

# Accountability and Local Elections: Rethinking Retrospective Voting

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*For too long, research on retrospective voting has fixated on how economic trends affect incumbents' electoral prospects in national and state elections. Hundreds of thousands of elections in the United States occur at the local level and have little to do with unemployment or inflation rates. This paper focuses on the most prevalent: school boards. Specifically, it examines whether voters hold school board members accountable for the performance of their schools. The 2000 elections reveal considerable evidence that voters evaluate school board members on the basis of student learning trends. During the 2002 and 2004 school board elections, however, when media (and by extension public) attention to testing and accountability systems drifted, measures of achievement did not influence incumbents' electoral fortunes. These findings, we suggest, raise important questions about both the scope conditions of retrospective voting models and the information voters rely upon when evaluating incumbents.*

Do voters reward elected officials for a job well done? Or do voters' ballot selections primarily reflect other considerations that have little to do with an incumbent's performance in office? Few questions in political science have attracted more scholarly attention. Indeed, the literature on retrospective voting—the proposition that citizens examine whether the state of the world has improved under a politician's watch, and vote accordingly—ranks among the most sophisticated within the social sciences.<sup>1</sup>

Two features of the empirical literature on retrospective voting stand out. First, officeholders in national and state governments are its sole protagonists, while local politicians are regularly overlooked. Second, the bulk of the literature remains fixated on developments in the domestic economy. Though federal and state politicians may expend considerable resources addressing issues that have no obvious relationship with the economy, the empirical literature on retrospective voting supposes that a voter's decision to support or oppose an incumbent's reelection efforts ultimately rides upon recent changes in inflation and unemployment rates.

Nothing about the theory of retrospective voting, however, requires that empirical explorations rest on these two foundations. There are, further, strong empirical reasons for departing from them both. The vast majority of elections in the United States occur at the local level, and many feature candidates with policy positions that concern a small number of well-defined functions that have little to do with the economy. Though presidents and members of Congress attend to a dizzying array of public policies, sheriffs, district attorneys, highway superintendents, and school board members oversee considerably simpler policy universes that revolve around public safety, criminal conviction rates, traffic, and student learning. Given the sheer number of elections that involve a well-defined set of corresponding public services, local elections present obvious, though heretofore unexplored, opportunities to test claims about retrospective voting.

By examining whether average voters hold school board members accountable for the performance of their schools, this paper constitutes the first-ever attempt to test theories of retrospective voting in single-function local elections. Specifically, we assess

<sup>1</sup>Classic treatments include Downs (1957), Key (1966), and Fiorina (1981). For reviews of the literature, see Monroe (1979), Fiorina (1997), Kiewiet and Rivers (1984), and Lewis-Beck and Stegmaier (2000).

whether voters punish or reward incumbent school board members on the basis of changes in student learning (as measured by standardized tests) in local and district schools. We also scrutinize elite-level behaviors, assessing the impact of student learning trends on incumbents' decisions to seek reelection and potential challengers' decisions to contest them. So doing, we demonstrate how future scholars can extend existing models of retrospective voting to the literally hundreds of thousands of single-function, local elections that occur around the nation.

We analyze a unique data set of 3,141 school- and district-level achievement trends and precinct- and district-level voting returns in 499 races over three electoral cycles in South Carolina. In the 2000 elections, when local newspapers devoted considerable coverage to student learning trends, and when public attention to the state's new accountability system was at its peak, a consistently positive relationship between student learning and incumbents' electoral fortunes is observed. But in the 2002 and 2004 elections, when media coverage of testing and accountability systems waned, and when interest groups and the public education sector attempted to discredit the state's testing regime, evidence of retrospective voting evaporated. The prevalence of retrospective voting in local elections, we suggest, critically depends upon the volume, tone, and sources of information that voters have about recent changes in the relevant domains of public life.

## The Retrospective Voting Literature

Two questions motivate this paper: Do voters hold local incumbents in single-function governments accountable for their performances in office? And what exactly do they hold them accountable for? Though the existing literature provides considerable guidance on the first question, it devotes minimal attention to the latter. This section addresses each in turn.

### Whether to Hold Incumbents Accountable?

Since Key famously posited the electorate's "role [of] an appraiser of past events, past performance, and past actions" (1966, 61), scholars have amassed a tremendous volume of empirical research on retrospective voting, the vast majority of which has focused on the influence of economic trends on U.S. national and state electoral outcomes. And in these contexts, retro-

spective voting appears to be reasonably common.<sup>2</sup> Important debates do continue about the saliency of different measures of the economy, the prevalence of "socio-tropic" and "ego-tropic" voting, and the distinctive roles of mass publics and political elites. On the whole, though, the ability of at least some citizens, some of the time, to evaluate the performance of incumbents and vote accordingly appears well established.

Though U.S. national and state elections demonstrate fairly consistent evidence of retrospective voting, the literature reveals mixed results in nearly every other setting. Indeed, the variable correlations between economic conditions and electoral outcomes represent the dominant theme of the comparative politics literature on retrospective voting. Beginning with the influential work of Lewis-Beck (1988) and Powell and Whitten (1993), comparative politics scholars have repeatedly found substantial variation in economic voting across countries, over time, and even within countries over time. In response, a large and vigorous literature seeks to explain where and when retrospective voting occurs (e.g., Cheibub and Przeworski 1999; Duch and Stevenson N.d.; Nadeau, Niemi, and Yoshinaka 2002). As Duch and Stevenson write, "The simple fact is that we do not know how universal economic voting really is. We find it in some elections but not in others and we do not know why" (N.d., 2).

Evidence of retrospective voting in local U.S. elections is even thinner. In terms of sheer volume, research on retrospective voting in national and state elections eclipses that conducted on local elections.<sup>3</sup> The few studies that have been conducted do not provide much reason to believe that voters regularly hold incumbents in local governments accountable for their performance in office. For instance, Kaufman (2004) finds that racial politics usually trump retrospective evaluations of incumbent performance in

<sup>2</sup>But see Peltzman (1990), which finds that economic variables add no predictive power for about one-third of Senate and gubernatorial elections. Other studies also find mixed or no evidence of economic voting in congressional elections (Jacobson 1989; Marra and Ostrom 1989; Erikson 1990; Alesina, Londregan, and Rosenthal 1993).

<sup>3</sup>By our count, fully 94% of the 212 articles on elections published between 1980 and 2000 in five top political science journals focused on presidential and congressional elections, another 6% considered state elections, and less than 1% examined local elections, none of which concerned retrospective voting. Figures are based on searches of articles with the word "election" in either the title or abstract in the *American Political Science Review*, *American Journal of Political Science*, *Journal of Politics*, *Political Behavior*, and *Public Opinion Quarterly*.

mayoral elections in major U.S. cities. Except in extraordinary circumstances, Kaufman argues, black, Hispanic, and white voters tend to cast ballots for candidates of their own ethnic background, regardless of the incumbent's record. In his analysis of local elections in Israel, Brender (2003) finds evidence that voters punished mayors for poor fiscal performance in only one of three election cycles, and he attributes this finding to the unusually high amounts of information available to voters during that one election cycle.

Perhaps the most extensive study related to retrospective voting in local U.S. elections is Oliver and Ha (2006), which analyzes voter surveys and election returns from 30 different suburban municipalities in five states for 2004 and 2005. As part of their survey, Oliver and Ha asked voters to rate government performance and the condition of the local economy. They found no relationship between the ratings and vote choice. Instead, Oliver and Ha found that candidate likeability, issue agreement, and shared partisanship were the strongest predictors of support for incumbents.<sup>4</sup> They conclude that "unlike in national elections, suburban voters do not punish incumbents for poor economic or governmental performance" (24). Neither Oliver and Ha's study nor any other of which we are aware presents compelling evidence to suggest that retrospective voting is common in local elections.

### What to Hold Incumbents Accountable for?

The extant empirical literature on retrospective voting examines how changes in the economy influence the electoral fortunes of incumbent office holders. In almost every instance,<sup>5</sup> scholars attempt to link inflation, employment, or growth indicators to voters' assessments of incumbent legislators, presidents, prime ministers, and governors. And for good reason. Though these officeholders oversee a vast number of policy domains, their reelection prospects benefit more from a prosperous economy than from demonstrated achievements in any other dimension of public life.

In this regard, state and national politicians appear atypical. Whole classes of locally elected officials attend to a much narrower band of issues than do legislators or executives in general-purpose elections. Consider the case of school boards, the subject of

the empirical tests that follow. Successful tenure on a school board ultimately reduces to demonstrated improvements in student learning. Though board members do many things that do not directly influence the daily lives of students (negotiating teacher contracts, writing budgets, procuring new school sites, and selling old ones), much of their work immediately affects the content and quality of student learning (modifying curriculums, establishing academic standards, deciding whether to accept federal aid for specific educational programs, assigning textbooks, writing disciplinary codes, and hiring superintendents). All board activities, what is more, presumably contribute to the everyday functioning of schools, and hence are in the service of students. To the extent that these activities collectively succeed, student learning should improve.<sup>6</sup>

In their narrow focus, school boards are hardly unique. According to the *1992 Census of Governments*, 487,796 elected officials serve in local U.S. governments, and fully 237,784 of these individuals fill single-function offices.<sup>7</sup> In addition to elected school board members, the job responsibilities of comptrollers general, county assessors, superintendents of highways, tax collectors, sheriffs, registrars of deeds, hospital district directors, public defenders, park commissioners, rural ambulance service directors, drainage district commissioners, soil and water conservation supervisors, watershed improvement district trustees, transit directors, and auditors (to name but a few!) are reasonably well defined—certainly more so than mayors or city council members, much less governors, senators, or presidents. And vitally, the job responsibilities of individuals serving in single-function offices often have little to do with the economy.

If retrospective voting is meant to be a general theory of political behavior—as its progenitors plainly intended (Downs 1957; Fiorina 1981; Key 1966) and a number of their more theoretically-minded adherents

<sup>4</sup>Oliver and Ha found that shared partisanship mattered even in nonpartisan elections. That is, voters apparently were able to vote on a partisan basis even without such information printed on the ballot.

<sup>5</sup>For one exception, see Fiorina, Abrams, and Pope (2003).

<sup>6</sup>According to one national survey, student achievement ranks second only to financial concerns as school board members' highest priority. Moreover, the vast majority of members claim to have devoted increased amounts of attention to test scores during their tenures and have regularly held open forums for parents and community members to discuss achievement trends and goals (Hess 2002).

<sup>7</sup>This compares to 543 officials who are elected at the national level and 18,828 at the state level. 1992 was the last year in which such data were collected. The *Census of Governments* provides data on the number of elected officials, not the number of elections. Because some officials are jointly elected (e.g., president and vice president, governor and lieutenant governor), the two are not equivalent.

have formally depicted it (Ferejohn 1986)—it must identify the conditions under which voters hold incumbents accountable for past job performance *in those areas of public life that incumbents actually oversee*. For retrospective voting to apply broadly, that is, voters must be able to match a specific electoral office with a relevant performance outcome. Yet the existing empirical literature on retrospective voting is largely silent on this aspect of the voter's calculus.

This omission, moreover, has profound consequences for our understanding of retrospective voting in the vast majority of elections that occur across the nation. Locally elected single-function officeholders outnumber by more than 10 to 1 the state and national representatives who have received so much scholarly attention. To our knowledge, however, no one has ever examined whether voters systematically punish and reward them for material changes in their respective issue domains. Indeed, the existing literature says virtually nothing about whether voters gauge these incumbents based on past job performance, and if so, by which metrics different offices are evaluated. Before proceeding to the empirical tests, therefore, the following section reviews the ways in which different institutional structures and information sources may contribute to the incidence of retrospective voting in the most prevalent, though not necessarily most representative, single-function local government—namely, school boards.

## Retrospective Voting in School Board Elections

Does retrospective voting uniquely apply to national and state elections? Or does it carry over to the modal U.S. election, one that is local, poorly attended, nonpartisan, the target of little funding, and that concerns an office that performs a single policy function that is unrelated to the economy? Borrowing from the existing retrospective voting literature, this section identifies institutional and informational factors that either augment or reduce the probability that voters will hold incumbents in the nation's most prevalent governing institution (school boards) responsible for recent trends in its issue domain (the education of children).

Since Powell and Whitten (1993), the comparative politics literature has focused primarily on how differences in political institutions explain variations in observed patterns of retrospective voting. In this regard, two institutional features of local elections enhance the general possibility that voters will hold school board members responsible for the perfor-

mance of local schools. First, members' job responsibilities are reasonably well defined, which simplifies the task of evaluating their performances in office. Rather than requiring voters to weigh economic trends against recent changes in crime, environment, or any number of other features of public life, as they must do in multifunction elections, here retrospective voting only requires that individuals assess student learning trends. Second, because most board elections are nonpartisan, party identification does not rival retrospective evaluations of incumbents as a basis for voting behavior. Voters, therefore, may place disproportionate weight on evaluations of board members' competency, as measured by the performance of local schools (Dubois 1984). Thus, the fact that school boards are single-function, nonpartisan offices should raise the probability that their elections exhibit retrospective voting.

The prevalence of retrospective voting also depends upon the amount and type of information that voters have about incumbents' performances in office. After all, whether people do in fact vote retrospectively hinges upon their knowledge about changes in that dimension of public life that an incumbent officeholder oversees. On this score, the existing literature on retrospective voting differentiates between unmediated and mediated sources of information, which Downs calls "free" and "subsidized" sources (1957, 237), and Popkin identifies as "daily life" and "media" sources (1991, 22–28). In the former, voters try to extrapolate from their own experiences (and those of their family and friends) to the larger world. Hence, if a voter recently lost her job, or if her wages were cut, or if her stock portfolio deteriorated, she might presume that the nation's economy is faltering and may punish the incumbent accordingly. Voters will often err, however, when trying to divine larger economic trends on the basis of personal experiences. Therefore, the empirical literature tends to highlight the importance of mediated sources of information (Fiorina 1981, 106–29). In congressional and presidential elections, voters typically rely upon print and television news reports to learn about general unemployment or inflationary trends.<sup>8</sup>

In the context of school board elections, mediated sources of information about student learning trends

<sup>8</sup>This presumes that voters care about general economic outcomes and not personal ones. To the extent that there is consensus on the matter, most scholars agree that collective (or sociotropic) considerations dominate pocketbook (or egotropic) concerns (Kiewiet 1983; Kinder, Adams, and Gronke 1989; Markus 1992; Alvarez and Nagler 1998). But for evidence of pocketbook voting, see Brown and Woods (1991) and Romero and Stambough (1996).



are often available, if not as commonly as information about trends in the national economy. Education writers in local newspapers pay careful attention to the release of district test scores. Editorial pages include both diatribes against a district's presumed failings and paeans extolling their most recent successes. And in campaign speeches that receive additional media coverage, the candidates themselves often talk about the trajectory of student test scores and what they say about student learning trends. But while media coverage of state and national economic conditions is regular and pervasive, coverage of local school performance is uneven and episodic. There is no guarantee that school performance will make the local news in the period leading up to school board elections. Hence, though mediated information can be considered relatively constant in studies of national economic voting, the availability of mediated information may be an important variable in local school board elections.

In addition to mediated information, or perhaps in place of it, voters can learn about the quality of educational services rendered at local elementary and high schools by observing their own children or those of friends and neighbors. Moreover, in the last several years, schools have administered regular assessments and standardized tests with rising frequency, and these test scores are often available on district websites. And under the recently enacted No Child Left Behind Act (NCLB), public schools are required to notify parents directly about the performance of their schools. Such sources of unmediated information about school performance may operate as either complements to or substitutes for mediated information.

Of course, it is entirely possible that voters do not receive sufficient information from either mediated or unmediated sources to evaluate the performance of incumbent school board members. Local media may not provide thorough coverage of student learning trends, especially if other local issues appear more pressing at election time. Moreover, many voters may not have access even to unmediated sources of information. Most voters, after all, do not have school-age children, and hence may decide not to collect information on the changing quality of public schools. Lacking both mediated and unmediated information about school performance, voters may turn to alternative heuristics, such as candidate likeability or shared partisanship (Oliver and Ha 2006), to guide their choice of candidates.

Ultimately, it is an empirical question whether either mediated or unmediated sources supply voters with the information that they need to hold board

members accountable for their performance in office, or whether voters rely on alternative heuristics to select candidates. By linking trends on standardized exams with school board election returns in South Carolina, we now investigate such possibilities.

## South Carolina

The challenge of gathering and organizing electoral returns from counties and districts constitutes the primary obstacle to expanding the retrospective voting literature's empirical scope to include local elections. Because it is the only state that centrally collects precinct-level election data for local school board races, we focus on South Carolina; everywhere else, local election data must be collected from individual counties. Furthermore, South Carolina recently instituted a statewide standardized student achievement test, making school-level data publicly available. This combination of readily available electoral and achievement data make South Carolina an ideal, and temporarily unique, testing ground for theories of retrospective voting in single function, local elections.

In most respects, South Carolina elections and school boards do not appear exceptional. Only four of the state's 46 counties hold partisan school board elections;<sup>9</sup> approximately 20% of school board members receive no compensation, while the remainder receive a salary, per diem payments, or reimbursement for their expenses; and 84% of districts hold elections contemporaneously with the general election in November, while the rest hold them in March, April, or May. More consequentially, perhaps, the state has among the weakest teachers unions in the country. When conducting equivalent analyses in states with stronger unions, which presumably punish and reward board members for their treatment of teachers rather than student test score trends, observed relationships between student learning and incumbents' electoral fortunes may differ.

## Election Data

South Carolina is divided into 85 school districts. Over 90% of school boards have between five and nine members, while the largest board (Beaufort) has 11.

<sup>9</sup>A bill passed in May 2003 required Charleston to run in partisan board elections.

Of these 85 districts, roughly half hold school board elections in any two-year election cycle. We collected precinct-level election returns for all school board races and then computed the vote share for each incumbent running in a competitive election.<sup>10</sup> Thus, our units of observation are unique incumbent-by-precinct combinations.<sup>11</sup> Because each incumbent runs in more than one precinct, and because each precinct may host more than one school board race, we have multiple observations of most incumbents and precincts.<sup>12</sup> For instance, in 2000 we have 67 incumbents running in 396 precincts, composing a total of 960 observations on incumbent vote share.

### Student Achievement Data

Student achievement data were obtained through the South Carolina Department of Education. Since 1999, South Carolina has administered the Palmetto Achievement Challenge Tests (PACT) to students in grades three to eight. These tests, based on the South Carolina Curriculum Standards, are given in both reading and math. We averaged the reading and math percentile scores to arrive at a composite score for each school,<sup>13</sup> and then we computed district-level and precinct-level average composite scores.<sup>14</sup> The precinct-level percentile scores indicate the performance of the schools nearest the polling place, and hence those schools most likely to be attended by a voter's children or those of a neighbor. District-level scores indicate the overall performance of schools in the district. To test whether voters respond more

strongly to local or district-wide academic performance, we estimated models with both precinct-level and district-level scores.

### Model Specification

We estimate vote share models by least squares, according to the following model specification:

$$V_{ipd} = \alpha + \Delta T_{pd}\theta + \Delta M_d\phi + T_{pd}\beta + \varepsilon_{ipd} + \eta_{pd} + \omega_d, \quad (1)$$

where the subscript  $i$  denotes an individual incumbent,  $p$  the election precinct, and  $d$  the school district. Thus,  $V_{ipd}$  represents the vote share that incumbent  $i$  received in precinct  $p$  of district  $d$ . Each incumbent may be observed multiple times (once for each precinct in which she is running), and each precinct also may be observed multiple times (once for each incumbent running in the precinct).  $\Delta T_{pd}$  represents the change in precinct-level test scores over the year preceding the election,<sup>15</sup> while  $\Delta M_d$  represents the change in the millage (property tax) rate, which is uniform within districts.<sup>16</sup>  $T_{pd}$  is the precinct-level average score in the most recent PACT test preceding the election.<sup>17</sup>  $\theta$ ,  $\phi$ , and  $\beta$  are regression coefficients, while  $\alpha$  is a constant. Finally,  $\varepsilon_{ipd}$ ,  $\eta_{pd}$ , and  $\omega_d$  are error terms for,

<sup>15</sup>In addition to percentile point changes (i.e., 2000 percentile score minus 1999 percentile score), we also estimated models based on percentage change in the percentile scores (i.e., [2000 score – 1999 score]/1999 score). Throughout, virtually identical findings are observed.

<sup>16</sup>The millage rate is equivalent to the tax per \$1,000 of assessed value. Although millage rates may not be directly comparable across districts due to different assessment ratios, changes in millage rates are comparable.

<sup>17</sup>To keep the discussion as simple as possible, parsimonious models are reported here. We have estimated, however, a wide range of alternative models that control for aggregate voter SES measures (race, age, and gender), partisanship (as measured by the presidential vote), the timing of the election (during November or earlier), and whether the election is ward-based or at-large. None of these variables exhibits a consistently significant relationship with any of our dependent variables. Given the ecological inference problems that the aggregate voter demographic measures introduce, we do not put much weight on these findings. Additionally, we have run models that estimate the probability that an incumbent won a majority of the votes in each precinct in a competitive race rather than the margin by which an incumbent won; models that weight the observations by the number of votes; models that account for test score changes and levels as a function of dollars spent on students; models that considered precinct deviations from district means; models that account for differences between concurrent and nonconcurrent elections; and models that control for the incumbents' lagged vote share. The overwhelming weight of the evidence is consistent with the results presented below.

<sup>10</sup>Further details are provided in an online appendix at <http://journalofpolitics.org/articles.html>.

<sup>11</sup>In the vote share models below, we use aggregate data to test theories of individual level voting behavior, as has often been done in the retrospective voting literature. Because we are not trying to estimate the behavior of specific groups within precincts—say, Democrats or Republicans, the highly educated or poorly educated—many of the concerns about ecological inference do not apply. Indeed, it is difficult to imagine how the basic results of the vote share models can be dismissed as ecological fallacies. In the models of an incumbent's decision to run or the probability of facing competition, moreover, we do observe individual-level behavior. Hence we need not worry about problems of ecological inference in these instances.

<sup>12</sup>Below we discuss how standard errors are adjusted to account for the resulting dependence among observations.

<sup>13</sup>A priori, there are no theoretical reasons to expect that retrospective voters will be particularly sensitive to student performance on either the reading or math portion of the exam.

<sup>14</sup>Further details are provided in the online appendix.

TABLE 1 Summary Statistics

	2000	2002	2004
<b>Precinct Level Variables</b>			
Number of incumbent $\times$ precinct observations	960	1308	963
Incumbent vote share			
Mean	58.27	56.30	61.02
Median	58.01	55.63	63.03
Standard Deviation	19.21	21.53	22.16
Test score levels			
Mean	51.59	58.95	51.79
Median	48.85	63.92	50.65
Standard Deviation	23.53	23.69	25.48
Test score change			
Mean	-.01	.54	-.10
Median	-.36	.78	-.17
Standard Deviation	5.85	4.92	5.51
<b>District Level Variables</b>			
Number of districts holding elections	39	38	39
Proportion of districts paying compensation	.75	.81	.79
Number of registered voters			
Mean	68,618	84,970	81,973
Median	33,430	21,631	28,698
Standard Deviation	90,241	163,732	136,889
Test score change			
Mean	.31	.54	1.36
Median	.63	.19	.89
Standard Deviation	3.99	3.79	3.73
Test score levels			
Mean	46.56	47.17	40.80
Median	46.50	49.48	41.54
Standard Deviation	22.26	20.75	21.58
Property tax rate (mils): 1-year % change			
Mean	1.89	4.12	1.15
Median	.41	3.58	1.86
Standard Deviation	6.35	5.39	5.67
<b>Incumbent Level Variables</b>			
Number of incumbents up for reelection	157	196	146
Number who ran for reelection	112	137	115
Number who faced competition	67	80	63
Number in competitive races who won reelection	50	56	48
Number of partisan elections	11	18	16

respectively, incumbents, precincts, and districts. In addition to precinct-level test scores, we also estimate a version of (1) in which we use district-level test scores to examine whether voters respond to performance in the district overall. In all cases, because observations for the same incumbent across precincts and for multiple incumbents in the same school district are not independent, we allow for clustering of

the standard errors by school district.<sup>18</sup> Table 1 presents summary statistics for all variables.

<sup>18</sup>This clustering allows for both types of error dependence, as all observations for a given incumbent are within one school district. For discussion on the topic, see Wooldridge (2002).

TABLE 2 Incumbent Vote Shares in School Board Elections

	(2000)	(2002)	(2004)
<b>Panel A: Precinct-Level Scores</b>			
Change in total score, previous to current year	.327* (.191)	-.270 (.223)	-.371 (.267)
Total percentile score in current year	-.104 (.067)	-.063 (.101)	-5.136 (7.918)
Change in millage rates, previous to current year	.380* (.190)	-.050 (.150)	.254 (.317)
Constant	62.198* (4.968)	6.632* (4.150)	62.722* (3.261)
Observations	960	1308	963
R <sup>2</sup>	.041	.011	.024
<b>Panel B: District-Level Scores</b>			
Change in total score, previous to current year	.015 (.513)	-.442 (.508)	-.871 (.746)
Total percentile score in current year	-.120 (.108)	.194* (.110)	-.071 (.164)
Change in millage rates, previous to current year	.360* (.190)	-.110 (.138)	.223 (.332)
Constant	63.314* (6.909)	46.231* (7.867)	64.411* (9.178)
Observations	960	1308	963
R <sup>2</sup>	.030	.025	.027

Robust standard errors in parentheses, with clustering by school district. Least squares regressions estimated. \*significant at 10%, two-tailed test.

## Results

Our analysis begins with the 2000 South Carolina school board elections, the first cycle of elections after PACT scores became available. In this year, 67 incumbents from 37 school boards ran for reelection in competitive races. Of these 67 incumbents, 50 were reelected, and the median vote share for all incumbents was 58%.<sup>19</sup>

Column 1 of Table 2 presents the regression results for incumbent vote shares in 2000. In Panel A, we find that precinct-level test score change is significant at the 10% level, with the expected positive coefficient indicating that incumbents won more votes where test scores showed improvements. The model predicts that a movement from the 25th to the 75th percentile of test score change—that is, moving from a loss of 4 percentile points to a gain of 3.8 percentile points between 1999 and 2000—is associated with an increase of three percentage points in an incumbent's vote share. With average incumbent vote share at 58

percent, these estimates suggest that a major swing in test scores can erode as much as two-fifths of an incumbent's margin of victory. Panel B shows that district-level scores were not significant, suggesting that voters focused on school performance within their immediate neighborhood rather than across the broader district. In models that include both district- and precinct-level scores (not shown), we again find that only precinct-level scores have a significant relationship with vote share.

The remaining results from 2000 are readily interpreted. Levels of test scores are not significant, which is consistent with the prediction from the retrospective voting literature that rational citizens will base their assessment of incumbents on *changes* during their tenure rather than the absolute *level* of performance. Finally, to account for the possibility that races are more competitive in higher-spending districts and that voters may evaluate student outcomes relative to spending, we control for changes in millage rates. We find that voters in 2000 rewarded incumbents for increases in spending.

The next two columns of Table 2 present the results for the 2002 and 2004 elections. As is immediately evident, whatever evidence of retrospective

<sup>19</sup>By comparison, in the U.S. House of Representatives, 98% of incumbents who ran for reelection in 2000 won, as did 80% of incumbents who ran for the U.S. Senate.



voting that existed in 2000 disappeared in the following two election cycles. In fact, precinct- and district-level test score changes register negative, albeit insignificant, effects in both years. The absence of a retrospective voting result does not appear to be a statistical or measurement artifact. In models not presented, we added administrative data from teacher, parent, and student ratings of local schools; we experimented with two- and three-year changes in test scores rather than one-year changes; we examined precinct deviations from district mean scores; we looked at changes in the percentage of students who received failing scores on the PACT; we restricted the sample of 2002 and 2004 elections to only those districts that held elections in 2000; and we examined alternative measures of student achievement such as SAT scores, exit exams, and graduation rates.<sup>20</sup> None of these alternative approaches yielded evidence of retrospective voting in the 2002 or 2004 elections.

In 2002, we find some evidence that voters punished school board members for increases in their property taxes, although the effect is nowhere near significant. As Table 1 documents, millage rates increased by a considerably higher magnitude during the lead-up to the 2002 elections than to those in 2000 or 2004.

### Strategic Politicians

The results reported in Table 2 reflect the experience of incumbents running in competitive elections. Many incumbents, however, either did not run for reelection or ran unopposed. In 2000, for instance, of the 157 incumbent board members in 39 school districts who were up for election, 112 sought reelection,<sup>21</sup> 45 of whom did not face a challenger. As a result, the 67 incumbents reflected in the first column of Table 2 represent less than half of the incumbents whose seats were in play in 2000. Presumably these candidates were not randomly selected into competitive elections, so test scores may have influenced electoral outcomes beyond the observed vote shares. Indeed, if board members anticipate citizens' voting behavior—and the existing work on “strategic politicians” suggests

that they may well<sup>22</sup>—then incumbents in districts with declining test scores should be less likely to seek reelection and more likely to face competition when they do run. If either of these effects is present, then results shown in Table 2 *underestimate* the effect of test score change on incumbents' electoral prospects.

Though exact filing dates vary by district, most candidates must decide whether to run for school board by mid-September of an election year. PACT scores, however, are typically released to the public in late September or early October. At the time that they commit to running, therefore, incumbents and challengers cannot know the exact magnitude of district or precinct test-score changes from the previous to the current year.<sup>23</sup> Nonetheless, having observed the schools first hand, and having listened to testimonials from principals and teachers, candidates do have some basis upon which to evaluate student learning trends. Moreover, by monitoring the education coverage of local television and print media, candidates can readily anticipate the extent to which test scores are likely to figure into their electoral prospects. Though the informational environment is not complete, it may be sufficient to support strategic behavior on the part of political elites.

To estimate the effect of test score trends on an incumbent's decision to run, and then to estimate the probability of facing competition for those who do run, we estimate the following two logistic regressions:

$$\Pr(Run_{id}) = \alpha + \Delta T_d \theta + \Delta M_d \phi + X_d \beta + Z_{id} \psi + \varepsilon_{id} + \omega_d \quad (2)$$

and

$$\Pr(Comp_{id}|Run_{id}) = \alpha + \Delta T_d \theta + \Delta M_d \phi + X_d \beta + Z_{id} \psi + \varepsilon_{id} + \omega_d, \quad (3)$$

where  $X_d$  represents test score levels and other characteristics of the district explained below,  $Z_{id}$  represents the incumbents' vote share in the previous election, and other notation is the same as in (1).<sup>24</sup> In these

<sup>20</sup>These alternative measures of school performance were not available for the 2000 models.

<sup>21</sup>Here, too, turnover in school boards appears larger than that in Congress. In 2000, 93% of incumbents in the House, and 85% of incumbents in the Senate, sought reelection.

<sup>22</sup>This research suggests that incumbents who oversee strong economies have a higher probability of facing either uncontested elections or elections with weak challengers, while incumbents who serve during times of economic downturn face stronger challengers (Jacobson 1989; Jacobson and Kernell 1983, 1990).

<sup>23</sup>It is possible that school board members have access to test score results before they are released to the public, but we have no way of knowing this for certain.

<sup>24</sup>Several considerations dissuaded us from attempting to estimate a Heckman-type selection model. First, we would require at least one identifying variable that strongly affects the chances of observ-

TABLE 3 Seeking Reelection

	(2000)	(2002)	(2004)
Change in total score, previous to current year (district)	.135* (.055)	-.014 (.058)	.063 (.052)
Total percentile score in current year (district)	.000 (.011)	-.004 (.009)	.019* (.010)
Incumbent vote share in previous election	.481 (.964)	.005 (.005)	-.939 (1.010)
Percent change in millage rates, previous to current year	.017 (.027)	.010 (.029)	-.005 (.036)
Dummy = 1 if position pays no salary	-1.196* (.440)	.244 (.584)	-.070 (.416)
Dummy = 1 if race is partisan	-1.721* (.583)	.278 (.753)	-.335 (.425)
Constant	.949 (.934)	.513 (.636)	1.427* (.857)
Observations	152	184	140
Pseudo R <sup>2</sup>	.06	.01	.04

Robust standard errors in parentheses, with clustering by school district. Logit models estimated. \*significant at 10%, two-tailed test.

models, we add dummy variables indicating whether board members received remuneration for their service and whether races were partisan. We also control for an incumbent's lagged vote share, which might serve as a signal of her strength to both the incumbent herself and her potential challengers. In contrast to the vote share models, we do not have precinct-level observations because the decision to run is an incumbent-level choice rather than a precinct-level choice. We do, however, allow for clustering of standard errors among incumbents within school districts.

Column 1 of Table 3 presents the results from the first logistic regression model for the 2000 elections. Again, test score changes continue to attain statistical

significance and remain in the expected direction: incumbents appear disinclined to seek reelection when their district's test scores drop. This result may indicate that incumbents bow out in anticipation of voter reprisals for poor performance or that serving in a declining district is less rewarding for board members. The point estimates in column 1 indicate that a movement from the 75th to the 25th percentile in test score change is associated with a drop of 13 percentage points in the probability that the incumbent will seek reelection (from 84 to 71%, holding other variables at their medians). Neither test score levels nor lagged vote shares are significant in 2000, indicating that incumbents in higher performing districts and incumbents who did especially well in past elections are no more likely to run for reelection.

Just as we found no evidence of retrospective voting in the 2002 and 2004 elections, we did not find any evidence of strategic retirements. As columns 2 and 3 show, recent changes in district test scores appear unrelated to incumbents' decisions about whether to run for reelection. In 2000, incumbents were less likely to seek reelection in districts that did not compensate board members and that held partisan races; neither of these relationships, however, were significant in 2002 or 2004. Incumbents in high-scoring districts were more likely to seek reelection in 2004, although the effect is relatively small and not significant in either of the prior elections. Finally, changes in property taxes appear unrelated to incumbents' decisions about whether to run in any of the three election cycles.

ing an incumbent in a competitive election but that is unrelated to incumbent vote share. Given that selection depends on both an incumbent's and a challenger's decision to run, we would require a factor that simultaneously (a) is positively (negatively) correlated with the probability of an incumbent seeking reelection, (b) is positively (negatively) correlated with the probability of a challenger entering the race, and (c) is unrelated to the incumbent's ultimate vote share. Among available data for South Carolina school board incumbents, we have not been able to uncover such an identifying variable. Second, the two stages of the model (selection and outcome) are observed for different units of analysis. That is, we observe the selection into a competitive race for individual incumbents, whereas we observe vote share at the precinct level, with multiple observations per incumbent. Thus, proper estimation of the standard errors for the corresponding selection model would be a challenge. Given these obstacles, the first being paramount, we do not estimate a Heckman-type selection model. Rather, we acknowledge that our estimates of the effects of test score change on vote share and on the probability of facing competition are likely to be lower bounds of the true effects.

TABLE 4 Facing Competition

	(2000)	(2002)	(2004)
Change in total score, previous to current year (district)	-.136* (.057)	.068 (.073)	-.051 (.088)
Total percentile score, current year (district)	-.010 (.020)	-.022 (.016)	.005 (.013)
Incumbent vote share in previous election	-1.788 (1.095)	.003 (.007)	-3.499* (1.418)
Percent change in millage rates, previous to current year	.022 (.045)	.090* (.050)	-.062 (.042)
Dummy = 1 if position pays no salary	1.351* (.755)	.912 (.610)	-.809 (.724)
Dummy = 1 if race is partisan	-.409 (1.502)	-.920 (.775)	-.538 (.903)
Number registered voters	.034 (.034)	.117* (.048)	-.002 (.008)
Constant	1.404 (1.270)	-.539* (.821)	3.491* (1.312)
Observations	108	126	113
Pseudo R <sup>2</sup>	.13	.20	.14

Robust standard errors in parentheses, with clustering by school district. Logit models estimated. \*significant at 10%, two-tailed test.

If declining test scores discourage incumbents from seeking reelection, they should encourage potential challengers to seek office, either because they believe that their chances of winning the election are higher when test scores have fallen, or because disgruntled citizens (or, more probably, parents) feel compelled to run for office when schools lag. To test this hypothesis for incumbents seeking reelection, we ran a logistic regression where the dependent variable is coded 1 if the incumbent faced at least one challenger, and 0 if she ran unopposed. In addition to the three variables introduced in column 1 of Table 4, we add the number of registered voters in the district, with the expectation that larger districts have a bigger pool of potential candidates, and therefore should be more likely to host contested elections.<sup>25</sup>

Once again, test score changes in 2000 are highly significant, this time appearing negatively associated with the probability of competition. The point estimates from column 2 suggest that a movement from the 75th to the 25th percentile in test score change is associated with an 18 percentage point increase in the probability of facing a challenger (from 44 to 62%, holding other variables at their median). All of the control variables, meanwhile, appear insignificant

with the exception of whether a position is paid. As one might expect, challengers are more willing to take on an incumbent board member when victory assures them some kind of financial remuneration.

As before, null effects emerge in the 2002 and 2004 elections. Achievement trends, no matter how they are measured or what other covariates are included in the models, do not systematically affect the probability that incumbents will face competition in the election. In 2002, incumbents from districts with large increases in property taxes and with large numbers of registered voters—likely representing a larger pool of potential challengers—were more likely to face competition. And in 2004, an incumbent's lagged vote share is negatively related to the probability of facing a challenger, indicating that challengers shy away from incumbents with strong records of electoral success.

### Explaining the Observed Findings

The evidence from South Carolina suggests that voters, at least some of the time, do acquire the information required to vote retrospectively in school board elections. Unfortunately, though, we do not observe the actual source of that information. Specifically, we do not know whether voters look to the educational experiences of their children and those of their friends (unmediated sources) or whether they rely upon newspaper and television reports to learn about student learning trends (mediated sources).

<sup>25</sup>Because the number of seats on the school board does not vary proportionately with enrollment, larger districts have more potential candidates per seat. School board size ranged from five to 11 seats, while school district enrollment ranged from 600 to 27,000.

Depending upon which is more prevalent, one can provide different explanations for the pattern of results observed in South Carolina.

*Mediated sources of information.* Suppose, first, that voters rely upon mediated sources of information. To explain the findings we observe, it must be the case that the amount and/or type of media coverage granted to student test scores differed markedly across the three electoral cycles. In fact, we find considerable evidence that it did. During the 2000 elections, the first election cycle to follow the passage of the state's accountability system, journalists devoted ample space to issues that either directly or indirectly concerned student learning trends.<sup>26</sup> Both incumbents and challengers regularly identified student achievement generally, and test scores in particular, as the single most important issue in their elections; and newspaper editorials that endorsed candidates regularly underscored ways in which they did, or would, improve student achievement. In the 2002 and 2004 elections, however, media coverage shifted to other issues such as the closing of schools, the racial composition of schools and boards, disciplinary problems, and sports programs. Whereas 45% of the newspaper articles on the 2000 school board elections discussed student test scores, only 30 and 34% of articles on the following two elections did so.<sup>27</sup> Thus, it is possible that test scores were not a factor in the 2002 and 2004 elections because the costs of learning about test scores increased due to fading media coverage.

The tone of articles devoted to the state's accountability regime also shifted drastically during this period. From 1998 to 2000, most stories adopted a fairly neutral tone, introducing the public to the new accountability system and offering a handful of relatively tepid praises and criticisms of the testing regime. Following the 2000 elections, however, journalists portrayed considerably more skepticism in their coverage of student achievement trends. Numerous stories were devoted to errors in the PACT's scoring, security breaches in school testing, flaws in the science and social studies portions of the PACT, district efforts to get ahead by changing their test dates, confusion regarding the comparability of test scores over time, missing PACT scores, and conflicts between school

evaluations under the state and national accountability systems.<sup>28</sup>

At the same time that administrative irregularities and mishaps attracted public scrutiny, teachers, district officials, and various other interest groups began to challenge the value of standardized tests more generally. Consider the following sampling of complaints, each of which was aired between 2001 and 2004. One third-grade teacher was quoted as saying, "These tests cannot and never will truly measure what a child actually knows, how a child sees the world, what a child genuinely understands and grasps, and what kind of life that child lives outside the school walls" (Dillard 2003, 6A). Another school district associate superintendent claimed, "The problem with PACT is it doesn't tell you what your child knows and doesn't know" (Stanley 2001, 1A). The Palmetto State Teachers Association regularly questioned the appropriate meaning of standardized test score changes. As the Association noted on its website, "The current statewide tests do not provide immediate diagnostic information needed to improve student achievement or provide information to help teachers plan to meet the needs of each student. The testing process is time consuming, and spending weeks on high-stake testing is NOT in the best interest of children." Or as the American Education Research Association proclaimed, "the PACT needs to be seen for what it is: a vehicle for politicians to say that they are tough on education (and educators). This may make for good politics, but it makes for bad educational policy" (*Post and Courier* 2001, 12A).

One final factor bears mentioning. The 2000 scores were released in late October, whereas scores in 2002 and 2004 were released in early October and early September, respectively.<sup>29</sup> It is possible that the release of the scores so close to the election date in 2000, and the media coverage that followed, primed the student learning dimension in voters' decision making. In other years, the lag of a few weeks between the release of scores and the election may have allowed the scores to fade from voters' attention, thus potentially diminishing the weight given to academic performance in voters' evaluations of incumbents.

In combination, these forces go some distance toward explaining the variable effects observed over the three electoral cycles. As a result of declining media attention, concerns about student learning trends probably did not stand at the forefront of voters' or candidates' thinking in the 2002 and 2004

<sup>26</sup>We canvassed *The Post and Courier* (in Charleston), *The Herald* (in Rock Hill), *The State* (in Columbia), and the Associated Press State and Local Wire, which serves numerous other South Carolina papers.

<sup>27</sup>These figures reflect media coverage during the two months preceding the school board elections.

<sup>28</sup>Examples of each of these stories are available upon request.

<sup>29</sup>We are grateful to an anonymous reviewer for this suggestion.



elections. In response to rising criticisms directed toward the PACT, voters may have grown disenchanted with the state's accountability system. Still, ambiguities persist. In the absence of intense positive media coverage on student test scores, we do not know whether voters chose from a slate of candidates on the basis of other issues discussed in the media, whether they simply reverted back to the more common voting heuristics that Oliver and Ha (2006) identify, or whether they simply chose candidates at random. All we can say for sure, in fact, is that whatever the bases for voter and candidate choices in these subsequent elections, they must have been unrelated to student test score trends as measured in the state's accountability system.

*Unmediated sources of information.* Though the flow of mediated information about student learning trends varied markedly from year to year, we have little reason to believe that the sheer amount of unmediated information changed over time. Hence, it is not immediately clear how one might square the observed findings from South Carolina with claims that voters rely upon direct experience to glean the information required to hold school board members accountable for their performance in office. If either of two additional facts hold, however, then the findings might well derive from voters' use of unmediated information sources. If (1) parents directly assemble impressions about student learning at a constant rate, but the correlation between the actual information they collect (which we do not observe) and test scores (which we do observe) changes over time; or (2) parents collect information on actual test scores at a constant rate, but the perceived value of this information varies markedly over time, then we have some basis for explaining the pattern of results in the 2000, 2002, and 2004 elections. We consider each possibility in turn.

First, let us assume that voters, when observing their own children and those of friends and neighbors, assemble general impressions about whether the local public schools are improving. There is reason to believe that in the early years of the PACT regime there may have been a tighter connection between this private information about student learning and actual test scores, which serve as the basis for our retrospective voting models. If so, then retrospective voting may have been a prominent feature of every election, though its expression through standardized test scores diminished as time passed.

It is possible that educators steadily learned to game the system, thereby reducing the connection between scores and actual student learning. For instance, teachers may have begun to teach to the test,

undermining both the accuracy of the standardized tests and the willingness of parents to use them when evaluating school board members. If this occurred in South Carolina—and other scholars have found considerable evidence of such behavior in other states (Jacob 2005)—then the observation that retrospective voting largely disappeared after the 2000 electoral cycle has less to do with changes in media coverage and more to do with the connection between the test scores and voters' unmediated information about student learning. If standardized tests are uncorrelated with the aspects of student learning that voters care about, then scores may appear unrelated to board members' electoral fortunes even though many voters hold incumbents accountable for their performances in office and even though many candidates respond to student learning trends in making decisions about whether to run for office.

Alternatively, when turning to unmediated sources of information, voters may directly observe the actual test scores. If the school and district reports on test scores remained constant over the three election cycles, then we have little basis for explaining the observed findings. If, however, the reports became less useful to voters, we have yet another explanation for why evidence of retrospective voting exists in 2000 but not in 2002 or 2004.

We do in fact find some evidence of the latter possibility. In 1999 and 2000, the first two years of PACT testing, scores were reported in their raw form in the materials received by parents. Beginning in 2001, however, official PACT reports to parents began to focus on a simpler rating scale that classified each school into one of five performance categories ranging from *unsatisfactory* to *excellent*. But under this scheme, almost every school attained a rating of at least "average." Indeed, a Department of Education news release in 2002 ran with the headline, "Schools receive higher absolute ratings on report cards; 80% average or better." Although the raw scores were contained deeper in the reports, the focus was clearly placed on the discrete rating classifications. If most schools appeared to be average or above, even those parents who were aware of the ratings may have found little to guide their vote choice. This change in the reporting of information, therefore, may have diminished the value of reported test scores to parents, leading them to vote retrospectively in 2000 but to follow other voting heuristics in subsequent elections. By the same token, incumbents and potential challengers may have become less responsive to scores when the testing regime began to give nearly every school a passing mark.

We have, then, a variety of competing explanations for the observed pattern of findings in South Carolina. Unfortunately, we cannot definitively rule out any one. For several reasons, however, we are skeptical of explanations that rely on the direct influence of interest groups or flaws in the testing system. According to at least one evaluation of state accountability systems, South Carolina's testing regime ranks among the best in the nation (Peterson and Hess 2006). Additionally, teachers unions in South Carolina are among the nation's weakest. Hence, among the explanations offered above, we place the most stock in those that emphasize changes in media coverage. Plainly, though, further research is needed to sort through the competing explanations. As data begin to emerge from other states with varying amounts and types of media coverage, testing regimes, and school board systems, we may gain further insight into the underlying mechanisms that support retrospective voting in local, single-function elections.

## Conclusion

The findings of retrospective voting in 2000 South Carolina school board elections tend to reinforce those in economic voting models that focus on U.S. national and state elections. Just as voters hold presidents, members of Congress, and governors responsible for economic developments, so too do voters occasionally evaluate school board members on the basis of student learning trends. Consistent with past research on "strategic politicians," evidence of retrospective voting primarily manifests itself in the choices made by political elites. The largest effects observed in school board elections arise in models that estimate the probabilities that incumbents run for reelection, and the probabilities that they face competition when they do.

Just as importantly, the 2000 elections appear rather unusual. With the recent passage of the state's accountability system and media coverage honed on student achievement trends, retrospective voting was a prominent feature of the 2000 elections. But with the passage of time, the shift of public attention to education issues that did not immediately bear upon recent student learning trends, and the various assaults waged on the state's accountability system, evidence of retrospective voting quickly vanished. In models that estimated incumbent vote shares, decisions to run for reelection, and the presence of competition in the 2002 and 2004 elections, null effects consistently arose.

Complementing a mature comparative politics literature and a nascent local politics literature, the South

Carolina findings raise important questions about the generalizability of the retrospective voting model. The vast majority of retrospective voting studies have focused on national and state elections. Though these offices are important, they represent a limited and atypical subset of U.S. elections. Hundreds of thousands of local elections take place in a markedly different electoral environment, one characterized by single-function jurisdictions, spotty media coverage, little campaign spending, and nonpartisan balloting. By highlighting the influence of noneconomic forces on incumbents' electoral fortunes and uncovering only limited evidence of retrospective voting across multiple election cycles, this paper represents an initial foray into the characteristics of voting behavior in local, single-function elections. Future research, though, is vital if we wish to untangle the various institutional and informational forces that shape retrospective voting in the more common, though admittedly less glamorous, local elections in American politics.

One thing is clear: with nearly a half a million local elections held around the country, the vista is wide open for continued research. Scholars may yet examine whether voters hold sheriffs responsible for trends in crime rates, district attorneys for conviction rates, roads commissioners for traffic congestion, mass transit officials for public transportation, or fire commissioners for emergency response times. We anticipate that such studies will advance our understanding of voting behavior in ways not possible by continually tinkering with existing models of recent congressional and presidential elections. As empirical research on single- and multiple-function local elections progresses, we may better understand how different institutional frameworks and the availability of information on incumbents' job performances contribute to, or detract from, retrospective voting.

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