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Unionism Comes to the Public Sector

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I. Introduction and Summary

IN THE 1950s only a small minority of public sector workers were organized and even AFL-CIO President George Meany believed it was “impossible to bargain collectively with the government.”¹ Virtually no states had laws permitting collective bargaining for public employees. Strikes were prohibited. Analysts of unionism regarded most public sector employees as unorganizable.

In 1984 about 44 percent of government employees were represented by labor organizations and 36 percent were members of unions, compared to 18 percent of private sector wage and salary employees who were “represented by labor organizations” in that year.² More than three-quarters of the states had legislation authorizing collective bargaining for most groups of public employees.³ Nine states

permitted strikes by some public workers.

What caused the sudden surge in public sector unionism in the United States? What are its economic consequences? How have various states and localities dealt with the organization of their employees? Which laws and procedures have proven more or less successful in coping with the unionism of public employees? In what ways do labor relations in the public sector parallel labor relations in the private sector? In what ways has the public sector been unique?

To answer these questions, I review the results of the past two or so decades of research on U.S. public sector labor relations. The research represents a significant and expanding effort by labor specialists. In 1960 relatively few labor relations articles in the leading journals dealt with the public sector; in 1983 not only were there numerous public sector articles in the labor journals but the field had grown sufficiently to produce two specialized journals, as well as numerous books and research treatises.⁴

Public Sector Data Set. See Valletta and Richard Freeman (1985).

⁴ The two specialized journals are the *Government Union Review*, and the *Journal of Collective Negotiations*. The bibliography to this paper shows the growth of research articles.

¹ The Meany quote is from Leo Kramer, *Labor's Paradox—the American Federation of State, County, and Municipal Employees*, AFL-CIO (1962, p. 41). One estimate for the percent of workers organized in unions in the government sector in the 1950s is 13 percent. John F. Burton, Jr., “The Extent of Collective Bargaining in the Public Sector,” (1979) pp. 2–3. However, few of these workers had contracts.

² See Appendix for other estimates of collective bargaining coverage.

³ Thirty-nine states have such legislation, according to the National Bureau of Economic Research

The review shows that while we have amassed considerable knowledge about the nature of public sector labor relations, there are noticeable gaps in our understanding of what public sector unions actually do. The following eight propositions provide a general overview of the major findings and issues in public sector labor relations:

1. A fundamental difference between public and private sector collective bargaining is that public sector unions, more so than private sector unions, can influence the employer behavior through the political process. The principal reason for this is that public sector employees help elect both the executive and legislative branches of government and thus play a role in determining the agenda for those facing them at the bargaining table. Private sector unions, while they can affect demand for labor through "union-label" campaigns or through governmental regulations (restrictions on car imports, Davis-Bacon restrictions on pay for government-funded construction and so on), do not in general help elect the board of directors of companies or top management.

There is, however, nothing about the political aspect of public sector bargaining that necessarily makes the demand for public sector workers more inelastic than the demand for private sector workers, thus giving public sector unions great economic power. Although it is true that public employers do not face competition in their locality, they are subject to the discipline of a budget and, in the long run, to exit and entry of residents and businesses (the Tiebout adjustment). "Legislative vetoes" of negotiated settlements in which legislatures refuse to raise the money for a given settlement and taxpayers' referenda that limit taxes can seriously weaken unions' ability to affect outcomes. Finally, in contrast to private sector unions, which are free to wield the strike threat as a weapon, union power

in most public sector jurisdictions is limited by restrictions on striking, and the effect of strikes may be less than in the private sector because governments continue to receive tax moneys whereas the receipts of private employees may dry up.

2. The growth of public sector unionism in the past two decades can be traced, in large part, to the passage of laws (executive orders) that have sought to bring the private sector industrial relations model to the public sector. In states with laws favorable to unionism, public sector unionism has flourished; in states without such laws, it has not. General lack of management opposition to public sector unionism, possibly due to the political power of unions, has been important for union victories in representation elections in the public sector. There is evidence that the spurt in public sector unionism has ended, leaving the United States with somewhat less than half of public sector labor covered by collective bargaining.

3. Much of the literature concludes that public sector unions have had relatively modest effects on wages compared to the effects of private sector unions on wages. This result, if true, would resolve the debate over the relative strength of unions to affect wages in public and private employment. A careful reading of the evidence, however, shows the finding to be questionable on several grounds: First, many public sector union wage studies looked at unions when they were just establishing themselves during a period of public sector expansion. If, as seems reasonable, the wage effects in first contracts are smaller than in later contracts and if union wage effects are smaller in booming than in declining markets, much of the early literature has *understated* the long-term "equilibrium" impact of public sector unions on compensation. A second problem with the generalization is that few studies have distinguished between the differing effects of public employment

per se versus differing effects due to the type of occupations organized in the public sector. Public sector unions include a relatively large number of white-collar workers, whose wages appear to be only moderately affected by unionism in the private sector. They include protective service workers, for whom it is difficult to find comparable occupational groups in the private sector. A third reason for questioning the conclusion that public sector unions have weak effects on wages is the likelihood that, because cities often use "comparability" to determine wages, there are greater "spillovers" of wage settlements in the public sector than in the private sector, biasing downward standard cross-section estimates of the union effect. Finally, for some groups, public sector compensation packages differ greatly in dimensions *not* captured in standard data sets. While these considerations do not necessarily refute the conventional generalization, they suggest it should not be accepted without further investigation.

4. With respect to wage structure, public sector unions have quite different effects on some aspects of wage structure than private sector unions do, and quite similar effects on other aspects. The teachers' unions appear to widen educational wage differentials, while police and firefighters' unions appear to have little effect on the range of salaries for their members. This contrasts with the general equalizing effect of unionism on such differentials in the private sector. On the other hand, most studies find that in both the public sector and the private sector the union impact on fringe benefits is greater than the union effect on wages, and there is some evidence that, as in the private sector, there is less inequality in earnings among union than among nonunion public sector workers.

5. Despite being illegal in all but nine states, strikes by public sector workers are part of public sector labor relations. From

the 1960s to the 1980s, the number of strikes increased drastically until one of every eight strikes in 1979 and 1980 occurred in the public sector. Public sector strikes are generally of short duration. Although injunctions often fail to halt strikes, there is evidence that the nature of strike laws affects their frequency. Public sector alternatives to the strike, in the form of various types of compulsory arbitration, have been successful in reducing strikes with no clear-cut impact on the level of wage settlements. Arbitrators' decisions show no apparent bias toward one side or the other, despite frequent claims to the contrary. Final-offer arbitration in which the arbitrator picks one of the final offers of the two parties rather than making his or her own award irrespective of their offers, appears to have worked reasonably well, perhaps with less of a "chilling effect" on negotiations than conventional arbitration.

6. The evidence available on the effects of public sector unions on productivity shows that unionism is not inimical to productivity. Some studies find positive union effects, some find essentially no effects, and some find negative effects. However, problems of measuring output of public services make any firm generalization difficult. With respect to public budgets, studies suggest that unionization does, indeed, increase the share of a municipality's budget going to the organized workers.

7. Several aspects of market performance have not, as yet, been extensively explored by public sector researchers. These aspects include the effect of public sector unions on turnover, which is known to be lower, in general, in public employment; the net effect of unions on the dispersion of earnings; the effect of unions on employment and wage responses to cyclical and other economic swings; and, most important of all, the effect of unions on the "price" of output, taxes, property

values, and municipal finances in total.

8. Viewed critically, perhaps the biggest gap in the economic analysis of public sector unionism has been the tendency of most researchers to apply the same models and tools as have been used to analyze the economic impact of private sector unionism, giving short shrift to the distinctive aspects of the government as an employer. Most studies have failed to address the differences in constraints (both legal and budgetary) between public and private sector bargaining. Most studies have failed to examine the potentially different goals of unions made of (white-collar) public sector workers, despite the often heard claims that these unions do, indeed, have more professional and political aims than do private sector blue-collar unions.

As an alternative to the private sector model I suggest in this essay a model in which public sector unions seek to shift demand curves for labor rather than simply to raise wages, so that their effects are as much on employment and total budgets as on wages. Indeed, I argue that, because of the political nature of public sector collective bargaining, union goals are likely to include the size of budgets and of employment—of public services provided—to a greater extent than do the goals of private sector unions. If this is correct, analysis limited to the wage or compensation effects of these unions can seriously understate the economic effects of public sector unions.

II. *The New Unionism*

Unions typically grow in sudden spurts after years of stagnation. As can be seen in Figure 1, this is true of public sector unions in the United States. During the mid-1960s through the early 1970s, public sector union membership more than quadrupled.⁵ The sudden growth of public

sector unions was remarkable in that it occurred during a period of noticeable decline in the organization of the private sector. It came as a surprise to most observers, who had cited such factors as the security of public sector work, the high proportion of female, black, and white-collar workers, adverse public attitudes, civil service laws and prohibitions on strikes as factors inhibiting organization (Burton 1979, p. 8). Indeed, as late as February 1959, the AFL-CIO executive council stated that “in terms of accepted collective bargaining procedures, government workers have no right beyond the authority to petition Congress—a right available to every citizen” (Jack Stieber 1973).

Because public sector unions operate under state laws that regulate unions differently and because some of the largest unions began as “associations” often opposed to collective bargaining, the measures of unionism and the precise timing of the “spurt” is subject to some problem (see Appendix). Figure 1 reports two statistics: 1. Union or union plus association membership from the Bureau of Labor Statistics linked to membership data from the Current Population Survey. The mixing of union and union plus association membership to depict the growth of public sector unions might be considered misleading but it is not. In the 1950s and through much of the 1960s associations did not in general operate as unions (bargaining collectively, for instance). In the 1970s, most did everything that unions do. The changes in the National Education Association and to a lesser extent the American Association of University professors are cases in point. 2. The percentage of state and local governments covered by contracts. Because larger cities are more likely to be under contracts than smaller cities, this is a conservative esti-

⁵ Because of differences in the data and in the fine line between associations and unions, these and

other statements about the growth of public sector unions are approximations.

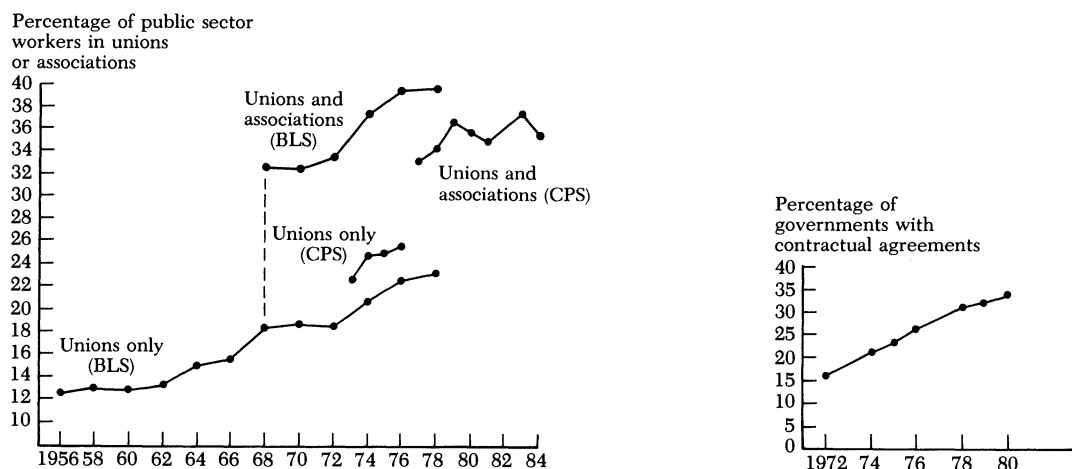


Figure 1.

Sources: Percentage of Workers in Unions and Associations, (BLS) U.S. Dept. of Labor, 1979b.
 Percentage of Workers in Unions and Associations, (CPS) U.S. Bureau of the Census, 1973–1984 (1982 not available).
 Percentage of Governments with Contractual Agreements, U.S. Bureau of the Census, 1981.

mate of the fraction of the public sector work force whose wages and work conditions are set by collective bargaining, whether the workers are union or are not union members.

Table 1 shows that, while some of the newly organized public sector workers are in unions that are predominantly in the private sector, such as the Service Workers or Teamsters, the majority of workers are in newly emergent public sector unions. These unions have certain distinct characteristics. First, in jurisdictional terms, many are more like craft than like industrial unions, being organized along occupational lines (i.e., the postal workers' unions, the teachers' unions, the police, the firefighters, the sanitation workers, and the transit workers). Second, the new unions have organized an exceptionally large number of "white-collar" workers, even if one excludes the teachers. Only one-third of contracts for state and local workers cover blue-collar workers only, whereas 42 percent cover white-collar workers, and 27 percent cover "mixed"-

collar units (see Table 2). By contrast, just 21 percent of private sector workers covered by major collective bargaining contracts are in white-collar only or mixed units (Daniel Mitchell 1979, p. 130). Third, in addition to the unions that can and do negotiate and sign collective agreements over wages and fringes and working conditions, there are the sizeable federal employee unions that do not sign agreements over wages and fringes. Roughly 17 percent of all public sector workers covered by unions are federal employees for whom unions perform representation but not collective bargaining functions.

What caused the spurt of public sector unionism in the late 1960s through the early 1970s?

What changes led to the sudden organization of traditionally nonunionizable public sector workers?

First and foremost were changes in the laws regulating public sector unions. In the federal sector, Executive Order 10988, which President Kennedy announced in 1962 and which was later

TABLE 1
THE PUBLIC SECTOR UNIONS, 1980

	Membership
Teachers	
American Federation of Teachers	551,000
National Education Association	1,684,000
American Association of University Professors	66,000
Public Safety	
International Association of Firefighters	178,000
International Conference of Union of Police Associations	50,000
Fraternal Order of Police	150,000
State and Local Government	
American Nurses Association	180,000
American Federation of State, County, and Municipal Employees	1,098,000
Service Employees International (1985)	560,000 ^a
Teamsters (1985)	150,000 ^a
Laborers (1985)	85,000 ^a
Assembly of Government Employees (1975)	600,000 ^b
Federal Nonpostal ^c	
American Federation of Government Employees	255,000
National Federation of Federal Employees	40,000
National Treasury Employee's Union	53,000
National Association of Government Employees (1982 Joined Service Employees)	50,000
International Association of Machinists	7,500
Postal and Federal	29,000–30,000
Postal Unions	
American Postal Workers Union	251,000
National Association of Letter Carriers	230,000

Sources: Bureau of National Affairs (1985, pp. 13–43) unless otherwise stated.

^a Based on discussion with union officials.

^b John Burton and Charles Krider (1975).

^c Sar Levitan and Alexandra Noden (1983, Table 1).

TABLE 2
COVERAGE OF PUBLIC SECTOR UNIONS

	Percent Covered by Unions
Federal Workers, 1981 ^a	61
Federal Wage Systems (Blue-Collar)	86
General Schedule (White-Collar)	54
State and Local, 1981 ^b	49
Local Contracts, 1976 ^c	52
Teachers	68
Police	53
Fire	71
Sanitation	40
Hospitals	29
In State and Local Contracts, 1976 ^c	
White-Collar Only	42
White-Collar and Blue-Collar	27
Blue-Collar Only	31
Membership, 1984 ^d	
White-Collar	35
Blue-Collar	38
Coverage, 1984 ^d	
White-Collar	44
Blue-Collar	44

Sources: ^a Levitan and Noden (1983, p. 15).

^b Troy (1983, Table C).

^c Mitchell (1979, p. 130).

^d Tabulated from U.S. Department of Commerce, 1984.

strengthened by ensuing presidents, was the principal cause of the rapid organization of federal employees. It provided for the recognition of federal worker unions but limited the scope of bargaining. Before 1962 unionization of federal employees was going nowhere; then suddenly, it shot upward. At the state and local level there were a variety of changes in the law occurring mostly in the 1960s and 1970s (see Table 3), which were followed by a rapid growth of unionization. The laws favorable to collective bargaining ranged from weak “meet and confer” laws, to re-

TABLE 3
CHANGES IN STATE LAWS AND POLICIES REGULATING PUBLIC SECTOR UNIONISM

	1959	1969	1979	1984
No Explicit Policy	39	14	5	4
Collective Bargaining Prohibited	4	6	4	4
Bargaining That Permits "Meet and Confer"	6	15	8	8
Bargaining Required	1	18	33	34
Arbitration/Other Terminal Dispute Resolution Mechanism	—	5	19	20

Source: Valletta and Freeman, 1985.

Notes: This table was compiled from a collection of state statutes, session laws, case references, and official opinions of state attorneys general. Each of these sources is subject to interpretation; the numbers shown may differ slightly from those compiled from any individual source, such as the U.S. Department of Labor's Summaries of Public Sector Labor Relations.

The first row of numbers, "No Explicit Policy," corresponds to the number of states in each year that had no known public sector collective bargaining laws or policies on record. The second row reflects the number of states that specifically prohibited public sector collective bargaining. The third row represents the number of states that authorized or required public employers to deal with public employee unions, but still allowed employers to unilaterally set the terms and conditions of employment. The fourth row corresponds to the number of states that required public employers to bargain in good faith with public employee unions. The final row represents the number of states that had in place legislation requiring arbitration or some other terminal dispute resolution procedure, where participation in the procedure was compulsory by legislative mandate or at the request of one of the parties.

quirements for bargaining, to compulsory arbitration to resolve disputes. Although the various laws differ among types of employees (i.e., police and firefighters have different regulations from the teachers), states that have favorable collective bargaining laws in one area also have them in others, permitting the broad classification of states, as shown in Table 3.

As an example of the rapid change in state laws, consider Massachusetts. In 1958 it passed a law allowing public employees to join unions but not to bargain over economic matters. In 1964, it passed a law requiring bargaining over work conditions, which was extended in 1965 to include wages, but did not contain any terminal mechanism for settling unresolved issues. In 1974 the state legislature ordered final offer arbitration to settle impasses. Then, responding to municipalities unhappy with final-offer arbitration, the

legislature developed a labor-management committee to resolve impasses through a variety of mechanisms. In the span of a decade, the state moved from no legal bargaining to bargaining with a dispute resolution mechanism guaranteeing a contract (Jonathan Brock 1982, pp. 27–29).

In addition to passing laws that encouraged collective bargaining, the majority of states instituted public employee relations boards (PERBs) to hold representation elections among workers and to resolve charges of unfair labor practices.⁶

Studies of the spurt in public sector unionism (see Table 4) uniformly show that these laws were a major factor in the

⁶ Thirty-four states (including Washington, DC) have some kind of employee relations board. Calculated from U.S. Department of Labor, Labor-Management Services Administration, *Summary of Public Sector Labor Relations Policies*, 1981.

TABLE 4
STUDIES OF THE IMPACT OF THE LEGAL ENVIRONMENT ON PUBLIC SECTOR UNION GROWTH AND
DETERMINANTS OF FAVORABLE LAWS

Study	Group	Result
<u>Union Growth</u>		
William Moore (1978)	Teachers, cross-state and time series, 1919–70	Mandatory bargaining laws help AFT, not NEA.
Reid and Kurth (1983)	Public employees, 1972–80	Progressive state labor law raises unionism.
Dalton (1982)	Government employees, 1976	Mandatory bargaining laws greatly raise union density.
Reid and Kurth (1983)	Teachers, 1972–80	Teachers' union growth spurred by provisions allowing exclusive representation, checkoff of dues, deterred by right-to-work laws.
William Moore (1977)	Public sector, 1968	Comprehensive collective bargaining laws raise unionism.
Ichniowski (1984), Lauer (1979)	Police, 1960–80	Collective bargaining laws are a key factor in police organization.
<u>Determinants of Laws</u>		
Faber and Martin (1979)	Laws on teacher collective bargaining	Urbanized states and those scoring high (low) on liberal ratings of passed laws earlier.
Kochan (1973)	State public employee bargaining laws	Per capita change in income 1960–70, state per capita expenditures of government, and innovativeness of state leads to public sector collective bargaining laws.

growth of public sector unionization. States that enacted laws had rapid increases in unionization in ensuing years. States that did not had no such growth. The more favorable the laws were to unions the greater the growth of unionization. For instance, in states where laws permit strong union security clauses, teachers' unions appear to have done better than in other states. This is not to say that public sector bargaining does not exist in the absence of a law. Indeed, Ohio is a good counter example. But one counter example does not discredit a social science generalization. For the most

part, the spurt in public sector unionism was associated with changes in state laws regulating collective bargaining.

Finally, it should be noted that there is some indication in the growth curves for public sector union organization that this spurt has come to an end. From 1972 to 1980 the share of state and local full-time employees with employee organization representation was virtually unchanged at almost 50 percent (U.S. Bureau of the Census 1974–1981), while from 1980 to 1984 the proportion of government workers who were union members was virtually constant at 36 percent (U.S.

Bureau of Labor Statistics 1985). The Troy-Sheflin (1985) numbers, based on dues-paying members, show an actual decline in public sector organizational density from 1976 to 1980.

Why Did the New Laws Induce the Spurt in Public Sector Unionism?

The various state public employee labor laws of the mid-1960s through the early 1970s established mechanisms for workers to vote for or against collective representation and required public sector employees to bargain with them. Both of these legal innovations were already part of the National Labor Relations Act governing private sector unionism. They can be viewed as making public employees more like private employees. Yet unionism in the public sector grew while in the private sector it declined during the period. One possible reason for the different results is that there was "pent-up" demand for unionization in the public sector, but not in the private sector. Another reason, which I believe to be more important, is that public sector employers have not fought union organization of their workers to the extent that private sector employers have. Public officials cannot break the spirit or letter of the law, as management has done in the private sector. Hence, the same nominal election procedures produce different results in the two settings.

Finally, an important issue that must be addressed in any analysis of the impact of laws on society is whether the legal changes have a true independent effect on social outcomes or whether they are simply an intervening or mediating factor for more fundamental forces. Studies of the variables associated with passage of laws favorable to public sector collective bargaining show that the laws have come first in states with high income per capita and a history of innovations in governmental activity (Thomas Kochan 1973; Charles Faber and Douglas Martin 1979).

Some show that these laws are more likely in states that are highly unionized in the private sector, but others do not. Although detailed analysis of legislative votes and of the history of key legislation is required to determine full causal routes, the available evidence suggests that the laws had an independent effect (see the studies in the first panel of Table 4, all of which try to control for other factors). Without legislation favorable to collective bargaining we would not have observed the extensive unionization of the public sector in United States, at least not to the extent that actually occurred.

III. *The New Setting*

The public sector differs in several important ways from the private sector (see Table 5). Public employers have the sovereign powers of the state; they generally are monopolies in their local area; they are ultimately responsible to the voting public, including public sector workers; and some produce essential services (police, fire, and defense).

Do these differences make the industrial relations system of the private sector essentially inapplicable to the public sector, or are these differences substantially no greater than the differences between various private industries such as steel and construction, for example? Do the distinctive features of the public sector give unions of governmental employees particularly strong economic power, as some have alleged?

The Sovereign Power Issue

Among the first objections to public sector unionism was the claim that such unionism infringes on the sovereign power of the state in determining levels of services and rules for the behavior of public employees. Surely, it was argued, one cannot allow public employees, particularly the military, the police, or fire-

TABLE 5
INDUSTRIAL RELATIONS SYSTEM IN THE PUBLIC SECTOR COMPARED TO THE PRIVATE SECTOR

	Public Sector	Private Sector
Actors		
Management	Elected officials. Legislative/City Council voters, through referendum.	Managers.
Unions	Often white-collar.	Mostly blue-collar.
Third Party	Compulsory arbitration. Police, military power of state.	Some mediation.
Workers	More likely to be women or blacks.	
Technology/Market		
Output Produced	Unpriced goods, hard-to-measure public goods.	Priced goods and services for private consumption or investment.
Competition	Monopoly in local market.	Competitive markets in most cases.
Entry and Exit of Employers	Residents and businesses can move across locales.	New firms enter or leave given locale.
Budget Conditions	Budget constraint. Can change taxes. Intergovernmental grants. Short-term debt. Tax revenue keeps coming in regardless of strikes.	Profits "buffer" changes in wages. Raise or lower prices to change revenues.
Time Period Between Receipts of Costs	Future generations of taxpayers may pay for future benefits promised today.	Company value likely to reflect.
Power		
Influence on Other Side	Unions can help elect political leaders in bargaining. Can do "end" runs by direct appeals to political and public leaders.	Unions have no say in company policy.
Conflict Tools	Strikes often prohibited.	Free to strike with only modest Taft-Hartley restrictions. Strikes halt receipts little.
Illegal Acts	Management unfair labor practices unlikely.	Little penalty for management unfair labor practices. Illegal acts frequent and rising.

fighters to have power independent of the elected government. The counter argument is that there is nothing special about employee-employer relations for most public sector workers. Why should a worker employed in a private firm under

city contract operate under a drastically different labor law from the equivalent worker in a city-owned service?

The sovereignty issue has, for the most part, been resolved by allowing public sector workers to organize, but by forbid-

ding most, particularly those in “essential services,” from striking. For workers in “nonessential services,” however, actual penalties for strikes are often moderate, effectively allowing short strikes (see Section VI).

The federal government stands in a unique position with respect to sovereignty. While federal employees are allowed to form unions and negotiate over working conditions, they do not negotiate over wages and are not allowed to strike. The high unionization in the federal sector thus provides evidence for workers’ desire for representation in a large bureaucratic organization, exclusive of the “monopoly” power of unions to raise wages through collective bargaining.

The Monopoly/Inelastic Demand Issue

The argument that the monopoly power that governments have in their jurisdiction creates such inelastic demand for public sector employees as to give public employee unions great economic power was stressed by Harry Wellington and Ralph Winter in their 1971 book:

. . . to the extent union power is delimited by market or other forces in the public sector, these constraints do not come into play nearly as quickly as in the private.

. . . some of these services are such that any prolonged disruption would entail an actual danger to health and safety. . . the demand for numerous governmental services is relatively inelastic, that is relatively insensitive to changes in price. Indeed, the lack of close substitutes is typical of many governmental endeavors (pp. 15, 30).

I reject this claim for three reasons:

1. In the short run, governments face tax and budget constraints that create a potentially more rather than less elastic demand for labor. This is because enterprises operating under a budget constraint have no profit “residual” from which to pay higher wages or in which to put savings from lower wages. All of the adjustment to changes in wages takes the form

of an adjustment in quantities. A labor demand curve with a fixed budget will, all else the same, be less steep than a labor demand curve generated by profit-maximizing behavior. More broadly, the budget serves as a “disciplinary” device in the public sector as does market demand in the private sector, forcing a quantity-price trade-off on the employer.

2. In the long run, cities and states are not really monopolies because residents and businesses can move from one jurisdiction to another. Indeed, excluding transactions cost mobility could compensate fully for the monopoly power governments have in their jurisdiction. Citizens unhappy with level of public services can move elsewhere, reducing the taxable population and thus the ability to pay public sector wages. Mobility places great constraints on public sector union bargaining power as has been stressed by Paul Courant, Edward Gramlich, and Daniel Rubinfeld (1979). Moreover, in jurisdictions where taxation of property raises most funds for operation of governments, the capitalization of taxes in property values is an additional constraint on public sector budgets and thus on ability of unions to raise wages.

3. In certain cases where one believes that public sector unions face a steeper demand curve because, as Wellington and Winter (1969) argue, demand for the product is inelastic (“essential”), the workers are almost always forbidden to strike, which greatly reduces their economic power. Moreover, strikes by public sector workers have quite different effects on revenue than do strikes by private sector workers. In the public sector, services are interrupted but tax revenues are not, whereas in the private sector both production and receipts will be interrupted. Because public sector as well as private sector employers “save” labor costs when struck, public employees may be more willing to take strikes because they “make

money” during a strike. This further reduces the economic power of unions in a dispute.

The Political Context

The political dimension clearly creates a distinct environment for labor relations which leads collective bargaining down different paths from those in the private sector. While private sector unions can occasionally alter the demand for labor curve (through union label campaigns), and can bargain over employment as well as wages, the usual assumption is that they alter the cost of labor, with firms responding by changing the level of employment. Indeed, the standard model of private sector unionism evaluates the monopoly loss due to unionism in terms of the lower national output because of the reduction in employment and increased marginal product in the union sector.⁷ By contrast, public sector unions can be viewed as *using their political power to raise demand for public services*, as well as using their bargaining power to fight for higher wages. A possible criticism of public sector unions is that they increase public goods production beyond the social optimum, raising rather than lowering employment.

Put in terms of the standard economic model of goals and constraints one can think of public sector unions as being forced by their situation to have a different set of goals from private sector unions. In the public sector the goal is to increase public demand for services performed by union members as well as to raise compensation for these members. Moreover, as

stressed by Courant, Gramlich, and Rubinfeld (1979), public sector unions will also place a greater weight on employment than private sector unions because additional employees increase the political force of the unions. Whether unions succeed in political activity is, however, unclear, for just as public sector unions will be out campaigning for more publicly provided goods and services, taxpayers may use the political system to oppose such increases.

The difference between the way in which consumers affect labor market outcomes in the private and public sectors deserves further attention. In the private market consumers affect wages of workers only indirectly through shifts in purchases when increased wages lead firms to raise prices. In the public sector “consumers” can affect wages directly by electing officials, passing referenda and the like that restrict settlements. In virtually every state, so-called legislative vetoes can vitiate bargains, as legislatures or councils refuse to raise the money to fund signed contracts. For example, in the 1970s, despite signed contracts college professors in the University of Massachusetts system did not receive salary increases for several years because the legislature did not allocate the funds. Taxpayer revolts, as evidenced in proposition 13 (California) or 2½ (Massachusetts), have also been used by opponents of public spending to limit potential union wage gains by capping tax revenues or budgets.⁸

In other circumstances unions have effectively used legislative or voter support to win terms they could not gain at the negotiating table, as the following case cited by the Labor Management Relations Service indicates:

A prime example of union use of the referendum to bypass a municipal employer unresponsive to union demands is that of the St. Louis

⁷ Recent innovative work has suggested that the standard model may overstate the employment effect of unionism. In an “efficient contracts” model, unions get higher wages for their members, but maintain employment on the contract curve. See, for example, the studies summarized in Andrew Oswald (1984) and Henry Farber (1981). It may also be useful to note that John Pencavel and Catherine Hartog (1984) find little direct evidence of union employment effects in their time-series study of the U.S. union and nonunion sectors from 1920 to 1980.

⁸ Public sector unions led the fight against both propositions and were solidly trounced.

Fire Fighters Local 73, who sought by special election to obtain equal pay with policemen. They rang doorbells and conducted an intensive campaign for votes in homes and taverns and at barbecues and labor and political meetings. The firemen also appealed for votes in newspaper, television, and radio advertisements. It was estimated that the entire campaign, financed by assessments on members of Local 73, cost between \$35,000 and \$50,000. This compared to the \$6,000 spent by the firemen's principal opponent, Mayor Alfonso J. Cervantes, who campaigned against the raise claiming it would cost the city \$1.7 million for a full year and probably cause a reduction in the number of fire companies. The firemen, claiming that these were "scare tactics," prevailed, as the voters gave the proposal a 64.7 percent majority; it needed sixty percent to pass. (1972, p. 8)

The terms *multilateral bargaining* and *end run bargaining* are commonly used to refer to the situation in which public sector unions bargain not simply with those across the table from them but with other interested public parties as well. In such bargaining, need for public services, public expenditures, and quality of services, as well as wage packages, are often at stake. Whether multilateral bargaining yields larger or smaller packages for unions has not been established (Paul Gerhart 1976; Thomas Kochan and Hoyt Wheeler 1975).

In sum, the particular features of the public sector do, indeed, yield a different industrial relations system from the private sector. Careful examination of how these features affect the bargaining power of the two sides suggests, however, that the relative strength of unions in the public versus the private sector cannot be resolved by a priori logic. The issue requires empirical analysis, to which we turn next.

IV. *Union Compensation Effects*

The general tone of studies dealing with the effect of public sector unionism on compensation is that the effects tend to be small. Indeed, most survey articles have concluded that "The 'average' wage

effect of unionism in government . . . is roughly on the order of five per cent . . . smaller than the average union wages impact in private industry" (David Lewin 1977, p. 138). "The general effects [of public sector unions] which have been measured are not huge" (Daniel Mitchell 1978, p. 89). The generalizations rest on extensive analysis of teachers unions, police and firefighters organizations, and on studies of union and nonunion workers in Current Population Surveys.

All of the studies have a similar methodology. They compare the wages of union and nonunion workers, holding fixed other wage-determining characteristics. To the extent that nonunion wages are affected by the pressure of unionism (an issue to be discussed in terms of "spillover" later), the studies do not measure the difference unionism has on the wages of the workers who are organized, all else the same: Rather they show the effect of unionism on relative wages. This is consistent with the vast bulk of the private sector union wage literature.

The unit of observation in the studies varies substantially. Some studies analyze wages of public sector workers by state, city, or district at a given time, using the fraction in a collective organization or having contracts as the "union variable." Others analyze rates of change in wages over time, looking for an acceleration in the rate of change after unionization. Some look at wages of different individuals on large data tapes. Others perform before or after comparisons of wage rates of the same person or city over time. For the most part, the studies relate to the period from the mid-1960s to the early or mid-1970s. In this Section I review briefly the relevant studies and examine the evidence and arguments that I believe question the existing generalization.

The Studies of Teachers

Table 6 reports the results of diverse estimates of the effect of school teachers'

TABLE 6
THE RELATIVE WAGE EFFECT OF TEACHERS' UNIONS

Finding by Year, Study, and Type of Experiment (CS = Cross-Section; B/A = Before/After)			
Author	Period Covered	Type of Experiment	Finding (percent)
States			
Kasper (1972)	1967-1968	CS	2
Brown (1975) ^a	1961-1971	B/A	5.9
Allen Smith (1972)	U.S. Total 1961-62 to 1963-71	B/A	0
Balfour (1974)	1969-1970	B/A	0
Districts			
Landon and Baird (1971)	1965-1968	CS	1
Baird and Landon (1972)	1966-1967	CS	5
Robert Thornton (1971)	1969-1970	CS	4
Daniel Lipsky and John Drotning (1973)	1967-1968	CS	3
Charles Rehmus and E. Wilner (1968)	1961-65 to 1966-68	B/A	6
Dennis Zuelke and Lloyd Frohreich (1977)	1968-1969		0
Clayton Hall and Norman Carroll (1973) ^b	1968-1969	CS	2
Donald Frey (1975)	1969-1970	CS	1
Roger Schmenner (1973)	1967-1970 (big cities only)	CS	12-14
Jay Chambers (1977)	1970-1971	CS	6-12
Alexander Holmes (1979)	1975	CS	3-10
Individuals			
Baugh and Stone (1982)	1974	CS	7
Baugh and Stone (1982)	1974-1975	B/A	4
Baugh and Stone (1982)	1977	CS	21
Baugh and Stone (1982)	1977-1978	B/A	12

^a Figures from Thomas Brown's article were calculated by taking the difference between negotiating states' 1961-1971 percent increase in salaries for teachers and percent increase in per capita income (71.6%-99%) and subtracting from this number the difference between nonnegotiating states' percent increase in salaries for teachers and percent increase in per capita income (70.5%-103.8%) these yield a difference of 5.9 points in favor of negotiating states over the decade. From Brown (1975, p. 61, Table 5).

^b Hall and Carroll figure calculated by dividing \$165, increase from unionization, by \$9,133, calculated mean salary.

unions on wages, arranged by time period, by unit of analysis, and by procedure. The results for 1965-68, which cover the beginnings of teacher unionism, support the view that *at that time* teachers' unions did not greatly affect compensation levels. Averaging across all the district studies, the union effect for the early period is a bare 3 percent. Some of the studies for 1970-75, by contrast, show larger positive

union effects. The recent analysis by William Baugh and Joe Stone (1982) of individuals for 1977 finds very *large* effects, of 21 percent in a cross-section and 12 percent in a before/after framework. Comparing 1974-75 CPS results with 1978-79 results they find a tripling in the union wage effect over time. While the change in units of observation from districts or states to individuals makes com-

parisons of the earlier work and the Baugh and Stone work hazardous at best, both for districts and individuals taken separately there is an apparent increase in the effect of the teachers' unions on pay.

There are several possible causes for the increased wage effect of the teachers' unions. One likely cause is changed economic conditions. In the early period the market for teachers was strong, with consequent good wages for non-union as well as union teachers; in the latter period the market was weak with the teachers' union using its power to offset some downward pressure on wages. Another hypothesis is that modestly higher differentials in *rates* of change of pay per settlement cumulated over time to a sizeable union effect. A third possibility is that, in fact, the power of the teachers' union has risen because of increased willingness to strike and changes in state laws regulating teachers' collective bargaining. Which, if any, of these possibilities is correct requires not only a careful analysis of the teachers' union wage effect using comparable data over time (along the lines of Baugh and Stone) but also better measures of union economic power than has been common in studies. Because of differences in the legal treatment of teachers' unions across states and over time, simple dichotomous or percentage-organized variables are potentially misleading: Two areas with the same "unionization" may have different economic outcomes because in one area the law gives the union of teachers different power from the power given the union in the other, for instance, by requiring final-offer arbitration or allowing strikes, as opposed to outlawing strikes or providing no means of resolving disputes.

Protective Service Workers

The second most extensively researched group of public sector unions are the police and firefighters, for whom most studies have found moderate wage effects

of about 5–10 percent (see Table 7). For both occupations, effects tend to be larger on total compensation than on wages; they tend to be larger for larger cities; and they tend to vary over time. Peter Feuille, Wallace Hendricks, and John Delaney's estimates of police union effects over time (1983) show a definite rise from the early 1970s to the mid-1970s, followed by a decline at the turn of the decade.

There are two possible problems with the studies of union effects among protective service workers that suggest the 5–10 percent increase in wages may underestimate the actual impact of unionism. The first problem is the not-so-simple matter of measures for pay. All of the studies use reported salary rates or average salary compensation from the Census of Governments or the International City Management Association (ICMA) or comparable sources. These sources value one of the components of compensation that unions appear to raise—retirement pay—at current employer cost rather than at the actuarial value to workers. If, as some claim, the public sector has a bias toward deferred compensation because politicians have a short time horizon this is likely to understate the effect of public sector unions. In addition, standard data sets ignore other "extra compensation" (days worked at overtime, for instance) which are important in the protective services.

Table 8 provides a rough notion of the possible error in analysis due to this data problem. It compares salaries from the ICMA survey to the more detailed investigation of salaries in the Urban Institute's *Public Employee Compensation: A Twelve City Comparison Study*. The Urban Institute study gathered data on salaries and benefits, with particular emphasis on pension costs and identification of hours worked. Instead of taking amounts paid into pension funds as the measure of cost of pensions, the study incorporated actuarial normal pension costs for each city

TABLE 7
THE RELATIVE WAGE EFFECT OF THE PROTECTIVE SERVICE UNIONS

	Year	Estimated Percentage Effects of Unions on Pay
<u>Firefighters</u>		
Ashenfelter (1971)	1961-66	4-14
Ehrenberg (1973)	1969	8-10
Ichniowski (1980)	1966	0
	1976	3-4
	1966-76	
Ehrenberg and Goldstein (1975)	1967	7
Michael Wasylenko (1977)	1968	12-14
Schmenner (1973) (Police and firefighters)	1962-70	15
<u>Police</u>		
Wasylenko (1977)	1968	0-2
Ehrenberg and Goldstein (1975)	1967	7
Bartel and Lewin (1981)	1973	4-6
Hall and Vanderporten (1977)	1973	3-12
Feuille, Hendricks, and Delaney (1983)	1971-75	5-7
	1976-78	9-11
	1979-81	6-7
Kearney and Morgan (1980)	1976	1
Freeman, Ichniowski, and Lauer (1985)	1976	CS 3-7 "Spillover" 18
<u>General Municipal and Other</u>		
Schmenner (1973)	1962-70	No union effect
James Freund (1974)	1965-71	No union effect

Source: U.S. Bureau of the Census, 1979, p. 166.

Note: Hall and Vanderporten figures calculated by dividing coefficients for mean salary by both minimum and maximum average annual salary scales (\$9,925 and \$12,312) in 1973.

based on the promised benefits. As the table shows, there are large differences between the ICMA and the Urban Institute's more complete data, which suggests a possible measurement error problem in empirical analysis.

The second potential problem with estimates of the effects of protective service worker unionism is the possibility of sizeable "spillovers" from union to nonunion cities. Such spillovers are more likely for

these occupations than for others because of the lack of equivalent occupations in the private sector and the consequent tendency for police and firefighters to stress pay comparability across cities. One admittedly crude way to examine this idea is to relate wages to unionism in a greater geographic area. Studies that have done this suggest union wage effects are roughly twice as large as the 5-10 percent of the standard cross-section analysis

TABLE 8
COMPARISON OF PAY OF POLICE OFFICERS
(TOTAL COMPENSATION PER HOUR WORKED)

City	International City Management Association (average pay)	"Twelve City Study" (5 years experience) ^a
San Francisco	19.45	21.99
Los Angeles	14.40 ^b	21.76
Philadelphia	13.83	16.47
San Diego	11.37	14.10

Sources: Tabulated from ICMA tapes by Jeffrey Zax for this paper.

"Twelve City Study," from Elizabeth Dickson and George Peterson, 1980, Table 2.

^a I have taken pay with 5 years of experience rather than entry pay or pay with 20 years of experience as the most reasonable comparison to the ICMA total compensation figures.

^b Pension data are not reported to ICMA for Los Angeles but are reported for other cities.

(Richard Freeman, Casey Ichniowski, and Harrison Lauer 1985; Ronald Ehrenberg and Gerald Goldstein 1975; Jay Chambers 1977).

Additional Groups

In addition to the studies of teachers and protective service unions, there have been a few studies of union wage effects in particular blue-collar occupations that are directly comparable to those in the private sector. As Table 9 shows, these studies present a very different picture of the relative economic impact of unionism in the public and private sectors from what is indicated in the earlier literature: Even in the early sixties and early seventies these studies show *no* noticeable difference in the wage impact of unions in the two sectors. For some groups of workers (bus drivers, sanitation workers) the union effects have been larger in the public sector; in others (construction) they are about the same in the two sectors; while

in others (hospital workers), they are slightly less in the public sector.

Three studies have divided the work force into blue-collar and white-collar work groups. William Moore and J. Raisian (1981), David Shapiro (1978), and Richard Freeman and John Leonard (1985) all found that unionism raises the wages of blue-collar workers more in the private sector than in the public sector. Their analyses of the effect of unionism on white-collar worker wages, however, differ, with the first study finding small effects in the public sector exceeding those in the private sector, the second finding no union effect for white-collar workers in either sector, and the third finding sizeable effects in the public sector, but still smaller than those in the private sector, for both white-collar and blue-collar workers.

Overall, the evidence in Table 9 provides an important antidote to the claim that public sector unions have smaller wage effects than private sector unions because the government is the employer. If public sector unions have smaller wage effects, it could be because of the occupations covered.

The Total Work Force

An alternative to the analysis of detailed occupations that occupies much of public sector labor relations research is to make use of large data sets to examine the pay of all government employees. The most important such study, by Sharon Smith (1976), found that in 1975 government employees in general were paid more than private sector employees, but that unionism raised wages less for public sector than for private sector workers, controlling for a wide variety of additional wage determinants. William Moore and Raisian's analysis (1981) of the Michigan Panel Survey of Income dynamics suggests substantial variation in the public sector union effect over time, with a drop from the late 1960s (when few were orga-

TABLE 9
RELATIVE EFFECTS OF UNIONISM: PUBLIC VERSUS PRIVATE SECTORS BY OCCUPATION

	Result
Bus Drivers, 1963–71 (Daniel Hamermesh 1975)	Unionized drivers in government-managed bus lines do 3–6% better than unionized drivers in privately owned lines.
Construction Workers, 1970–72 (Hamermesh 1975)	Unions in the public sector raise wages 16–25% compared with the private sector.
Sanitation Workers, 1974 (Linda Edwards and Franklin Edwards 1979)	Unionism raises the pay of sanitation wages by 11–13% in the public sector, compared with 0–5% for the pay of sanitation workers in the private sector.
Hospital Workers, 1966, 1969, 1972 (Myran Fottler 1977)	Unions of hospital workers in the public sector raise wages by 10–14% compared to 14–19% in the private sector.
Blue-Collar and White-Collar Workers, 1967–77 (William Moore and Raisian 1981)	Unionism raises blue-collar wages by 23% in the public sector compared with 31% in the private sector; unionism raises white-collar wages by 6% in the public sector compared to 4% in the private sector.
Blue-Collar and White-Collar Workers, 1971 (David Shapiro 1978)	Unionism has no effect on white-collar wages in public sector or in private sector but has a 20% effect on blue-collar wages in the public sector and a 25% effect in the private sector (some differences for blacks).
Blue-Collar and White-Collar Workers by Sex, 1984 (Richard Freeman and John Leonard 1985)	Among women, unionism raises white-collar wages by 11% (females) and 4% (males) in the public sector compared to 18% (females) and 12% (males) in the private sector. Unionism raises blue-collar wages by 18% (females) and 14% (males) in the public sector compared to 24% (females) and 26% (males) in the private sector.

nized) to the early 1970s and a rising effect thereafter. In the absence of a comprehensive study of various data sets, definitions of government employees, and different models, the safest conclusions are that the union wage effects differ significantly over time and are generally smaller than those in the private sector (for any of the reasons given earlier) but are far from negligible.

Composition of Compensation

Private sector unions raise “fringe benefits,” especially deferred compensation, more than they raise wages, and have sizeable impacts on the structure of wages,

reducing personal differentials and the overall inequality of earnings within the union sector. Do public sector unions have the same effects?

With respect to deferred compensation there is good reason to believe that they should have larger effects. First, on the union side, the same arguments that have been advanced to predict higher fringe spending under unionism in the private sector should also hold for the public sector. Second, as noted on the employer side, it is argued that politicians with short time horizons should be especially willing to negotiate contracts promising future fringes.

TABLE 10
EFFECTS OF PUBLIC SECTOR UNIONS ON COMPOSITION OF COMPENSATION

Group	Conclusion
Firefighters	
Ichniowski (1980)	Union raises spending on fringes by 7% compared with 4% wage effect.
Police	
Bartel and Lewin (1981)	Union raises spending on fringes by 8–17% compared with 6–12% wage effect.
Feuille (1973)	Union raises spending on fringes by 12% compared with 5–10% wage effect.
Feuille, Hendricks, and Delaney (1983)	Unionized cities have fringe benefits 20–30% higher than union cities, compared with roughly 5–11% for wage effect.
Teachers	
Holmes (1979)	Teacher union raises premium for education and for experience.
William Moore (1978)	Teachers union reduces secondary school/elementary school premium by 6%.
Alan Gustman and Martin Segal (1977)	Teachers affect pension levels substantially for those with less than 25 years of experience (48%) but not for those with more experience.
Sanitation	
Edwards & Edwards (1979)	Unions raise spending on fringes by 27–43% compared with 9–22% wage effect.
Hospital Workers	
Brian Becker (1979)	Unionization has moderately greater effects on fringes than on salaries.
Roger Feldman and Richard Schef- fler (1982)	Unionization increased fringes about 6% while wages increased 8–12% in a hospital with 50% of employees unionized.
Glen Cain et al. (1981)	Unions had a large effect on fringes but a small and statistically insignificant impact on wages.

In fact, as Table 10 shows, all studies find that public sector unions raise fringe benefits by considerably more than they raise wages, except for hospital workers. One important consequence of the increased pensions due to public sector unions is that public sector retirement funds had assets of \$355 billion in 1982 (Alicia Munnell 1983, p. 19). It is the size of these funds that underlies the argument by Jeremy Rifkin and Russell Barber (1978) that public sector assets should be invested in the states in which the workers live, “to make the north rise again.”

What public sector unions do to the structure of wages is less clear. On the one hand, there is Alexander Holmes’ (1979) evidence that teachers’ unions raise the premiums for education and for experience, which runs counter to the private sector union effect in reducing such differentials. On the other hand, Alan Gustman and Martin Segal (1978) have found that teachers’ unions reduce the number of steps in the salary structure, which reduces inequality, and Gary Moore (1976) reports a reduction in the secondary teacher-elementary teacher wage differ-

ential in Nebraska. The various studies of the effect of firefighters and police give a mixed picture of the union impact on minimum versus maximum salaries.⁹ Some studies find larger effects on minimums than on maximums but not by very much, while others find smaller effects. Tabulations of public sector usual hourly earnings by union coverage of workers for 1984 show smaller levels of dispersion for unionized labor, though a full analysis taking account of other differences between workers has yet to be done.¹⁰

One group for whom the union compensation effect may be different in the public from that in the private sector is women. Whereas union compensation effects are roughly the same by sex in the private sector, they are noticeably larger for white-collar women than for white-collar men in the public sector (Freeman and Leonard). The finding that public sector unionism reduced sex differentials is but one indication of union efforts to equalize pay between the sexes. In what is perhaps the most important development in public sector wage determination in decades, the American Federation of State, County, and Municipal Employees has

won, in federal court, increases in the wages of female workers in the state of Washington of 31 percent and upwards, to bring about "comparable worth." According to the ruling in district court, from 1983 to 1985, the state must bring wages for workers in predominantly female job classifications up to levels paid to workers in predominantly male occupations that require comparable skill, responsibility, and working conditions. AFSCME brought the original suit after ten years of trying to get the state to comply with the findings of the state's own comparable worth studies. Other important comparable worth cases have been made in Los Angeles, San Jose, Iowa, and Minnesota. The landmark pay equity ruling may revolutionize pay practices in the public sector.

Effects of Different City Governments and Laws

While the potential impact of different forms of government on the constraints facing public sector unions has been of considerable interest to political scientists it is only recently that economists have examined whether or not public sector effects vary along this dimension. The work of several scholars (Linda Edwards and Franklin Edwards 1979; Ronald Ehrenberg 1973; Ichniowski 1980; Ehrenberg and Goldstein 1975; and Jeffrey Zax 1985a) shows that city management is associated with higher earnings than other forms of city government. Zax interprets this as reflecting higher labor quality and more professional services. Zax also finds that when the city council is elected at large or on a nonpartisan basis municipal work forces are larger and better paid. This is interpreted as a patronage effect. By contrast, there has been virtually no work on the potentially important effect of different laws on wage effects (beyond the studies focused on arbitration in Section VI).

⁹ For example, studies that show large effects on the minimum are Feuille, Hendricks, and Delaney (1983), Michael Wasylenko (1977), Richard Kearney and David Morgan (1980), and Ichniowski (1982). Studies that find larger effects on the maximum are Clayton Hall and Bruce Vanderporten, (1977) and Anne Bartel and David Lewin (1981).

¹⁰ My tabulations of the 1984 Current Population Survey show:

Standard Deviation of Logarithm of "Usual Hourly Earnings" of Public Sector Workers

	Sample Size			
	White Collar	Blue Collar	White Collar	Blue Collar
Covered by				
Collective Contract	.40	.40	3,897	9,608
Not Covered by				
Collective Contract	.52	.54	5,168	12,580

Sample defined as public sector class of worker, 16 and above, with earnings. Blue-collar includes service workers.

Wages and Employment in a Macro Context

With about 15 percent of the U.S. work force employed in the public sector, the extent to which public sector wages and employment vary over business cycles and in response to secular changes has important macroeconomic implications. At one point many analysts believed public sector labor markets to be *less* responsive to economic conditions than private sector markets. The sharp increase in relative wages and employment of public workers in the 1960s and decreases in relative pay and employment in the 1970s call into question this generalization. During the 1970s and 1980s the federal government broke from its stated comparability policy to grant smaller pay increases than those in the private sector, raising the possibility that in times of stagflation public sector wages are more responsive to economic conditions. Freeman's (1985) analysis of public sector wage and employment patterns over the business cycle has found that while wages and employment respond to aggregate labor market conditions, the responses differ from those in the private sector. These results, together with those from Canada which, according to Gunderson's review, show that public sector wages certainly are not immune to market forces, suggest the value of a detailed analysis of public sector wage and employment setting in a macroeconomic setting. Such an investigation should be clearly tied to public finance studies of cyclical/secular/abnormal changes in federal, state, and municipal finances and to variations in sales/income and property tax legislation across jurisdictions.

V. Public Sector Union Effects on Employment, Budgets, and Welfare

Because of the features of the public sector environment, I expect that public sector unionism will have significant ef-

fects on employment, budgets, and taxes. These should produce different economic analysis and welfare calculus from the traditional monopoly wage framework used to analyze private sector unionism.

Although research on these aspects of public sector unionism is meagre, the topics are important and deserve as much attention as the more heavily researched topic of compensation and the arbitration-strike issues that respectively precede and succeed this section.

Employment and Budgets

In the private sector it is commonly accepted (though not empirically well established, see Pencavel and Hartsog 1984) that one of the responses to union wage effects is a reduction of employment. As noted in Section III, this is questionable for the public sector because lobbying for higher budgets could raise employment as well as wages. Cross-section empirical evidence comparing employment in union and nonunion cities in reduced form equations supports the notion that unionism raises or at least does not lower employment effects in the public sector. In a comprehensive cross-section study of ICMA data for 400 cities over a decade, Zax (1984, 1985b, pp. 144-47) has estimated that public sector unionism raises employment by about 10 percent. In a similar vein R. B. Victor (1977) found essentially no change in employment for police and increases in firefighters' employment under unionism, while Stanley Benecki (1978) found increases in employment in small cities but reductions in very large cities, for reasons that are not clear. In a complex model with unionism endogenous, Robert Inman (1981) reports higher employment for both police and firefighters under unionism, but a negative union wage effect for police. It is unclear whether his results come from the data or from the particular structure imposed on the data.

If unions have a positive or nonnegative effect on employment without controlling for wages, and if they raise wages, then budgets in organized jurisdictions should be higher than in unorganized jurisdictions. Indeed, four studies of the impact of unionism on size of budgets show such effects.¹¹ Moreover, the evidence by Randall Eberts (1984) for the impact of *specific* contract items on the allocation of dollars among New York school districts shows that one can even relate differences in expenditures to particular contractual points.

The analyses of the relation between unionism and employment and budgets, while consistent with our general theme of public sector unions' raising demand for labor, should not be viewed as complete. With the exception of Inman (1981), who estimates a complete structural model with endogenous unionism, much of the analysis of union impacts on employment and budgets is unconnected to the analysis of union wage effects. None of the studies adequately models the budget process, its interrelation to taxes, intergovernmental grants, or debt financing. In contrast to the studies of compensation, none of the studies provides a before/after test of findings. What is lacking, and needed, is a consistent analysis of the *full* effects of public sector unionism on labor costs, employment, and finances.

Productivity

Despite the difficulty of measuring the output of many public goods, there have been a surprisingly large number of studies on the relation between unionization in the public sector and productivity. Some of the studies have used the production function methodology of regressing

output per worker (value added in monetary units) on standard production function variables such as capital per worker, quality of workers (education or a proxy for skill), and union variables. Others use different methods, ranging from case studies to analyses of manager (worker) perceptions of productivity effects to simple comparisons (correlations) of productivity indices with measures of unionism.

Table 11 presents a brief summary of the studies. Rabid opponents of public sector unionism will be surprised to find that there is little evidence that public sector unions adversely affect productivity. Of the 11 studies in the table, 7 show essentially no union effect, 2 report positive effects of varying strength, while 2 report negative effects. Each study has sizeable problems with output measures; for example, the study by Ronald Ehrenberg and Joshua Schwartz (1983), which concluded that unionism had essentially no effect on productivity, found a positive effect on output for one measure, interlibrary loans; and the Feuille et al. (1983) study, which I categorize as showing no effect, found positive productivity effects in crime rates but not on crime clearance rates. Also, there were problems with the structure of the models, especially concerning the control variables and the routes by which unionism affects output. These results are therefore hardly strong enough to warrant a firm generalization. They do, however, reject the presumption that public sector unionism necessarily has adverse effects on productivity. At the least, the evidence backs the weak generalization offered by David Methe and James Perry in the *Public Administration Review* (1980) that "collective bargaining has had no (negative) impact on the effectiveness of local services" (p. 368).

Personnel Practices

Perhaps the most important way unionism affects the operation of enterprises is

¹¹ See Benecki (1978) for general municipal services in all but the very largest cities; Daniel Gallagher (1978) on teacher's budgets; Feuille et al. (1983) for police budgets; Zax (1984) for all municipal groups.

to force firms to alter their personnel practices. Rules replace managerial discretion in a wide variety of decision areas. Grievance and arbitration procedures give workers "due process" at the work place.

It is difficult to predict whether public sector unions would have a larger or smaller effect on personnel practices than private sector unions. On the one hand, civil service regulations, tenure laws for teachers, and the like provide some protection for the majority of public sector workers, thus limiting the scope for unionism. On the other hand, public sector management is allegedly inefficient and full of political decisionmaking which increases the need for explicit personnel practices and grievance machinery. While there has been no definitive summary of personnel practices before or after unionism or of practices between union or non-union areas, the available literature suggests that unions have had a sizeable impact on personnel practices, with contractual protection generally superseding civil service or other legal protection. The study by Roy Carpenter and Neil Ashworth of personnel practices in Mississippi (1982) found that many nonunion cities diverged noticeably from the Civil Service model, even to the extent of failing to have explicit job definitions. Janice Beyer, Harrison Trice, and Richard Hunt's study (1980) of supervisory policies in the federal government found that unions have positively affected supervisors' use of *management-initiated* policies regarding alcoholism. In his 1972 study, David Stanley found that "most department heads interviewed said that this union pressure is good for both employees and management" (David Stanley 1972, p. 3), a result consistent with Sumner Slichter, James Healy, and Robert Livernash's (1960) work on the private sector.

In the federal government, where contracts deal solely with work conditions, Sar

Levitan and Alexandra Noden (1983) rejected "the myth that worker rights and collective bargaining are contrary to efficiency" (p. 138). In his analysis of hospitals in Canada, Gallagher (1984) found that both management and union agreed that unionization forced regular and professional personnel practices onto the institutions.

In terms of econometric research, several analysts have sought to evaluate the effects of unionism on personnel practices by coding collective bargaining contracts according to whether specific provisions favor the union or the management. Kochan (1974), Gerhart (1979), and Feuille et al. (1983) found that in states where public sector labor laws are most favorable to unionism, contracts have been tilted in favor of workers, as one would expect. Eberts (1983) has analyzed the cost impact of personnel practices embodied in contracts in New York city schools, and found that those relating to labor jurisprudence and grievance categories were costly to management.

Each of the various public sector occupations has different personnel practice issues. In teaching, one issue relates to the extent to which state law on tenure can be overridden by collective bargaining contracts. Courts have decided the issue differently in different states. Another important issue relates to the power of principals to assign or lay off teachers. If and when school administrations or unions push for merit pay, that will certainly become a major issue in bargaining. Among police and firefighters, key personnel issues have included parity, pay, and staffing issues. For sanitation and various blue-collar public sector workers, the issue of subcontracting to private sector organizations has been important and it is likely that unions have managed to reduce contracting out.

No good estimates exist of the extent to which contracts trade off personnel

TABLE 11
EFFECTS OF UNIONIZATION ON PRODUCTIVITY IN PUBLIC SECTOR

	Method	Finding
Stanley (1972)	Case study of 19 state and local governments. Analyzes union impact on personnel administration, work supervision, and financial management by reviewing interviews, government reports, bargaining outcomes, and press reactions from 1968–69.	No net effect. Can increase program effectiveness by exacting safety programs, equal levels of service throughout a city, and adequate staff organization. Also provides psychological security for workers. However can decrease efficiency by increasing costs and impeding the use of flexible management.
Philip Coulter (1979)	Discriminant analysis for firefighters of 324 municipalities with populations of 25,000 and over. Uses total cost (property loss from fires plus expenditures) per capita as a measure of productivity.	Unionism variable not statistically significant.
Feuille, Hendricks, and Delaney (1983)	Regression equations for police calculated for each year from 1971–80 and for eight types of crimes. Outputs were measured as reported crime rates and the rate of crimes cleared by arrests.	Unions decrease crime rate but effect is unstable, depending on the type of crime and year. No systematic association with clearance rates.
Ehrenberg and Schwarz (1983)	Regressions for libraries, 1977 cross-section data. Output is measured in eight ways, such as number of interlibrary loans and number of borrowers.	Ranges from zero effect to positive effect (33%). All values, however, are statistically insignificant or only marginally so.
James Perry, Harold Angle, and M. E. Pittel (1979)	Regression analysis for public transit in Western U.S., 1977. Service effectiveness is measured by revenue passengers per service area population and revenue passengers per revenue vehicle hour.	Unionization did not have significant impact.

practices and related noncompensation conditions for compensation.

Revenue, Taxes, and Welfare

If unions raise public sector budgets, then they necessarily raise the need for revenue and thus taxes, intergovernmental transfers, or debt. A consistent model of union impacts on the public sector requires investigation of these effects as well as those on wages, employment, and budgets. Unfortunately, until recently, there has been little investigation of the effect of public sector unions on budgets and taxes (except for Benecki's 1978 study, and

Ames Levi's 1984 study) and none on the consistency between the various estimates of union effects on compensation, budgets, employment, and productivity.¹² This is

¹² On the basis of Benecki's calculations, a complete analysis of union effects might be expected to show greater revenue per capita, higher property taxes, higher sales taxes, but lower user charge revenue in unionized municipalities and lower debt. Because Benecki (*a*) finds different patterns for large cities than for other cities, (*b*) does not obtain internally consistent results in all cases, and (*c*) includes "three institutional bargaining variables" likely to have affected his estimates of union impacts, I regard his findings as only suggestive. They are, however, valuable in raising the possibility that a major research payoff could come from the proper analysis of union impacts on broadly defined municipal finances.

TABLE 11 (Continued)

	Method	Finding
Noam (1983)	Regressions for building inspectors in 1970. Output is measured as number of building permits granted as well as the total construction volume supervised.	The effects were often negative but not statistically significant.
Salkever (1982)	Regressions for hospitals measuring the cost of hospital services for four New England states, 1975.	Negative effect. Production costs increased 5–9% with most of increase from nonwage sources.
Gallagher (1984)	Management and local union representatives assessment by questionnaire for 117 hospitals in a Canadian province during 1970s. Measures of impacts used fall into four categories: economic, employer attitudes and behavior, management policy and control, and quality care.	Positive effect.
Hoyt Wheeler and Thomas Kochan (1977)	Job evaluation correlation for firefighter officers by interviewing both officers and chiefs. Used interviews, questionnaire.	Slightly negative effect, perhaps due to some effects on discipline and grievance handling.
Edgar Crane, Bernard Lentz, and Jay Shafritz (1976)	Regressions for state governments, 1974–75 using surveys, interviews, and various secondary sources. Output is measured as the level of state productivity improvement effort.	Strong positive impact by unions.
Eberts (1984)	Regression analysis of teachers in mid-1970s for factors believed to be determinants of student achievement.	Concludes that overall effect is unclear. Teachers covered by collective bargaining spend less time in instruction but more time preparing for class. Collective bargaining increases experience and education level of teachers.

a major shortcoming in the research for both substantive and methodological reasons. Substantively, failure to demonstrate a union impact on “bottom line” issues like taxes and municipal or state debt seriously hampers any social evaluation of public sector unionism. Methodologically, failure to analyze union impacts on all of the diverse outcome variables results in a loss of information and yields less efficient and possibly biased estimates of key parameters.

Still, the existing estimates of the effect of unions on employment, wages, and budgets described earlier do suggest that

public sector unions raise both taxes and public services above what they would be in the absence of the unions. Does this mean that there is a loss of social welfare due to excessive public goods resulting from unionism?

In the absence of a generally accepted theory or empirical results on whether a democratic government over- or under-produces public goods, no definitive answer can be given to the question. In analysis of private sector unionism, second-best considerations may weaken our belief in the standard welfare evaluation of the output loss due to union wage effects, but

does not lead us to reject it. For the public sector, the problem of evaluating whether the average citizen would be better or worse off in the absence of public sector unions lobbying for public goods is sufficiently complex to leave one agnostic. If, as John Kenneth Galbraith argued in *The Affluent Society* (1969), there is a tendency to underproduce public goods, the union pressures may be socially beneficial. If, by contrast, the conservative fear that there are inherent tendencies to overproduce public goods is correct, public sector unions are on the wrong side of the social welfare ledger. What is needed are more analyses of actual output decisions in the public sector, as opposed to the normative theory of public goods production, to help us determine whether the potential expansion of output in the public sector due to public sector unionism is socially good or bad.

To sum up, just as private sector unions have significant nonwage effects, so too do public sector unions. In the private sector some of these effects—lower turnover, more professional management—help raise productivity to counterbalance union wage effects, at least in part. In the public sector some of the effects of political lobbying seem to operate in the direction of increasing expenditures on output of public goods. Analysis of the nonwage effect of public sector unions has been relatively sparse, but extant research does suggest that, as in much of the private sector union literature, a large intellectual payoff will come from focusing on the effect of unions on non-wage outcomes rather than exclusively on wages.

VI. *Impasse Resolution*

A major policy and research issue in public sector labor relations concerns which rules and institutions should be used to resolve disagreements about terms of contracts, and concurrently how to

treat strikes. The various state legislatures and municipalities have experimented with a wide variety of mechanisms for impasse resolution. Eight states have legalized strikes for some public sector workers, thereby letting the traditional private sector battle of economic strength or threat thereof serve as the ultimate pressure for agreements. Many states make public sector strikes illegal, some with rather severe penalties for strikers. In recent years a sizeable number of states have opted for conventional or final offer binding arbitration as a means for achieving settlements in the absence of strikes.

In this section I examine what we have learned about public sector strikes and arbitration substitutes for the strike.

Public Sector Strikes

Strikes have a bad press. No one really likes them. But in a system of free collective bargaining they serve an important function. Without the strike, or some substitute form of economic weapon, labor might never be able to force management to take its demands seriously, and management might never be able to force workers to withdraw demands or give concessions.

Despite being outlawed in most jurisdictions, strikes in the public sector are far from rare. As Table 12 shows, the U.S. has experienced a sizeable number of public sector strikes. Indeed, between 1960–64 and 1976–80, the number of stoppages in the public sector rose from 32 per year to 500 per year.¹³

Public sector strikes differ in their basic dimensions from private sector strikes. They are of much shorter duration but tend to involve more workers per strike. According to William Nelson, Gerald Stone, and Michael Swint (1981) they follow a different cyclical pattern from pri-

¹³ Calculated from U.S. Dept. of Labor, Bureau of Labor Statistics, *Handbook of Labor Statistics*, 1971 and 1983.

TABLE 12
SELECTED WORK STOPPAGE MEASURES: ALL INDUSTRIES AND GOVERNMENT, 1979

Item	All Industries	Government		
		Total	State	Local
Days of idleness as a percent of estimate of total working time	0.15	0.08	0.06	0.1
Workers involved as a percent of total employment	1.9	1.6	1.4	2.2
Average number of workers involved per stoppage	358	428	853	383
Average days of idleness per worker	20.1	11.7	10.6	12.0

Source: U.S. Department of Labor, Bureau of Labor Statistics, *Work Stoppages in Government*, 1979. Mar. 1981, Report 629, Table 2.

vate sector strikes, falling rather than rising in business expansions.

Just as the various states have adopted different laws regulating collective bargaining in the public sector, so too have they developed different laws regulating strikes. Nine states permit strikes (see Table 13). In some with no explicit regulations courts have interpreted the law to imply that strikes are illegal. Others outlaw strikes with varying penalties for strike breakers—penalties that are sometimes not enforced.

Which of these legal treatments is most successful in limiting strikes? Is it better to make strikes legal, to have harsh penalties, or to have moderate penalties? What is the effect of conventional or last-offer arbitration on strikes?

There have been a sizeable number of studies of these questions (see Table 14). The most notable and consistent finding is that compulsory arbitration (almost always coupled with an antistrike clause) is

an effective deterrent to strikes. Several studies have found a curvilinear relation between public sector labor laws and strike incidence, with states having weak “meet and confer” laws being more strike prone than states with no comprehensive public sector labor relations law and those with compulsory arbitration having the fewest number of strikes (Hoyt Wheeler 1975; James Stern and Craig Olson 1982; Robert Rodgers 1980; Ichniowski 1982; Robert Fallon 1977; Horn, McGuire and Tomkiowicz 1982). One possible explanation may be that it is the uncertainty of outcomes (including treatment of strikes) that generates strikes. Whatever good or ill effects compulsory arbitration has on bargaining and settlements, it does, nevertheless, limit strikes.

By contrast, studies that fail to distinguish between types of public sector bargaining laws yield mixed results, possibly because bargaining laws without compulsory arbitration increase strikes whereas those with compulsory arbitration laws reduce them (for example, David Colton 1978, versus Andres Weintraub and Robert Thornton 1976, among teachers). Similarly, the findings with respect to strike laws per se are also less clear. Alan Balfour and Alexander Holmes (1981) found strikes most frequent in states with very harsh penalties and in those with no penalties, and least in those with moderate penalties. Robert Fallon (1977) found strikes less frequent in those with no penalties. Jack Klauser (1977) cited the Hawaii experience as showing that legalization of strikes reduces them, presumably because of the greater pressure on management to reach agreement with workers.

Joel Douglas’ 1981 study of New York’s Taylor law shows that public officials are loath in many instances to impose the penalties of the law, which includes a two-for-one pay penalty for each day on strike, loss of checkoff of dues, and the requirement that workers go back to their jobs

TABLE 13
STATUTORY AND CASE LAW REGULATION OF PUBLIC SECTOR STRIKES BY STATE, 1979

Strikes are legal for some public sector workers (9 states)

Alaska	Oregon
Hawaii	Pennsylvania
Idaho ^a	Vermont
Minnesota	Wisconsin
Montana	

Strikes of some public sector workers are not treated in law but regarded as illegal by courts (11 states)

Arizona	None
Colorado	None
Illinois	Strikes are illegal and striking employees may be fired.
Louisiana	Police officers can't strike; labor organizations violating may be fined \$500; otherwise silent.
Mississippi	None
New Mexico	Silent; state employees prohibited and may lose deduction privileges and certification.
North Carolina	Silent
South Carolina	Silent
Utah	None
West Virginia	None
Wyoming	Silent

Strikes prohibited, with no sanction or with no specific penalties provided (16 states)

Alabama	Prohibited
Arkansas	Prohibited
California	Prohibited
Connecticut	Prohibited
D.C.	Prohibited
Kansas	Prohibited
Kentucky	Prohibited
Maine	Prohibited
Massachusetts	Prohibited
Michigan	Prohibited
Missouri	Prohibited
North Dakota	Prohibited
New Hampshire	Prohibited
New Jersey	Prohibited
Rhode Island	Prohibited
Washington	Prohibited; uniformed employees fined up to \$250 per day.

^a A 1978 court case states that strikes are allowed for Idaho firefighters when collective bargaining agreement prohibiting strikes has expired and the employer has engaged in bad faith bargaining.

immediately. From 1967 through 1978 272 illegal work stoppages produced only 173 charges of illegal activity, of which only 136 led to injunctions. In several instances the disputes produced exceedingly bitter labor-management relations that might have been avoided under a different collective bargaining law. In this

regard Lynn Zimmer and James Jacobs' 1981 study of New York prison guard strikes suggests that the greatest problem of a punitive strike law is the danger that it exacerbates disputes, rather than helps resolve them.

Finally, in light of the longstanding sovereignty issue in public sector labor rela-

TABLE 13 (Continued)

Heavy penalties (15 states)

State	Statutory Sanctions
Delaware	Prohibited; union recognition revoked for two years, dues deduction for one. Penalties are mandatory.
Florida	Prohibited; court may enjoin and may fine union up to \$5,000 for contempt and union officers \$50–\$100 per day; employer may recover damages. Employee may be dismissed or put on probation for six months. Union may lose certification or dues deduction and may be fined up to \$20,000 per day for each day of strike.
Georgia	Prohibited; dismissal with three year ban on rehiring; no salary increase for three years and five year probation; inciting a strike is a misdemeanor punishable by up to one-year imprisonment, a fine of \$100–\$1,000, or both.
Indiana	Prohibited; employer may sue for injury or damage. Union loses dues deduction privilege for one year. Employee may not be paid for days on strike.
Iowa	Prohibited; court may enjoin and fine up to \$500 per individual or \$10,000 for union for each day of violation and/or six months imprisonment. Individual may be fired and not rehired for one year.
Maryland	Prohibited; recognition revoked for two years. Dues deduction suspended one year. Penalty mandatory.
Nebraska	Prohibited; violators guilty of class 1 misdemeanor.
Nevada	Prohibited; strike may be enjoined. Union may be fined \$50,000 per day, union leader \$1,000 per day or jailed. Employer can dismiss, or suspend, or demote worker, cancel collective bargaining agreement and/or withhold wages for period of strike.
New York	Prohibited; one year probation and loss of two days pay for each day on strike. Union loses dues deduction. Employer may seek injunction.
Ohio	Prohibited; termination possible. One year freeze on salary if rehired plus two year probationary period.
Oklahoma	Prohibited; union loses recognition. Employee may not be paid for strike. Police and firefighters may be fined or dismissed.
South Dakota	Prohibited; union fined to \$50,000, employee \$1,000 or jailed up to one year or both. Employer can seek injunction.
Tennessee	Prohibited; employer may seek injunction; employees may be dismissed or forfeit tenure for three years.
Texas	Prohibited; employee dismissed, loses reemployment or other benefit rights. Fines for police and fire. No wage increase for one year.
Virginia	Prohibited; employee dismissed, no rehirement possible for one year.

Source: U.S. Dept. of Labor, 1979

tions, one must not forget that in a number of cases, governors and the president have used the National Guard or the army to break illegal public sector strikes. The most notable such recent case was President Reagan's use of Air Force traffic controllers to defeat PATCO and ultimately

crush that union. In the 1970s, the National Guard was used temporarily to replace striking public sector workers by both liberal and conservative governors. The likelihood of such force being used may be an important deterrent to protective service strikes, which may

TABLE 14
FINDINGS IN EMPIRICAL STUDIES OF PUBLIC SECTOR STRIKES

Study (year)	Group	Finding
Balfour and Holmes (1981)	Teachers across states, 1974-77	States with strikes permitted or harsh penalties have more strikes than those with moderate penalties; low salaries induce more strikes.
Klauser (1977)	Hawaii impasse procedures, 1971-77	Only one strike; legalization limits strikes.
James Stern and Craig Olson (1982)	Teachers, police, and firefighters, 1975-77	Propensity to strike during negotiations is lowest with compulsory arbitration, highest with no bargaining law.
Hoyt Wheeler (1975)	Firefighters' strikes, 1969-72	Compulsory arbitration laws reduce strikes.
John Burton and Charles Krider (1975)	All public sector workers cross-state, 1968-71	Prohibiting or penalizing strikes, third-party procedure laws, and type of bargaining law have no discernible effects on strikes.
Rodgers (1980)	Same as Burton and Krider, 1974-75	Making strikes illegal and third-party procedures reduce strikes.
Ichniowski (1982)	Police, 1972-73, 1976-78	Compulsory arbitration reduces strikes.
Robert Horn, William McGuire, and Joseph Tomkiewicz (1982)	Teachers' strikes across states, 1977	Districts that engage in collective bargaining have fewer strikes than those with no bargaining required or with meet-and-confer procedures; higher wages reduce strikes.
Fallon (1977)	All state public sector strikes, 1972	Compulsory arbitration procedures have no significant effects or very minor ones.
Colton (1978)	Teachers' strikes, 1960-75, cross-states	No relation between strikes and bargaining statute.
Weintraub and Thornton (1976)	Teachers' strikes over time, 1946-73	Districts with permissive bargaining legislation have more strikes.

be rendered largely ineffective as a result.

Binding Arbitration

The use of arbitration in various forms as the terminal step in statutory procedure for resolving deadlocked negotiations was the most innovative and impressive development in labor relations in government in this country during the 1970's and early 1980's. (Richard Lester 1984, p. 1)

A sizeable research effort has been devoted to the consequences of compulsory

arbitration, either conventional (in which the third party is free to impose any solution) or final-offer (in which the third party selects one of the parties' final offers) on public sector labor relations. The theory of conventional arbitration has focused on the "chilling" effect that such third-party resolution can have on negotiations. In the standard analysis, it is argued that if two parties operating under a conventional arbitration statute believe the arbitrator will "split the difference," negotiations will be chilled, as each side will refuse to make

concessions for fear they will lower its award in arbitration. By contrast, final-offer arbitration—under which the arbitrator must pick one of the two offers—is often claimed to have less of a chilling effect.

The major criticism leveled against final-offer arbitration is that it provides identifiable “winners” and “losers,” which is bad for labor relations because the parties have to deal with each other constantly throughout the life of the subsequent contract. This may be mitigated somewhat, however, if losers in one round are more likely to be winners in subsequent rounds. Several alternatives, including “issue-by-issue final offer arbitration” where various issues are subject to separate final-offer selection, have been proposed to reduce this problem.

In New Jersey and Massachusetts—two extensively studied states—unions have tended to “win” approximately two-thirds of the arbitration awards, leading to considerable complaint by cities.¹⁴ If employers and unions had equally realistic final offers, and arbitrators made decisions close to union offers most of the time, the cities would have a legitimate gripe. In fact, however, Ashenfelter and Bloom (1984) have found that the reason unions win more in New Jersey is that union offers are more realistic, perhaps because union leaders are more risk-averse than municipal officials. They find that final-offer arbitration produces even smaller settlements than conventional arbitration.

Finally, as noted in our previous discussion of strikes, there has been considerable concern about the extent to which compulsory arbitration laws reduce strikes, particularly compared with laws that make collective bargaining illegal or that simply penalize public sector strikes.

When the issue of binding arbitration initially surfaced in the public sector literature, there was a notable lack of empiri-

cal evidence on its effects. As Table 15 shows, by 1981, 20 states had some form of binding arbitration, 10 of which relied exclusively on conventional arbitration, and 10 of which experimented with some form of final-offer arbitration. While binding arbitration has been invoked for nearly all workers, it has been most widely used to deal with the problems of protective service employees.

Statistical analysis of the effects of the laws on negotiations and wages has taken various forms: before and after studies within states; cross-section comparisons between groups that are covered by the arbitration provision with those that are not; comparisons of arbitration awards with negotiated settlements; and laboratory experiments designed to evaluate how various dispute resolution mechanisms affect negotiations.

Because the presence of compulsory arbitration dispute resolution may affect negotiations, the most problematic of the approaches is to compare the wages determined by compulsory arbitration with those that result from a settlement negotiated under the threat of arbitration. This is because, as Farber and Harry Katz point out, the presence of a binding arbitration provision may change negotiations as well, depending on the nature of the arbitrator's preferences. In addition, the selection of jurisdictions into arbitration will not be random, so apparent variations in outcomes between compulsory arbitration and those arising out of negotiations between the parties may reflect the differences between the nature of the jurisdictions rather than any differences between the dispute resolution procedures. In other words, there is a potential for “selectivity bias.”

Table 16 summarizes current findings of the effects of compulsory arbitration on economic outcomes. First, as noted earlier, binding arbitration reduces strikes. Some analysts conclude that conventional arbitration has harmed bargaining. Others

¹⁴ For New Jersey, see Bloom (1981) and Ashenfelter and Bloom (1984). For Massachusetts, see Lipsky and Barocci (1977) and Somers (1977).

TABLE 15
STATE INTEREST ARBITRATION LAWS, 1984^a

State (Effective Date of Law)	Covered Employees	Form of Arbitration
Alaska: 9-4-72	Law enforcement, firefighters, prison, hospital	Conventional
Connecticut: Teachers: 7-1-79 Others: 10-1-75	Municipal employees and teachers	Final-offer by issue
Hawaii: 7-1-78	Firefighters	Final-offer
Illinois: 7-1-84	Police and firefighters	Final-offer by issue
Iowa: State: 6-1-76 Muni.: 7-1-75	All	Final-offer by issue (fact-finder's recommendation may be selected)
Maine: State: 7-28-74 Muni.: 10-1-69	State	Conventional, not binding on wages
Michigan: 8-14-69 Type specified as FO: 1-1-73	Police and firefighters	Final-offer on economic issues, conventional on others
Minnesota: 5-23-73	Police and firefighters, exceptions	Conventional or final-offer
Nebraska: 4-29-69	All	Conventional
Nevada: 5-77	Firefighters	Final-offer
New Jersey: 5-10-77	Police, firefighters, prison	Final-offer or conventional
New York: 7-1-77	Police and firefighters	Conventional
Ohio: 4-1-84	Law enforcement, firefighters, prison, some medical	Final-offer by issue
Oregon: 7-1-73	Police, firefighters, retail hospital, prison	Conventional
Pennsylvania: 6-24-68	Police and firefighters	Conventional
Rhode Island: State: 5-4-72 Muni.: 4-1-67 Teachers: 5-11-66 Police: 6-4-68 Firefighters: 5-13-66	State, teachers, municipal Police and firefighters	Conventional, not binding on wages Conventional
Vermont: 4-3-72	State	Conventional
Washington: 5-14-79	Police and firefighters	Conventional
Wisconsin: 4-21-72	Police, firefighters, municipal, and teachers	Final-offer
Wyoming: 5-22-65	Firefighters	Conventional

Source: Valetta and Freeman, 1985.

^a This table lists laws for which initiation of arbitration procedures does not require the consent of both parties. Laws that pertain exclusively to employees not in one of the five major functional groups (police officers, firefighters, state employees, teachers, other municipal employees) are omitted.

TABLE 16

EFFECTS OF COMPULSORY ARBITRATION ON ECONOMIC OUTCOMES: SUMMARY OF RESEARCH FINDINGS

A. Effects on Bargaining

Compulsory Arbitration Reduces Bargaining

1. Wheeler (1975): Conventional, firefighters. Management bargainers are less likely to change positions on starting wages when compulsory arbitration laws exist. Also, there is a greater gap between party and impasse positions.
2. Kochan and Baderschneider (1978): Conventional, New York firefighters and police. Parties have a high and increasing dependence on third-party arbitration.
3. Lipsky and Barocci (1977): Final-offer, Massachusetts firefighters, police, and teachers. Measured as proportion of negotiations that resulted in impasses.
4. Somers (1977): Final-offer, Massachusetts firefighters and police. Final-offer arbitration led to increased reliance on third-party arbitration. Didn't lead to increase of preimpasse bargaining.

Compulsory Arbitration Does Not Reduce Bargaining

1. Grodin (1974): Conventional, Nevada.
2. Joseph Loewenberg (1970): Conventional, Pennsylvania police and firefighters. Two-thirds of municipalities that negotiated arrived at negotiated settlement.
3. Daniel Gallagher and Richard Pegnetter (1979): Final-offer, Iowa. Final-offer arbitration encourages negotiations.
4. Gary Long and Peter Feuille (1974): Final offer, Eugene, Oregon. Case study of seven negotiation-arbitration experiences since 1971. Moderate encouragement of bargaining.
5. Lipsky and Barocci (1977): Final-offer, Massachusetts firefighters, police, and teachers. Measured by number of cases settled by arbitration.

B. Effects on Wages

Compulsory Arbitration Raises Wages

1. Loewenberg (1970): Conventional, Pennsylvania police arbitration resulted in larger increases than in negotiations or employer determinations.
2. James Stern et al. (1975): Final-offer, Wisconsin and Michigan. Regression analysis shows weak evidence of a positive relation for firefighters and police in both states from 1 to 5%.
3. Olson (1980): Conventional, firefighters for population of 100,000 and over.
4. Thomas Kochan and Tod Jick (1978): Police and firefighters in New York State. The nature of the impasse procedure—factfinding or arbitration—had a positive impact for management salary but no movement for union salaries.

Compulsory Arbitration Does Not Raise Wages

1. Somers (1977): Final-offer, Massachusetts. Final-offer arbitration leads to excessive percentage wage increases.
2. Bloom (1981): New Jersey. Final-offer. None of coefficients for arbitration was significantly different from zero in regression analysis with salary changes as dependent variable.
3. Ashenfelter and Bloom (1984): New Jersey. Final-offer arbitration has less effect on wages than conventional.
4. Loewenberg (1970): Firefighters' median increase in salary is similar to that for negotiated settlements or for decisions determined by an arbitration award.

claim that it has not. Some have argued that once two parties get involved with arbitration, there is a "narcotic effect," in which they keep coming back for more arbitration rather than proceeding to bargain. Others have argued that the effect is illusory rather than real. As the Richard Butler-Ronald Ehrenberg and Thomas Kochan-Jean Baderschneider exchange in the *Industrial Labor Relations Review* (1981) makes clear, it is difficult to isolate the true effect of using arbitration in the past on the probability that one uses it in the future from any "unobserved" predilection to use arbitration. While the overall impact of arbitration on bargaining is unclear, the general expectation that "final-offer" arbitration will be less chilling than conventional arbitration seems, for the most part, to be supported in the data.

As panel B of Table 16 shows, there is no clear conclusion in the literature regarding the impact of compulsory arbitration on wages. The most sophisticated study, by Orley Ashenfelter and David Bloom (1983), finds that final-offer arbitration does *not* produce higher wage settlements than does conventional arbitration, despite municipal complaints to the contrary (if anything, the data show slightly lower settlements for final offer arbitration in New Jersey).

Finally, in addition to the statistical analysis of the effects of actual arbitration and other dispute resolution mechanisms, there have been several laboratory experiments concerning how the various mechanisms affect behavior (see Table 17). A typical such study assigns subjects to the role of union and management negotiators and puts them into a negotiating "game" situation. They are presented with fact sheets about the situation and instructed to try to obtain the best bargain for their side, with monetary rewards depending on what they get. To study the effect of different forms of arbitration, some subjects are

allowed to bargain freely for a specified amount of time, while others are told that if they fail to reach agreement in the bargaining period, a specified type of arbitration, or in some cases a strike, will end the impasse. In general, the smaller the percentage of agreements reached or size of concessions, or the greater the differences between the parties' final offers, the greater is the chilling effect.

Both the methods and results of the studies vary so much as to preclude any neat summary of their findings. Expected compulsory arbitration may have a chilling effect depending not only on the type of arbitration expected, but also on the particular negotiation conditions extant. For example, two of the studies (William Bigoness 1976; Douglas Johnson and William Tullar 1972) suggested that the chilling effect of conventional arbitration may depend on the degree of conflict, or the "need to save face," between the negotiators; if there is low conflict expected or a low "need to save face," expected conventional arbitration may facilitate bargaining. Another study (Angelo DeNisi and James Dworkin 1981) indicated that final-offer arbitration is less likely to have a chilling effect when negotiators are more knowledgeable about the arbitration process. The studies do suggest that final-offer arbitration has less of a chilling effect than conventional arbitration, although of the four relevant studies, one states the result with qualifications and the other finds a stronger chilling effect for final-offer arbitration under high "need to save face" conditions.

VII. Conclusion: Unanswered Questions

As the preceding review and summary of findings show, much has been learned about public sector labor relations. Much also remains to be learned. Wage studies covering more recent periods of time are likely to produce different estimates of the

TABLE 17
RESULTS OF LABORATORY EXPERIMENTS OF IMPASSE RESOLUTION PROCEDURES

Study	Comparison and Measure of Outcome	Finds Chilling Effect for Compulsory Arbitration	Finds Less Chilling Effect for Final-offer Arbitration
Johnson and Tullar (1972)	Conventional or final-offer arbitration versus mediation or non-intervention. Frequency and size of concessions, whether agreement reached.	Yes, when "need to save face" is high. Bargaining facilitated when "need to save face" is low.	No, finds more chilling effect for final-offer when "need to save face" is high.
Bigoness (1976)	No intervention, mediation, voluntary arbitration, compulsory arbitration. Number of contracts settled, number of issues unresolved, total amount conceded.	Yes, if high conflict between sides. Bargaining facilitated if low conflict.	—
Urban (Notz and Starke 1978, p. 191)	Compulsory arbitration, voluntary arbitration, no intervention. Time to reach agreement.	Yes.	—
Johnson and Pruitt (1972)	Conventional arbitration versus mediation-factfinding. Frequency and size of concessions, whether agreement reached.	No. Bargainers expecting arbitration were more conciliatory.	—
DeNisi and Dworkin (1981)	Final-offer (informed versus uninformed negotiators) versus no arbitration. Closeness of offers (initial and final), frequency, and size of concessions.	No, for bargainers informed about arbitration procedures. Uncertain for uninformed.	—
Notz and Starke (1978)	Final-offer and conventional arbitration, no intervention (strike condition). Differences between the parties' initial "reasonable settlements" and final bargaining positions.	Yes.	Yes.
Aremanda Subbarao (1978)	Conventional arbitration final offer by package. Sum of final differences on all issues, sum of differences between initial and final positions.		Yes.
John Magenau (1983)	Conventional and final-offer arbitration, no intervention (strike condition). Differences in last offers, differences in submissions after negotiations closed, "change scores" (subtract latter from former), percentage agreement.	Yes.	Yes, with qualifications.

effects of unionism from those covering earlier periods, leading to different conclusions about the power of public sector unions. Additional analysis of the legal and political environment under which unionism operates should illuminate the particular aspects of public sector labor relations.

Perhaps what is most sorely needed in this area of research is a general analytic framework around which the diverse research studies can be organized. For the most part, researchers have applied the same basic analytic framework used in the private sector, concentrating on wage and other compensation effects of collective bargaining. If the analysis in this review essay is correct, this approach misses much that is distinctive about the public sector in terms of both positive and normative economics. Whereas in the private sector most (though not all) labor economists are willing to infer employment declines from union-induced wage increases, this does not appear to be valid in the public sector because of union potential to *shift* demand outward through the political process. If this is a correct insight, future work on public sector unionism should pay greater attention to two aspects of collective bargaining in the government: (1) the political constraints that these unions face and that produce outcomes different from those in the private sector, and (2) the way in which the public aspect of the unions leads them to develop different objectives from private sector unions. While it may be difficult to decompose the effects of "publicness" on objectives and constraints, such an analysis can greatly illuminate the dimensions of public sector unionism.

As a general guide, models in which public sector unions bargain politically for the entire budget and tax position of cities and states as well as for wages and labor employment in collective bargaining appear to offer the best hope for understand-

ing what public sector unions do and for allowing a social evaluation of what the advent of unionism to the public sector means for the United States economy.

APPENDIX: THE MEASUREMENT OF THE EXTENT OF COLLECTIVE BARGAINING

Because public sector unions operate under different state laws, the definition of "unionism" is by no means clear. Existing data provide several widely used sets of figures, which are described below:

1. *Membership in a Bargaining Organization*

The term *bargaining organization* was coined by John Burton (in Ben Aaron, John Grodin, and James Stern, 1979) to include unions and bargaining associations (or what the Bureau of Labor Statistics [BLS] calls *employee associations*). Burton divides public sector organizations into three classes: unions, bargaining associations, and nonbargaining organizations. Unions are characterized by strike endorsement, emphasis on collective bargaining, exclusion of supervisors from membership, and ALF-CIO affiliation. Bargaining associations also rely on collective bargaining, but are generally averse to strikes, are more likely to emphasize political action instead, and are unlikely to be affiliated with AFL-CIO. The National Education Association (NEA) is an example. Finally, nonbargaining organizations don't bargain as a group, don't strike, are not affiliated with AFL-CIO, but generally include supervisors as members. An example is the American Bar Association (ABA). According to Burton, a shortcoming of the BLS data is that it underestimates coverage by excluding municipal public employee associations. Other problems are that BLS includes membership outside the United States as well as retired and unemployed workers. Post 1979 the Bureau of National Affairs has kept this series.

2. *Membership in an Employee Organization*

The Bureau of the Census, Department of Labor (BCDL) defines an employee organization as "an organization (e.g., union, association, federation, or council) that exists for the purpose, in whole or in part, of dealing with the employer concerning personnel policies and practices, employee grievances, labor disputes, wages, rates of pay, hours of employment, and other conditions of work." The data are available only as the percent of *full-time* employees and exist from 1974 to the present.

3. *Employees Represented by Bargaining Units*

The BCDL defines a bargaining unit as a group recognized as appropriate for representation by an employee organization for the purpose of collective and/or meet-and-confer discussions. Units commonly include both members and nonmembers of the organization.

4. Employees Covered by Contractual Agreement

The BCDL defines a contractual agreement as "a written document developed by collective negotiations between representatives of the employer and employee organizations that describes the conditions of employment (e.g., wages, hours, fringe benefits, etc.) and the methods by which disputes or grievances arising during the term of the contract shall be resolved."

5. Employees Represented by Labor Organizations

The Current Population Survey (CPS) includes both members of unions and employee associations engaged in collective bargaining as well as those covered by a union or employee association contract. No retirees, unemployed union members, or persons in the armed forces are included. Moreover, it includes members only in the United States. A major problem, however, is that while the CPS reports "government" workers as part of its "class of worker" question, it breaks up the government into state, federal, and local only for those workers in public administration.

The following figures provide some notion of the range of figures one gets from different surveys:

State and Local Employees	1976	1980
Percentage of employees with bargaining organization membership (BLS)	37	—
Percentage of full-time employees with employee organization membership (BCDL)	49.8	48.8
Percentage of employees represented by bargaining units (BCDL)	35.8	38.4
Percentage of all employees covered by contractual agreement (BCDL)	27.7	32.1
Percentage represented by labor organizations (CPS)	—	43.4

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