

# GOVERNANCE AND THE IMPACT OF PUBLIC EMPLOYEE UNIONS ON ORGANIZATIONAL PERFORMANCE

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**ABSTRACT:** *Research has long suggested that public employee unions may influence public organization performance by changing the allocation of resources and the management of personnel. Other elements of the governance context, such as the characteristics and behaviors of those who design public policies and run public programs, have less often been considered by researchers, an omission that helps to explain the mixed findings and conflicting conclusions regarding the influence of unions on outcomes. This study develops arguments regarding the impact of governance strategies on the relationship between collective bargaining and organizational performance and tests them in a sample of educational organizations. The results suggest that there is an association between strong teachers' unions and lower student performance, but that the relationship can sometimes be moderated by school boards and superintendents.*

**KEYWORDS:** *organizational performance, public employee unions, public schools*

Following their dramatic expansion in the 1960s, public employee unions became an important source of influence on the organizations that implement public programs. It is estimated that by 2008, more than 35% of all public workers belonged to unions, which was more than five times the rate of unionization in the private sector. Rates among local government workers were even higher, topping 40% (Bureau of Labor Statistics, 2009). There is evidence that public employee unions, due in part to their substantial membership, have been relatively successful in securing increased wages, benefits, and employment levels, or some combination thereof, for their members (e.g., see Blanchflower & Bryson, 2004; Hunter & Rankin, 1988; Kroncke & Long, 1998; Spizman, 1980).

For decades, scholars and practitioners have been interested in the impact of these successes, and indeed of public employee unions in general, on the outcomes produced by public organizations. The most recent work in this area suggests that it is not possible to fully understand organizational performance in the public sector or to make useful prescriptions for improving ineffective agencies if we “fail to recognize and explore the collective power of the government’s own employees” (Moe, 2009, p. 172). Unfortunately, the empirical evidence on the subject is decidedly mixed. Many studies conclude that unions have a negligible or even a positive impact on performance, but there are also a significant number suggesting that unions, and the gains they secure for government employees, ultimately are bad for organizational performance and client outcomes (for reviews, see Freeman, 1986; Hirsch, 2004).

Previous work in this area suggests that unions may influence performance by changing the governance of public organizations—forcing the diversion of scarce resources or securing structures and procedures that impede performance-oriented management (e.g., see Eberts, 1983). It is interesting then, that very few studies explicitly model governance influence when estimating the relationship between public employee unions and performance. The term “governance” is used here and elsewhere in this study to describe resource allocation and structural decisions made by both elected and appointed officials charged with governing public organizations, as well as managerial behavior within those organizations. In prior work on the subject, these actions and decisions are not typically allowed to influence performance directly or to moderate the impact of unions on performance. The failure to control for these elements may help to explain the inconsistent findings regarding the influence of public employee unions on organizational performance and, more important, indicates why their inclusion can help us to better understand the conditions under which such influence occurs.

The present study tests for the interrelations between public officials, public employee unions, and organizational performance in a sample of California educational organizations. School districts are, for a variety of reasons, a fruitful place to examine the impact of unions on public organizational performance, and the possibly moderating effect of governance. First, school districts are the most ubiquitous public organizations and have been the focus of recent work on the subject (Moe, 2009). More important, teachers unionize at high levels, even relative to other public employees, and their unions, particularly in California, are widely regarded as politically savvy and powerful. Thus, if governance variables are shown to be important in this context, one can be reasonably confident that they are also important in other organizational settings.

### **Public Employee Unions and Performance in the Literature**

A relatively extensive literature on public unions has developed over the years (see Kearney, 2008), although a recent review concludes that interest in this topic has

been uneven (Ricucci, 2011). Scholars have discussed the history and growth in size and strength of public unions (Kearney, 2010) and compared them to their counterparts in the private sector (Mesch, 1995; Ricucci, 2007; Seroka, 1985). Scholars have also examined how management affects membership rates for public sector unions, the penalties for public unions that strike (Straussman, Bretschneider, & Rodgers, 1986), and the reaction of public unions to privatization (Ravitch & Lawther, 1999). Of course, researchers have also been interested in the impact of collective bargaining across a variety of dimensions, including wages (Ashraf, 1998; Chandler, 1995; Dilts, Boyda, & Sherr, 1993), managerial decision-making (Burton, 1972; Gely & Chandler, 1993), public budgets (O'Brien, 1994; Valletta, 1989), work practices (O'Brien, 1996), and privatization (Chandler & Feuille, 1991). Finally, the political activities of unions, along with the impact of those activities, have also received considerable scholarly attention (Chandler & Gely, 1995; Delaney, Fiorito, & Jarley, 1999; Gely & Chandler, 1993).

The literature linking public unionism and collective bargaining to organizational performance is of considerable interest to the present discussion. Although not nearly so large as the literature on productivity or performance and unionization in the private sector (for a review, see Doucouliagos & Laroche, 2003), there is a relatively well developed body of work that examines that relationship in public organizations. The findings from this scholarship are very inconsistent, with substantial variations in both the direction and the size of union impact.

By far the smallest category of studies finds a positive impact of unions on organizational performance. Even the expectation of productivity gains due to increased unionization is fairly novel and grows primarily out of work by Freeman and Medoff (1979, 1984). They argue that unions, in addition to their more well known rent-seeking behavior, may have a positive effect on performance by giving voice to worker concerns, improving management/labor communication, increasing morale, and decreasing turnover. Subsequent work has suggested that this effect may be even larger in the public sector due to the increased loyalty and decreased exit propensity of public employees (Gunderson, 2005).

While intuitively reasonable, empirical evidence for this assertion is relatively scant. Freeman's (1986) review of 11 studies finds only two examples of a stable positive relationship between unionism and productivity. More recent studies have demonstrated slightly lower mortality rates in unionized public hospitals (Ash & Seago, 2004) and only small improvements in test scores among students with unionized teachers (Eberts & Stone, 1987; Nelson & Rosen, 1996; Register & Grimes, 1991). It is important to note, however, that recent work argues that at least some of the positive findings in the education context are the result of model misspecifications (Moe, 2009).

A larger number of studies have failed to find any relationship between public employee unions and organizational performance. Across a variety of program

contexts and levels of government, including fire and police departments, public libraries, and public transit systems, among others, scholars have concluded that unionization has no direct impact on the outcomes produced by public agencies (e.g., Coulter, 1979; Feuille, Hendricks, & Delaney, 1983; Perry, Angle, & Pittel, 1979; see Stanley, 1972).

However, after considering the increased expenditures associated with unionization, scholars often treat null performance gains for public organizations as negative productivity outcomes. Following an extensive analysis of the literature on the wage and productivity effects of public unions, Addison and Hirsch conclude that there is an “absence of a sizeable productivity effect . . . despite the significant union premiums in all but the library sector” (1989, p. 81) and suggest the need for greater competition in the production of public services. Hoxby similarly finds that teachers’ unions increase teachers’ salaries with no resultant improvement in student performance and concludes that “unions are a potential answer to the puzzle of increased school spending and stagnant student performance in the post-1960 period” (1996, pp. 708–709).

Finally, a number of studies, particularly in education, find a direct negative impact of unionization on public organizational performance. Freeman’s (1986) review identifies three studies that find negative relationships in the context of fire protection, local government regulation, and public hospitals. Meador and Walters (1994) find a large negative impact on productivity in union versus nonunion academic departments in public universities. In the area of secondary education, scholars have concluded that increased unionization was a significant contributor to the decline in SAT scores among U.S. high school students between 1972 and 1983 (Kurth, 1987). Hoxby (1996) finds that dropout rates worsened by 2.3% after schools unionized.

The most recent work on teachers’ unions and student performance also finds a large negative relationship in both elementary and secondary schools (Moe, 2009). The primary contribution that Moe’s study makes to the literature is the use of collective bargaining agreements, rather than union membership or some other proxy, to measure the power that the union has over school operations within a given district.<sup>1</sup> Moe (2009) also contributes to the long-standing debate on unions and performance by exploring some conditional effects of unionization, concluding that negative impacts are more pronounced in large districts and in those with a high percentage of minority students.

So, as noted above, the empirical evidence on the impact of unions on public organizational performance is far too mixed to draw precise conclusions. It should be noted, however, that many authors begin with the same assumptions about the two primary mechanisms through which public employee unions *could* influence performance.

First, they assume that collective bargaining may force suboptimal allocation of

resources within an organization (Babcock & Engberg, 1997). Faced with higher salary and benefits costs, public agencies operating with a fixed budget allocation are forced to transfer funds away from activities that are more directly correlated with performance. If salary increases improve employee performance, then any loss resulting from the transfer can be offset, but research has demonstrated that this is not always the case (Hoxby, 1996). Indeed, mathematical models of union wage restrictions suggest that such restrictions may provide incentives to rational employers to hire less well trained, and presumably less productive, workers (Babcock & Engberg, 1997). If unions are able to increase budgets at the same rate as wage expenditures, then tradeoffs become unnecessary, but there is not clear empirical evidence that they are able to do so (Inman, 1981).

A second manner in which unions are assumed to influence (or potentially influence) productivity is through the creation of rules and procedures that force organizations to alter their personnel practices and limit discretion in the management of human resources (Freeman, 1986; Strunk & Grissom, 2010). More important, the structures and procedures that unions create are often not aligned with organizational performance. Speaking specifically of teachers' unions, Moe argues that "the core interests they pursue in negotiations are rooted in their own survival and well-being as organizations—not in student achievement" (2009, p. 157). Others have made similar arguments, suggesting that limitations on managerial discretion and overhead control sought by unions are primarily designed to attract and retain members, rather than promote higher performance (Grimshaw, 1979; McDonnell & Pascal, 1979; Moe, 2001).

### **Governance and Union Effects on Performance**

While conclusions about the influence of public employee unions are mixed, there is general agreement that unions help to determine resource allocation and managerial discretion within public agencies (see Eberts, 1983). In other words, through the collective bargaining process, unions and their members affect the governance of public programs. Surprisingly, other elements of governance, including most notably the behaviors and characteristics of elected and appointed officials, as well as the relationships among these actors, are rarely included in these studies.<sup>2</sup> Scholars have investigated the impact of different market conditions on the relationship between unions and public agency performance (Hoxby, 2002), as well as the influence of different inputs (Moe, 2009). They have also explored the behavior of politicians and managers during the process of negotiating collective bargaining agreements (Burton, 1972; Gely & Chandler, 1993). However, they have not explored the impact of different governance factors on the effects of collective bargaining agreements after the agreements have been reached.

Admittedly, collective bargaining agreements won by unions are a somewhat

unique challenge faced by public organizations in that they simultaneously represent (1) an environmental constraint, and (2) an internal set of decision rules. Fortunately, prominent governance frameworks deal explicitly with both of these types of challenges. These frameworks, which model outcomes as an interaction between policy, rules, environmental inputs, and discretionary management behavior, arrive at relatively similar conclusions regarding the importance of managerial discretion to the performance of public organizations, as well as the important role that managers play in moderating the relationship between organizational inputs and outputs (e.g., see Agranoff, 2007; Lynn, Heinrich, & Hill, 2000, 2001; O'Toole & Meier, 1999; Salamon, 2002). Borrowings from various corners of this rich literature are used below to develop the specific hypotheses regarding the impact of governance on the relationship between collective bargaining agreements and performance in public organizations.

### **Governance, Unions, and Performance in School Districts**

Specifically, the present study developed and tested hypotheses regarding the impact of governance and unions on performance in the context of educational organizations. School districts are a useful place to test for such relationships for a variety of reasons. They are the most ubiquitous of public organizations and the place where the impact of unions on performance has been most investigated, and most decried.

In addition, school districts are a tractable place to test for the moderating impact of governance on union effects, both because they share characteristics with other types of government and because their governance structures, along with the behaviors of key actors, are relatively observable and measurable. School boards are elected from a local community and constitute a fully functioning legislative body, with the power to pass policies and raise revenues. Also important for present purposes, board members tend to be more amenable to answering the queries of scholars than legislators in other governance arrangements. School boards appoint an executive, or superintendent, who implements district policies. Like legislative bodies in other municipal-appointed executive systems, school boards typically have some involvement with the day-to-day management of the organization, although most decisions are delegated to the superintendent. As in other "council-manager" systems, the appointed executive in an educational organization is responsible for overseeing a cadre of mid-level managers and line bureaucrats. In the case of school districts, these include assistant superintendents, principals, assistant principals, and teachers, among others. Yet, in contrast to multipurpose governments, school districts have fairly focused outputs that can be quantified as measures of organizational performance.

Based on the existing work in governance (e.g., see Lynn, Heinrich, & Hill,

2000, 2001; O'Toole & Meier, 1999), the present study begins with the assumption that the actions of individuals who run school districts will have a significant impact on student performance and, ultimately, on the impact of unions on that performance. Whether collective bargaining agreements are treated as rules that govern organizational behavior or as "inputs" that districts must work with, a governance approach suggests that their impact on student performance should compete with and be moderated by the ways in which district officials use their discretion. This set of actors includes both the superintendent of the district and the school board. Although boards obviously serve as the legislative body in district governance, research suggests that they also play a significant role in the day-to-day management of schools (Land, 2002); their actions post-agreement may influence the impact of union contracts on student performance.

A variety of actions by board members and superintendents may influence the impact of collective bargaining agreements on district performance. What is offered here is by no means an exhaustive list but simply reflects a set of important actions that matches well with the existing governance literature.

First, managers often try to leverage opportunities in the environment to generate additional resources that may be used to improve organizational performance (e.g., see Glaser, Aristigueta, & Payton, 2000; O'Toole & Meier, 1999). From a monetary perspective, this will primarily be accomplished by school boards, which can engage in fund-raising activities that may minimize fund transfers necessitated by union contracts. Thus, the impact of collective bargaining agreements on student performance is expected to be lower in districts where the school board is more active in soliciting extramural funding (H1). The literature also suggests that superintendents often work "outwardly" to improve performance by forming relationships with community organizations that can benefit students or by encouraging parents to become more active co-producers of education (e.g., see Meier & O'Toole, 2001; Meier, O'Toole, & Goerdel, 2006). It is possible, therefore, that networking activities by district executives may moderate any negative consequences of bargaining agreements, and the impact of collective bargaining on performance is expected to be lower in districts where the superintendent more actively networks with key stakeholders (H2).

Research also suggests that, in addition to looking outward, public managers can improve performance by acting upward and downward (Moore, 1995). This may entail improving relationships with superiors in order to gain more discretion and more support for productivity improvements (Lewis, 1993; Moore, 1995). Indeed, research on schools suggests that the relationship between school boards and superintendents can be positively related to student performance (e.g., see Meier & O'Toole, 2001). It may also involve increased communication and information exchanges with subordinates, which can ultimately improve the character of those relationships (Berman, West, & Richter, 2002; Hellweg & Phillips, 1982). Finally,



it may include the selection and retention of high-quality mid-level managers, who are ultimately responsible for many of the important governance decisions within public organizations (Johansen, 2008).

In the case of educational governance, superintendents who maintain good relationships with school boards may find more support when making changes that may moderate the negative effects of restrictive collective bargaining agreements. The impact of unions is expected to be lower in districts where the relationship between the board and the superintendent is better (H3). Similarly, communication with teachers and principals may help to foster informal relationships that moderate the impact of formal contract rules. This sense of “community” is the same reason that Moe (2009) gives for the reduced impact of collective bargaining agreements in smaller districts. Therefore, the impact of collective bargaining agreements on student performance is expected to be lower in districts where the superintendent communicates regularly with middle managers and line bureaucrats (H4). Finally, superintendents may offset union impacts by maintaining a cadre of principals who use resources and manage teachers effectively (Brewer, 1993; Hallinger & Heck, 1998; Waters, Marzano, & McNulty, 2003), and the impact of collective bargaining is expected to be lower in districts with more high-quality principals (H5).

A host of activities that superintendents might undertake to offset union impacts on performance do not fit neatly into the categories of network management, trust building, increasing communication and information flow, or other explicit strategies. Many of these are subtle and difficult (or impossible) to observe, but they are likely to reflect a superintendent’s experience dealing with the district teachers’ union. Superintendent experience has also been shown to be positively related to student performance in studies not focused on unions (e.g., see Meier et al., 2006). Since most districts unionized in the 1960s and 1970s, the membership of unions within districts has remained relatively stable, and their influence on district governance has been relatively stable over time. Thus, in addition to the other positive impacts on student performance, superintendents with more experience will have worked in the context of that influence for a longer time and are more likely to have developed effective moderating strategies. It is hypothesized, therefore, that the impact of collective bargaining agreements will be lower as superintendent experience increases (H6).

### **Data, Variables, and Methods**

Investigating the governance relationships of complex organizations necessitates the use of multiple data sources. The data set built for this study merges data from multiple original data collections together with administrative data obtained from the California Department of Education. The study focuses on districts within a



single state, California, because collecting the data required for a project of this kind is both expensive and labor-intensive. Despite the single-state focus, the results are generalizable to other states because there is significant variation among California districts on the key variables of interest. Nicholson-Crotty and Meier (2003) suggest that when cross-organization variation exists, results from single-state studies can provide valid inference to organizations outside the state. Each of the data sources is described below. Descriptive statistics for all the variables obtained from these sources are provided in Table 1.

### **DISTRICT ACADEMIC PERFORMANCE INDEX (API) GROWTH**

The measure of organizational performance used in the analyses that follow is one-year growth in the district's Academic Performance Index (API) score between the 2004–5 and 2005–6 academic years. The API is a composite score calculated for each school district by the California Department of Education based on the district's performance on standardized state tests each year. The score ranges from 200 to 1,000. Performance on a variety of tests across subjects and grade levels is aggregated to obtain the API score. The tests are not given the same weight in the API calculation from year to year, and, in fact, the API scores for consecutive years may not even be based on the same set of assessments. As a result, it is not valid to create simple differences in yearly API level scores as a measure of district growth. However, each year the department calculates a special one-year growth score that is the difference between this year's and last year's performance using a set of metrics with identical weighting schemes. It is this growth measure, obtained from the California Department of Education Web site, that is used in the analysis.<sup>3</sup>

### **MEASURING UNION STRENGTH**

The impact of teachers' unions on district performance is captured by relying on the Transfer and Leave Score (TLS) calculated for each district by Koski and Hornig (2007).<sup>4</sup> The TLS measure is constructed from a content analysis of district collective bargaining agreements, which were requested from all California school districts containing four or more schools ( $n = 565$ ) in 2006; 488 districts responded, for a response rate of 86%. The authors constructed the TLS based on the strength of the rights each collective bargaining agreement afforded to teachers in the processes of transferring schools (voluntarily or involuntarily) or returning from paid leaves. Oversight of transfers and leaves is among the most important functions of the collective bargaining agreement (Hess & Kelly, 2006), making its provisions an excellent place to measure union influence. Consistent with this assertion, Moe (2009) notes that voluntary and involuntary transfer provisions are the most strongly weighted provisions in his factor-analyzed measure of collective bargaining agreement restrictiveness.

Table 1. Descriptive Statistics

Variable	School Board Sample (N = 121)			Superintendent Sample (N = 70)			All California Districts (N = 966)		
	Mean	SD	Max	Mean	SD	Max	Mean	SD	Max
Transfer & leave score	4.98	2.23	10	4.96	2.23	10			
API growth 2005–06	11.24	9.68	55	10.96	10	30	10.93	20.74	-116
Base year API	732.71	62.93	903	727.51	59.59	863	739.99	79.63	512
Percent black	5.35	6.73	41	4.9	5.01	25	3.7	6.05	0
Percent Hispanic	37.38	24.37	94	38.67	23.24	93	35.78	27.9	0
Percent Asian	7.12	9.45	47	7.13	9.97	47	4.92	8.58	0
Percent free- or reduced-price-lunch eligible	42.45	23.02	100	44.13	22.01	96	45.27	27.24	0
ln(district enrollment)	8.57	1.45	13.19	8.48	1.24	10.98	6.96	1.95	1.1
Elementary district	0.26	0.44	1	0.27	0.45	1	0.58	0.49	0
Secondary district	0.14	0.35	1	0.16	0.37	1	0.09	0.28	0
Percent parents who are college graduates	19.78	9.82	44	19.06	9.21	44	19.72	12.46	0
Percent teachers with full credentials	95.69	4.25	100	95.97	3.81	100	96.03	5.77	50
ln(per pupil expenditures)	8.87	0.17	9.65	8.86	0.17	9.53	8.91	0.25	8.48

(continues)

**Table 1. Continued**

<i>Variable</i>	<i>School Board Sample (N = 121)</i>			<i>Superintendent Sample (N = 70)</i>			<i>All California Districts (N = 966)</i>		
	<i>Mean</i>	<i>SD</i>	<i>Max</i>	<i>Mean</i>	<i>SD</i>	<i>Max</i>	<i>Mean</i>	<i>SD</i>	<i>Max</i>
Governing actors relationships index	-0.12	1.05	-3.24	1.19					
School board works together well	4.19	0.73	1.75	5					
School board members communicate with each other well	3.95	0.79	1.67	5					
School board has good relationship with superintendent	4.41	0.65	1.5	5					
School board actively raises voluntary contributions	0.46	0.33	0	1					
Percentage of superintendent time spent:									
Communicating with union representatives					8.16	5.62	1.22	21.92	
Visiting schools					20.68	7.9	4.35	39.13	
Interacting with parents or community					17.78	7.66	2.86	39.13	
Superintendent experience in district					4.76	4.22	0.17	20	
Principal Quality Index					-0.22	0.99	-1.82	5.58	

Koski and Horng (2007) coded transfer and leave provisions from the contracts on a 15-point scale, with higher scores indicating greater collective strength of these provisions. As an example of how the authors coded transfer and leave provisions, consider the coding scheme used to analyze the contract's handling of voluntary teacher transfers:

- What role does seniority play in voluntary transfer teacher assignments?
- No seniority language = 0 points
- Seniority is a factor but is not determinative = 1 point
- Seniority is determinative = 2 points
- Displacement of other teachers based on seniority (bumping) is permitted = 3 points

The authors coded five other areas of transfer and leave policy similarly (for a full description, see Koski & Horng, 2007).<sup>5</sup> The TLS used in the analysis is the sum of the scores for the six parts as provided by the authors.<sup>6</sup>

## SCHOOL BOARD SURVEY MEASURES

Multiple independent variables utilized in the analysis come from an original survey of a stratified sample of sitting California school board members. As described in Grissom (2010), the California District School Board Member Survey (CDSBMS) was administered to board members in 222 of California's roughly 970 school districts during the 2005–6 academic year. Districts were stratified by size and chosen randomly. For boards selected into the sample, the CDSBMS solicited responses from every member of the board. The response rate was 63%, yielding data from approximately 700 board members. A full description of the survey methodology is available in Grissom (2010).

School board survey responses are used to measure two constructs. The first is the quality of the relationships within the school board and between the school board and the superintendent. This measure is created from board members' responses, on a five-point Likert scale (strongly disagree, disagree, neither agree nor disagree, agree, strongly agree), to three statements:

- My school board works together well almost always.
- My school board communicates with one another well almost always.
- My school board has a good working relationship with the district superintendent.

Responses to these items were highly correlated (Cronbach's  $\alpha = 0.84$ ), suggesting that they captured one underlying relationships construct, so factor analysis (with the standard linear scoring method) was used to reduce them to one dimension.<sup>7</sup> To facilitate interpretability, the factor was standardized. Descriptive statistics for the responses and the resulting factor are given in Table 1.<sup>8</sup>

The second measure created from the school board survey was the board's involvement in fundraising for the district. For each board member, this dichotomous

variable was coded as 1 if the member reported that the board “actively promotes the raising of voluntary contributions to schools from” either parents or the local community—two separate items on the survey—and 0 otherwise. Voluntary contributions are an important source of revenue for schools in California because the state’s centralized school finance plan makes raising additional funds for schools through traditional means, such as property tax levies, very difficult.

Because the study’s unit of analysis was the school district, board member responses were averaged at the district level. Averaging across multiple board members for each district had the added advantage of increased measurement precision for these variables.<sup>9</sup> To maximize sample sizes, the analysis included any district for which a response was received.<sup>10</sup> Since the CDSBMS sampled from all California school districts, whereas Koski and Horng (2007) sampled only from districts with four or more schools in creating the transfer and leave score, only a subset of available CDSBMS data was used in this analysis. As shown by a comparison of the characteristics of this sample with the universe of California school districts in Table 1, the schools in the resulting sample of  $n = 121$  districts were, as expected, larger in size (5,271 vs. 1,054 students, on average). They also had slightly higher fractions of nonwhite students and were less likely to be elementary-only districts (as opposed to secondary-only or unified districts). Yet differences across other variables, including test scores, student poverty, and expenditures, were quite small, suggesting that, aside from enrollment size, the analysis sample using the CDSBMS data was roughly representative of districts in the state at large.

## **SUPERINTENDENT SURVEY MEASURES**

At the same time that the CDSBMS was administered, a companion survey of district superintendents was administered using the same stratified sampling frame used for school board members. The response rate was 71%, yielding data from approximately 160 California superintendents.

Superintendents were asked a variety of questions about their work, their attitudes, and the relationships, decision-making processes, and needs in their districts. Multiple measures were created from these responses. Data were provided by the superintendents on their time allocations. From a larger set of items, it was possible to calculate the fraction of total time in the average week superintendents spent engaging in each of the following work activities: communicating directly with teachers’ union representatives, visiting schools, interacting with parents and the community. Survey data were also used to capture the number of years of experience the superintendents had in their district. Finally, the superintendent responses were used to construct a measure of the capacity of middle management in the district. This measure was created from a factor analysis of 12 items of the form “How many of the principals in your district have the skills to do the following?” Items included: choose the best teachers from the pool of available

candidates, think strategically about how to allocate school resources, identify students most in need of help, and use data on student achievement to guide instruction. Superintendents were asked to rate their principals on each item, using a scale of none, less than 25%, 25% to 75%, more than 75%, and all. Factor analysis of superintendent responses revealed one underlying factor that explained 84% of the variance in the measures (Cronbach's  $\alpha = 0.91$ ). This factor was labeled the Principal Quality Index. The standard regression scoring method was used to assign a value for this index to each school district.

As with the CDSBMS, the match between the superintendent survey and the TLS provided by Koski and Horng (2007) was imperfect because of differences in sampling strategy. Despite the high response rate to the superintendent survey, each missing response constituted a district that must be excluded from the analysis; the analysis samples using superintendent survey data had  $n = 68$ . As Table 1 shows, the analysis samples from the school board survey and superintendent data were very similar in observable characteristics, meaning that, as above, the analyses based on the superintendent responses were for districts that skewed somewhat larger and more nonwhite than California as a whole. Differences across other key variables were negligible.

## CONTROL VARIABLES

A slate of control variables were included in all analyses to take into account heterogeneity in organizational characteristics across districts. As in Moe (2009), the API growth models controlled for the base year (2005) API level to account for past district performance. Because student characteristics influence test score growth, district demographic variables also were included in the models: percentage black, percentage Hispanic, percentage Asian, and percentage free- or reduced-price-lunch eligible, a common measure of district poverty. Because organizational size can affect outcomes, the study controlled for district enrollment, taking the natural log to avoid undue influence from very large districts. For consistency with Moe (2009), the study also included the percentage of parents who were college graduates and the percentage of teachers who were fully credentialed. Each of the variables discussed so far was obtained from the California Department of Education's API files. Three final variables were obtained from the department's district financial data: indicator variables for elementary or secondary status (as opposed to unified), respectively, and per-pupil expenditures, again operationalized using the natural log to ensure that districts with very large budgets were not given inappropriate weights.

## METHODS

For ease of comparison with earlier work, the empirical specification was based as closely as practicable on the model used in Moe (2009). The specification models

district performance captured by growth in the Academic Performance Index as a function of district characteristics. As seen in Equation (1), it takes the form:

$$APIGrowth_i = \beta_0 + \beta_R R_i + \beta_M MGMT_i + \beta_A API_i + \beta_L X_i + \varepsilon_i \quad (1)$$

The variable subscripts index districts ( $i$ ).  $R$  is the collective bargaining restrictiveness measure, operationalized here by the transfer and leave score provided by Koski and Horng (2007).  $MGMT$  represents district management, which is operationalized using various measures from school board and superintendent survey data.  $API$  represents the base-year Academic Performance Index level.  $X$  is a vector representing district-level control variables, such as student demography or district size. The term  $\varepsilon_i$  is random error. Models are estimated using ordinary least squares regression with robust standard errors to account for diagnosed heteroscedasticity in the error term across districts.

Also explicitly considered is the moderating impact of management on the relationship between contract restrictiveness and performance, as represented in Equation (2):

$$APIGrowth_i = \beta_0 + \beta_R R_i + \beta_M MGMT_i + \beta_{RM} R_i * MGMT_i + \beta_A API_i + \beta_L X_i + \varepsilon_i \quad (2)$$

This equation includes an interaction term between restrictiveness and management. In the case that district management moderates the impact of union contracts on organizational outcomes, it is predicted that the  $\beta_{RM}$  coefficient will be of meaningful magnitude and statistical significance.

## Findings

Equation (1), excluding the  $MGMT$  term, was estimated as a baseline for further analyses. This specification most closely replicates the main analysis in Moe (2009). Results are presented in Table 2. Column 1 gives the results without the inclusion of the base year API score as a control variable, while Column 2 gives the results with this variable included. Changes in the coefficients on some student demographic variables, together with an increase in the adjusted  $R^2$  value, suggest that API level should be included to capture prior organizational performance; thus the focus here is on Column 2, and API was included in all remaining models. The coefficient is negative and significant at the 0.10 level, indicating that districts with higher past API scores had more difficulty increasing performance than district with lower past API scores.

The main coefficient of interest in Table 2 is the one on the TLS, which is large and negatively associated with district performance growth. The coefficient ( $\beta = -0.68$ ) is stable with the inclusion of base API and statistically significant at the 0.05 level (one-sided hypothesis test). The magnitude of the coefficient suggests



**Table 2. Base Model of Union Impact on Student Performance**

Dependent Variable = District API Growth 2005–6

	(1)		(2)	
Transfer & leave score	-0.68**	(0.39)	-0.68**	(0.37)
Percent black	-0.06	(0.14)	-0.12	(0.14)
Percent Hispanic	0.08	(0.06)	0.06	(0.06)
Percent Asian	0.08	(0.07)	0.13	(0.08)
Percent free- or reduced-price-lunch eligible	0.18***	(0.06)	0.06	(0.09)
ln(district enrollment)	-1.13	(0.89)	-0.94	(0.85)
Elementary district	2.28	(2.13)	4.39*	(2.22)
Secondary district	1.11	(3.03)	-2.15	(3.74)
Percent parents who are college graduates	0.33**	(0.14)	0.43**	(0.17)
Percent teachers with full credentials	0.17	(0.26)	0.19	(0.26)
ln(per pupil expenditures)	10.76	(8.66)	12.19	(8.59)
Base year API			-0.07*	(0.04)
Constant	-105.76	(80.09)	-66.37	(74.82)
Observations	121		121	
Adjusted $R^2$	0.106		0.136	

Robust standard errors in parentheses. Asterisks indicate statistical significance in a two-sided test, except for the Transfer & Leave Score, which is one-sided. \* $p < 0.10$ . \*\* $p < 0.05$ . \*\*\* $p < 0.01$ .

that a one-standard-deviation increase in the TLS (approximately two points) is associated with a decrease in API growth of approximately 0.16 standard deviations, or about 1.5 points. This result suggests, as has previous work, that rules enshrined in teachers' union contracts may provide significant obstacles to positive organizational performance for school districts in California.

However, the apparently deleterious impact of contract restrictiveness may be attenuated when considered in the context of organizational management. Table 3 considers two such measures from the school board survey: the measure of governance relations and school board fundraising. Column 1 shows that, while the coefficient on the TLS continues to be negative ( $\beta = -0.52$ ) and statistically significant, the association between performance and governance relations is positive ( $\beta = 1.4$ ) and similarly statistically significant. The two coefficients are such that, in the case that the two variables operate independently, each one-point increase in the transfer and leave index score can be offset by a 0.4-standard deviation increase in the measure of school board–superintendent relations. For voluntary contributions, the coefficient in the first model is also positive ( $\beta = 4.5$ ), although

**Table 3. Governance Relationships, Fund-Raising,  
and Impact of Unions on Organizational Performance**

Dependent Variable = District API Growth 2005–6

	(1)		(2)	
Transfer & leave score	-0.52*	(0.35)	-1.45***	(0.64)
Governance relationships (factor)	1.40*	(0.74)	0.03	(1.76)
TLS × Governance relationships			0.29 <sup>A</sup>	(0.29)
School board actively raises voluntary contributions	4.46	(2.79)	-4.71	(6.24)
TLS × Raises contributions			2.12* <sup>A</sup>	(1.16)
Control variable				
Percent black	-0.15	(0.14)	-0.17	(0.15)
Percent Hispanic	0.05	(0.06)	0.06	(0.06)
Percent Asian	0.16	(0.10)	0.15	(0.10)
Percent free- or reduced- price-lunch eligible	0.06	(0.08)	0.08	(0.08)
ln(district enrollment)	-0.62	(0.84)	-0.48	(0.81)
Elementary district	5.24**	(2.24)	5.66**	(2.23)
Secondary district	-1.69	(3.70)	-0.58	(3.65)
Percent parents who are college graduates	0.45***	(0.16)	0.48***	(0.15)
Percent teachers with full credentials	0.09	(0.27)	0.00	(0.29)
ln(per pupil expenditures)	14.23	(8.59)	15.92*	(8.45)
Base year API	-0.09**	(0.04)	-0.08**	(0.04)
Constant	-69.76	(75.30)	-80.58	(77.54)
Observations	121		121	
Adjusted R <sup>2</sup>	0.160		0.175	

Robust standard errors in parentheses. Asterisks indicate statistical significance in a two-sided test, except for Transfer & Leave Score, which is one-sided. \* $p < 0.10$ . \*\* $p < 0.05$ . \*\*\* $p < 0.01$ .

<sup>A</sup> statistical significance at the 0.10 level in a two-sided joint F-test.

the evidence is weaker that this value can be distinguished from zero ( $p = 0.11$ ).

Column 2 tests for interactions between contract restrictiveness and the management variables. Because of the multicollinearity introduced by multiple interactions with the TLS in the same model, an  $F$ -test is used to test for the joint significance of the interactions; it finds that the null hypothesis that

both are zero can be rejected at the 0.10 level ( $F = 2.45$ ,  $p = 0.09$ ). This result is interpreted as evidence that management can have a moderating impact on contract restrictiveness. The coefficient on the interaction between board relations and TLS is positive, suggesting that, while restrictiveness is negatively associated with district performance, this negative relationship is weaker in districts where the school board and superintendent maintain positive relations. The similarly positive coefficient on the interaction term between the TLS and voluntary contributions suggests that the negative relationship between contract restrictiveness and performance is also attenuated in districts where school boards actively seek outside sources of funding.

Table 4 moves on to consider district management measures from the superintendent survey.<sup>11</sup> As in Table 3, Column 1 shows the variables modeled as having only direct effects, while Column 2 shows the interactions between the management variables and the TLS. The superintendent's tenure in the district is considered first, but no significant evidence of a direct effect is found, conditional on the other management variables.<sup>12</sup> The next three variables capture superintendent time allocation: the approximate fraction of work time the superintendent allocates in an average week to communicating with teachers' union representatives, visiting schools, and interacting with parents or the community. Among these three activities, only one shows a statistically significant association with performance: time allocated to communication with the union.<sup>13</sup> The coefficient is negative ( $\beta = -0.59$ ,  $p < 0.01$ ), suggesting that each additional 1% of time spent interacting with union representatives in a typical week is associated with 0.59 fewer API growth points. The remaining variable examines the district's middle management, using the Principal Quality Index, a measure constructed from superintendents' assessments of the work capacities of the districts' principals along 12 dimensions using factor analysis. The coefficient for this measure is positive but not statistically significant, conditional on the other factors.<sup>14</sup>

Although only one of the superintendent management variables shows evidence of a direct association with district performance, Column 2 shows that there may be additional moderating impacts. Because of the multicollinearity introduced by including multiple interactions with the TLS, a joint  $F$ -test is again used to test whether there are multiplicative effects present. The  $F$  statistic ( $F = 2.44$ ,  $p = 0.04$ ) makes it possible to reject the null hypothesis that all of the interactions are zero. As hypothesized, the interaction between the TLS and principal quality is positive. The other interaction terms are, however, negative. They suggest, for example, that restrictive contracts have a more negative association with performance when the superintendent has served longer.<sup>15</sup> This is contrary to expectations and may suggest, as does the literature on organizational turnaround (see Meier et al., 2006), that replacing top executives is the best way to address chronic underperformance.

**Table 4. Executive Experience, Time Allocation, Principal Quality, and Impact of Unions on Organizational Performance**

Dependent Variable = District API Growth 2005–6

	(1)		(2)	
Transfer & leave score	-0.59	(0.54)	3.59	(2.89)
Superintendent experience	0.26	(0.25)	1.95**	(0.78)
TLS × Superintendent experience			-0.34*** <sup>A</sup>	(0.15)
Percentage of superintendent time spent:				
Communicating with teachers' union representatives	-0.59***	(0.21)	0.37	(0.52)
Visiting schools	0.05	(0.16)	0.20	(0.41)
Interacting with parents or community	-0.16	(0.15)	0.07	(0.41)
TLS × Communicating with union			-0.17*** <sup>A</sup>	(0.08)
TLS × Visiting schools			-0.02 <sup>A</sup>	(0.08)
TLS × Interacting with parents or community			-0.03 <sup>A</sup>	(0.07)
Principal Quality Index	0.72	(1.74)	-3.04	(3.09)
TLS × Principal quality			0.73 <sup>A</sup>	(0.61)
Control Variable				
Percent black	-0.25	(0.20)	-0.10	(0.22)
Percent Hispanic	0.06	(0.09)	0.09	(0.09)
Percent Asian	0.19*	(0.09)	0.25**	(0.11)
Percent free- or reduced-price-lunch eligible	0.31***	(0.11)	0.35***	(0.12)
ln(district enrollment)	1.67	(1.41)	1.00	(1.64)
Elementary district	2.88	(3.08)	2.50	(3.68)
Secondary district	3.21	(4.11)	4.10	(5.42)
Percent parents who are college graduates	0.31	(0.27)	0.40*	(0.24)
Percent teachers with full credentials	0.19	(0.37)	0.29	(0.37)
ln(per pupil expenditures)	16.45	(10.55)	19.17*	(10.57)

Dependent Variable = District API Growth 2005–6

	(1)		(2)	
Base year API	0.02	(0.05)	0.03	(0.06)
Constant	-195.37*	(103.18)	-258.95**	(115.89)
Observations	68		68	
Adjusted $R^2$	0.259		0.264	

Robust standard errors in parentheses. Asterisks indicate statistical significance in two-sided test, except for Transfer & Leave Score, which is one-sided. \* $p < 0.10$ . \*\* $p < 0.05$ . \*\*\* $p < 0.01$ .

<sup>A</sup> indicates statistical significance at 0.10-level in a two-sided joint F-test.

## Discussion and Conclusions

The analyses discussed above are both interesting and, on some dimensions, supportive of the argument that governance matters when considering the impact of collective bargaining on public performance. The results suggest that outwardly focused activities by public officials can reduce the deleterious effects of restrictive bargaining agreements on organizational performance. For example, efforts by a legislative body (in this case the school board) to mobilize monetary resources from the community does as much to increase performance as restrictive contracts do to decrease it. More important, such efforts are able to influence performance indirectly by *decreasing* the impact of the collective bargaining agreement. This may be because fund-raising efforts increase the overall budget and eliminate the need for the reallocation of resources often necessitated by collective bargaining.

The results also suggest the importance of good working relationships among governance actors. A good relationship between the superintendent and the school board and among school board members has a substantial impact on the effect of collective bargaining agreements on student performance. The quality of the relationships among governance actors moderates the influence of restrictive collective bargaining agreements on student performance, reducing it by almost 20%. Given the similarities between board/superintendent and council/manager relationships, it is easy to imagine how this result might generalize to the performance of municipal government organizations, although more research is obviously needed to confirm this supposition.

Surprisingly, the indicator of interaction with parents and community groups does not have the significant positive impact on performance that was expected. This may be, of course, because there simply is no impact in the sample of organizations, but it may also be due to poor measurement. The argument that these activities should matter is premised on work that measures “managerial networking” or activities outside the organization in a much more comprehensive manner

than was possible in this study (e.g., see Meier & O'Toole, 2001). Nonetheless, the fact that the inclusion of these variables affects the size and significance of the contract coefficient suggests that they play an important role in the process modeled.

Time spent by superintendents visiting schools does not have either a direct or indirect impact on student performance in the models. This finding may simply reflect that the impact on school performance of this aspect of superintendent time allocation is not captured by changes in test score growth and would be better evidenced by data on intermediate organizational variables, such as teacher satisfaction or middle management turnover. However, it may suggest that appointed officials serve best by managing upward and outward, and in the selection of high-quality subordinates, rather than by spending time checking up on the day-to-day activities of midlevel managers and line bureaucrats. This contention is supported by the finding that the quality of midlevel managers does moderate the impact of collective bargaining agreements on organizational performance.

Although counter to expectations, the negative interactions between some of the superintendent variables and the transfer and leave scores supports the assertion that management moderates the impact of unions on student performance. Superintendents who spend less time communicating with the union and have less experience both reduced the negative impact of unions on student performance. The large literature on bureaucratic behavior and regulatory policy cautions against the ability of powerful interest groups to "capture" the agencies that are supposed to be regulating them, and these results may reflect the ability of unions to influence the decisions of long-standing superintendents or those with whom they have more frequent contact. Of course, more research is necessary to confirm this supposition.

The study began with a set of assumptions regarding the moderating effect of governance on the relationship between unions and performance in public organizations. The findings support the assertion that governance matters, although not always as expected. Actors at multiple levels of an organization, through the strategies they adopt and the relationships they foster, can reduce or eliminate the negative impact that restrictive collective bargaining outcomes have on performance. Alternatively, if the actors make the wrong choices, the negative impacts of unions can grow. This finding is unsurprising given the well-developed theoretical and empirical literature on the importance of governance in public organizational outcomes. Nonetheless, it makes a significant contribution to the study of public employee union impacts on performance. At least a portion of the literature on this subject treats unions as an irresistible juggernaut imposing their will on public organizations and taxpayers. With that view, it is perhaps understandable why abolishing collective bargaining or dramatically curtailing the power of unions to recruit members is an attractive solution to policymakers in some states and even to

some scholars. Alternatively, the present study suggests that the impact of unions on performance can be managed in the same way that public officials respond to myriad other internal and external challenges to organizational performance. This suggests a much less dramatic solution to what some perceive as a “union problem.” Under the right governance regime, unions might continue to provide the benefits valued by their members—who are, after all, public servants—with few significant deleterious effects on performance.

The results also suggest some practical strategies for education officials facing restrictive collective bargaining agreements. If it is an option in their district, officials can overcome the resource constraints imposed by unions by actively courting nontraditional funding sources. In addition, boards need to understand that replacing the district executive may be a strategy to reduce union impact on student performance, although this decision should obviously be made with caution given the potentially negative effects of superintendent turnover. Finally, it is important for district officials to understand that high-quality principals are a first line of defense against restrictive collective bargaining agreements. Given that principals are typically promoted from within, this increases the need to recruit and retain high-quality teachers, which raises an interesting challenge for boards and superintendents who have a conflictual relationship with the organization that represents the teachers.

Of course, caution is necessary in drawing conclusions from the analyses for a variety of reasons. They were conducted in a rather small sample of public organizations, and the small sample size decreases the likelihood of finding significant statistical relationships. Nonetheless, although the data requirements for this type of study are comprehensive, and therefore daunting, future research must confirm the results in a larger sample of organizations. Caution is further warranted because the study tested assertions about the relationship between unions, governance, and performance in only one type of organization. It must be stressed, however, that these organizations negotiate with some of the most powerful public employee unions in the nation. While the authors are confident that their conclusions are generalizable to other organizational settings, further research is obviously necessary to determine the specific character of the union/governance/performance relationship in other contexts.

Finally (although not exhaustively), there is reason for caution in the fact that the study does not fully conceptualize and model many of the possible interdependencies between key variables in the models. One such relationship is between socioeconomic status in a district and union influence. The ability of parents of low socioeconomic status to support union activities may hinder the strength of collective bargaining agreements struck by these organizations. Alternatively, a lack of efficacy and resources among these parents may make it more difficult for district officials to raise external funds or take other steps necessary to challenge



or manage the power of the union. Future research must take account of this and other potential sources of endogeneity.

## Notes

1. See Eberts (1983) for a similar strategy.

2. For a partial exception, see the work of Eberts and Stone (1984, 1987), who include some principal characteristics in their studies of union impacts on performance in public schools.

3. API data files may be obtained from the California Department of Education at [www.cde.ca.gov/ta/ac/ap/apidatafiles.asp](http://www.cde.ca.gov/ta/ac/ap/apidatafiles.asp) (accessed September 1, 2009).

4. A special thanks to William Koski and Eileen Horng, who were generous enough to share their data with us.

5. The other five transfer and leave “questions” asked of the collective bargaining agreements were: (1) What role does seniority play in selecting a teacher to involuntarily transfer? (2) What role does seniority play in receiving a teacher who is being involuntarily transferred? (3) How are outside applicants considered relative to inside applicants? (4) When is the district required to provide reasons for denying a transfer request? (5) What position must a teacher be given on returning from long-term paid leave?

6. A TLS measure was also created from the Koski and Horng (2007) data using factor analysis and was found to be highly correlated with their index measure ( $r = 0.85$ ). The study’s main results are qualitatively similar regardless of which of the two measures is used; Koski and Horng’s score measure was used to preserve consistency with their work.

7. Because these three variables are ordinal in nature, the factor analysis is based on the polychoric correlation matrix for the three variables rather than the more common Pearson correlations.

8. Note that the factor is not exactly mean 0, standard deviation 1, because the factoring and standardization were conducted on the full survey sample, not the analytic sample.

9. Intra-class correlations were computed to measure inter-rater reliability for each of the variables from the school board survey. For the three measures factor analyzed to create the governance relationships variable, the correlations were moderate, ranging between 0.4 and 0.5 for boards with two or more responding members. For the contributions variable, the reliability was only 0.2, suggesting that this variable is measured with a substantial degree of error.

10. The number of responses per board in the analytic sample ranged from one (7%) to seven (2%); 80% had at least three respondents.

11. The variables derived from the two different surveys are considered separately because of the substantial differences in sample sizes.

12. A positive and significant ( $p < 0.05$ ) coefficient was found for experience when it is the only management variable included in the model, suggesting that the impact of experience may be mediated by time use or middle manager quality.

13. Given the potential for intercorrelations among the time allocation variables, various combinations of time variables were included in a series of models to assess the robustness of the results. Time allocated to union communication was statistically significant regardless of the combination of time variables included; no other time variable showed evidence of a significant association across models.

14. Like superintendent experience, this variable is statistically significant (at the 0.10 level) when the other management variables are not included in the model.

15. A model was also run that included all of the management variables from the two surveys in the same equation, but the loss of sample size from pairing the two made the results difficult to compare to those shown in Tables 3 and 4, even before including the interaction terms. Note, however, that in the combined model without the interactions, the point estimates of all of the management variables were all in the same direction and generally of the same magnitude as those shown in Column 1 in both Tables 3 and 4, although only time spent communicating with the union remains statistically distinguishable from zero.

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