Available online at www.sciencedirect.com
ScienceDirect
Electoral Studies 26 (2007) 477–491
Electoral Studies
www.elsevier.com/locate/electstud

Electoral system effects and ruling party dominance in Japan: A counterfactual simulation based on adaptive parties

Andy Baker [a], Ethan Scheiner [b,*]

[a] University of Colorado at Boulder, CO, USA
[b] Department of Political Science, University of California at Davis, One Shields Avenue, Davis, CA 95616, USA

Abstract

Japan's electoral system has long been held to be a primary shaper of party success and failure in Japanese politics. This paper offers a counterfactual simulation of electoral outcomes under Japan's long used SNTV/MMD electoral system. Because of features particular to the SNTV/MMD system, we are able to simulate party adaptation to alterations in the system and estimate what features of the system aided the longtime ruling Liberal Democratic Party's (LDP) success. Based on this new analysis, we find that it is an overstatement to hold the electoral system responsible for longtime LDP dominance.
© 2007 Elsevier Ltd. All rights reserved.

Keywords: Japan; Electoral systems; SNTV; Simulation; Malapportionment; Single-party dominance

It is well established that electoral rules influence election outcomes. A rich literature following in the footsteps of Duverger's Law has explored the mechanical and psychological effects of institutions on who governs. Yet quantifying the precise impact of electoral systems and, in particular, potential changes and/or "corrections" in electoral rules entails an important counterfactual exercise that most scholars overlook. Namely, political actors are adaptive and would react and respond differently to a changed set of rules. For instance, party adaptation to rule changes is an important, but largely overlooked, intervening variable that would condition the impact of rules on outcomes.

Nowhere is this issue more pertinent than under Japan's now-defunct single-non-transferable-vote, multi-member district (SNTV/MMD) electoral system. Many scholars have attributed Japan's ruling Liberal Democratic Party's (LDP) longtime uninterrupted rule to advantages generated by the electoral system. In dealing with this question, scholars have examined the extent to which the LDP and its leading opponents were able to develop efficient nomination strategies – an important component of success under the SNTV/MMD system – and the impact of malapportionment, whereby LDP-dominated rural districts were allocated more seats per resident than urban areas where the LDP was less strong. To understand the impact of malapportionment, in particular, it is necessary to counterfactually simulate results under a properly apportioned system. However, efforts at such simulation have not taken into account the fact that, under a changed electoral system, parties would change their behavior by running a different number of candidates in each district under the system.

In this paper, we offer a new approach to the study of electoral system effects in Japan. We develop

* Corresponding author. Tel.: +1 530 754 8176; fax: +1 530 752 8666.
E-mail addresses: bakerab@colorado.edu (A. Baker), escheiner@ucdavis.edu (E. Scheiner).

0261-3794/$ - see front matter © 2007 Elsevier Ltd. All rights reserved.
doi:10.1016/j.electstud.2007.03.002

a counterfactual simulation that incorporates the intervening variable of party adaptation in the area of candidate nomination – i.e., how many candidates each party would nominate – to weigh in on substantive debates surrounding the impact of electoral system effects in Japan.

The paper has two principal contributions. First, and most important, we highlight the importance of including party adaptation in counterfactual simulations of the effects of institutional change and offer one approach to dealing with the problem. The fact that parties will adapt to changed conditions is of course not a new idea, but their adaptations have usually been left out of analyses that use real world data to simulate the effects of institutional change. This contribution is not merely academic, as the new-rules-same-strategy approach to predicting the effects of electoral rule change is the one most often used. In this way, our analysis suggests a corrective to an ongoing problem in the most common approach to investigating the impact of electoral rule change. Our second contribution is empirical: By taking into account party adaptation, we offer a more reliable estimate of the impact of electoral system effects on electoral outcomes in Japan. In the process, our results help adjudicate the longtime debate on the impact of electoral rules on electoral outcomes in Japan, as we present evidence that electoral rules did not play a major role in maintaining LDP dominance.

The paper proceeds as follows. First, we discuss the importance of including party adaptation in any simulation that counterfactually imposes new electoral rules on a competitive context, and we indicate how unique features of the SNTV/MMD electoral system make it a useful context within which to impose a counterfactual simulation. The decision regarding how many candidates to nominate is at the center of party strategy under SNTV/MMD. The fact that it is easily quantifiable for scholars makes it a tractable measure of party strategy and adaptation and one that can be manipulated for the sake of counterfactual simulation. Second, we discuss the literature on the impact of the electoral system on LDP dominance in Japan and suggest areas in which we might improve upon existing analyses. We argue that including party adaptation in the model as well as treating the opposition camp as a whole – rather than dividing it into a non-Communist and a Communist camp – is important for the reliability of the analysis. Third, we develop a counterfactual model of electoral outcomes in Japan, in which we simulate the impact of candidate nomination errors and malapportionment on the success of the LDP. Fourth, we present the simulation's results, which indicate that the electoral system did not appear to play a major part in LDP dominance.

1. Simulations and SNTV/MMD as an opportunity to study party adaptation

Simulations have been used for years in the social sciences to study human interaction. Axelrod's (1984) analysis of cooperation is perhaps the most well known, but simulations have been used in numerous other areas such as the interaction between legislators, bureaucrats, and interest groups (Bender and Moe, 1985) and party adaptation in electoral issue space (Kollman et al., 1998). Most notable simulations – such as those above – tend to be founded on hypothetical situations with little real world "noise" to complicate them. One class of simulation, however, relies partly on real world data. The most common form of such simulations is counterfactual analyses of electoral outcomes, which are regularly used to estimate how electoral outcomes would have been altered through the introduction of different electoral rules. Electoral simulations of this kind are commonly used by the press, parties and candidates around the globe, but scholars use them as well (Christensen and Johnson, 1995; Lijphart et al., 1986; Reynolds, 1999).

The inherent problem with analyses that simply slap new institutions (e.g., new district boundaries) on existing political conditions is that they ignore the fact that when faced with a new structure, political parties and candidates would be likely to alter their strategies.[1] Given a new context, parties might alter the types of appeals that they make or implement a new nomination strategy; this, in turn, would influence election outcomes, the simulated quantity of interest.[2] The difficulty involved in systematically anticipating and quantifying the likely changes parties would make to their electoral strategies has thus limited analysts' ability to incorporate the intervening variable of party adaptation.

SNTV/MMD systems offer a way around this problem. In SNTV/MMD, which was used in Japan's House of Representatives (HR) elections from 1947 through 1993 and in much of the prewar era, each voter casts a ballot for a single candidate and votes cannot be transferred to other candidates or the candidate's party. Where M is the number of seats in the district (district magnitude), the M candidates receiving the largest number of votes win seats. In Japanese SNTV most

[1] Similarly, using survey data, Bartels (1996) generates predicted probabilities of presidential candidate success in the U.S. according to how well informed voters are, but does not take into account how candidates and parties would respond to an altered voter pool.

[2] See Baker and Scheiner (2004), Kitschelt (1994), and Meguid (2002) for discussions of how and when parties adapt to changing contexts.

districts had between three and five seats, with a party needing to win roughly two seats per district in order to gain majority status.

Under SNTV/MMD, a party (or bloc of allied parties) is prone to three types of strategic errors. First, a party might *overnominate*: it might run so many candidates that it splits its total vote share too thinly and wins fewer seats than it would have with fewer candidates. Second, it might *undernominate*: it might have enough votes to elect a certain number of candidates, but it nominates fewer and fails to take full advantage of these votes. Finally, a party might suffer from *vote division error*: if a large share of its total votes is concentrated in a subset of its nominees, it may win fewer seats than a more evenly distributed vote share would have allowed.

Because electoral success in SNTV/MMD hinges heavily on how many candidates a party nominates in a district, SNTV/MMD provides quantitative measures of actual party strategy – *the observed number of nominees* – and optimal strategy that varies substantially across districts, parties and elections. In viewing SNTV/MMD systems, we can easily measure the extent to which parties pursue optimal nominating strategies (i.e., how many candidates they nominate relative to how many they *should* nominate), the conditions under which they are likely to do so, and the electoral effects of their doing so. In short, in SNTV/MMD systems, the number of candidates a party nominates is a variable at the center of party strategy that we can easily include in quantitative analyses of electoral behavior and outcomes. In this way, SNTV/MMD offers an ideal setting to conduct counterfactual analysis that re-estimates electoral outcomes based on real world data in simulated structural contexts.

When simulating what electoral outcomes in Japan would have been if various structures were altered, we can incorporate the typically overlooked intervening variable of how parties would adapt their candidate nomination strategies to their new structural context. In this way, we can offer a simulation that includes a critical factor left out of most simulations of electoral outcomes. Previous studies of nomination errors in SNTV/MMD do "simulate" alternative party strategies by considering what election outcomes would have been under optimal nominating behaviors (e.g., Cox, 1996; Cox and Niou, 1994; Cox and Rosenbluth, 1994).[3] In contrast, as we explain in greater detail in our discussion below of our simulation, we incorporate estimates of actual, rather than optimal, nominating behavior as a crucial intervening variable between changed institutions and electoral outcomes.

In addition, previous studies of the SNTV/MMD system have analyzed the impact of nomination patterns and strategies on electoral politics (e.g., Christensen, 2000; Cox, 1996) and sought to understand the conditions under which parties are likely to adapt their nomination strategies to the electoral context (Baker and Scheiner, 2004). However, no study has attempted to understand how nomination strategies would change in a new institutional context and how these altered strategies would affect electoral outcomes. In this paper, we develop a simulation that seeks to do just that.

2. The institutional sources of the LDP seat bonus: SNTV/MMD and malapportionment

The LDP was formed in 1955 and has largely dominated Japanese politics ever since.[4] The LDP has not won a majority of the vote since 1963, but an overall LDP affiliated "camp" – comprised of the LDP itself, conservative independents, and (from 1976 through 1986) the New Liberal Club – received, with one minor exception (49.9% in 1976), a majority of the vote in the 12 elections from 1958 to 1990. In most years the conservative camp's majority within the electorate was quite slim, yet it always won a much larger percentage of seats than votes. Because this "seat bonus" increased the conservative camp's dominance over the Japanese opposition, scholars have sought to explain its causes.

Two features of Japan's SNTV/MMD system emerged as leading explanations for the conservative camp's seat bonus.[5] First, districts in Japan were malapportioned, with substantially fewer votes per seat in rural areas, the conservatives' electoral stronghold. Second, nomination errors may have been more costly for Japan's

[3] This is typically by virtue of employing the MAXS measure of party strategy, which is discussed below.

[4] The LDP lost power in 1993 when roughly 55 members defected to form new parties, but by 1994 it was back in power. Since 1994 the HR has operated under a new electoral system.

[5] In addition to examining the impact of malapportionment and strategic efficiency on seat bonuses under Japanese SNTV, Christensen and Johnson (1995) also consider the effect of turnout differentials and the relatively small district magnitudes in Japan. They explain that turnout differentials between districts contributed negatively to the LDP seat bonus because the party won most of its seats in high turnout districts (1995: 579), but they also find that the variable had only a small impact. In addition, they argue that the small district magnitudes in Japan – typically three to five seats per district – gave the LDP a substantial seat bonus. However, their method of calculating its effect is not wholly convincing in that it is merely the residual after controlling for strategic efficiency, malapportionment, and turnout differential.

opposition than for the conservative camp (e.g., Cox, 1996, 1997; Cox and Niou, 1994). Below, we point to shortcomings in the ability of previous work to assess properly the impact of these features on the LDP's dominance and we describe and implement an approach that we believe is better suited to do so.

2.1. Malapportionment

In the postwar era there has been significant migration from rural to urban areas in Japan. Because the country had no built-in system for adjusting electoral districts and seats to population changes, this migration was not accompanied by serious reapportionment in the electoral system. Occasionally, new districts were created, seats were taken away from rural districts, and new seats were added to urban districts, but such reapportioning did not make a tremendous difference. The countryside was very over-represented in Diet elections from the late 1950s through the 1990s, with rural votes worth, on average, 1.4–1.9 times those in the city.[6] Because the conservatives' strongest base of support was in the countryside, scholars agree that if districts had been more fairly apportioned, the conservatives would have won a smaller proportion of the seats in each election.[7]

The debate around malapportionment centers on quantifying its impact. Journalists have measured the effect by correcting for malapportionment and then deleting the bottom ranked winners in over-represented districts and adding in top ranked losers in under-represented ones (*Asahi Shimbun*, January 16, 1981: 2, cited in Christensen and Johnson, 1995). Lijphart et al. (1986) offer a more sophisticated approach, weighting each district according to the degree to which its voters are over- or under-represented in the Diet. They then adjust the number of seats available per district and extrapolate from the actual distribution to determine the results of the hypothetical election. Christensen and Johnson improve on this by calculating the weight for each district's over- or under-representation using a more sensible basis of district size, the number of registered voters. They then multiply this weight by the number of seats each party won in the district and sum the product of these weights and the seats won by the conservative camp. Each method indicates that the conservatives benefited substantially from malapportionment (usually between 5 and 15 seats per election), although results vary by election and method.

However, in estimating the likely outcome in a reapportioned system, none of the three methods takes into account a critical fact of reapportionment: parties are adaptive and will alter their strategies when confronted with a new electoral context. If districts had been reapportioned, parties would have altered their nomination strategies accordingly and seat totals won by parties would have changed. In short, in order to approximate accurately the likely outcome of reapportionment, we must take into account parties' likely responses. If, as Cox's analysis suggests, the conservatives were more effective strategically, the conservative camp will win more seats in models that anticipate party adjustments in their adjustments for malapportionment. By contrast, if, as Christensen's analysis suggests, opposition strategy was as good as (or better than) that of the conservative camp, we should see the conservatives winning fewer seats in models that recognize party adjustment than in models that do not. Regardless of who is correct, models that incorporate party adjustments to reapportionment into the equation ought to find the conservatives winning fewer seats (than in models that do not incorporate such adjustments) in years in which the opposition cooperated.

2.2. Nomination errors

Although all parties and blocs made errors under Japanese SNTV/MMD, scholars disagree over which political camp, the LDP and its affiliates or the opposition, lost more seats from its own strategic errors. Taagepera and Shugart argue that SNTV/MMD imposes "a conservative strategy on large parties because they can lose badly if they nominate too many candidates" (Taagepera and Shugart, 1989, 170, fn. 5). In addition, with more candidates and votes through which to wade, large parties may face greater difficulty finding ways to divide their votes evenly among their various candidates. For reasons such as these, Christensen (2000) and Christensen and Johnson (1995) argue that SNTV benefited the opposition, costing the conservatives more seats due to nomination error. In contrast, Cox (1996, 1997) and Cox and Niou (1994) argue that the party in power can more easily overcome its collective action problems by allocating government resources to reward supporters and divide the vote more evenly.

Cox (1996, 1997) offers empirical analysis to suggest that the conservatives were more successful at coordinating under SNTV/MMD: based on the number of votes a party won in a district, Cox determines for each party the number of "winnable" seats, the

[6] At its most extreme, at one point the most under-represented urban district had more than five times as many eligible voters per seat than the most over-represented rural district.

[7] The correlation between conservative vote share and number of registered voters per seat in a district was −0.62.

maximum number of seats that it could win in the district if it committed no errors. He finds that the conservatives won a larger proportion of winnable seats than the opposition did. On the other side, Christensen (2000) finds that the results varied according to time period. In particular, he argues that the opposition made fewer strategic errors than the conservative camp during periods in which the non-Communist opposition coordinated in its nomination strategies: It was more likely to run an optimal number of candidates and distribute its votes evenly.[8] In the end, he argues, the conservative camp won more "winnable" seats – again defined as the maximum number of seats that it could win in the district if it committed no errors – because it won a larger number of votes per winnable seat than the opposition.

In order to consider fairly the relative capacities of each party to achieve strategic success, the Christensen–Cox debate divides the opposition into the following two blocs: the non-Communist parties and the tiny Japan Communist Party (JCP), the latter of which largely ignored overall opposition interests by nominating a candidate of its own in *every* district.[9] While useful in its own right, we claim that this approach is inappropriate for addressing the more consequential question of whether the electoral system generated conservative dominance. In our statistical and simulation analyses below, we develop models that analyze and predict how many candidates the conservative camp nominated in each district and, most important, how many seats it won. Given our focus, it makes more sense to consider the opposition as a whole, not just the non-Communist opposition. While the non-Communist opposition and JCP may each have done moderately well separately, they *as a group* may have wasted votes, which a coordinated alliance could have used to bring the entire opposition extra seats. If so, the conservatives would have gained seats as a result of the entire opposition's strategic failures.

In other words, we do not seek to re-test Cox or Christensen's claims, since treating the non-Communist opposition and JCP as one group does not offer a fair measure of the *non-Communist* opposition's capacity to cooperate. Indeed, doing so would potentially yield the incorrect impression of consistent overnomination by the opposition, when in fact the non-Communist opposition in many instances may have put forward a perfect nomination strategy. Rather, our principal substantive goal is to see how candidate nomination decisions affected the conservatives' overall success. When analyzing and predicting the candidate nomination behavior of the conservatives and, especially, the number of conservative camp seats won, what matters most is simply that the overall group opposed to the conservatives did or did not use its vote effectively.[10]

3. A simulation of conservative success

For these reasons, we conduct a counterfactual simulation that incorporates likely party adjustments to reapportioned districts and treats the entire opposition as a group. The logic of the simulation is as follows. First, we estimate a "factual" multivariate model (i.e., using real election data) for a given election that quantifies the impact of votes, apportionment, and each bloc's nomination errors (all measured at the *district* level) on the mechanical process of converting votes for conservative camp candidates into conservative camp seats at the district level. We then use the estimated impact of these variables (i.e., the coefficients we derived from the multivariate model) to generate a predicted value for the number of seats the conservative camp won for that election. That is, we multiply the coefficients ($\boldsymbol{\beta}$) by the actual values of the independent variables ($\boldsymbol{X}$) to simulate the *actual* LDP-bloc seats-won process in each district. In other words, this is a simulation based on real world conditions. We then sum the seats the conservatives won in this simulation in each district to arrive at the (simulated) total that the conservatives took nationally. We call this the "factual" model. Second, we sequentially change aspects of the factual data to simulate various hypothetical scenarios of interest and then calculate predicted values for each scenario by multiplying the factual model parameter estimates by the hypothetical conditions. (In short, we vary $\boldsymbol{X}$ but not $\boldsymbol{\beta}$.) As we describe in greater detail below, we simulate one scenario in which no malapportionment exists, another scenario in which the conservatives made no nomination errors, another scenario in which the

[8] The opposition's degree of nomination strategy success was more mixed in years of non-cooperation.

[9] Scholars have tended to do this because the Communist party did not cooperate much with other parties.

[10] That said, though, treating the opposition – including the Communists – as one group offers a "hard" test of Christensen's claims. If opposition errors – measured for the non-Communist opposition and the JCP as one group – have no greater impact than conservative camp ones on the fortunes of the conservatives, then we can probably presume that the non-Communist opposition – unfettered by the weight of the JCP's lack of cooperation – was even more capable of cooperating.

opposition made no nomination errors, another in which no one made any errors, and so on. Third, we compare the predicted number of conservative camp seats from each counterfactual scenario to the predicted value from the factual model. This difference is the estimated impact of whatever variable has been changed in the scenario. Finally, this process is repeated for every election.

3.1. Model of the seats-won process

In the multivariate seats-won model, each case is a single district (in a given election) and the dependent variable is the proportion of available seats won by the conservative camp. An appropriate statistical model for this type of proportions data, conservative camp seats won (Y) per seats available (M) in each district, is the extended beta binomial (EBB) (Prentice, 1986; King, 1989; Palmquist, 1999). EBB is appropriate for this because each seat is a binary trial that the conservatives either win or lose. Independent variables vary systematically with the probability of a successful trial; that is, the EBB models p, the probability that the conservatives win a given seat. EBB affords the luxury of letting M vary by district, so, in contrast to the work of Christensen and Johnson (1995), we do not need to split the sample by district magnitude size.

In modeling the seats-won process, we include three independent variables, borrowed in part from Baker and Scheiner (2004), that are critical factors in the process. The first, and clearly most important, is the *conservative vote share*, the conservative camp's proportion of all votes cast, in each district. Naturally, as conservative vote share increases, the conservative camp wins a larger proportion of seats. The other independent variables measure *conservative nomination error* and *opposition nomination error*. These variables represent each party's deviation from its optimal number of nominees. We define the optimal number of nominees with the commonly used electoral (Droop) quota measure, which is the minimum number of votes a candidate needs to guarantee a seat:

$$\text{Quota}_{it} = \frac{V_{it}}{M_{it}+1}, \qquad (1)$$

where V_{it} is the number of votes cast in district i in election t and M_{it} is district i's magnitude. Party j's nomination error is therefore the absolute value (to capture both over- and undernomination) of the difference between the number of candidates it nominated and the number of quotas it won:

$$\text{Nomination error}_{ijt} = \left| N_{ijt} - \frac{V_{ijt}}{\text{Quota}_{it}} \right|, \qquad (2)$$

where N_{ijt} is the number of nominees for party j and V_{ijt} is the number of votes j received.[11] Since nomination error assists one's opponent, we expect conservative nomination error to have a negative sign and opposition nomination error to have a positive sign.

Our measurement of nomination errors is quite different from those used in previous analyses. Cox and Niou (1994) and Cox and Rosenbluth (1994) measure error through a variable termed MAXS, the number of seats a party could have won in a district had it perfectly divided its votes among the optimal number of candidates, assuming that its opponents' votes did not change. We choose our variables for two reasons. First, MAXS can be misleading in that it may give the same score to two parties with substantially different numbers of votes (Christensen, 2000). Second, aside from conservative vote share, which we hold constant, we seek to only include variables for which we can impute new values by means of our simulation, and thereby more properly include party adaptation in the model. The MAXS variable, however, assumes that a party's opponents do not change their nominating strategy. This assumption is obviously inappropriate for our simulation, which estimates changes in electoral success in a (correctly) reapportioned world where the conservative camp and its opponents would most certainly adjust their nomination strategies.[12]

3.2. Modeling party adaptation to reapportioned districts

To estimate the impact of malapportionment we compare the EBB models' predicted number of conservative winners in the two alternative situations: (1) the actual data (the "factual" model from above)

[11] In setting up our "error" variables, we utilize Baker and Scheiner's (2004) definition, with one important difference. Baker and Scheiner's equations involve subtracting from the *effective* number of candidates. However, in our simulation below, we include party strategy, whereby parties nominate actual whole numbers of candidates. For this reason, in our error variables, we subtract from the *actual* number of candidates.

[12] Vote concentration within the conservative and opposition camp will also influence the number of conservative winners. However, similarly, because predicting their values in counterfactual scenarios is impossible, we find it impractical to include these in the model.

and (2) a hypothetical, ''reapportioned'' or correctly apportioned scenario. In simulating correct apportionment, we make two assumptions. First, the number of seats in the Diet and geographic district boundaries would not change, but seats would be reapportioned using the number of registered voters and PR-Hare with largest remainders, the most proportional method of allocation (Lijphart, 1994).[13] Following Japanese law, we reapportion districts based on data from the most recent census year (which occurs every fifth year).

Second, the hypothetical scenario assumes that parties would have made *strategic adjustments* to a correctly apportioned system.[14] In short, parties would have responded to reapportionment by shifting the number of nominees. To estimate the number of candidates that parties *would have* nominated under the changed conditions, we run a series of Generalized Event Count (GEC) models that analyze systematically the number of candidates the conservative camp and the opposition did nominate in each district in each election year.[15]

We discuss the variables and details involved in our simulation in greater detail below, but the basic intuition is as follows: First, we use the GEC parameter estimates to predict the number of candidates parties would have nominated in a reapportioned world. Second, we add these predicted values in place of N_{it} in the EBB's nomination error equation (Eq. (2)) above to help predict the degree to which the conservatives and the opposition would have made nomination errors under the correctly apportioned system. Third, equipped with these new error variables, we calculate predicted values $(\sum M_i^{\text{new}} p_i)$ for the number of seats won in this ''reapportioned'' hypothetical scenario using the EBB estimates of the seats-won process in Table 1.[16] In other words, based on our EBB coefficients and the predicted adjustments parties would have made in their nomination strategies, we calculate the number of seats the conservatives would have won in each district. We then sum the number of seats the conservatives would have won in each district under this scenario to determine how many seats the conservatives would have won nationally under the correctly apportioned system in which parties adjusted their nomination strategies.

Let us be more specific about the details of our simulation of party adaptation to the reapportioned system: we begin by running a series of GEC models in which the dependent variable is the number of *discretionary* nominees in a given camp. (We run one set of models for the conservative camp and one for the opposition.) In other words, to capture the underlying strategic logic of nominating behavior, we model the number of candidates that each political camp *chose* to nominate. This distinction is crucial since both camps had ''automatic'' nominees who ran regardless of party leaders' decisions. In the real world, conservative camp incumbents were automatically nominated (typically, as long as they wanted to be). On the opposition side, the Japan Socialist Party (JSP) and JCP each nearly always nominated at least one candidate per district.[17] The dependent variable is therefore coded, at the district level in a given election, as the total number of candidates running for a given camp minus the number of ''automatic'' nominees.

In general, our independent variables measure relevant information, mainly in the form of previous election results, which party leaders had available to them at the time of the nomination decision. The first and most important variable is camp *j*'s *vote base*, a measure

[13] PR-Hare's improvement over Japan's real system was extensive. The correlation between registered voters and district magnitude went from about 0.5 per election to 0.98.

[14] Ideally, we would also include *voter* adjustments to the new electoral context. However, we know of no way to include a *systematic* and *accurate* estimate of the effect of system changes on voters and the effect in turn of voter adjustments on electoral outcomes. We discuss this issue in greater detail in the Appendix, but we believe that focusing here on party adaptation itself offers a far more accurate simulation of likely behavior than those previously offered.

[15] Our GEC models are very similar to those run by Baker and Scheiner (2004). For justifications of each of the variables and the GEC model, see Baker and Scheiner (2004). However, we go beyond Baker and Scheiner's concern with understanding when parties would be most likely to behave adaptively and instead use the analysis to suggest how the number of candidates parties choose to run affects electoral *outcomes* in Japan.

[16] We put a cap of $M+1$ on the number of candidates each side would nominate, since this seemed to be a natural maximum in the real world. In addition, since a small share of very disadvantaged districts were reapportioned to have magnitudes larger than six, we were concerned that our GEC estimates would not apply in these cases because they were generated using data from two- to six-member districts. In these districts, the imputed values for number of candidates was the real world number of nominees multiplied by the ratio of the new magnitude to the old magnitude. Although this involves a weighting process similar to those we criticized, we remain true to our argument by weighting and imputing the number of nominees, not the number of winners. In other words, this technique does not ignore strategy as an intervening variable.

[17] Out of 1364 districts (an average of 124 districts each for 11 elections), the JSP did not run any candidate in a district only 27 times (2 percent of the time) and the JCP did not run a candidate only six times (0.4 percent of the time).

Table 1
Extended beta binomial (EBB) models of the number of conservative winners in each district

	1960	1963	1967	1969	1972	1976	1979	1980	1983	1986	1990
Conservative vote share	1.25* (0.05)	1.20* (0.08)	1.34* (0.06)	1.15* (0.08)	1.40* (0.06)	1.32* (0.06)	1.12* (0.07)	1.15* (0.05)	1.32* (0.06)	1.29* (0.05)	1.20* (0.06)
Conservative nominating error	−0.03* (0.01)	−0.03 (0.02)	−0.12* (0.02)	−0.08* (0.01)	−0.09* (0.02)	−0.07* (0.02)	−0.00 (0.02)	0.02 (0.04)	−0.11* (0.02)	−0.06* (0.01)	−0.08* (0.01)
Opposition nominating error	0.04* (0.01)	0.06* (0.01)	0.07* (0.02)	0.08* (0.01)	0.06* (0.02)	0.04* (0.01)	0.05* (0.01)	0.07* (0.02)	−0.03 (0.01)	0.02* (0.01)	0.04* (0.01)
Intercept	−0.14 (0.03)	−0.13 (0.05)	−0.21 (0.05)	−0.06 (0.05)	−0.17 (0.03)	−0.13 (0.03)	−0.10 (0.04)	−0.13 (0.04)	−0.11 (0.03)	−0.15 (0.03)	−0.04 (0.03)
ϕ	−0.29* (0.01)	−0.26* (0.01)	−0.25* (0.01)	−0.26* (0.01)	−0.26* (0.01)	−0.26* (0.01)	−0.24* (0.01)	−0.25* (0.01)	−0.27* (0.01)	−0.29* (0.01)	−0.27* (0.01)
No. of districts	117	117	122	123	123	129	129	129	129	128	128

Entries are extended beta binomial coefficients and standard errors in parentheses, $^*p < 0.01$, one-tailed. Six-member districts were dropped from the 1986 and 1990 models because they created an unfeasibly high minimum for the dispersion parameter. The theoretical minimum of ϕ is $1/(1 - n_{max})$, where n_{max} is the largest number of trials found in the data.

of how many seats the party could expect its discretionary nominees to win under perfect strategy:

$$\text{Vote base}_{ijt} = \frac{V_{ij(t-1)}}{\text{Quota}_{i(t-1)}} - A_{ijt}, \tag{3}$$

where $V_{ij(t-1)}$ is the number of votes camp j received in district i in the previous election, *Quota* is defined in Eq. (1) above, and A_{ijt} is the number of automatic nominees: the greater the vote base, the more candidates a party would nominate. The second independent variable is *vote concentration*, a measure of the extent to which camp j's total vote is concentrated in its top vote-getting nominee:

$$\text{Vote concentration}_{ijt} = \frac{\left[\dfrac{V^{\text{top}}_{ij(t-1)}}{V_{ij(t-1)}} - \dfrac{1}{N_{ij(t-1)}}\right]}{N_{ij(t-1)}}, \tag{4}$$

where $V^{\text{top}}_{ij(t-1)}$ is the number of votes received by camp j's top vote-getter and $N_{ij(t-1)}$ is, as in Eq. (2), the number of nominees. As the vote grows more concentrated in one candidate (large positive value of vote concentration), parties will run fewer candidates. The third independent variable is a dummy variable indicating whether the party had the *top loser* in the previous election, and the final independent variable is simply the current *district magnitude*. Parties will be likely to run an additional candidate in districts where they had come close to winning in the previous election (top loser equals 1) and will be more likely to run more candidates in high magnitude districts.

To predict the number of nominees in the hypothetical, reapportioned world, we substitute the PR-Hare district sizes, M^{new}, into the two variables (vote base and district magnitude) that are based on or equal to M. Using the estimates of the GEC models, we recalculate these variables and generate predicted numbers of discretionary nominees for each district. As with the predictions based on the EBB, we multiply a given variable's value – which we adjust by utilizing M^{new} in the correctly apportioned simulation – by the coefficient on that variable in the year under consideration.[18] We then add automatic candidates back in and, as described above, we substitute the predicted values in place of N_{it} in the EBB's nomination error equation (Eq. (2)). Finally, we use the adjusted values to calculate the number of seats the conservative camp would have won in the reapportioned world.

[18] To generate the predicted values, we use the correction suggested by Winkelmann et al. (1995), not exp($\boldsymbol{XB}$).

4. Simulation results

Table 1 shows EBB estimates of the conservative seats-won process for 11 elections in Japan (1960–1990).[19] With only a few exceptions, all coefficients are in the expected direction and statistically significant.[20] We use these factual parameter estimates to generate predicted values for all subsequent simulations. In running the simulations, the total number of seats won for each scenario is $\sum M_i p_i$, or the sum over all districts of the predicted probability multiplied by the district magnitude. To test the accuracy of our model, we compare the predicted values from the EBB models – the "factual" models – to the actual seat totals in the 1960–1990 elections. Our "factual" models' predictions perform very well. On average, they deviate from the real world outcome by only 1.5 percentage points.[21]

4.1. Impact of malapportionment

The results of the GEC models of candidate nomination patterns for the two camps are listed in Table 2. Based in part on the coefficients from Table 2, Fig. 1 indicates the impact of malapportionment on the proportion of seats won by the conservatives. We use as a baseline the "factual" model's predicted seat totals ("Actual Seats Won (EBB)"). Fig. 1 also shows results from two hypothetical scenarios: (1) reapportioned

Table 2
Generalized Event Count (GEC) models for number of discretionary nominees

	1960	1963	1967	1969	1972	1976	1979	1980	1983	1986	1990
Conservative nominees											
Vote base	0.69* (0.11)	0.54* (0.12)	0.79* (0.08)	0.81* (0.10)	0.90* (0.13)	0.81* (0.11)	0.70* (0.12)	0.50* (0.24)	1.07* (0.15)	0.63* (0.10)	0.98* (0.10)
Vote concentration	−0.45 (0.40)	−0.30 (0.44)	−0.21 (0.41)	−0.39 (0.43)	0.41 (0.62)	−0.35 (0.45)	−0.37 (0.27)	−0.52 (0.47)	−0.36 (0.36)	−1.2* (0.50)	0.12 (0.31)
Top loser	0.10 (0.33)	0.53* (0.13)	0.31* (0.10)	0.29* (0.17)	0.23 (0.19)	0.03 (0.16)	0.18 (0.15)	0.22 (0.20)	−0.14 (0.22)	0.23* (0.13)	−0.24 (0.19)
District magnitude	0.11 (0.07)	0.08 (0.07)	0.05 (0.09)	0.04 (0.09)	0.10 (0.11)	0.19* (0.10)	0.05 (0.04)	−0.10 (0.10)	0.07 (0.11)	−0.00 (0.08)	0.04 (0.04)
Intercept	−0.86 (0.33)	−1.06 (0.22)	−1.15 (0.38)	−0.98 (0.38)	−1.43 (0.52)	−1.38 (0.44)	−0.73 (0.32)	−0.26 (0.40)	−1.15 (0.49)	−0.38 (0.35)	−1.07 (0.32)
σ^2	0.41* (0.10)	0.53* (0.04)	0.45* (0.01)	0.62* (0.01)	0.78* (0.08)	0.62* (0.08)	0.56* (0.10)	0.50* (0.01)	0.84* (0.10)	0.52* (0.08)	0.65*(0.11)
N	117	117	117	122	123	123	129	129	129	129	129
Opposition nominees											
Vote base	0.83* (0.06)	1.17* (0.24)	0.76* (0.10)	0.85* (0.19)	0.84* (0.17)	0.75* (0.16)	1.31* (0.17)	2.08* (0.42)	0.98* (0.19)	1.47* (0.33)	1.26* (0.22)
Vote concentration	0.14 (0.25)	−0.08 (0.15)	−0.05 (0.24)	0.11 (0.27)	0.52* (0.17)	−0.24 (0.45)	−0.43 (0.29)	0.97 (0.94)	−0.23 (0.65)	0.68 (0.62)	0.70 (0.78)
Top loser	0.26* (0.09)	−0.04 (0.15)	−0.22 (0.18)	0.10 (0.17)	0.26 (0.20)	−0.01 (0.15)	0.43* (0.22)	0.50 (0.44)	0.27 (0.21)	0.49* (0.29)	0.22 (0.27)
District magnitude	0.19* (0.04)	0.13 (0.11)	0.25* (0.07)	0.14 (0.10)	0.46* (0.12)	0.15* (0.07)	0.30* (0.14)	0.26 (0.32)	0.20* (0.11)	0.36* (0.21)	0.32* (0.16)
Intercept	−1.14 (0.20)	−1.33 (0.41)	−1.23 (0.21)	−0.94 (0.45)	−3.11 (0.58)	−0.97 (0.36)	−2.41 (0.68)	−3.30 (1.58)	−1.99 (0.42)	−3.26 (0.88)	−3.02 (0.91)
σ^2	0.45* (0.01)	0.41* (0.01)	0.56* (0.01)	0.60* (0.06)	0.54* (0.01)	0.60* (0.01)	0.69* (0.01)	0.53* (0.16)	0.65* (0.03)	0.81 (0.02)	0.42 (0.12)
N	117	117	117	122	123	123	129	129	129	129	129

$^*p < 0.05$.

[19] The data come from Reed (1992) and the associated, machine-readable version, covering the 1958–1990 elections, which is available at the Lijphart Elections Archive at http://dodgson.ucsd.edu/lij. Because our reapportionment simulation utilizes lagged independent variables, we do not run a GEC for 1958, the first election year in the data set. The EBB estimates were derived using a Stata.ado file written by Bradley Palmquist.

[20] The parameter ϕ is the average bivariate correlation among the binary trials. That it is negative in all cases indicates that our data exhibit the rare phenomenon of negative contagion. This results from the simple fact that when a seat is won by a conservative candidate, the probability that another seat is won by a copartisan decreases because the winner has, in a sense, "consumed" a significant portion of the party's vote share.

[21] It is important that our predictions are accurate. It might be argued that we ought to have used a more nuanced model that, for example, treats JCP candidates separately because they do not cooperate with the rest of the opposition and the inclusion or exclusion of particular JCP candidates has no effect on overall opposition cooperation and, hence, LDP success. However, there are three responses to such claims. First, similar claims could be made about uncooperative and/or weak candidates from other parties for both the opposition and the LDP. Second, and related, to treat such candidates in a more nuanced fashion would undermine the more systematic, non-ad hoc analysis we sought to implement here. Third, and most important, in its current form, our results estimate reality very well.

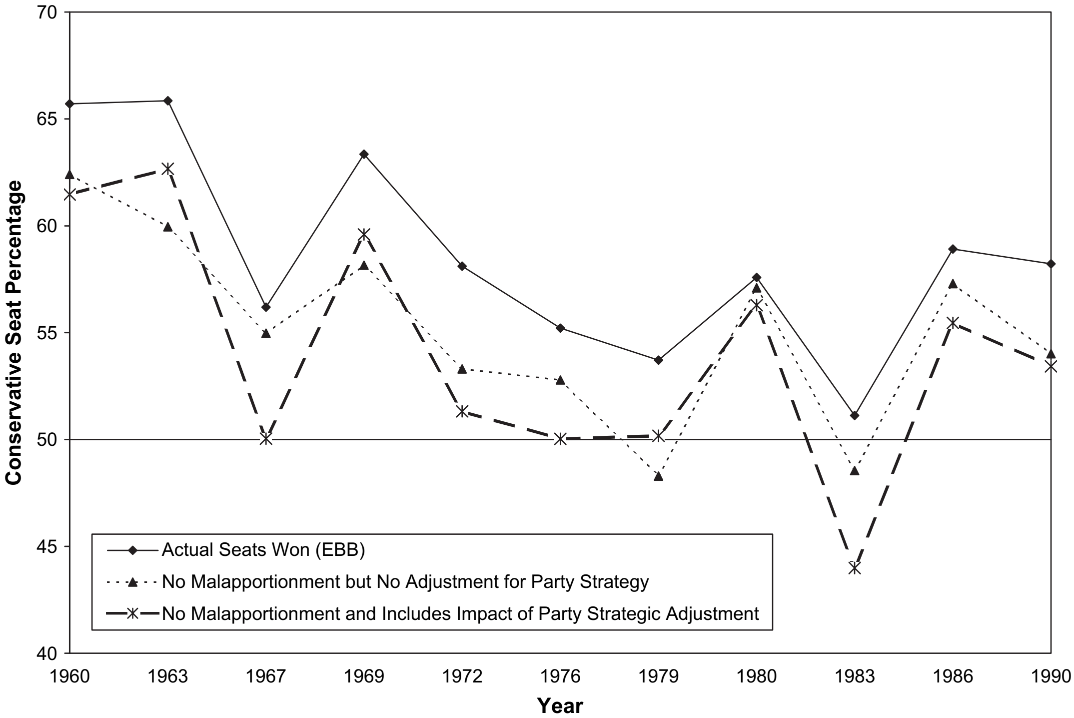

Fig. 1. The impact of malapportionment on conservative camp seat share in the HR. Sources: "Actual Seats Won (EBB)" and "No Malapportionment and Includes Impact of Party Strategic Adjustment" are the sum of predicted values from Table 1 under two alternative scenarios (i.e., with two different sets of predictor variables). "No Malapportionment but No Adjustment for Party Strategy" is from Christensen and Johnson (1995).

districts with parties adapting to the changed magnitudes and (2) reapportioned districts with parties not adapting to the change. For the latter scenario we report the results from Christensen and Johnson (1995).[22] On the whole, we find that malapportionment and parties' responses to reapportioned conditions certainly had an impact. In a correctly apportioned world where parties respond to the new district magnitudes, the conservatives would have lost, on average, 4.5 percentage points from the percentage of seats it won in the malapportioned world.

Including party strategy in the model has an important effect. The average difference between the scenario that includes party strategic responses and the one that does not is 2.2 percentage points. While this mean effect is not huge, year to year variations are revealing. In many years, there is not much difference among our estimates of (1) outcomes when parties adjust their strategies in a reapportioned world, (2) real world outcomes (the "factual" model), and (3) Christensen and Johnson's estimates of a reapportioned world in which parties do not adjust their strategies. However, the differences are far greater in 1967 and 1983. In 1967 – the first year that the LDP by itself did not get a majority of the vote – we find that, in a correctly apportioned world, the conservative camp would have been much closer to losing its majority than earlier analyses have suggested. Christensen and Johnson estimate that, in a fairly apportioned system, the LDP-led conservative bloc would have won approximately 55% of all seats. Our simulation suggests that it would have been 50.04%, and would have been under 50% for the LDP alone. Such a result probably would have altered the competitive party dynamic in Japan dramatically and could have led to the inclusion of other parties in the government far earlier than actually occurred. Similarly, we find that in 1983 the conservatives' seat percentage not only would have been less than a majority in a correctly apportioned system – just as Christensen and Johnson find – but also would have been *well* below majority status (44%). Under such conditions, a non-LDP government would have been quite likely or, at a minimum, the LDP would have had to have formed a coalition government with opposition parties.

[22] To test the accuracy of our simulation, we ran one using Christensen and Johnson's (1995) assumptions. That is, we ran a simulation in which districts were properly reapportioned but parties did not change their number of nominees. The simulation results deviated from Christensen and Johnson's by only 0.37 percentage points per year.

It is also important to notice that with only three exceptions[23], the conservative camp won fewer seats in models that include party behavioral adjustments than in models that do not. Particularly noteworthy is the fact that, on average, the difference between the strategic and non-strategic models was greatest – with the conservatives winning fewer seats in the strategic model – in years of opposition cooperation, suggesting that opposition strategy in those years was particularly effective in holding off greater conservative camp success.

In the end, however, our results are most striking in that they suggest that in general malapportionment had relatively little impact. Reapportionment would have cost the conservative camp its seat majority *in only one year* and even in that year the LDP was far and away the largest party.

4.2. Impact of strategic errors

Fig. 2 indicates the impact of errors committed by each camp on the conservative camp's seat share in the HR. Besides the baseline factual model's predicted seat totals, we also plot the conservatives' seat proportion for three hypothetical scenarios: (1) the conservatives make no nomination errors, (2) the opposition camp makes no nomination errors, and (3) neither camp makes any nomination errors. In scenario (1), we give the conservative nomination error variable a value of zero and hold the opposition error variable at its real world value. In scenario (2), we do the opposite. In scenario (3), we score both error variables as zero. The thick dashed line in the figure indicates that had the opposition made no errors, the conservatives would have done markedly worse. At the same time, though, the top, lightly dashed line indicates that an error-free conservative camp would have been more successful than it was in reality. From one viewpoint, errors appeared to hurt the opposition more than they did the conservative camp: An error-free opposition would have reduced the conservatives' proportion of seats by an average of 5.7 percentage points, while an error free conservative camp would have only won 3.2 percentage points more seats per year. However, much of this discrepancy is due to the first four elections, when there was little cooperation among opposition parties. During the years in which cooperation existed (1972–1990), an error free opposition would have only cut into the conservative camp's seat proportion by an average of 3.7 percentage points, as opposed to a 3.0 percentage point increase for an error-free conservative camp.

This result is also skewed by 1980, a difficult year to judge party strategy because of an unexpectedly large number of votes for the conservative camp in the wake of the death of its leader, Prime Minister Ohira. If we look at the years of opposition cooperation but exclude 1980, opposition errors gave the conservative camp on average 3.3 percentage points more seats, while conservative errors cost the ruling coalition 3.6 percentage points worth of seats. In short, errors by the conservatives were slightly more costly than opposition errors.

In the end, then, the impact of strategic errors appears marginal. It is true that, had the conservatives continued to make the same errors, a "smart" opposition – making no errors – could have knocked the conservatives out of their majority in 2 years, but a "smart" conservative camp could also have increased its strength even further. Especially when the opposition was cooperating, errors by the conservatives and opposition essentially washed each other out. Given that we lumped the non-Communist opposition together with the JCP in our measure of the opposition, this was a "hard" test of the opposition's capacity to work together, so we can presume that the non-Communist opposition by itself was even better able to cooperate. This suggests that, as Christensen and Johnson (1995) argue, conservative camp errors hurt the conservatives more than non-Communist errors helped it.

The simulation in which neither side made errors is quite telling as well. As should be expected, in most cases the results of the "No Errors by Anyone" simulation falls in between the results of the simulations in which one side or the other made no errors. Most striking, in the years of opposition coordination the no errors simulation is often very close to the actual outcome, suggesting that there may often have been less need for each camp to engage in intense rational calculations to take advantage of the errors of the other: each side suffered from uncertainties and no doubt recognized that to some degree they would cancel each other out.

5. Conclusion

Ultimately, the most important contribution of this paper relates to the importance of including actor adaptation in the simulation approach. Simulations offer the social scientist a great deal of traction over social phenomena, and we push our analysis here as an example of how useful it can be. Most important, though, scholars should do all they can to include systematically the

[23] One of the exceptions, 1979, is quite noteworthy, as Christensen and Johnson's model suggested the LDP camp would lose its majority, while our analysis shows the ruling camp narrowly holding onto it.

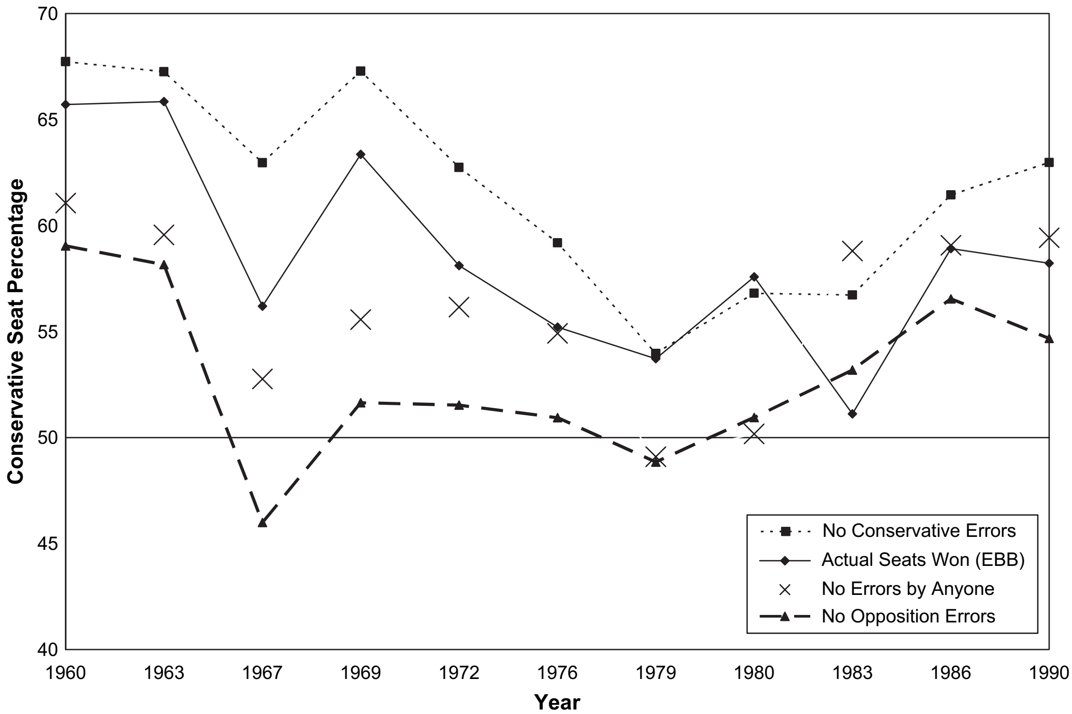

Fig. 2. The impact of strategic errors on conservative camp seat share in the HR. Source: lines are the sum of predicted values from Table 1 under four alternative scenarios (i.e., with four different sets of values for the predictor variables).

adaptive behavior of actors within the system. In our case, we focus on the adaptiveness of political parties, an important feature left out of previous analyses.

Our analysis allows us to estimate the impact of leaving party adaptation out of previous analyses of malapportionment in Japan, the impact of malapportionment overall, and the impact of strategic errors on the Japanese conservative camp's seat bonus. Our simulation suggests that models that leave out party adaptation to changed conditions misread the impact of malapportionment by an average of 2.2 percentage points per election. This low figure belies the fact that there is substantial year to year variation in the difference between the models that do and do not include party adaptation, with the no-party-strategy model appearing to understate the impact of malapportionment by 4.5–5 percentage points in particular years. Looking at the impact of malapportionment overall on conservative seat fortunes, our party adaptation based simulation suggests that malapportionment contributed an additional 4.5 percentage points worth of seats to the conservatives, varying from an impact of just over 1 percentage point in some years to over 7 percentage points in others. And our simulations of the impact of party nomination patterns suggest that on average opposition errors gave the conservatives an additional 5.7 percentage points in seats per election, while conservative errors only cost the LDP-bloc 3.2 percentage points worth of seats. However, these estimates are the average for *all* elections in our data set. When we consider only the years in which the non-Communist opposition was cooperating, we find that the strategies of each side affected the conservative seat bonus by roughly 3 percentage points, essentially leaving the errors of each washing out the impact of the errors of the other.

Most important from a substantive perspective, our analysis suggests that it is a mistake to focus too much on the electoral system as the primary shaper of LDP and conservative camp dominance in Japan.[24] Strategic errors under SNTV/MMD played a relatively small part in generating greater LDP dominance. Clearly, had only

[24] At the same time, our finding that malapportionment did not yield major electoral effects does not mean that it did not produce important distributive policy outcomes, such as those demonstrated by Horiuchi and Saito (2003). Interestingly, despite efforts by the LDP to favor over-represented districts with budgetary expenditures (Horiuchi and Saito, 2003), the conservative bloc's overall seat benefit from malapportionment was limited.

the opposition corrected its errors, at times it could have eliminated the conservatives' majority, but conservative camp errors also were present. Errors may have harmed the opposition early on – especially in 1967 when a new party, *Kōmeitō*, that did not cooperate with the rest of the opposition that year, emerged – but, once the opposition began coordinating in 1972, each side's errors negated the effects of the other's.

It also appears that malapportionment did not usually lead to the conservative camp winning a majority it did not "deserve." It is possible that by reducing the conservatives' majority to a very slim margin very early on, correct apportionment might have inspired voters to focus earlier on casting out the LDP or led the LDP to seek coalition arrangements from an early stage, in both cases altering the competitive context. Also, malapportionment appears to have helped give the LDP camp a majority of seats in 1983. However, ultimately, malapportionment appears to have given the conservative camp a "false" majority in only that *one* year.[25]

In short, electoral system-based arguments have limited utility in explaining the longtime dominance of Japan's LDP. It is of course beyond the scope of this paper to offer an alternative explanation for LDP dominance, but we can speculate that such an explanation would involve the resource advantage owned by the LDP. Indeed, a resource-based explanation could even help reconcile the differences between Christensen's and Cox's analyses.

Christensen (2000) cleverly demonstrates how the Japanese opposition was more successful than the LDP-bloc in most important tasks involving vote divisions and the number of candidates each nominated. The opposition's problem, he argues, was that it consistently had fewer votes per winnable seat than the LDP. In the end, this appears to be a way of saying that the LDP's advantage was based on the fact that its candidates on average simply won more votes than the candidates of the other parties. This is consistent with Scheiner's analysis of LDP dominance, which in part attributes LDP dominance to the higher "quality" of LDP candidates. At the same time, Scheiner's (2005, 2006) argument also suggests that much of the reason for the larger pool of quality candidates in the LDP is the ruling party's substantial advantage in controlling state resources. This resource advantage argument is consistent with Cox's (1997) underlying explanation for LDP success under the SNTV/MMD system, which emphasizes the LDP's ability to use the resources of the state to win elections.

In other words, a resource-based explanation for LDP dominance helps to reconcile partly the differences between the Cox and Christensen analyses, while emphasizing factors other than the electoral system. Explanations of this kind are particularly attractive, as they – unlike those attributing LDP advantage to SNTV/MMD – can help to explain how LDP dominance continues today even after the advent of a new electoral system in Japan.

[25] See the Appendix for additional reasons to think that reapportionment would not have helped overcome the LDP camp's dominance and, therefore, further question the persuasiveness of arguments that suggest that malapportionment was a critical piece in bringing about LDP dominance.

Acknowledgements

Thanks to Steve Reed, Meg McKean, Ray Christensen, James Fowler, Bob Huckfeldt, Cindy Kam, Rob Weiner, Jun Saito, Masahiko Tatebayashi, John Brehm, Charles Franklin, Bert Kritzer, Paul Johnson, and the anonymous reviewers for helpful suggestions and comments on earlier drafts of the article. Special thanks, yet again, to Greg Flemming and Bob Turner for their insights into the seats–votes relationship.

Appendix. Adaptive voters?

Clearly, voters would also react differently in the reapportioned world. The change in number of candidates means that more (or fewer) candidates can appeal to a broader (or narrower) share of the electorate. We, however, assume that voters would continue to vote for the same party in both the malapportioned and the reapportioned worlds. In short, our measure of malapportionment estimates the reaction of parties to reapportioned districts, but not the reaction of voters.

It is highly likely that, in many instances, the opposition would match conservative camp changes in the number of candidates in response to a changed district magnitude. These changes might very well equal out any resulting vote share changes.

More compelling, vote totals by bloc ought to remain fairly close to actual figures or, if anything, shifts in support would be more likely to aid the conservative camp, suggesting that our results may be biased in such a way as to *overestimate* the degree to which reapportionment would help the opposition. To begin with, conservative voters who switched their allegiance from one candidate to another tended to do so from one LDP candidate to another or from an LDP candidate to a conservative independent. Supporters of conservative candidates were certainly less likely to switch to the opposition, even with a change in the number of candidates. On the left, in many cases, voters followed the cues put out by party leaders. Christensen (1996), for example, demonstrates how the opposition was able to ensure that its voters voted for the "correct" opposition party candidate, even when not a candidate of their preferred opposition party.

However, what is perhaps most important is the substantial candidate advantage the LDP has held. The LDP has held a substantial advantage over other parties in its ability to run "quality" or attractive new (i.e., non-incumbent) candidates, who would be more likely to draw in votes than new candidates of the opposition (Scheiner, 2006). Given the LDP's advantage in attracting strong candidates, the LDP would have had an advantage over other parties in its ability to develop new slates of candidates in the reapportioned world. In this way, it seems likely that voter shifts under a correctly apportioned system would have been more *toward* conservative candidates and strengthened LDP dominance even more. This remains consistent with our argument that malapportionment did not typically play a major part in bringing about LDP dominance in Japan and reapportionment would not appear to lead to the LDP's downfall.

In any case, in the end our assumption of votes being held constant by party must be left at the level of assumption. No model currently exists that would accurately and systematically account for voter behavior, so we avoid pushing an analysis that offers little validity. Accounting for the adaptiveness of parties is an important and necessary step forward in the process, but we encourage future analyses to attempt similar steps to understand voter adaptiveness.

Previous commentators on this paper have suggested that it is impossible to predict changes in voter choice under a new system, but that we might consider predicting the effect of electoral system changes on voter turnout. It is of course possible to attempt such prediction, but in the end such predictions would tend to be based on ad hoc – rather than systematic – adjustments on our part and it would be unclear how such simulations would improve our predictions of electoral outcomes.[26] Moreover, analysis and predictions about changes in turnout are only meaningful if we could determine *which* voters would turn out at higher and lower levels in the new context.

[26] Because it is similarly less systematic, we do not pursue other suggestions made to us in the past, such as controlling for the presence in districts of party and faction leaders.

References

Axelrod, R.M., 1984. The Evolution of Cooperation. Basic Books, New York.

Baker, A., Scheiner, E., 2004. Adaptive parties: party strategic capacity under Japanese SNTV. Electoral Studies 23, 251–278.

Bartels, L.M., 1996. Uninformed votes: information effects in Presidential elections. American Journal of Political Science 40, 194–230.

Bender, J., Moe, T.M., 1985. An adaptive model of bureaucratic politics. American Political Science Review 79, 755–774.

Christensen, R.V., 1996. Strategic imperatives of Japan's SNTV electoral system and the cooperative innovations of the former opposition parties. Comparative Political Studies 29, 312–324.

Christensen, R., 2000. Ending the LDP Hegemony: Party Cooperation in Japan. University of Hawaii Press, Honolulu.

Christensen, R., Johnson, P., 1995. Toward a context-rich analysis of electoral systems: the Japanese example. American Journal of Political Science 39, 575–598.

Cox, G.W., 1996. Is the single nontransferable vote superproportional? Evidence from Japan and Taiwan. American Journal of Political Science 40, 740–755.

Cox, G.W., 1997. Making Votes Count: Strategic Coordination in the World's Electoral Systems. Cambridge University Press, New York.

Cox, G.W., Niou, E.M.S., 1994. Seat bonuses under the single non-transferable vote system: evidence from Japan and Taiwan. Comparative Politics 26, 221–236.

Cox, G.W., Rosenbluth, F., 1994. Reducing nomination errors: factional competition and party strategy in Japan. Electoral Studies 13, 4–16.

Horiuchi, Y., Saito, J., 2003. Reapportionment and redistribution: consequences of electoral reform in Japan. American Journal of Political Science 47, 669–682.

King, G., 1989. Unifying Political Methodology. University of Michigan Press, Ann Arbor.

Kitschelt, H., 1994. The Transformation of European Social Democracy. Cambridge University Press, New York.

Kollman, K., Miller, J.H., Page, S.E., 1998. Political parties and electoral landscapes. British Journal of Political Science 28, 139–158.

Lijphart, A., 1994. Electoral Systems and Party Systems: A Study of Twenty-Seven Democracies, 1945–1990. Oxford University Press, Oxford.

Lijphart, A., Pintor, R.L., Sone, Y., 1986. The limited vote and the single nontransferable vote: lessons from the Japanese and Spanish examples. In: Grofman, B., Lijphart, A. (Eds.), Electoral Laws and Their Political Consequences. Agathon Press, New York.

Meguid, B.M., 2002. Competing with the Neophyte. Unpublished Doctoral Dissertation, Harvard University.

Palmquist, B., 1999. Analysis of Proportions Data. Paper Prepared for Delivery at the Annual Meeting of the Society for Political Methodology, College Station, Texas, July 16–18.

Prentice, R.L., 1986. Binary regression using an extended beta-binomial distribution, with discussion of correlation induced by covariate measurement errors. Journal of the American Statistical Association, Applications 81, 321–327.

Reed, S.R., 1992. Japan Election Data: The House of Representative, 1947–1990. Center for Japanese Studies, The University of Michigan, Ann Arbor.

Reynolds, A., 1999. Electoral Systems and Democratization in Southern Africa. Oxford University Press, Oxford.

Scheiner, E., 2005. Pipelines of pork: a model of local opposition party failure. Comparative Political Studies 38, 799–823.
Scheiner, E., 2006. Democracy Without Competition in Japan: Opposition Failure in a One-Party Dominant State. Cambridge University Press, New York.
Taagepera, R., Shugart, M., 1989. Seats and Votes: The Effects and Determinants of Electoral Systems. Yale University Press, New Haven.
Winkelmann, R., Signorino, C., King, G., 1995. A correction for an underdispersed event count probability distribution. Political Analysis 5, 215–228.