presumably not contribute to Republican legislators' campaigns to reward them for voting with the Democrats on salient votes. To the extent that campaign dollars insulate incumbents from potential challengers, such funds could provide an exceptional carrot for recruiting votes on key measures.²³ This scenario provides an interesting counterpoint to the U.S. Congress where parties do not make hard money contributions, and it suggests that further examination of the

role of parties in the electoral arena, and its impact on legislative organization and party discipline, is worthwhile.

To revisit our point above, skeptics might argue that while our findings are consistent with vote-buying, perhaps they are simply an artifact of a straightforward seat maximization strategy. In other words, perhaps Democrats targeted those legislators around the chamber medians because they were the easiest to convert from Republican to Democrat (or from slightly right leaning to slightly left leaning) because they were the most electorally vulnerable, and it had nothing to do with vote-buying strategies, *per se*.

To the extent that such a seat-maximizing perspective is valid, we would expect to see a relationship between Republican legislator ideology and electoral security. Empirical investigation reveals, however, that this is not the case, as the correlation between a Republican legislator's NOMINATE and his/her two-party vote-share in the election prior to redistricting is only 0.11 (p-value of 0.39).²⁴ Hence, there is no obvious reason why the Democrats chose liberal Republicans for seat conversion or ideological tweaking in that they were not the easiest to convert or influence.²⁵

After the Fact: Some Evidence on the Veracity of Our Preference Measures

Our conclusions regarding the goals of Democratic redistricters in Illinois rest on whether we have accounted for the mapping between district demographics and legislator ideologies. If the specification of the regression in Table 2 is poor, then our estimates for members' predicted NOMINATE scores will be wrong and the inferences we draw flawed.²⁶ Consideration of the relationships between legislators' predicted NOMINATE scores for the 93rd General Assembly and their actual NOMINATE scores from that General Assembly allows us to assess whether our method has face validity. More specifically, by scaling common space NOMINATE scores for

the 93rd General Assembly with roll call data from the 2003-2004 legislative session in a manner analogous to what we did for the 92nd Assembly, we can see how legislators' actual NOMINATE scores in the 93rd General Assembly were related to their predicted scores as projected from Table 2.²⁷

To illustrate, consider the Parker-Garret and Donahue-Sullivan races for the 29th and 47th Senate seats, respectively; recall we predicted that in the 93rd General Assembly Garret would be one of the most conservative Democratic senators and Sullivan would be the 2nd most conservative Democrat. In reality, we find that Garret's 93rd NOMINATE score placed her as the third-most conservative Democratic senator, whereas Sullivan was the most conservative Democrat. Hence, for these theoretically pivotal races located near the legislative median, we find that the ordinal rankings of our predicted NOMINATEs for the 93rd General Assembly are quite similar to members' actual rankings based on roll calls cast. This lends credibility to our inferences regarding predicted changes in chamber and party medians.

Caveats and Conclusions

Conventional wisdom dictates that those in control of legislative redistricting create new district maps to benefit their political interests. Moving beyond the relationship between election returns and partisan seat shares, we have focused on the recent redistricting for the Illinois General Assembly with the goal of identifying whether the state's Democratic Party tried to generate with a district map a legislature that was favorable to its policy interests. Our linking district demographics to election outcomes and legislator ideologies has allowed us to create *before* and anticipated *after* snapshots of the General Assembly, and the results that emerged speak to broad questions on the nature of parties in government.

With respect to the validity of competing theories, our findings are mixed yet insightful. We find no evidence that clearly refutes majoritarian theories of legislative policymaking, but at the same time the stability of chamber medians we have identified does little to support majoritarian theories. With regards to Cox and McCubbins's strong party theory, the most fundamental prediction with regards to redistricting is clearly borne out in the data: the party that controlled redistricting acquired and maintained majority status. At the same time, however, our analysis suggests that the Democrats' acquisition and maintenance of majority status in the House and Senate was not necessarily intentional. Moreover, we demonstrate that in both chambers the distance between Democratic party median and chamber median was predicted to contract, not expand, following redistricting, and this predicted contraction is statistically significant in the Senate. Combined with a predicted rightward movement in the Democratic party median these findings seem to undermine some of the fundamental policy motives of a party that exerts negative agenda control.

That said, there are several reasons not to dismiss strong party theory. First, the empirical specification of our first stage estimation does not account for the probability that a given legislator will be Republican or Democrat, independent of his or her ideal point. Because Cox and McCubbins argue that majority party control is tantamount to all party goals, it is plausible that the redistricting plan implemented in 2002 was the best the Democrats could do to acquire and expand their majority status. Hence, they may have been willing to sacrifice policy gains to acquire and maintain agenda control, which we do not account for. Second, to reemphasize a caveat noted above, the implications tested here go beyond the scope of the most straightforward presentation of strong party theory insofar as it speaks to legislative politics within one legislative session. Hence, it is possible that the cross-time predictions we tested are not the

most appropriate implications of strong party models and we should be looking elsewhere for evidence, or lack thereof, of the presence of negative agenda power.

While there are potential complications with strong party theories, our results offer support for vote-buying theories in that there is a significant decrease and increase in the standard deviations of the House Democrats and Republicans, respectively, which is consistent with the prediction that potential vote-buyers would try to structure the new districts so that legislators near the medians of both parties would be more left-leaning than their predecessors. While similar changes are not observed in the Senate, it is nonetheless clear that redistricters sought to convert more moderate and left-leaning Republicans to Democrats, thereby contributing to rightward shifts in both party medians. The fact that these members were not obviously the easiest to convert based on prior election returns suggests that such conversions were not consistent with simple Democratic seat-maximization. Furthermore, such efforts are consistent with the goals of a vote-buyer who could buy his own party members' votes for less than competing party members.

Taken together, our results suggest that while it may not be the case that parties in Illinois have *no* influence in legislative politics *a la* majoritarianism, their influence is somewhat less than that of a procedural *Leviathan*. To the extent that policymaking is influenced by legislative vote-buying, one implication of our findings is that any influence that parties might have over legislative politics seems intimately tied to their influence over members' electoral fortunes.

We conjecture that variation across states in the strength of party organizations should translate into different goals for partisan redistricters, which in turn should translate into consequences for legislative composition following redistricting. The method we advance provides a technique for identifying the goals of partisan redistricters, and we argue that finding

such variation in different states and legislative systems would support the validity of our technique as well as enhance our understanding of the connections between the role of parties in the electoral arena and legislative organization and politics. This approach can be applied to virtually any redistricting setting, and so long as the connection between redistricting and legislative outcomes is not confounded by the actions of players outside of the political system (e.g., the actions of other states), this methodology can facilitate a greater understanding of the nature of and connections between legislative and electoral politics in democratic systems.

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Figure 1: Policy Outcomes Under Majoritarian Model

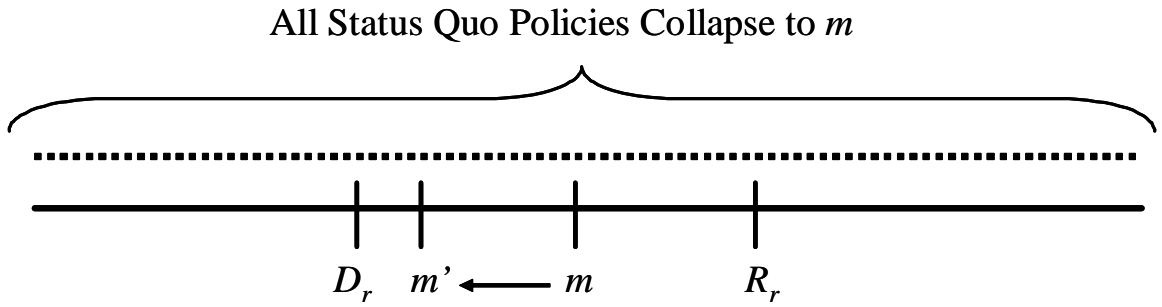


Figure 2: Policy Outcomes Under Strong Party Model, Pre- and Post-Redistricting

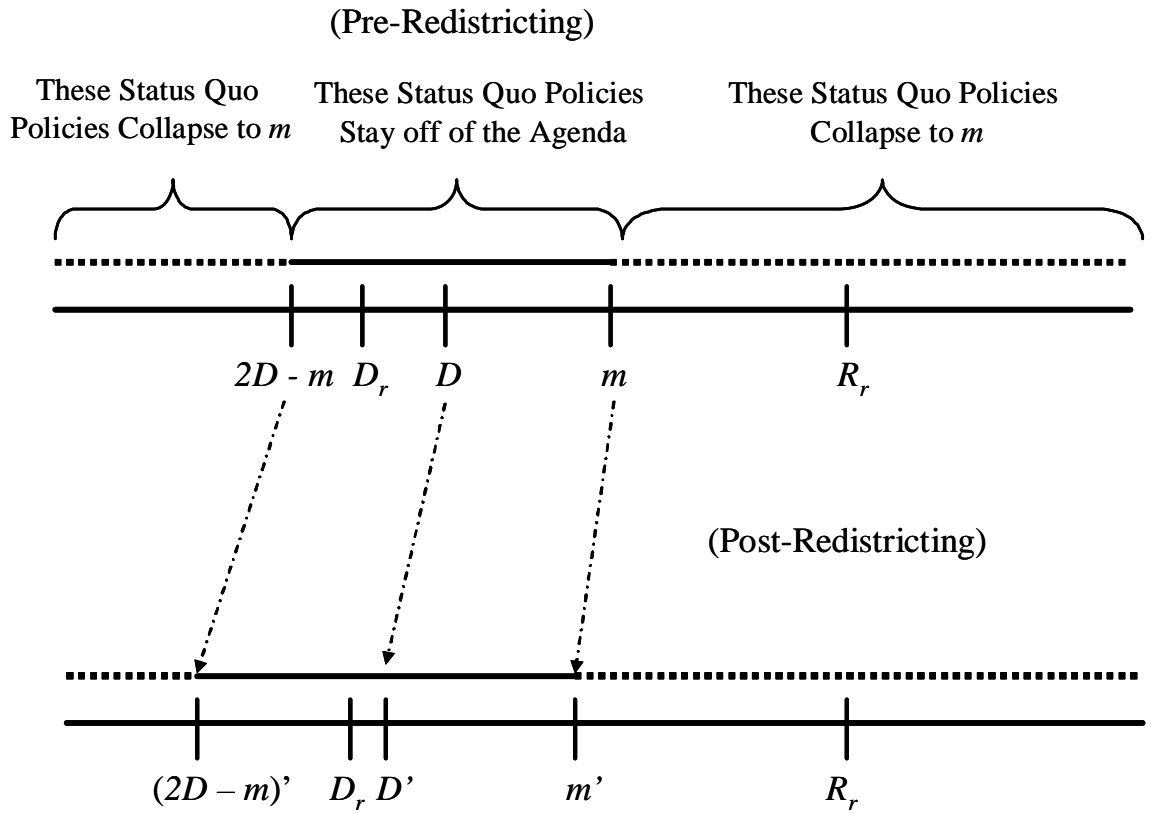


Figure 3: Vote-Recruitment Strategies Under Vote-Buying Theory

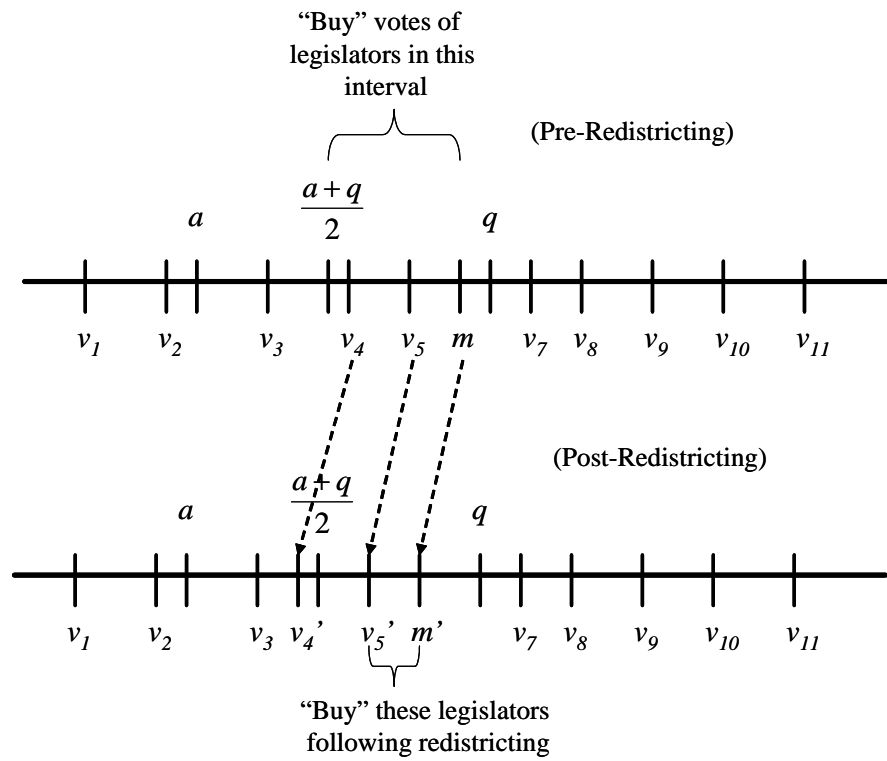


Figure 4: Vote-Recruitment Strategies Under “Partisan” Vote-Buying Theory

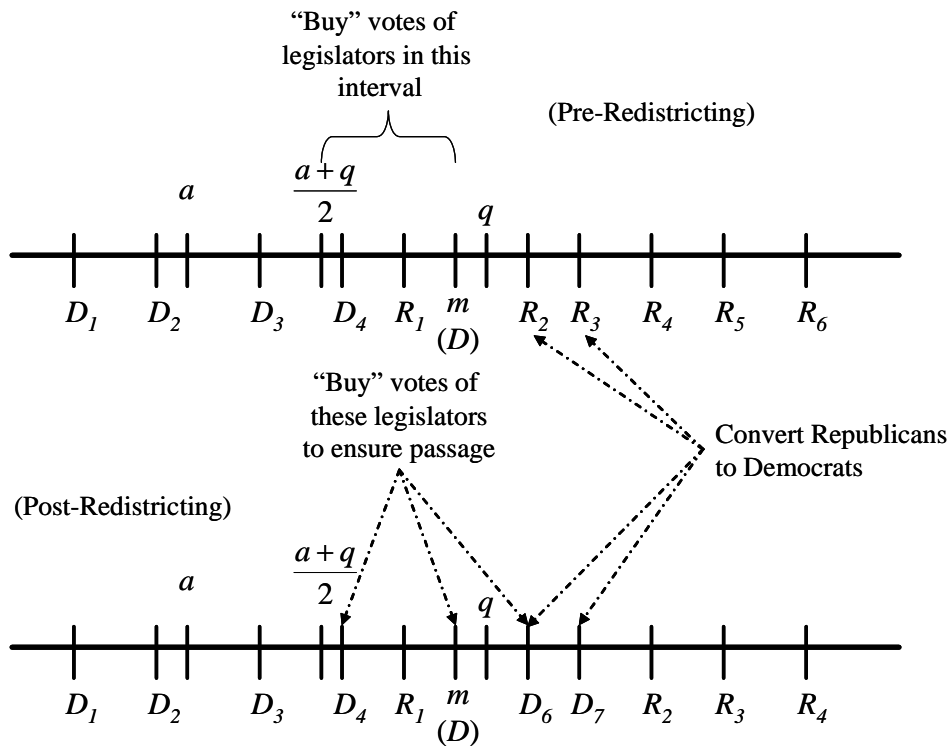


Table 1: Summary of Hypotheses from Competing Theories

Post-Redistricting Variable	Majoritarian	Strong Party	Vote-Buying
Chamber Median	New < Old	New < Old	New < Old
Democratic (Maj.) Party Median	No Prediction	New < Old	No Prediction
Democratic (Maj. Party) Std. Dev.	No Prediction	No Prediction	New < Old
Republican (Min.) Party Std. Dev.	No Prediction	No Prediction	New > Old
Maj. Party Median-Chamber Median	No Prediction	New > Old	No Prediction

Note: “Old” refers to pre-redistricting. The hypotheses assume that redistricters are dominated by Democrats and that legislator ideal points are aligned so that politically left preferences are captured in small numbers, politically right preferences in large numbers.

Table 2. District-level Determinants of Legislator NOMINATE Scores (Pre-Redistricting)

Variable	
Constant	8.64 ^{**} (3.04)
% Black	-0.67 [*] (0.288)
% Latino	-0.94 [*] (0.396)
% Middle Income Bracket	2.79 [*] (1.18)
% Top Income Bracket	1.02 [*] (0.459)
% Urban	-10.70 ^{**} (3.21)
% Farm	-7.45 (6.93)
% Ages 1-17	-29.90 ^{**} (10.3)
% Age 65+	-9.68 (8.12)
% Urban x % Age 1-17	34.00 ^{**} (10.6)
% Urban x % Age 65+	10.40 (8.54)
Chicago	-0.15 [*] (0.111)
R ²	0.44
F	11.88 ^{***}

Note: N = 177; estimated standard errors in parentheses;

- p<0.05; ** p<0.01; *** p<0.001;

Table 3a. Descriptive Statistics of Predicted House NOMINATE Scores, 2000

Legislators	Mean	Median	Std. Dev.	Min	Max
All	0.0663	0.192	0.335	-0.732	0.630
Democrats	-0.124	-0.0546	0.334	-0.732	0.450
Republicans	0.277	0.276	0.143	-0.0651	0.630

Predicted NOMINATES calculated via fitted values using 2000 district data and regression results from Table 2 above.

Table 3b. Descriptive Statistics for Projected House NOMINATE Scores, 2002

Legislators	Mean	Median	Std. Dev.	Min.	Max.
All	0.0672	0.158	0.323	-0.701	0.663
Democrats	-0.109	-0.0790	0.323	-0.701	0.372
Republicans	0.291	0.297	0.163	-0.0716	0.663

Projected NOMINATES calculated via fitted values using 2002 district data and regression results from Table 2 above.

Table 3c. Differences Between 2000 Predicted and 2002 Projected Ideal Points

Variable	Difference	Implication	95% CI	90% CI
Chamber Median	-0.034	Moves leftward	(-0.0543, 0.0150)	(-0.0472, 0.00942)
Democratic Median	-0.024	Moves leftward	(-0.0352, 0.0572)	(-0.0265, 0.0495)
Democratic Std. Dev.	-0.011	Heterogeneity Decreases	(-0.0301, -0.0121)	(-0.0284, -0.0138)
Republican Std. Dev.	0.020	Heterogeneity Increases	(0.0041, 0.0414)	(0.0067, 0.0382)
Republican Median	0.021	Moves rightward	(-0.0139, 0.0498)	(-0.00896, 0.0434)
Democratic Median- Chamber Median	-0.0096	Difference contracts	(-0.0838, 0.0237)	(-0.0760, 0.0144)

Table 4a. Descriptive Statistics of Predicted Senate NOMINATE Scores, 2000

Legislators	Mean	Median	Std. Dev.	Min	Max
All	0.0661	0.210	0.324	-0.720	0.537
Democrats	-0.171	-0.189	0.330	-0.720	0.374
Republicans	0.267	0.277	0.122	-0.0431	0.587

Predicted NOMINATES calculated via fitted values using 2000 district data and regression results from Table 2 above.

Table 4b. Descriptive Statistics for Projected Senate NOMINATE Scores, 2002

Legislators	Mean	Median	Std. Dev.	Min.	Max.
All	0.0724	0.202	0.316	-0.699	0.530
Democrats	-0.103	-0.0394	0.321	-0.699	0.356
Republicans	0.295	0.321	0.110	0.0440	0.530

Projected NOMINATES calculated via fitted values using 2002 district data and regression results from Table 2 above.

Table 4c. Differences Between 2000 Predicted and 2002 Projected Ideal Points

Variable	Differences	Implication	95% CI	90% CI
Chamber Median	-0.008	Moves leftward	(-0.0454, 0.0361)	(-0.0386, 0.0284)
Democratic Median	0.2284	Moves rightward	(0.0211, 0.2510)	(0.0317, 0.228)
Democratic Std. Dev.	-0.009	Heterogeneity Decreases	(-0.0242, 0.0081)	(-0.0218, 0.0053)
Republican Std. Dev.	0.022	Heterogeneity Decreases	(-0.0422, 0.0253)	(-0.0367, 0.0202)
Republican Median	0.044	Moves rightward	(-0.0104, 0.0700)	(-0.00479, 0.0623)
Dem. Median- Chamber Median	-0.236	Difference contracts	(-0.269, -0.0146)	(-0.245, -0.0271)

Endnotes

¹ A “swing ratio” is the rate at which a party’s popular vote share translates into a legislative seat share.

² Gelman and King (1994) provide a review of these various findings in their analysis of the determinants of bias and responsiveness in state legislative redistrictings. More recently, Cox and Katz (2002) provide a detailed assessment of the existing literature in this area in their work on the representational effects of *Baker v. Carr*.

³ This point is underscored in McDonald’s (2004) recent synthesis of the state legislative redistricting literature.

⁴ Shotts (2001, 2003) develops models that analyze the electoral and policy effects of race-based gerrymanders.

⁵ Such game-theoretic treatments of racial redistricting have been criticized by Lublin (1999) and Lublin and Voss (2003), yet these critics agree (Lublin (1997), Lublin and Voss (1998)) that racial redistricting has nontrivial consequences for policy preferences.

⁶ On this point, see Groseclose and Snyder (2003), Krehbiel (1999, 2003), McCarty, Poole and Rosenthal (2001), and Snyder and Groseclose (2000).

⁷ We deviate from the canonical Downsian (1957) model by arguing that party elites have explicit policy preferences and try to realize their policy goals rather than viewing policy platforms as instruments for electing candidates. This assumption is consistent with the view that partisans sort into parties based primarily on their own policy preferences (e.g., Snyder and Ting 2002). The assumption that partisan redistricters (and elites, more generally) tend to be ideologically more extreme than the legislators in their parties is consistent with theoretical work

by Londregan and Romer (1995) and Wiseman (2006) who demonstrate how partisan activities in the electoral arena can influence the ideology of candidates.

⁸ We are not arguing that partisan redistricter's goals might be to expand the range of agenda control for the sake of increasing gridlock per se. Rather we argue that redistricters seek final policies (or maintained status quos) as close to their ideal points as possible. As demonstrated in Figure 2, the leftward movement of the chamber and Democratic Party median ensures that the final policies implemented at the median voter's ideal point, as well as the maintained status quo policies are closer to D_r than prior to redistricting.

⁹ The locations of status quo policies that leaders seek to influence are highly relevant to this hypothesis. Cox and McCubbins (2002, p. 112) assume that the status quo in period (t) is identical to the status quo at the end of period (t-1) plus an exogenous shock that is realized prior to (t). Or more formally: $SQ_t = SQ_{t-1} + \varepsilon_t$. While Cox and McCubbins do not make explicit assumptions about the distribution of ε_t , we assume that $\varepsilon_t \sim U[-k, k]$, where $k > |D|$, and D is the location of the Democratic (majority) party median. Hence, each new period presents sufficiently extreme status quo points that the majority party would like to keep off the floor agenda.

¹⁰ For the sake of parsimony, we adopt Snyder's original language and refer to vote-recruiters "bribing" legislators for their votes, which is not meant to imply that cash-in-hand transfers for votes occur in Illinois.

¹¹ A quadratic specification for a legislator's utility is chosen for analytical convenience and is not crucial.

¹² The Illinois legislature has no supermajority requirement analogous to a filibuster in the U.S. Senate.

¹³ By this same logic, if the vote-recruiter advocates a relatively extreme policy, so that the Democratic median is in the interval $x_D \in [\frac{a+q}{2}, x_m]$, then vote-buyer theories would suggest that the new Democratic median would be more left-leaning in the new legislature in comparison to the old. In contrast, if the vote-buyer advocates a less ideologically extreme policy, then one would expect no movement in the Democratic median. More formally, one would predict that $\text{New Democratic Median} \leq \text{Old Democratic Median}$. Likewise, if Democratic redistricters can feasibly replace Republicans who are located to the right of the Republican Party Median with Republicans legislators who are located to the left of the chamber median, leftward movement in the Republican Party Median might ensue: $\text{New Republican Median} \leq \text{Old Republican Median}$.

¹⁴ It is worth emphasizing that certain of our strong party auxiliary hypotheses (H^3 , H^4) rely on assumptions that transcend Cox and McCubbins's presentation of their theory, most notably that the Democratic Party redistricter is to the left of the Democratic Party Median. Given the ideological heterogeneity of Democratic legislators noted below, combined with the fact that four out of five of the Democrats on the Illinois Redistricting Commission, including the tie-breaker, Michael Bilandic, were from Chicago, we believe that this assumption is reasonable. We concede, however, that strong party theory would not necessarily imply our hypotheses if these assumptions were not satisfied. Hence, failure to find empirical support for these hypotheses might not be an indictment of strong party theory so much as an indictment of our assumptions. These caveats aside, we still believe that it is worth exploring these matters in the data, to identify what empirical regularities can be uncovered that might be consistent with postulated hypotheses.

¹⁵ The courts have consistently ruled that this lottery-based tie-breaker contingency is legal and constitutional, and with the exception of 1970, the legislature has never determined the redistricting plan following the census.

¹⁶ In other words, if 75% of a given Illinois block group was in House District 1, we assume that 75% of the block group's total income was earned in this district, that 75% of the block group's older residents are in this district, and so forth (e.g., Herron and Theodos 2004).

¹⁷ Please see the Appendix for further information regarding our estimation of common-space NOMINATES.

¹⁸ We also estimated a spatial lag model where a (House or Senate) district was deemed to be a neighbor of another (House or Senate) district if their boundaries touched in a non-trivial way. Trivial touchings were those that occurred when a vertex of one district intersected with the boundary of another district. The spatial regression results with this approach were nearly identical to the results that do not allow for spatial effects.

¹⁹ The explicit specification chosen for Table 2 followed from the consideration of several potential covariates and selecting the model that provided the greatest fit for scaled legislator preferences. It is worth noting that Party was statistically insignificant once district demographics were controlled for. Results from alternative specifications are available from the authors.

²⁰ One potential concern is that our method does not account for the probability that a given legislator was a member of the majority party at the same time that we estimate the impact of district demographics on his or her ideology. Because one of the primary goals of parties in strong party theory is acquiring and maintaining majority party status, one would suspect that a strong-party redistricter would simultaneously take into account how redistricting affected the

probability of maintaining majority status and legislators' expected preferences. Data limitations prevent us from analyzing such an empirical specification, but we recognize that it is worthy of future scholarship.

²¹ To reemphasize a point above, however, it is difficult to infer whether these findings fail to support strong party theory or rather reflect the fact that redistricters' policy preferences are inconsistent with our assumptions.

²² In the 1996 Senate race for the 58th District, for example, 77% of the \$1.34 million spent in the race by the candidates came from party leadership committees (Redfield 1998, p.3).

²³ One potential concern with this argument is that if vote-buying is occurring then the NOMINATE scores are likely tainted by this influence, precisely in the area of the legislature that is most relevant to this exercise (Snyder and Groseclose 2000, McCarty, Poole and Rosenthal 2001). The fact that parties exhibit notable intra-party heterogeneity suggests that a sizeable number of votes are not the subject of such pressure and that NOMINATE scores are reasonably accurate cardinal rankings of legislator ideologies.

²⁴ Furthermore, the correlation between a Republican legislator's predicted NOMINATE and his/her two-party vote-share in the election prior to redistricting is only -.02 (p-value of .77).

²⁵ Further insight can be gleaned by analyzing the bias of the electoral system (Cox and Katz 2002, 31-34). In the 2000 elections Democrats competing for contested House seats won 56.1% of the vote yet won only 52.1% of the contested seats. After redistricting however, Democrats won 54.1% of the House votes for contested seats, and captured 56.7% of the contested seats, generating a 2.6 point pro-Democratic bias in the system, which was less than the previous pro-Republican bias. In the Senate elections following redistricting, Democrats won 46.9% of the ballots cast in contested races yet only won 42.8% of the contested seats. Hence, it appears that

there was actually an *anti*-Democratic bias of nearly 4 points in the Illinois Senate redistricting plan. While far from conclusive evidence, these statistics raise further questions regarding the veracity of the seat-maximizing hypothesis.

²⁶ It is worth noting that the R^2 is 0.44, which implies that there is still a good deal of residual forecasting error that we are unable to account for. Given this residual error, we are (ironically) even more confident that the significant changes we identify in the variables of interest do not reflect random noise.

²⁷ It is not possible to compare relevant medians across time without strong identifying assumptions.