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The Incumbency Advantage in Multimember Districts: Evidence from the U.S. States

Studies of the incumbency advantage in U.S. state legislative elections have usually been limited to the relatively few states that use single-member districts exclusively. In this paper we provide a method for computing the incumbency advantage in multimember districts, based on the Gelman-King (1990) estimator for single-member districts, and use it to estimate the incumbency advantage in 40 U.S. states over the period 1970–86. We find that the incumbency advantage has increased in states using multimember districts but at a substantially lower average rate than in states with single-member districts. We also find that states in which legislators have more opportunity or ability to perform casework services for their constituents are also those in which the incumbency advantage is larger.

Studies of the so-called incumbency advantage—the additional electoral support a candidate gains due to his or her incumbent status—have recently expanded their purview to include a wide range of state elections (Breaux 1990; Cox and Morgenstern 1993; Garand 1991; Holbrook and Tidmarch 1991; Jewell and Breaux 1988, 1991; King 1991a; Niemi, Jackman, and Winsky 1991; Weber, Tucker, and Brace 1991). This expansion in the literature is important not only for our understanding of state government but also as an opportunity to test extant theories of the incumbency advantage originating in investigations of federal elections.

Thus far, however, in part because researchers have sought to maintain comparability with studies of federal elections and in part because measurement techniques have not been developed for true multimember districts, studies of the incumbency advantage in state legislative elections have mostly been limited to states with single-member districts or multimember districts with posts (which operate essentially as if they were single-member districts).[1] This article removes this restriction in the literature by providing a method for computing the incumbency advantage in multimember districts that is

directly comparable to methods used in single-member districts. In particular, it extends the method in Gelman and King (1990) so that it can be employed in multimember districts.

Our plan of attack is as follows. First, we briefly review the literature on the state-level incumbency advantage. Second, we show how to adapt Gelman and King's model for use in multimember districts. Third, we apply the generalized Gelman-King method to 40 of the 50 states in the period 1968–86. We find that the incumbency advantage increased in multimember states, although neither as much nor as soon as in single-member states. Fourth, we replicate and extend our earlier analysis of the determinants of the incumbency advantage, continuing to find support for the general idea that states in which legislators can perform more casework services for their constituents are also states in which the incumbency advantage is larger. Fifth, we discuss some of the technical difficulties in handling uncontested races. Finally, we conclude with some comments on our findings and the possibilities for future research.

Measuring the Incumbency Advantage

The incumbency advantage can be denominated in either votes or seats. In terms of votes, it can be defined as the difference between the percentage of the vote an incumbent actually garnered and the percentage the same candidate would have garnered had he or she not been an incumbent. In terms of seats, it can be defined as the difference between an incumbent's probability of victory and the hypothetical probability that the same candidate would have won had he or she not been an incumbent. It is quite possible, as Jacobson (1987) has pointed out, for the vote advantage of incumbents to be growing without any corresponding change in the seat advantage. In what follows, we shall focus on the vote advantage and various methods of measuring it, returning in the conclusion to the issue of the seat-denominated incumbency advantage.

The vote-denominated incumbency advantage can be, and has been, further refined into a scare-off advantage and what King (1991b) has called the "contested-election incumbency advantage." The scare-off advantage is the decrease in the probability that the election will be contested when the incumbent candidate runs (operationally, a race is contested when the runner-up garners at least some minimum share of the two-party vote—usually 5% or 10%). The contested-election advantage is the increased vote share that an incumbent party enjoys when the incumbent candidate runs for reelection in a contested race.

In this paper, we shall focus on the contested-election advantage rather than the scare-off effect (on which, see Cox and Morgenstern 1993; Jewell and Breaux 1991; Weber, Tucker, and Brace 1991).

Regardless of how one measures it, the (vote-denominated, contested-election) incumbency advantage appears to have increased in the 1970s and early 1980s, at least in states employing single-member districts or their equivalents. Jewell and Breaux (1988) and Garand (1991) find that incumbents' average margin of victory increased significantly. Holbrook and Tidmarch (1991) find that the sophomore surge more than doubled. Cox and Morgenstern (1993) find that the incumbency advantage, as measured by Gelman and King's unbiased regression technique, almost doubled.

Explanations of the increase in the state-level incumbency advantage have focused on the same factors invoked to explain the increasing advantage in federal elections. In particular, investigators have looked at the ability of legislators to provide services to constituents (Fiorina 1977). Their findings have been largely consistent. Holbrook and Tidmarch, in a study of 32 states, find that the sophomore surge increases with allowances for staff and for trips back to the constituency. King (1991a), in a study of 13 states, finds that the incumbency advantage is statistically related to the size of legislative operating budgets, measured on a per legislator basis. Cox and Morgenstern (1993), in a study of 24 states, find that the incumbency advantage increases with the size of legislative operating budgets, measured on a per constituent basis (staff allocations and per legislator budgets both having positive but insignificant impacts).

Evidence on the contested election incumbency advantage in states employing true multimember districts is currently unavailable. There is some evidence pertinent to the scare-off advantage in multimember districts (Jewell and Breaux 1991; Weber, Tucker and Brace 1991), but none pertinent to the contested-election advantage. In the next section, we show how this advantage can be measured in a way that will yield figures comparable to those already available for single-member districts.

The Gelman-King Model

Gelman and King (1990) define the incumbency advantage as the difference between w(1), the "proportion of the vote received by the incumbent legislator in his or her district, if he or she runs against major party opposition," and w(0), the "proportion of the vote received by the incumbent party in that district, if the incumbent legislator does

not run and all major parties compete for this open seat" (1143). Their definition thus corresponds to that of the vote-denominated, contested-election advantage given above.

Gelman and King's regression-based method of estimating the incumbency advantage has two main advantages over its predecessors. First, it uses all contested elections, as opposed to the retirement slump or sophomore surge measures, which respectively look only at races following the retirement or first legislative term of an incumbent. Second, Gelman and King prove that their estimator of the incumbency advantage is unbiased, whereas previous estimators are not.

Our goal is to generalize Gelman and King's procedure beyond the realm of single-member districts. To this end, we reinterpret some of Gelman and King's variables to clarify their application in multimember districts. As we show in the endnotes, our reinterpreted variables are precisely equivalent to Gelman and King's original variables, when the analysis deals with the special case of single-member districts.

Gelman and King specify their model as follows:

$$E(v_2) = \beta_0 + \beta_1 v_1 + \beta_2 P_1 + \psi I_2$$

where $E(v_2)$ = the expected two-party vote percentage for the Democratic party in the current (or second) time period;[2]

v_1 = the two-party vote percentage for the Democratic party in the previous (or first) election;

P_1 = the number of Democratic victors in the previous election less the number of Republican victors, divided by the district magnitude;[3] and

I_2 = the number of Democratic incumbent candidates in the current election less the number of Republican incumbent candidates.[4]

The coefficient of I_2, ψ, gives the average increment to the Democratic party's vote share due to a unit increase in I_2. Since a unit increase in I_2's value can occur with either the addition of a Democratic incumbent or the subtraction of a Republican incumbent, ψ can be interpreted as the value to a party of having one more incumbent candidate of its own (or one less incumbent candidate of the opposite party).

Previous applications of the Gelman and King model have been limited to single-member districts, in studies either of federal elections (Gelman and King) or of those state elections that exclusively use single-member (or equivalent) districts (Cox and Morgenstern

1993; King 1991a). Our reinterpretation of Gelman and King's variables makes clear that their model is applicable to multimember districts as well.

There is, however, an important difficulty that is more acute in the multimember than in the single-member context. We can explain this difficulty by first reviewing how Gelman and King select and handle the data on single-member districts, then noting that a problem remains even after analogous procedures are used in the multimember case.

The primary restriction on Gelman and King's analysis of U.S. House elections is that they exclude uncontested races. They also focus attention on the major parties by using the Democratic percentage of the two-party vote, rather than the Democratic percentage of the total vote, as the dependent variable. We have also excluded cases involving uncontested races and used the Democratic percentage of the two-party vote as the dependent variable.

Gelman and King are left with a fairly homogeneous dataset after excluding uncontested races, in the sense that most of their observations are from districts in which one Democrat faced one Republican in both the current and previous election. There are some cases in which third-party candidates come and go, but such candidates typically get few votes and, in any event, the analysis uses two-party percentages to partially compensate for their appearance.

For multimember districts, excluding uncontested races leaves a much less homogeneous dataset. In double-member districts, for example, an election that pits one Democrat against two Republicans, whereas the previous election pitted two Democrats against two Republicans, is still in the data—and one would certainly think that decreasing the number of Democrats running would decrease the Democratic percentage of the vote. To control for variations in the number of candidates in multimember states, we have further confined attention in those states to contests in which M Democrats faced M Republicans in both the current and previous election, where M is the number of seats in the district.

One might interpret this restriction as inherent in the notion of a contested-election incumbency advantage. After all, some standard for deciding what constitutes a contested election must be established, and the M-against-M standard seems a natural one. With this definition of a contested election—which coincides with that used by Gelman and King in the special case of single-member districts—we are simply excluding all uncontested races.

Nonetheless, excluding uncontested races may introduce sample-selection bias, particularly when the category of uncontested

races includes what might more properly be called partially contested races (e.g., (M–1)-against-M). Thus it may be prudent to seek some way to include uncontested races in the analysis, especially if there are lots of them. We return to this matter in the penultimate section.

Another question that arises when multimember districts are admitted to the analysis concerns how to handle the data from a state-year in which districts vary in number of seats. The 1970 election in Montana, for example, involved districts of varying magnitude. Should a single incumbency advantage be estimated for all districts in this state-year? Arguing against such a procedure is the observation that a 5% incumbency advantage means something very different in a one-seat as opposed to a nine-seat district. A candidate is guaranteed to win a seat in a nine-seat district if he or she gets 10% of the vote, so a 5% advantage would be enormous. In contrast, the same 5% advantage would be much less significant in a one-seat district, albeit still nice to have. The difference in political impact of a given percentage-point advantage suggests that the incumbency advantage will almost certainly be smaller in larger magnitude districts.

Unfortunately, there are not enough observations to allow one to estimate a separate incumbency coefficient for each district magnitude in each state. We have adopted a second best approach; in those state-years in which districts vary in magnitude, we have pooled them all, with a single slope coefficient for the value of incumbency. This approach provides something like a weighted average of the slopes that one would get from separate regressions for each magnitude class, where the weights are the number of districts contributing to the regression from each district-magnitude class. It indicates the average experience of incumbents from the given state-year, without controlling for the possibility that incumbents come from districts of varying magnitude.

Given this estimation procedure at the state-year level and the previous comments about the varying political significance of a given incumbency advantage, some caution in comparing incumbency advantages across state-years is indicated. If a given state has virtually all double-member districts in 1974, but virtually all single-member districts in 1984, then one expects the average incumbency advantage to grow even if there is no growth within either single-member districts or double-member districts. Similarly, if one state in a given year uses single-member districts and has an incumbency advantage of 6% while another state in the same year uses double-member districts and has an incumbency advantage of 3%, it is misleading to conclude that the incumbency advantage in the former state is twice as large as that

in the latter state. To make the incumbency advantage in one state-year comparable to that in another, we adopt a simple normalization, expressing advantages as percentages of the average Droop quota rather than as percentages of the total votes cast. Thus, in the example given above, the normalized incumbency advantage in the single-member state would be 12% (6% divided by a Droop quota of 1/(M+1) = 1/2), while the normalized incumbency advantage in the double-member state would be 9% (3% divided by 1/3). In the analysis that follows we shall use the normalized incumbency advantage throughout.

Results

With these matters of data selection and manipulation understood, we turn now to estimate the (normalized, vote-denominated, contested-election) incumbency advantage in 40 of the 50 U.S. states in the period 1970–86.[5] All 40 states fall into one of two categories: those with and those without true multimember districts. We have already estimated the incumbency advantage for most of the states in the latter category and simply repeat the relevant figures (in normalized form) in Table 1. In addition, Table 1 presents new figures for 18 states, 4 without and 14 with true multimember districts.[6]

Figure 1 graphs some summary statistics from Table 1—the first, second, and third quartiles of the distribution of normalized incumbency advantages in states possessing multimember districts. The median advantage in such states heads steadily downward from 1972 to 1978, but thereafter moves steadily upward, with a small relapse in 1986. The first and third quartiles also increase after 1978, showing that the entire distribution of normalized incumbency advantages shifted upward in multimember states in the 1980s.

The visual impression of an upward trend that one gets from Figure 1 is corroborated by a regression of the estimated incumbency advantage in state j, election t, on t (measured in years after 1969) and a set of dummy variables identifying the states. This fixed effects model (see, e.g., Judge et al. 1982) allows each state a separate y-intercept but pools all multimember states when estimating the coefficient on t. We follow previous practice in the literature (Cox and Morgenstern 1993; King 1991a) and weight each observation of the incumbency advantage by its standard error (see Appendix B for the standard errors used). Thus, observations about which we have more precise information are weighted more heavily.[7]

TABLE 1
Incumbency Advantage in Elections to Lower Houses of U.S. State Legislatures
(unstandardized regression coefficients)

State	1970	1972	1974	1976	1978	1980	1982	1984	1986
Arizona[a]	[c]	[c]	1.3	[c]	0.1	3.8	[c]	[d]	[d]
California	9.1	8.1	[c]	4.6	8.6	8.6	[c]	[c]	8.0
Colorado	3.7	[c]	2.3	4.6	1.7	8.9	[c]	3.7	–1.4
Connecticut	0.3	[c]	[c]	–1.4	4.6	5.0	[c]	2.9	7.3
Delaware	6.8	[c]	1.6	8.4	1.7	9.3	[c]	18.6	3.0
Florida	–2.1	[c]	8.7	0.7	5.0	9.9	[c]	6.0	9.1
Georgia[b]	4.9	[c]	[c]	–4.6	8.6	11.2	[c]	0.6	8.9
Idaho[a]	–1.7	[c]	[c]	0.0	–8.6	2.1	–0.5	[c]	[d]
Illinois	[d]	[c]	[d]	[d]	[d]	[d]	[d]	[c]	4.3
Indiana[a]	–0.1	[c]	1.1	1.5	– 0.3	1.1	[c]	1.0	2.9
Iowa	[c]	[c]	4.5	4.5	7.5	5.1	[c]	4.4	10.8
Kansas	0.8	[c]	[c]	4.1	8.7	[c]	11.1	8.3	10.6
Kentucky	4.3	[c]	2.1	[d]	–2.0	–0.9	[d]	[c]	4.4
Maine[a]	0.9	0.1	[c]	7.1	[c]	6.3	11.4	[c]	4.4
Massachusetts[a]	2.4	7.8	[c]	2.5	[c]	14.6	8.9	13.0	–1.1
Michigan	3.0	[c]	5.2	2.6	5.1	3.8	[c]	1.8	8.8
Mississippi[b]	[c]	[e]	[c]	[e]	[c]	[e]	5.9	[e]	14.3
Missouri	–0.6	[c]	0.8	5.5	–7.8	10.5	[c]	8.9	0.3
Montana[a]	1.0	[c]	[c]	0.8	–2.2	3.8	1.5	[c]	5.3
Nevada[a]	[d]	[c]	[c]	12.1	[d]	9.7	[c]	9.2	11.5
New Hampshire[a]	1.7	[c]	[c]	[c]	0.6	1.3	[c]	[c]	4.5
New Jersey[a]	[c]	[c]	1.0	2.5	0.0	6.8	[c]	1.4	2.6
New Mexico	4.2	[c]	1.1	0.9	1.8	3.5	[c]	[c]	3.9
New York	3.8	[c]	4.0	5.3	9.8	5.6	[c]	6.0	9.2
North Carolina[a]	[d]	[c]	1.0	–0.6	0.0	–0.8	2.5	[c]	[d]
North Dakota[a]	0.7	1.7	–0.3	[c]	2.0	1.8	[c]	5.4	2.5
Ohio	3.7	[c]	5.6	4.8	7.5	5.9	[c]	4.7	0.7
Oklahoma	3.4	[c]	–1.9	6.2	7.0	–5.4	[c]	1.9	7.4
Oregon	7.6	[c]	8.0	0.5	12.2	8.3	[c]	8.3	2.0
Pennsylvania	–1.6	[c]	2.4	0.8	0.2	7.2	[c]	12.2	10.1
Rhode Island	0.6	0.6	9.4	1.6	4.1	5.9	[c]	9.0	4.5
South Carolina[b]	[d]	[c]	[c]	11.5	10.7	1.8	[c]	9.5	5.8
South Dakota[a]	0.2	[c]	1.0	–1.7	1.5	0.4	[c]	[c]	6.3
Tennessee	1.6	[c]	[c]	6.5	5.7	8.7	9.7	[c]	8.6
Texas	–3.6	[c]	–0.6	[c]	3.0	2.7	[d]	[c]	8.4
Utah	1.3	[c]	3.2	2.4	0.8	0.0	[c]	3.5	–2.0

TABLE 1
(continued)

State	1970	1972	1974	1976	1978	1980	1982	1984	1986
Virginia[b]	[c]	[c]	[d]	[d]	[d]	[c]	[c]	10.9	–1.1
Washington	5.1	[c]	5.5	4.2	5.3	6.5	[c]	4.2	6.0
West Virginia[a]	0.0	1.4	[c]	0.0	–0.3	–0.5	[c]	–0.1	0.9
Wisconsin	0.6	[c]	4.1	5.0	8.0	4.2	[c]	[c]	4.8
Wyoming[a]	[d]	[c]	3.8	–0.1	–0.1	–0.4	[c]	[d]	[d]

Note: See Appendix B for standard errors and numbers of observations in this analysis. See Appendix A for a description of the dataset.

[a]State has true multimember districts.

[b]State has single-member districts only but was excluded from Cox and Morgenstern 1993 for not meeting requirement of 20 observations in five years (see Appendix A).

[c]Redistricting year.

[d]Insufficient data (fewer than 20 single-member districts or fewer than 10 single-member and multimember districts combined).

[e]Not an election year. (Mississippi uses four-year terms.)

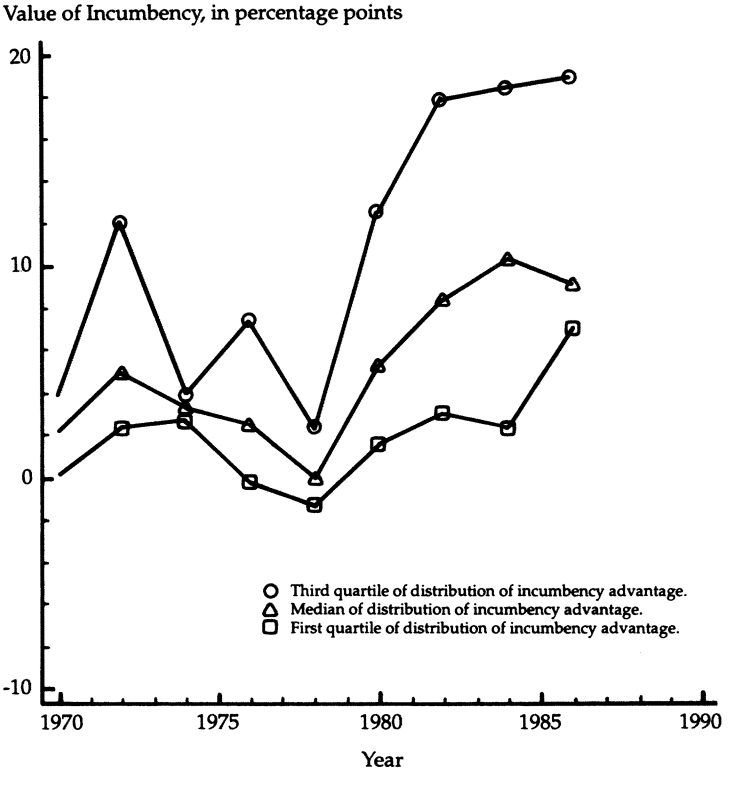
On average, the normalized incumbency advantage in the multimember states increased by .34 per year or about a two-thirds of a percentage point per election cycle. This average rate of increase over the 1970–86 period, although it clearly hides some differences in the rate of increase at different points in time, is nonetheless statistically discernible from zero at conventional levels of significance.

The picture for single-member states (Figure 2) shows almost monotonic growth over the entire time period (1970–86). On average, the normalized incumbency advantage in such states increased by .56 per year or a bit over one percentage point per election cycle. This average increase is about 60% greater than that in multimember states. Comparison with Figure 1 also reveals that incumbency advantages in multimember states began to increase almost a decade after those in single-member states did, but then increased at a more rapid rate, almost catching up by the mid-1980s (the median advantages in single-member and multimember states are almost identical in 1984, with the third quartile still lagging).

Explaining the Increasing Incumbency Advantage

What explains the increasing value of incumbency in states with multimember districts? What explains the differences between single-member and multimember states? In our previous work, we

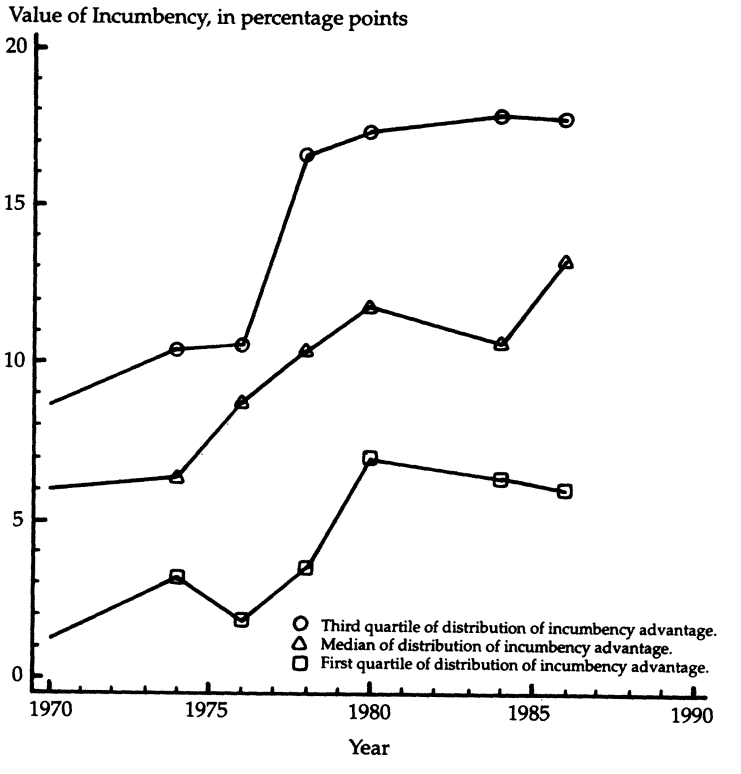
FIGURE 1
The Value of Incumbency in 14 States
Employing Multimember Districts



found that much of the upward trend in incumbency advantages in single-member states could be explained by the size of legislative operating budgets per constituent, a crude measure of the resources of which each legislator disposed in processing demands from constituents. Does the same hold true for multimember states?

In order to answer this question, we regressed the incumbency advantage in state j, election t on (1) t, measured in years after 1969; (2) BUDPER, the real legislative operating budget per constituent in the biennium before election t; (3) BURSIZE, the number of state and local government employees per 10,000 inhabitants in the year of the election; and (4) a set of state dummy variables.[8] The operating budget per constituent crudely indicates the resources with which legislators in

FIGURE 2
The Value of Incumbency in 26 States
Employing Only Single-Member Districts



each state can respond to constituent demands, while the number of government employees suggests the level of demand—as constituents do battle with a larger state and local bureaucracy, they seek more help from their elected representatives.

In Table 2, Model 1, both time and size of bureaucracy have positive but statistically insignificant coefficients, while operating budget per constituent has a negative and insignificant coefficient. Despite the fact that all regressors have insignificant coefficients, however, the R^2 of the regression is reasonably large, suggesting that there may be multicollinearity among the independent variables. And, indeed, if one excludes any two of the three variables of interest from the regression, the remaining variable's coefficient is both positive and statistically

TABLE 2
Explaining Variations in the Advantage of Incumbency in 40 U.S. States

	Model 1: Multimember States		Model 2: Single-Member States	
Independent Variable	Coefficient Estimate	t-value	Coefficient Estimate	t-value
Intercept	−8.55	.44	.56	.06
Time Trend	.25	1.09	.21	1.31
Size of Legislative Operating Budget per District Inhabitant	−1.02	.12	18.06	2.40
Size of Local and State Bureaucracy by District Population	.02	.50	.02	1.00
Number of Observations	76		159	
Adjusted R^2	.25		.35	

Note: Model 1 includes only states for which our dataset contains some observations from true multimember districts. Model 2 includes only states for which our dataset contains observations exclusively from single-member districts or multimember post districts.

significant (at the .01 level for time and size of bureaucracy, at the .10 level for operating budget per constituent). Although there is insufficient information in the current sample to disentangle the respective effects of time, operating budget per constituent, and the size of the state and local bureaucracy, our results lend some support to the idea that an increased ability to do constituency service or an increased demand for constituency services lies behind the increasing incumbency advantage in multimember states.

The results for 26 single-member states (the 24 studied in Cox and Morgenstern 1993, minus Indiana and Montana, plus Georgia, Mississippi, South Carolina, and Virginia)[9] are qualitatively similar but allow a clear decision as to which of the nondummy regressors is the most important. Time alone or operating budget per constituent alone or size of bureaucracy alone (when coupled with the state dummy variables) has a positive coefficient statistically discernible from zero. When all three regressors are included in the same model, however (Table 2, Model 2), a clear victor emerges, as in our previous work. Neither time nor the size of the state and local bureaucracy has a statistically significant impact, but operating budget per constituent does.[10]

The pattern of results in the single-member observations is sufficiently different from that in the multimember observations that the two sets of data do not pool. In particular, the coefficient on the operating budget per constituent variable is significantly larger in the single-member than in the multimember states.

As regards single-member states, we conclude (as before) that the primary engine pushing up incumbency advantages in the 1970s and 1980s was an increase in the state-provided wherewithal to perform casework and other services for constituents. In multimember states, the story is less clear but seems also to be related to the ability to supply constituency service or the volume of demand for such service.

Uncontested Races and the Incumbency Advantage

We return now to the issue of how uncontested races ought to be handled in estimating the contested-election incumbency advantage. Recall that the definition of a contested race underlying the analysis in the third and fourth sections requires that there be M Republican candidates and M Democratic candidates, where M is the number of seats to be filled in the district. There are two fairly evident problems with excluding uncontested races so defined.

The first problem, which occurs whether one is analyzing single-member or multimember districts, has to do with the possibility of rational entry decisions by potential challengers. Districts are uncontested because potential challengers decided not to run. Assuming that potential challengers base their decisions largely on their judgments of how much chance they have of winning a seat and assuming that their judgments are well informed, one underestimates the contested-election incumbency advantage by looking only at contested elections. For, had contests occurred in the uncontested districts, the incumbents there might have done better on average than did the incumbents in actually contested districts.

A second (and related) problem is specific to multimember districts. As defined, uncontested races include $(M - 1)$-against-M races, $(M - 2)$-against-$(M - 1)$ races (for $M \geq 2$), and so forth. Yet these races may be competitive in that there may be more candidates than seats to be had in the district. For example, if one Republican faces two Democratic incumbents in a two-seat district, not all can win. Such partially contested races are excluded at present, yet they may occur precisely when the incumbency advantage is large (again on the assumption that potential challengers shy away from bad odds).

Should partially contested or even uncontested races be included in the analysis and, if so, how? One approach might be to

include them all and impute values to missing variables in some fashion (King 1991b). An opposite approach—taken in the earlier sections of this article—excludes them all. Which approach is better depends on two considerations: first, how well one can estimate the counterfactual quantities necessary to implement the first approach (in particular, the vote an unopposed—or partially opposed—incumbent would have gotten had he or she faced a contest); second, how much the actual entry decisions depended on (sound) judgments of the relevant electoral probabilities. If potential candidates in state legislative elections have very poor ability to forecast their chances, so that their entry decisions vary mostly with opportunity cost and other considerations, then there will not be much bias in the second approach; the risks involved in imputing data entailed in the first approach will not be worth the potential gain. If, on the other hand, potential candidates are pretty good at figuring their chances and make their entry decisions mostly on this basis, then the risks of imputing data may well be worth the potential gain.

We believe—unfortunately on almost purely a priori grounds—that the ability of state legislative candidates to forecast their chances is limited. Accordingly, we do not think that much information is contained in the fact that one incumbent faces a full contest while another does not. We concede that our estimates are plausibly downwardly biased, but we do not think the probable size of the bias justifies the risks of imputing data.

A weak test of our belief can be conducted by taking a third approach to estimating the contested-election incumbency advantage, one in which partially contested (but not uncontested) races are allowed into the analysis. This approach of course changes nothing in single-member states, since there are no partially contested races in such states. But the number of observations available for analysis in multimember states increases by about 18%. In estimating the incumbency advantage in this larger dataset we have included an additional variable to control for net changes in the number of major party candidates. Letting ND_t and NR_t stand for the number of Democratic and Republican candidates, respectively, running in election t, define $NETINCR = (ND_2 - NR_2) - (ND_1 - NR_1)$. NETINCR measures the net increase in the preponderance of Democratic over Republican candidates. The logic behind including this variable is simple: the Democratic party's percentage of the vote in the focal election (v_2) ought to be greater than what one would predict on the basis of its vote percentage in the previous election (v_1) if the number of Democratic candidates increases relative to the number of Republican candidates.

It might be objected that changes in the preponderance of Democratic over Republican candidates reflect a scare-off effect that should be credited to the incumbency variable (by excluding the net increase variable). Our response to this criticism can best be explained in the context of an example. Suppose that two Democrats win in an Arizonan double-member district (district A, say) at election 1, beating two Republicans. Both then run as incumbents at election 2, but face only one Republican challenger. Presumably, these incumbents will garner higher vote percentages against their lone challenger than they would have against two. How should this increment in their vote percentages be counted when measuring the incumbency advantage? Part of the advantage of incumbency is that incumbents are more likely to face partial challenges than are nonincumbents; this is the scare-off effect and should not be counted when calculating the contested-election advantage. Another part of the advantage of incumbency is that incumbents are more likely to fare better when they do face a diminished field of outparty challengers than are their nonincumbent colleagues. To measure this advantage, one should compare the race in district A sketched above to another in which two Democrats beat two Republicans at election 1 and only one or zero of them decide to seek reelection while only one Republican challenger emerges at election 2. How much better are the two incumbents of district A at exploiting the absence of a full Republican challenge than are the one incumbent and one nonincumbent (or two nonincumbents) of the other district?

We have estimated the incumbency advantage in our sample of multimember states using the net increase variable (and observations on partially contested elections) and compared the resulting estimates to those obtained earlier and tabulated in Table 1. There are two things to note. First, the correlation between the new and old estimates is .87. Second, the new estimates are slightly larger on average than the old estimates (by a bit over one-tenth of a percentage point), but the difference is not statistically discernible from zero. That the new estimates are larger on average lends support to the suspicion that the previous results are downward biased because strategic entry decisions by potential challengers determine the sample of races investigated. That the increase in the estimated size of the incumbency advantage is not statistically significant is consistent with our contention that potential candidates in state legislative elections do not have very good information about their chances, so that not much information about incumbency advantage is conveyed by the pattern of partially contested races.[11]

One might consider extending the analysis to include uncontested as well as partially contested races, again using the net increase

variable as a control. The problem with this idea is purely practical. In single-member districts, to take the easiest example, the technique would work only if there were a reasonable number of uncontested open seats. In practice, however, in many states there are not. Thus we do not pursue the matter here.

Conclusion

This article has shown that the Gelman-King method of measuring the incumbency advantage in contested elections, first devised for use in single-member districts, can be adapted for use in multimember districts as well. Using our generalization of the Gelman-King technique, we have measured the incumbency advantage in 14 U.S. states which hold free-for-all multimember elections to fill at least some of the seats in their lower houses. Adding these to directly analogous measurements for 26 predominantly single-member states, we have observations on the incumbency advantage in 40 of the 50 states between 1970 and 1986.

We find that the incumbency advantage has increased in states with multimember districts but at a substantially lower average rate than in states with single-member (or equivalent) districts. We also find that the size of the legislative operating budget, measured on a per constituent basis in constant dollars, is positively and statistically significantly related to the size of the incumbency advantage in both multimember and single-member states but that the relationship holds up under multivariate analysis only in the single-member dataset.

Some topics for future research are clear. First, we have looked only at the contested-election incumbency advantage, saying little about the scare-off effect. Although there is some evidence on this score in the literature, there does not appear to be a complete analysis. Second, if the basic Gelman-King model were estimated with two-party seat percentages, rather than two-party vote percentages, as the dependent variable (and this would require greater attention to the limited nature of the dependent variable, especially in single-member states), one could see whether incumbents have a significant seat-denominated advantage. That is, one could see whether the presence of an incumbent in a contested election boosts not just the incumbent party's vote percentage (as we show here) but also its probability of retaining the seat held by the incumbent. Previous work by Jacobson (1987) on federal elections has shown that increasing vote advantages do not necessarily translate into increasing seat advantages; the question remains (empirically) open in the state context.

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APPENDIX A

The data in this paper are published as "State Legislative Election Returns in the United States, 1968–1986" by the Inter-University Consortium of Political and Social Research (ICPSR). This dataset contains almost 123,000 records of state house and state senate elections; it details, among other variables, candidates' parties, vote totals, district type (post, multimember, or single-member), and incumbency status. From this dataset we filtered out all lower house contests in single-member districts, districts with post positions, or free-for-all multimember districts. We excluded contests following state redistricting; we also excluded contests in which a third-party candidate won more votes than either the Democrat or the Republican and those in which a major party candidate won more than 90% of the two-party vote. Because we needed information on the current and previous election in our model, we also eliminated observations for which we did not have information from the previous time period. Finally, we examined only races that were fully contested; that is, in the previous and current time periods, we sought races in which the number of available positions was equal to the number of candidates from each of the two main parties. If these criteria left at least 20 observations in five years (20 state-years) in a state that used single-member districts or two or more years of 10 observations in states that utilized at least some multimember districts, we calculated the incumbency advantage in the remaining state-years. We also included the four states noted in Table 1 (Georgia, Mississippi, South Carolina, and Virginia), which fell between these criteria, having 10 to 20 observations of single-member districts in two or more state years. Our earlier paper mistakenly included Oklahoma 1980 and Tennessee 1986, both of which fail to meet the 20 observation criterion. Exclusion of these two data points does not change our substantive results, and we have thus kept them in our dataset.

The result of our whittling left a database with about 11,000 observations. About 90% of the observations are from single-member districts and post elections, primarily because many multimember districts, which are concentrated in the South, are not fully contested. Arkansas is a case in point; of the 74 districts in 1980 that met other criteria, only 8 had a Republican challenger.

The various data requirements listed above—as well as some to be mentioned presently—leave us with observations on 40 of the 50 states. Arkansas is excluded because of a high number of uncontested races. In Alabama, Louisiana, and Maryland, the use of four-year election cycles limited the data available, forcing us to exclude these three states from the analysis also. Additionally, we excluded Illinois because it used cumulative voting between 1972 and 1980, Nebraska because of its nonpartisan elections, and Minnesota, which did not put party designations on the ballot until 1974, because it did not have sufficient races in which Republicans and Democrats were the primary combatants. Alaska and Hawaii were excluded because of a lack of state budgetary data. Vermont is not in our dataset because ICPSR has collected information only on the 1986 Vermont elections.

APPENDIX B
Standard Errors Associated with Results in Table 1

State	1970	1972	1974	1976	1978	1980	1982	1984	1986	Number of Observations: Single-member	Number of Observations: Multimember
Arizona			2.2		1.5	2.7					36
California	2.9	1.8		2.0	2.5	2.5			1.9	399	
Colorado	2.6			2.1	3.1	2.5		3.2	3.1	282	
Connecticut	0.8		1.2	1.3	1.4	1.4		1.3	1.6	977	
Delaware	2.5		3.5	3.7	5.0	2.9		5.1	6.7	191	
Florida	1.9		2.6	1.8	2.0	1.9		2.6	2.6	276	
Georgia	5.0			6.1	5.2	3.0		4.4	2.4	111	
Idaho	2.5				4.3	3.1	2.7			174	11
Indiana	0.3		1.0	0.9	1.0	0.9		1.0	1.2	268	104
Iowa			1.5	1.4	1.6	2.5		1.9	2.1	434	
Kansas	1.7			2.0	2.2		3.0	2.5	2.8	369	
Kentucky	1.9		3.2		3.6	4.9			4.0	155	
Maine	1.0	1.6		2.5		2.1	2.4		2.6	492	18
Massachusetts	1.8	2.0		3.0		3.4	3.8	3.3	6.1	235	20
Michigan	1.1		1.6	2.1	1.9	2.1		2.4	2.0	611	
Mississippi							11.7		4.3		25
Missouri	1.5		1.5	1.8	6.2	2.1		3.0	3.0	440	
Montana	0.5			1.9	2.5	2.1	2.3		3.9	293	15
Nevada				5.8		8.8		2.7	3.8	93	
New Hampshire	1.1				1.2	1.0			1.6	43	106
New Jersey			1.1	0.9	1.5	1.1		0.7	1.3		226
New Mexico	2.0		3.7	3.1	3.5	4.2			2.1	243	
New York	1.6		1.4	1.9	2.0	2.4		2.1	2.5	798	
North Carolina			1.1	1.6	1.2	1.1	0.9			34	50

APPENDIX B (continued)
Standard Errors Associated with Results in Table 1

State	1970	1972	1974	1976	1978	1980	1982	1984	1986	Number of Observations	
										Single-member	Multimember
North Dakota	0.8	0.9	0.6		2.5	1.1		1.4	0.9		211
Ohio	1.7		1.9	1.5	2.0	2.1		2.0	1.5	567	
Oklahoma	3.9		4.3	4.2	5.1	4.9		3.3	2.4	182	
Oregon	5.0		2.9	2.9	3.1	2.9		2.5	3.2	396	
Pennsylvania	1.2		1.2	1.1	1.4	1.5		1.9	1.9	1107	
Rhode Island	1.6	1.1	4.1	2.1	3.1	2.4		2.6	3.0	475	
South Carolina				4.1	3.8	4.2		4.5	5.1	121	
South Dakota	1.3		0.7	0.7	1.1	0.6			1.8	9	100
Tennessee	3.2			3.5	4.6	3.6	4.4		5.5	211	
Texas	1.9		2.6		4.3	2.9			4.3	179	
Utah	1.5		2.8	1.9	2.8	1.9		2.0	2.2	308	
Virginia								8.9	4.7	50	16
Washington	2.4		2.2	2.1	2.8	2.0		1.6	1.8	391	
West Virginia	1.0	1.3		0.4	1.0	3.4		0.8	1.1	71	65
Wisconsin	1.9		3.0	3.0	2.8	3.3			2.4	410	
Wyoming			1.2	1.1	2.6	1.3				14	29

Note: In our earlier paper, Iowa 1970 and New Mexico 1984 were included in our analysis. They are excluded here due to new information on redistricting. For similar reasons, we now include Rhode Island 1974.

NOTES

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1. There are several types of election held in multimember districts. Free-for-all elections, in which each voter has as many votes as there are seats to be filled, are the most common. In these elections, voters may cast fewer than the total number of votes they are allotted, but may not cumulate (cast more than one vote for a single candidate). It is this kind of multimember district that we refer to as *true*. Elections in multimember districts can also be conducted by establishing a number of posts equal to the number of seats to be allocated in the district, requiring each candidate to file for one and only one post, and giving each voter one vote in each post. The result is that there are M simultaneous at-large elections, all held under the usual single-member rules.

2. The vote percentage for the Democratic party is the sum of the vote percentages of all Democratic candidates. In a single-member district, of course, there is only one such candidate.

3. Gelman and King define P as a dummy variable describing party incumbency status at the second election: –1 if the Republicans won the previous election, +1 if the Democrats did. Our new definition of P, in a single-member district held by the Democrats, would be 1 (the number of Democratic victors) minus 0 (the number of Republican victors), divided by 1 (the district magnitude), yielding +1, the same value as under the old definition. Similarly, a value of –1 is obtained when the Republicans hold the seat.

4. Gelman and King define I as the interaction between R_2, a dummy variable indicating the decision of the incumbent to seek reelection (1 if she seeks reelection and 0 otherwise), and P_2, the party which won the previous election (1 if Democrats and –1 if Republicans). In single-member districts, the value is the difference between the number of Democratic and Republican incumbents (divided by the district magnitude of 1).

5. The states excluded (and the reasons for their exclusion) are described in Appendix A.

6. Two states—Indiana and Montana—were included in our previous study of single-member states because they have a large number of single-member districts. In that analysis, only the single-member districts in Indiana and Montana were used in estimating the incumbency advantage in those states. In the current analysis, all districts from both states were included in the analysis. In Indiana, there are significant changes in the estimated value of incumbency for all years (with about 50% of the observations from multimember districts) and in Montana for three years (with only about 5% of the observations from multimember districts).

7. King (1991a, 127, n. 20) discusses the efficiency of the weighted least squares estimator. Our regression includes two states—Virginia and Mississippi—for which only two years of data on the incumbency advantage were estimable. Excluding these states has no significant effect.

8. Each observation in the regression was again weighted by the standard error of the coefficient estimate of the incumbency advantage, as in King (1991a) and Cox and Morgenstern (1993). The standard errors used as weights are reported in Appendix B.

9. Recall that, even if a state had multimember districts during the time period under investigation, it is classified as a single-member state if none of its multimember districts contributed usable data to the regressions calculating the incumbency advantage.

10. There are some noteworthy differences between the single-member results in Table 2 and those in our previous work. Removing the 11 observations from Indiana and Montana increases the coefficient on time from an insignificant –.01 (in Cox and Morgenstern 1993) to an insignificant +.11 (in Table 2) and simultaneously cuts the coefficient on operating budget per constituent almost in half. These changes reflect the removal of the five observations from Montana. Estimates of the incumbency advantage in Montana's single-member districts (only these districts were examined in our previous work) put it at the bottom of single-member states in most years. At the same time, Montana had one of the smallest legislative operating budgets among single-member states in all years. Thus the Montana observations contributed strongly to the size of the coefficient on operating budget per constituent, and removing them has a large impact.

11. These results are for the 54 state-years in which relaxing the M-against-M requirement yielded a gain in the number of usable data points. If the 21 state-years in which no gain occurred are included, then of course the correlation between the new and old estimates increases and the difference between them diminishes.

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