

The Long-Haul Effects of Interest Arbitration: The Case of New York State's Taylor Law¹

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Abstract

The authors use experiences with interest arbitration for police and firefighters under New York State's Taylor Law from 1974 to 2007 to examine the central debates about the effects of this form of arbitration on collective bargaining. They draw on old and new data to compare experience with interest arbitration in the first three years after it was adopted with experiences from 1995 to 2007. They find that no strikes have occurred under arbitration, rates of dependence on arbitration declined considerably, the effectiveness of mediation prior to and during arbitration remained high, the tripartite arbitration structure continued to foster discussion of options for resolution among members of the arbitration panels, and wage increases awarded under arbitration matched those negotiated voluntarily by the parties. Econometric estimates of the effects of interest arbitration on wage changes in a national sample suggest wage increases between 1990 and 2000 in states with arbitration did not differ significantly from those in states with non-binding mediation and factfinding or states without a collective bargaining statute. The length of time required to complete the arbitration process increased substantially and several critical employment relations issues facing the parties have not been addressed within the arbitration system. The authors suggest these findings should be considered by both critics and supporters of proposals to include a role for interest arbitration in national labor policy.

The role of interest arbitration in collective bargaining negotiations has been a topic of longstanding debate among industrial relations researchers and policy makers and features prominently in contemporary debates over how to reform national labor laws. A bill to provide for final offer arbitration to resolve emergency disputes in airline was introduced and debated in the Senate in 2001 and at the time of this writing, both houses of Congress—and the nation—are debating the merits of the Employee Free Choice Act (EFCA).² EFCA proposes that—for the first time in U.S. history—arbitration

² See Airline Labor Dispute Resolution Act, S.1327 available at <http://www.govtrack.us/congress/billtext.xpd?bill=s107-1327>. As noted earlier, more recently the debate over the merits of interest arbitration has been heightened by the proposed Employee Free Choice Act. For the 2008 version of the Employee Free Choice Act, see “The Employee Free Choice Act” (H.R. 800) available at <http://thoms.loc.gov/cgi-bin/query/z?c110:H.R.800>. Support for the bill is summarized at the website of the American Rights at Work <http://americanrightsatwork.org>. Arguments against the bill are summarized on the website of the Heritage Foundation <http://www.heritage.org/research/labor/wm1768.cfm>.

be used to resolve impasses between private employers and newly certified unions arising out of the negotiation of their first labor contract.

While there is very limited experience with mandated interest arbitration in the private sector, for several decades, interest arbitration has been used in twenty public sector jurisdictions to resolve bargaining impasses between municipalities and their police officers and firefighters (Valletta and Freeman, 1988). The passage of these arbitration statutes in the late 1960s and early 1970s led to a number of studies that examined early experiences with arbitration (Loewenberg, 1968; Stern, Rehmus, Loewenberg, Kasper, and Dennis, 1975; Lipsky and Drotning, 1977; Thompson and Cairne, 1973; Lester, 1984). Since then, however, “There has been a virtual stoppage of books and articles on [the public] sector’s labor relations” (U.S. Secretary of Labor’s Task Force Report, 1995: 103).

In this paper we seek to fill at least a portion of the gap in research on interest arbitration by examining experience with the arbitration of police and firefighter disputes. We draw on data used to evaluate the effects of the introduction of arbitration in police and firefighter negotiations in New York State in 1974 (Kochan, Baderschneider, Ehrenberg, Jick, and Mioni, 1978) and update these data to capture experiences under this law from 1995 to 2007. We also supplement the New York State data with descriptive statistics and econometric analyses from a national data set that allow us to compare the effects of interest arbitration with the effects of mediation or factfinding and the absence of a bargaining statute on changes in police and firefighter wages over time. In the final section we discuss the implications of these results for contemporary debates over the role of arbitration in national labor policy.

The Longstanding Theoretical Debate: Is Arbitration Compatible with Collective Bargaining?

Because arbitration provides a binding resolution by one or more neutral experts, it has been viewed by many as a fair and effective way to resolve disputes when the costs of a strike to the public or to the parties are too high to tolerate or when power is so imbalanced in a relationship that one of the parties can refuse to negotiate and impose its will on the other. Indeed, opinion polls have shown that the majority of the American public prefers arbitration to strikes in these types of situations (Bok and Dunlop, 1970; Hart Research Associates, 2009).

Most of the post-World War II generation of industrial relations experts, however--many of whom served on the World War II War Labor Board--opposed compulsory arbitration (Taylor, 1948; Phelps, 1964). They argued that society should instead promote “free collective bargaining,” i.e., bargaining free of intervention or control by government or other outside parties (Northrup, 1966). Some experts worried that the use of arbitration in contract negotiations would “chill” the negotiations process or result in the parties’ having a high and perhaps increasing rate of dependence on arbitration in lieu of reaching voluntary agreements (the so-called “narcotic effect”) (Wirtz, 1963). The presumed existence of the chilling effect was also premised on the view that interest arbitrators almost never sided entirely with one side or the other, but issued awards that were somewhere between the two sides’ final positions. If arbitrators split the difference between the parties’ final positions, then the parties have a greater incentive to hold to exaggerated proposals during negotiations and a reduced incentive to make mutual concessions. If these premises are correct, then, over time, the availability

of interest arbitration would lead to fewer voluntary agreements and more reliance on arbitration.

Others, including many public sector managers, feared that the availability and use of interest arbitration would have a significant effect on wages, salaries, and compensation. They believed that using arbitration to resolve public sector disputes would drive public sector pay to levels significantly above acceptable norms and would result in higher taxes or strains on public budgets (Wellington and Winter, 1971; Stanley, 1972).

In 1966 Carl Stevens published a highly influential article that proposed a remedy for the presumed narcotic and chilling effects of interest arbitration (Stevens, 1966). Stevens introduced the idea of final offer arbitration, a form that would limit an arbitrator's options to the choice of either the employer's final offer or the union's (thereby eliminating the arbitrator's option of splitting the difference). Stevens argued that the disincentive to compromise in conventional arbitration would be eliminated under his proposal. If the arbitrator were forced to choose one party's final position or the other's, Stevens believed, then during negotiations each side would have a strong incentive to offer a position it believed would be most appealing to the arbitrator. An attempt by one party to offer such a compromise would lead to the other side offering a compromise that it believed would be even more attractive to the arbitrator. Thus, Stevens believed that final offer arbitration would lead to a dynamic process of offers and counteroffers, resulting in agreements between the parties short of the use of arbitration.

It was the historic rise of collective bargaining in the public sector in the 1960s that cast these longstanding theoretical arguments about arbitration in an entirely new

light. Policy makers and scholars alike were faced with a dilemma. They sought means of extending collective bargaining to the public sector, but they also wanted to protect the public from strikes. On the one hand, few state legislatures or governors were willing to grant public employees the right to strike. On the other hand, neither were they ready to cede final decision-making authority to arbitrators. Several states in addition to New York created blue-ribbon commissions that included prominent post-war labor relations scholars to recommend ways to resolve this dilemma (Lester, 1984). Not surprisingly, given the prevailing views discussed above, arbitration was not included in most of the initial public sector bargaining statutes enacted during the 1960s. Although most of these new statutes prohibited strikes, they chose various combinations of mediation or factfinding with recommendations as dispute resolution options rather than binding arbitration (Lester, 1984).

In New York, for example, a blue ribbon committee chaired by former Chairman of the War Labor Board, George Taylor, recommended a law that provided for mediation and factfinding, but not arbitration. This law, commonly referred to as the Taylor Act, was enacted in 1967 (N.Y. Civ. Serv. Law §§200-214; Lefkowitz, et al., 1998; Donovan, 1990). Despite the Taylor Law's prohibition on strikes, however, in the two years following its passage in 1967, there were nearly forty public sector strikes in the State (Oberer, et al., 1970). In 1969 the Legislature, dissatisfied with the operation of the Law's impasse procedures, added amendments to the act encouraging the parties to use voluntary interest arbitration (N.Y. Civ. Serv. Law §§209.2 and 209.3; Lefkowitz, pp. 525-526). In 1974 the legislature amended the law to *require* interest arbitration for police officers and firefighters (N.Y. Civ. Serv. Law §209.4; Lefkowitz, et al., pp. 766-

767). The amendment provided for the use of conventional (not final offer) arbitration. It was designated as an “experiment” with a three year duration at which point the legislature would decide whether to continue it, amend it further, or return to the prior procedures.

Thus, the passage of the 1974 amendment provided the opportunity to test for the effects of arbitration on the process and outcomes of bargaining by comparing bargaining under mediation/factfinding from 1967 to 1973 with bargaining under arbitration from 1974 to 1976, the three years designated as the “experimental” period for the new procedures. The legislature’s decision in 1976 to continue the law to the present time allowed us to update these data and examine the effects of arbitration over this longer time period. Specifically, in the analysis to follow we present data to test for the chilling and narcotic effects on the negotiation and agreement making processes and then supplement these data with descriptive statistics and econometric results from a national data set that test for the effects of arbitration on wage outcomes.

Methods

Data on the initial experiences with arbitration are drawn from a large-scale study that compared experiences under the Taylor Law’s mediation and factfinding procedures in effect from 1967 to 1973 with experiences under arbitration from 1974 to 1976. Data were collected on the complete set of police and firefighter bargaining units in effect over that time period. These data were used to test whether the change from mediation/factfinding to arbitration led to: (1) greater or fewer settlements without an impasse, (2) greater or fewer settlements in mediation, (3) more or fewer strikes or other forms of job actions, and (4) higher or lower wage increases. In addition interviews with

participants in the arbitration process were carried out to explore how the administration, decision-making process, and general experiences under interest arbitration unfolded for cases that went through the complete process. Interviews followed a semistructured protocol (Kochan et. al., 1978; 206-16).

To determine how arbitration fared in the thirty years following the initial study we address the same basic questions as were addressed in the original study, albeit with more limited data and methods. Impasse data were collected from the New York State Public Employment Relations Board (PERB) from 1995 through 2007.³ These data were supplemented by records of arbitration awards and negotiated collective bargaining agreements archived at the Cornell School of Industrial and Labor Relations Catherwood Library. Semi-structured interviews were conducted with ten of the most active neutral arbitrators who together accounted for nearly half of the arbitration cases completed between 2002 and 2007. They were asked to describe how they conducted their arbitration processes using a subset of the same questions used to capture these data from arbitrator interviews in the earlier study. That is, they were asked about their experiences and satisfaction with the tripartite panels, their willingness and ability to mediate and/or narrow differences in the parties' positions, and to identify any issues that were particularly problematic in the arbitration proceedings. They were also asked whether, based on their experiences, they preferred to continue the tripartite structure, shift to a single arbitrator model, or make any other modifications to the dispute resolution process. To better understand how the law is perceived currently by the parties directly involved in and responsible for administering it, interviews covering these same questions were

³ Unfortunately, PERB did not collect systematic data on impasse histories between 1976 and 1995. Those data that were collected in these interim years were subsequently lost to a flood in the New York State Archives.

conducted with the General Counsel of the New York State Union of Police Associations, the President of the New York State International Association of Fire Firefighters, the Director of Employee Relations for the New York State Conference of Mayors and Municipal Officials, and the Chairman, Director of Conciliation, and Assistant Director of Conciliation of the New York State PERB.

One important piece of information no state agency or private group has collected is the number of bargaining units negotiating contracts in a given year. We therefore developed a means of estimating this number. A combination of archival records and interviews with police and firefighter representatives indicated that there are approximately 97 firefighter bargaining units and 326 police bargaining units covered by the Law. Since the average contract duration for these bargaining units was 2.8 years, we assume for our calculations that one-third of these units negotiated contracts each year.⁴

Results

The Initial Years

The results from the initial study of the net effects of the change from mediation/factfinding interest arbitration on the process and results of bargaining are summarized below:

1. The probability of going to impasse under arbitration increased by 16 percent, but so too did the likelihood that the parties would resolve their impasse in mediation. The probability of settling in mediation after the arbitration amendments went into effect increased by 13 to 18 percent.
2. Overall there was about a 15 percent increase in the likelihood the parties would go to arbitration compared to the probability during the earlier period of going beyond factfinding to a legislative hearing.

⁴ Note that this leads to underestimation of the number of contracts negotiated each year as variation in the length of contracts increases; for example, one-year contracts are negotiated more frequently and so have a larger impact on the number of contracts negotiated annually. Correction would increase the denominator when calculating the impasse rate, and magnify the main result that impasse rates have declined.

3. Dependence on the impasse procedures increased in each successive round of negotiation under factfinding and this pattern continued in the first round under arbitration, a pattern that reflected the predictions of those worried about a potential narcotic effect.⁵
4. There were no significant effects of the change to interest arbitration on wages and no differences in the rates of wage increases granted by arbitrators compared to those negotiated voluntarily by the parties.
5. Since no strikes occurred during the three years of experience under the arbitration amendments or in the last round of negotiations under factfinding, no conclusions could be drawn on the *relative* effectiveness of interest arbitration with respect to avoiding strikes or other work stoppages.
6. The qualitative analysis of the tripartite interest arbitration process found that both management and union representatives were generally satisfied with the procedural and administrative aspects of tripartite arbitration, but city representatives continued to oppose the arbitration amendments as a matter of principle. The tripartite structure had resulted in a good deal of mediation by the neutral arbitrator with the party-appointed arbitrators after the hearing had been completed but before the award was written.

More Recent Years: Déjà vu All over Again?

Our findings pertaining to the impasse resolution processes from 1995 to 2007 are summarized in Figures 1 through 4.⁶

Avoiding Strikes

The primary purpose of using arbitration is to avoid work stoppages by essential public service employees. On this criterion the arbitration statute has clearly met its

⁵ This pattern is reported in detail in Kochan and Baderschneider (1978). See also Butler and Ehrenberg (1981) and Kochan and Baderschneider (1981) for further discussion of whether or not the patterns observed were consistent with how earlier scholars defined the narcotic effect.

⁶ These results focus only on police and firefighter bargaining units in cities and towns outside of New York City. Before 1998, the arbitration of New York City police and firefighter disputes was administered by the New York City Office of Collective Bargaining. In 1998 the Legislature transferred jurisdiction over police and firefighter bargaining impasses from the OCB to PERB, although OCB retains jurisdiction over improper practices and representation matters. New York City contested the constitutionality of this transfer, but the New York Court of Appeals rejected the City's claim in 2001 (*Patrolmen's Benevolent Association of the City of New York v. City of New York*, 2001 NY Int. 149, December 20, 2001, found at http://www.law.cornell.edu/nyctap/101_0149.htm, accessed on March 20, 2009). For an analysis of arbitration experiences in New York City, see Lipsky and Katz (2006).

objectives. No police or firefighter unit engaged in a strike in the traditional sense of a complete work stoppage over this thirty-year period. PERB listed twelve incidents involving police and firefighter units in its Work Stoppages file since 1976. However, most if not all of these appear to be some form of sickout, refusal to work overtime, or some other type of limited job action. Eight of these twelve events occurred between 1977 and 1981 in the City of Yonkers, a period during which the State had set up an emergency control board to oversee the city's finances.⁷ Three others--the Orangetown police in 1995, Buffalo police in 2002, and Kings Point police in 2003—were ultimately judged by PERB to fall short of a “strike action.” As a point of comparison, PERB's records indicate that 33 teacher strikes occurred in New York State between 1977 and 2007.⁸

Although the arbitration statute has clearly achieved its objective of preventing work stoppages, other factors may have also played a role. One factor has probably been the Triborough Doctrine, which requires a public sector employer to continue an expired agreement until a new agreement is negotiated or resolved by mediation, factfinding, or arbitration. The doctrine, first articulated in a decision by PERB in 1972, was added by amendment to the Taylor Law in 1982.⁹ A union, however, forfeits its right to preserve all the terms of an expired agreement if it goes on strike.

The fact that strikes by public sector employees are unlawful in New York State may prompt those in law enforcement to think twice before they go on strike and violate

⁷ The emergency control board in Yonkers continues to operate under legislation passed in 1984. See <http://law.justia.com/newyork/codes/yonkers-financial-emergency-act-103.84/>, accessed on March 20, 2009.

⁸ There were 40 job actions by teachers during this period, but PERB found that only 33 were actually strikes as defined by Section 210.1 of the Taylor Law.

⁹ PERB's 1972 decision was *Triborough Bridge & Tunnel Authority*, 5 PERB 3037 (1972). The Triborough amendment is at 1982 N.Y. Laws chs. 868, 921.

the law. The illegality of strikes under the Taylor Law may be as or more important than interest arbitration in deterring work stoppages by police officers and firefighters.

Impasse and Arbitration Rates

The data in Figure 1 provide a test of whether or not a “narcotic” pattern of dependence has built up within these bargaining units over time. Between 1995 and 2007 approximately 28 percent of firefighter units and 40 percent of police negotiations went to impasse and only 7 percent of firefighter and 9 percent of police contracts were resolved by an arbitration award. These impasse and arbitration rates compare favorably to the experience in the early years of the process. The 1976 study found that 57 percent of firefighter and 74 percent of police units went to impasse and 26 percent of firefighter and 31 percent of police contracts were resolved by an arbitration award. Thus, there is no evidence of either a high or an increasing rate of dependence on arbitration.¹⁰ The trend has moved in the opposite direction over time. An argument can be made that the availability of interest arbitration, rather than leading to a narcotic effect, encourages the parties to be more realistic in their negotiations and to settle their impasse without an award.

Reliance on interest arbitration does vary across jurisdictions. Police units have a higher rate of usage than do firefighter units, most likely because police are more likely to serve as a pattern setter for firefighter units within cities than vice versa.¹¹ Several

¹⁰ Note that Figures 1-4 report data for the complete population (not a sample) of the relevant cases within New York. Treated as a sample, a chi-squared test concludes that impasse rates were significantly different (at 1%, two-tailed test) in 1974-1976 than they were in 1995-2007, for both police and firefighters.

¹¹ In New York City for many years police and firefighter contracts generally followed a pattern that was set by the contract the City negotiated with its largest municipal union, District Council 37 of American Federation of State, County and Municipal Employees (AFSCME). This practice tended to hold down the salaries of police officers and firefighters, and as a consequence the City eventually encountered difficulties in recruiting new police officers. See Lipsky and Katz, 2006, p. 270. Business groups and other stakeholders began to urge the City to abandon this form of pattern bargaining; see Steven Greenhouse,

cities are heavily reliant on arbitration. The City of Buffalo and its firefighter and police units have needed arbitration to determine their contracts nearly every time they negotiated since 1995. Syracuse and Rochester are also heavy users of arbitration. These cities were also heavy users of factfinding and arbitration in the early years of the Taylor Law. There does appear to be a relationship between fiscal distress and reliance on arbitration.

The data presented in Figure 2 speak to the question of whether or not arbitration has had a “chilling” effect by examining the rates of resolution achieved in mediation prior to or in some cases during the arbitration process. The data indicate that mediation either prior to the arbitration step or mediation at the arbitration stage continued to achieve a high rate of voluntary settlement. Approximately 71 percent of firefighter impasses and 78 percent of police impasses were resolved by mediation or other voluntary means short of an award. This represents a slight increase from the 70 percent of police and firefighter contracts settled in mediation in the first three years of bargaining under the arbitration statute.

Effects on Wages

There are at least two ways the effects of arbitration on wages have been assessed in previous studies. One common approach is to compare negotiated and arbitrated wage

“Panel Urges End to City’s ‘Pattern Bargaining’ with Unions,” *New York Times*, January 20, 2001, found at <http://www.nytimes.com/2001/01/20/nyregion/panel-urges-end-to-city-s-pattern-bargaining-with-unions.html>, accessed on March 20, 2009. Both Mayor Guiliani and Mayor Bloomberg resisted the police union’s effort to persuade the City to depart from the pattern, but in 2007 police commissioner Raymond Kelly broke with Mayor Bloomberg and also called for an end to pattern bargaining in New York City. See Steven Greenhouse, “Kelly Resists Tradition, and Mayor, on Police Pay,” *New York Times*, May 25, 2007, found at <http://www.nytimes.com/2007/05/25/nyregion/25police.html>, accessed on March 20, 2009. In unpublished research, Lipsky and Katz found that police set the pattern for firefighters in upstate cities such as Buffalo and Rochester, but the strength of that pattern had diminished over time.

increases for bargaining units covered by the same statute and process. However, both theory (Farber and Katz, 1979) and prior evidence (Kochan et al., 1978) suggest that we should not observe any significant differences in negotiated versus arbitrated wages because arbitrators rely heavily on comparisons with other settlements in fashioning their awards.¹² So it is not surprising that no significant differences in negotiated and arbitrated awards were observed in the early years of the arbitration statute. The data reported in Figure 3 indicate the same results were obtained in comparing negotiated and arbitrated outcomes for police between 2001 and 2006. Negotiated and arbitrated wage increases for police officers in the first through the fourth step of their salary schedules were nearly identical. Settlements and awards average between 3.3 and 3.6 percent for the various steps on the salary schedules. The same nearly identical pattern of negotiated and arbitrated wages was observed for firefighters (see Figure 4). However, these figures should be used with caution because of the small number of arbitration cases (5) available for this comparison. PERB reported similar data for 1998 and 1999 and again showed that negotiated and arbitrated outcomes were essentially equal.¹³

The same results are reported for police and firefighters in New Jersey, the only other state where similar longitudinal data are available. Data in the New Jersey Public Employment Relations Commission's 2008 biennial report on its arbitration process

¹² Most public sector arbitration statutes require arbitrators to take relevant wage comparisons into account in fashioning their awards. The Taylor Law instructs arbitration panels to base their awards on a "comparison of the wages, hours, and conditions of employment of the employees involved in the arbitration proceeding with the wages, hours, and conditions of employment of other employees performing similar services or requiring similar skills under similar working conditions and with other employees generally in public and private employment in comparable communities" (N.Y. Civ. Serv. Law §209.4.c.v.).

¹³ Negotiated police and fire agreements averaged 3.41 percent in 1998 compared to 3.49 percent for arbitrated agreements. In 1999 negotiated agreements averaged 3.49 percent and arbitrated settlements averaged 3.82 percent. See "Contract Analysis Program: PERB's Summary of Selected Collective Bargaining Agreement Provisions, 1998-1999." A report of the New York State Public Employment Relations Board, March, 2001. (Available at the Martin Catherwood Library, Cornell University or from the authors upon request).

indicate that negotiated wage increases for police and firefighters between 1993 and 2007 averaged 3.70 percent per year; arbitrated wage increases averaged 3.63 percent.¹⁴

The second, and in our mind, more appropriate approach is to compare wage outcomes in states that have statutes requiring arbitration for police officers and firefighters with wage outcomes in states that have collective bargaining statutes but only use nonbinding resolution processes. Such tests are complicated, however, by the fact that states that have enacted bargaining statutes vary from those that have not in systematic ways that may also affect public employee wage levels and changes. Kochan found, for example, that states with more liberal political environments and higher per-capita incomes were more likely than their counterpart states to enact bargaining statutes between 1960 and 1970 (Kochan, 1973). These variations in state-level characteristics, therefore, need to be taken into account in assessments comparing wage changes that occur under different statutory regimes.

Figure 5 illustrates the importance of considering differences across states that existed before collective bargaining statutes were enacted. The figure shows levels and changes in the median real wages (in 2000 dollars) of police officers in each decade from 1960 (before states began to enact public sector bargaining statutes) to 2000.¹⁵ The data for 1970 show that prior to the enactment of any bargaining statutes median wages were approximately 28 percent higher in states that subsequently enacted arbitration or

¹⁴ See “Biennial Report of the Public Employment Relations Commission on the Police and Fire Public Interest Arbitration Reform Act,” January 2008. Available at www.state.nj.us/perc/IA_Biennial_Report20008.pdf.

¹⁵ Wages for 1980, 1990, and 2000 were calculated by dividing annual wage and salary income by usual hours worked per week and weeks worked last year. Both the 1960 and 1970 Census reported hours and weeks for intervals, so the means conditioned on the interval values are imputed. Also, because place of work (i.e., the state) is not identified in earlier censuses, only those who worked in their own states could be associated with arbitration codes.

factfinding than in states that continue to have no collective bargaining statutes.

Consistent with the general pattern of the effects of collective bargaining on wages found by other researchers (see, for example, Blanchflower and Bryson, 2007), this differential expanded modestly over this forty-year time period. In 2000 police wages in factfinding or arbitration states were approximately 33 percent higher than police wages in states without bargaining statutes, with much of the increase attributable to shifting relative demographic characteristics (such as education). Note, however, that wages in arbitration states tracked almost exactly wages in mediation/factfinding states, suggesting that it is collective bargaining *per se*, not the presence of interest arbitration that accounts for the growth in these wage differentials.

Table 1 provides additional descriptive statistics comparing wage levels adjusted for difference in per-capita income (to account for the endogeneity of bargaining laws) and wage changes between 1990 and 2000 for police and firefighters in New York, in other states with arbitration statutes, in states with mediation/factfinding procedures, and in states without bargaining statutes. These data again show that wage changes under arbitration in general and under arbitration in New York in particular did not increase at rates greater than wages changes in states that use mediation and factfinding or in states without bargaining statutes. Specifically, police wages increased by 6.49 percent in New York and by 5.90 percent in other states with arbitration statutes compared to 8.82 percent in states using mediation and factfinding and 5.25 percent in states without a bargaining law. Firefighter wages in New York, in real terms, actually declined slightly (by 0.65 percent) between 1990 and 2000. In other states with arbitration statutes firefighter wages increased by 6.57 percent, compared to an increase of 15.72 percent in

states using mediation or factfinding and 8.71 percent in states without bargaining statutes.

The data presented in Figure 5 and Table 1, however, do not control for other factors that affect wages and therefore do not provide a precise test of the net effect of arbitration on wage increases over time beyond the net effect in states using mediation and factfinding or in states without collective bargaining. Given the difficulties of assembling the necessary data and the technical complexities involved in trying to control for other factors affecting wages, it is not surprising that only a handful of studies have been carried out that test for these effects. A study of the effects of arbitration on firefighter wages in the 1970s conducted by Olson found small positive effects for arbitration (Olson, 1980). Using a time series of municipal and state data, Feuille and Delaney concluded that arbitration had a positive but modest effect on the level of police salaries (Feuille and Delaney, 1984). However, a study of the effects of arbitration on the wages of police officers in New Jersey by Bloom found no significant effects (Bloom, 1981).

Ashenfelter and Hyslop conducted the most recent and most comprehensive study (in terms of geographic scope) of the effects of arbitration on police wages (Ashenfelter and Hyslop, 1999). They analyzed wage growth from 1970 to 1990 and wage levels in 1990 of police units in the states with arbitration statutes and in states without. They found that the average effect of arbitration on both the growth and level of wages was approximately *zero*. There was some regional variability in the wage effect: arbitration in Midwestern states had a small positive effect on wages, a result that was also discovered in the studies reported above. Overall, their evidence suggested that the

presence of arbitration did not significantly increase the wages of police beyond the wages negotiated under collective bargaining in jurisdictions without arbitration. They did not, however, differentiate between those states with mediation and factfinding and those without a collective bargaining statute.

We conducted a set of regressions similar to those in the Ashenfelter and Hyslop study in order to update their results and to assess differences in the wage growth of police officers and firefighters between 1990 and 2000. We used individual-level data for police officers and firefighters contained in the 1990 and 2000 censuses, and we extended the Ashenfelter and Hyslop analysis by distinguishing police officers and firefighters in states with arbitration statutes from those in states using mediation and factfinding and in states without bargaining statutes. Table 2 presents the descriptive statistics for the variables used in the analysis for police. Tables 3 and 4 present regression results for police officer and firefighter wages in 1990 and 2000, controlling for demographic characteristics, education, family status, and whether or not the individual was located in a right-to-work state. Wages are adjusted by state per-capita income to account both for other factors that may affect the passage of bargaining statutes and for factors that affect wages across states that are independent of collective bargaining and impasse resolution procedures. Wages are calculated by dividing weekly wage income by typical hours worked per week multiplied by weeks worked in the previous year. Wages are bottom-coded and top-coded at the 1st and 99th percentiles, respectively, and 1990 wages are adjusted for inflation. States without bargaining statutes serve as the reference category.

The coefficients on the mediation/factfinding and the arbitration dummy variables, therefore, provide estimates of the percentage difference in wages associated with being in a state with these procedures versus one with no bargaining law. The coefficients on mediation/factfinding and arbitration are significant for both police and firefighters in 1990 and 2000. These results are consistent with prior studies that estimate the effects of unions and collective bargaining on the wages of public sector workers to be in the range of 10 to 20 percent (Blanchflower and Bryson, 2007). The results should be interpreted with caution, however, because the coefficients also capture the effects of any omitted variables that may affect wage levels across states. Consequently, the results should not be interpreted as precise estimates of the effects of arbitration or mediation/factfinding on wage levels.

Our interest, however, is less in the effects of impasse procedures on wage levels than in testing whether the coefficients of the impasse procedures variables *change* between 1990 and 2000. Analysis of changes in the coefficients between 1990 and 2000 (“differences-in-differences”) allow us to test whether police officers and firefighters in states that mandate arbitration at impasse experienced greater (or lesser) wage growth than those in states governed by mediation/factfinding or states without bargaining statutes, under the assumption that the effects of any omitted variables remained constant.

The nearly identical coefficients on arbitration for 1990 and 2000 in Table 3 indicate that police officers in states that mandate arbitration had no change in their wages compared to police officers in states without bargaining statutes over this decade. The same was true in states that provide mediation and factfinding relative to those in states without bargaining statutes. The patterns observed in Table 4 for firefighters

indicate that a slight compression in the effects of arbitration (2.7 percentage points) relative to no statute occurred between 1990 and 2000 while the effects of mediation/factfinding relative to no statute declined by 1.2 percentage points. Taken together, these descriptive statistics and regression results suggest three conclusions: (1) consistent with other studies of the effects of unions and collective bargaining in the private and public sector, the presence of collective bargaining creates and maintains a positive wage differential over time; (2) there is no evidence that the presence of arbitration over a long period of time leads to expanding wage differentials or higher wage levels than those negotiated under collective bargaining without arbitration; and (3) arbitration under New York's Taylor Law produced results roughly similar to arbitration in other states.

The Arbitration Process

The New York statute provides for conventional arbitration with a tripartite panel. Each of the parties in an arbitration case selects one member of the panel (a so-called "party-appointed" arbitrator), and the two parties jointly select a neutral chair of the panel from a list of nine names supplied by PERB (N.Y. Civ. Serv. Law §209.4.c.ii). A tripartite panel serves to protect the parties from ill-advised decisions by neutral arbitrators who lack the benefit of input and advice from representatives of the parties in the final stages of the process. However, this is only one of a variety of arbitration designs found throughout the country.¹⁶ Six states have some form of final-offer

¹⁶ The Taylor Law includes a so-called "local option" section that allows New York municipalities to set up their own "mini PERBs" so long as their procedures are substantially equivalent to those in the state law (N.Y. Civ. Serv. Law §212). In New York City collective bargaining between the City and its unions is administered by a tripartite agency called the Office of Collective Bargaining (OCB). In arbitration cases under OCB's jurisdiction, the three-person arbitration panel consists entirely of neutrals. The police and firefighter unions in New York City came to prefer tripartite panels, and principally for this reason lobbied

arbitration rather than conventional arbitration; some states use a single neutral rather than a tripartite panel.

Interviews with the sample of the most active neutral arbitrators who have handled recent (2002-2007) police and firefighter cases in New York confirms the earlier findings of Kochan et al. that use of the tripartite panels encourages negotiations among the arbitrators and mediation by the chair between the two party-appointed arbitrators, particularly after the adjournment of the formal arbitration hearings. In virtually all arbitration cases in New York State, after the formal hearings are concluded, the tripartite panel goes into “executive session,” where negotiation and mediation are common features of the process. In some cases these negotiations often produce a settlement or a unanimous award. In other cases the negotiations serve to narrow the differences between the parties on some of the issues but not sufficiently to produce a unanimous award. The arbitrators we interviewed also told us that executive sessions sometimes resulted in tacit agreements but political factors dictated the need for the neutral chair to write an award and for one of the parties to offer a dissent. There was near universal preference among the arbitrators for the tripartite design over use of a single neutral arbitrator. Only one arbitrator voiced an exception to this view preferring the single neutral model in cases that involved a single unresolved issue.

Time Required

The one big change in the experience since the formative years of the arbitration process is that the time from contract expiration to issuance of an award has greatly increased. In 1976 it took an average of 300 days from contract expiration to issuance of

for a transfer of authority over their impasses from OCB to PERB. For a more extended discussion, see Lipsky and Katz (2006).

an arbitration award. That number has more than doubled: police arbitration awards during the period 2001-2006 were issued an average of 790 days (median was 743) after contract expiration. The comparable figure for firefighter cases was 751 days (median was 700). Since the medians and means are close, long time lags are the norm rather than the result of a few outlier cases. Under the Taylor Law, arbitration panels cannot award contracts of greater than two years (unless, as in a growing number of cases, the parties consent to a longer contract). This statutory requirement implies that most awards during the 2001-2006 period were issued after the contract had already expired. Thus, the parties were likely to have already been in negotiations over a successor contract at the time of the arbitration award.

Why has the length of time between the expiration of a contract and the issuance of an arbitration award increased so dramatically over the past thirty years? We asked this question in the interviews with the arbitrators and the union, city, and PERB officials and received several different plausible explanations for the lengthened delay in the issuance of awards. First, all arbitration panels in New York State award retroactive pay increases in cases where the collective bargaining agreement has already expired. The longer the delay in the issuance of the award, the larger the lump-sum retroactive payment received by the bargaining unit members covered by the award. Several of the arbitrators indicated that, based on testimony in arbitration hearings and inputs provided by the partisan arbitrators in executive session, some police officers and firefighters prefer to receive large lump-sum payments, rather than smaller incremental pay adjustments over two years or more. These same arbitrators further indicated that delay in the issuance of the award also gives the unions some leverage on what can be done with

the retroactive pay increase. Specifically, one arbitrator noted that today police and firefighter unions are often interested in increasing the pay rate used for retirement benefit calculations. One of the union interviewees reinforced this point by noting he has sometimes advised local unions to use the arbitration process to trade off a part of the retroactive pay increase for an increase in the base salary used to calculate retirement benefits. Two of the arbitrators also noted that a municipality benefits when it can invest money put aside to fund an arbitration award at a higher rate of return than the interest rate used by the arbitrator to calculate the amount of the retroactive payment. When this is possible, management's incentive to complete the arbitration process in timely fashion is diminished.

Second, in New York State the so-called "Triborough Doctrine" makes it an improper practice for a public sector employer to change unilaterally the terms of an expired agreement until a new agreement is negotiated or resolved by mediation, factfinding, or arbitration, and most of our interviewees believe this provision of the law is a principal factor causing the increased delay in the issuance of awards¹⁷ The Triborough Doctrine distinguishes the Taylor Law from the Taft-Hartley Act as well as virtually all other public sector bargaining statutes.¹⁸ It guarantees that police officers and firefighters will continue to receive their existing salary and benefits no matter how long it takes to resolve a bargaining dispute. If the Triborough Doctrine significantly contributes to the problem of delay, its effects on the parties' incentives to expedite or delay the impasse procedures, including the arbitration process, probably vary depending on budgetary and economic conditions. When the economy is strong and budgets are

¹⁷ 1982 N.Y. Laws chs. 868, 921).

¹⁸ Under the Taft-Hartley Act an employer who has been bargaining in good faith can unilaterally change the terms and conditions of employment when an existing collective bargaining contract has expired.

healthy, the union's incentive is to take advantage of the situation and push the arbitration process ahead, hoping for a generous arbitration award before conditions worsen, whereas management's incentive is to prolong the process. When the economy is weak and budgets are in distress, the union's incentive is to delay the process, hoping for better times down the road, and management's incentive is to expedite it. As one of the readers of an earlier draft of this paper noted, however, the incentive for a union to delay the process during bad economic times might be reduced substantially if management begins aggressively to downsize the workforce.¹⁹

The Triborough Doctrine has been in effect since 1972, so as PERB representatives noted in the interviews, it clearly does not offer a *per se* explanation of the increasing delay in the issuance of awards. Their interpretation is that the increased delays reflect a gradual learning process of how the arbitration process and the Triborough Doctrine might affect bargaining outcomes. In earlier rounds of bargaining both parties hoped for major victories in arbitration and, therefore, they were anxious to complete it. But experience taught the parties that breakthroughs in arbitration rarely if ever occurred. Thus, the parties learned over time that arbitration seldom resulted in major gains or losses for either side. Instead, it became more predictable, and therefore, one side or the other had little motivation to move it forward expeditiously.

Some Broader Concerns

One of the questions we asked the arbitrators and representatives of the parties interviewed for this study was: Are there issues facing municipal governments and their employees that are not being effectively addressed in negotiations and arbitration under the statute? The two issues most frequently mentioned were health insurance and

¹⁹ We thank Ronald Ehrenberg for making this point.

pensions. This is not surprising. Health insurance is the biggest problem facing negotiators in both the private sector and the public sector across the nation. It is clear that individual bargaining units and cities cannot address the full dimension of our health care problem. Health insurance for retirees is an especially vexing issue for employers and unions. In *PERB v. Village of Lynbrook*, 48 N.Y. 2d 398, the New York Court of Appeals ruled that retiree health care benefits were not an “impermissible” topic of bargaining under the Taylor Law. In effect, the court’s decision made retiree health care benefits a nonmandatory topic of bargaining and therefore outside the authority of arbitrators to consider. Although arbitrators commonly take the costs of union or employer proposals for changing co-pays, deductibles, premium sharing, and the like into account in fashioning their awards, they are reluctant to consider more wholesale restructuring options, preferring to leave those to the parties to work out on their own.

Pensions have been subject to substantial change in the private sector over the past two decades as companies have replaced defined benefit with defined contribution or 401(k) plans (for a recent assessment, see Ghilarducci, 2008). In New York State, under the Taylor Law pensions are not generally negotiable except in the case of certain retirement plan options the Legislature permits the parties to decide (Lefkowitz, et al., pp. 489-491). Yet states across the country, including New York, face serious underfunded pension liabilities that will need to be paid by citizens who, in recent years, have witnessed their own pension plans being modified or, in some cases, eliminated.

Both health insurance and pensions are therefore highly vulnerable political issues and ones of growing public concern. Other issues such as substance abuse and drug testing, recruitment and retention of police officers, changes in technology and related

staffing issues and other issues that affect the quality and affordability of public sector services are arising with increased frequency in public sector settings around the country (Brock and Lipsky, 2003). Experience demonstrates in New York and elsewhere that arbitrators are reluctant to break new ground in their awards and would prefer to leave innovative approaches to the parties. The conservative nature of arbitration suggests that only in rare cases will significant changes be achieved on critical contemporary issues if left to arbitrators to handle on a bargaining unit level. Thus, although the conservative norm governing arbitrator behavior may address the concern that an arbitrator might impose an unworkable outcome on the parties, it may also have the effect of constraining the innovative potential of collective bargaining.

Conclusions and Implications

By examining the effects of arbitration over a long period of time against the theoretical concerns of its early (and contemporary) critics, a picture emerges of both how this process works in practice and its value and limitations as a dispute resolution alternative. With the exception of the increased time delays, on the conventional criteria used for judging a dispute resolution system, the New York State police and firefighter arbitration system has performed well over this thirty-year span of time and has not led to the results predicted by its post-war or contemporary critics. Strikes have been avoided. The initial rather high rate of reliance on arbitration has declined considerably and only a small number of bargaining units in cities with particularly complex circumstances have experienced a high rate of dependence on arbitration. There is no evidence that, on the whole, arbitration has had a chilling effect on negotiations. Neither the presence nor use of arbitration has led to an escalation of wages beyond the wage levels negotiated by

police and firefighters in other states without arbitration. Moreover, by use of tripartite panels, the parties have limited the potential risk of getting a “bad” or an “unworkable” award by having their representatives participate directly in the arbitration decision-making process. Specifying the criteria arbitrators are to apply in specific cases adds further discipline to the decision-making process and results. These same features may, however, lead arbitrators to follow conservative norms preferring to leave major innovations or departures from industry or occupational patterns to the parties to negotiate. Although this is one of the reasons the above pattern of results prevail, it also suggests that other means for promoting or facilitating innovation may be needed in settings where arbitration governs negotiations over an extended period of time.

Since these results were generated in a public sector setting, it is not clear they will generalize in exactly the same way to the private sector settings in which labor policy is currently being debated. For example, time delays should not be as much of a problem in first contract negotiations where contract bar rules expire one year after a unit is certified if no agreement has been reached by that date. Yet these may be the best data available for transforming what too often is a largely ideological and data-free debate over the likely effects of proposals to provide for first contract arbitration under the NLRA or binding arbitration of airline disputes under the RLA. Those who oppose providing arbitration in these settings should at least be held responsible for addressing the evidence that the standard concerns about arbitration have not materialized in the thirty years of experience with interest arbitration reviewed here. Moreover, those in favor of providing interest arbitration in private sector settings need to examine the experience reported here carefully and build into their proposals the design features that

have mitigated the standard concerns. Finally, notwithstanding its good performance on the standard criteria, it is clear that interest arbitration is not a panacea or a stand-alone solution to the challenges facing labor and management today. It needs to be treated as one component of a broader set of state-of-the-art negotiations and dispute resolution tools available to policy makers and practitioners if collective bargaining is to fulfill its function as a “bulwark of democracy” in the years ahead.

Table 1
Police and Firefighters Mean Wages 1990-2000
 (adjusted real wages in \$2000)

	Police			Firefighters		
	1990	2000	% Change	1990	2000	% Change
No Provision	17.72 (0.142)	18.54 (0.121)	4.63%**	17.08 (0.194)	18.48 (0.17)	8.2%**
Med/Factfinding	24.06 (0.233)	25.03 (0.204)	4.03%**	22.45 (0.315)	24.21 (0.302)	7.84%**
Arbitration	22.72 (0.121)	24.16 (0.127)	6.34%**	22.34 (0.206)	23.42 (0.183)	4.83%**
New York	27.86 -0.306	28.87 -0.337	3.63%*	29.36 (0.487)	28.43 (0.422)	-3.17%

* p<0.05, ** p<0.01

Includes police and firefighters between the ages of 40 and 65 earning between the first and ninety-ninth percentiles. Includes the 50 states, does not include workers in Washington DC, US territories, or expatriots. Wage calculated by dividing earned income by typical hours per week and weeks worked in previous year.

Table 2

Descriptive Statistics for Police and Firefighters in 1990 and 2000 Census

	Police		Firefighters	
	1990	2000	1990	2000
Continuous Variables				
Wage	21.41 (8.54)	22.42 (9.58)	20.44 (8.85)	21.69 (9.14)
Log-Wage	2.97 (0.44)	3.01 (0.47)	2.93 (0.43)	2.99 (0.44)
Age	46.95 (5.87)	47.81 (5.82)	47.11 (5.66)	47.13 (5.35)
Female	8.5%	12.2%	0.9%	2.4%
Right-to-Work	15.0%	17.3%	13.7%	16.2%
Race				
White	89.6%	85.9%	93.0%	88.3%
Black	7.7%	9.8%	5.0%	7.5%
Other	2.7%	4.3%	2.0%	4.3%
Hispanic	3.6%	5.5%	3.0%	4.1%
Education				
LT High School	4.2%	1.4%	5.7%	1.9%
High School	24.4%	18.3%	32.5%	22.5%
Some College	34.5%	39.3%	35.7%	40.6%
Associate's Deg	15.4%	15.7%	16.5%	18.9%
Bachelor's Deg	16.7%	19.8%	8.2%	13.7%
Master's Deg	3.9%	4.8%	1.3%	1.9%
Prof Deg	0.9%	0.7%	0.2%	0.5%
Marital Status				
Married	83.3%	78.3%	85.8%	82.8%
Widowed	1.1%	1.1%	0.5%	0.6%
Divorced	2.1%	2.0%	1.7%	1.4%
Separated	10.9%	13.2%	9.3%	10.7%
Never Married	2.6%	5.3%	2.7%	4.4%
Observations	8816	12387	4232	5623

Police includes all police and sheriff's patrol officers, detectives and criminal investigators, and first-line supervisors and managers of police and detectives between the ages of 40 and 65 earning between the first and ninety-ninth percentiles. Includes the 50 states, does not include workers in Washington DC, US territories, or expatriots. Wage calculated by dividing earned income by typical hours per week and weeks worked in previous year.

Table 3

Regression of Log-Wages (adj. 2000 dollars by state per capita income) against impasse provisions and controls, Police

Variables	1990		2000	
	<i>Coefficient</i>	<i>Std. Error</i>	<i>Coefficient</i>	<i>Std. Error</i>
Impasse Resolution				
No Provision	Reference		Reference	
Med-FF	0.267***	(0.0127)	0.265***	(0.0110)
Arbitration	0.206***	(0.00988)	0.206***	(0.00900)
Age	0.0422***	(0.0107)	0.0563***	(0.00969)
Age-Sq	-0.000417***	(0.000108)	-0.000619***	(9.72e-05)
Female	-0.258***	(0.0156)	-0.144***	(0.0121)
Race				
Black	0.0331**	(0.0157)	0.0159	(0.0131)
Other	-0.0815***	(0.0280)	-0.0579***	(0.0197)
Hispanic	0.0515**	(0.0246)	0.0346**	(0.0175)
Education				
LT High School	-0.485***	(0.0234)	-0.438***	(0.0331)
High School	-0.310***	(0.0136)	-0.315***	(0.0125)
Some College	-0.177***	(0.0125)	-0.177***	(0.0105)
Associates	-0.126***	(0.0147)	-0.118***	(0.0128)
Masters	0.0565**	(0.0235)	0.0730***	(0.0193)
Professional	-0.00903	(0.0441)	-0.103**	(0.0461)
Marital Status				
Widowed	-0.0263	(0.0404)	-0.0361	(0.0363)
Separated	-0.0235	(0.0290)	0.0516*	(0.0276)
Divorced	-0.0270**	(0.0137)	-0.0331***	(0.0115)
Never	-0.0580**	(0.0266)	-0.00594	(0.0175)
Right-to-Work State	-0.160***	(0.0127)	-0.148***	(0.0109)
Constant	1.996***	(0.264)	1.804***	(0.239)
Observations	8816		12387	
R-squared	0.226		0.178	

*** p<0.01, ** p<0.05, * p<0.1

Standard errors in parentheses

Table 4

Regression of Log-Wages (adj. 2000 dollars by state per capita income) against impasse provisions and controls, Firefighters

Variables	1990		2000	
	<i>Coefficient</i>	<i>Std. Error</i>	<i>Coefficient</i>	<i>Std. Error</i>
Impasse Resolution				
No Provision	Reference		Reference	
Med-FF	0.264***	(0.0180)	0.252***	(0.0156)
Arbitration	0.231***	(0.0139)	0.204***	(0.0127)
Age	0.0262	(0.0163)	0.0261	(0.0160)
Age-Sq	-0.000146	(0.000165)	-0.000225	(0.000163)
Female	-0.128**	(0.0651)	-0.0873**	(0.0363)
Race				
Black	0.0383	(0.0281)	0.0173	(0.0210)
Other	-0.00944	(0.0461)	-0.0601**	(0.0296)
Hispanic	-0.0297	(0.0382)	0.0575*	(0.0302)
Education				
LT High School	-0.335***	(0.0341)	-0.365***	(0.0427)
High School	-0.201***	(0.0241)	-0.231***	(0.0189)
Some College	-0.104***	(0.0235)	-0.109***	(0.0171)
Associates	-0.0598**	(0.0258)	-0.0866***	(0.0194)
Masters	0.0103	(0.0579)	0.0916**	(0.0423)
Professional	-0.292**	(0.132)	-0.153**	(0.0776)
Marital Status				
Widowed	-0.00562	(0.0881)	-0.131*	(0.0720)
Separated	0.00586	(0.0464)	-0.0447	(0.0461)
Divorced	-0.0173	(0.0209)	-0.0406**	(0.0178)
Never	0.0103	(0.0371)	0.0140	(0.0270)
Right-to-Work State	-0.178***	(0.0185)	-0.162***	(0.0158)
Constant	2.026***	(0.399)	2.277***	(0.390)
Observations	4232		5623	
R-squared	0.171		0.137	

*** p<0.01, ** p<0.05, * p<0.1

Standard errors in parentheses

Figure 1
Impasse and Arbitration Rates
1974-1976 and 1995-2007

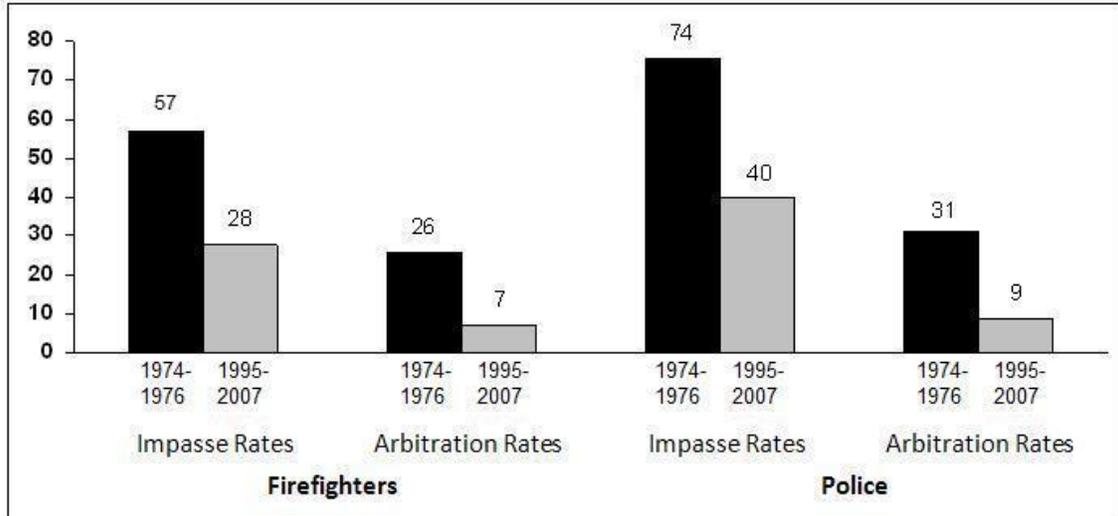


Figure 2
Mediation and Voluntary Settlement Rates
1974-1976 and 1995-2007

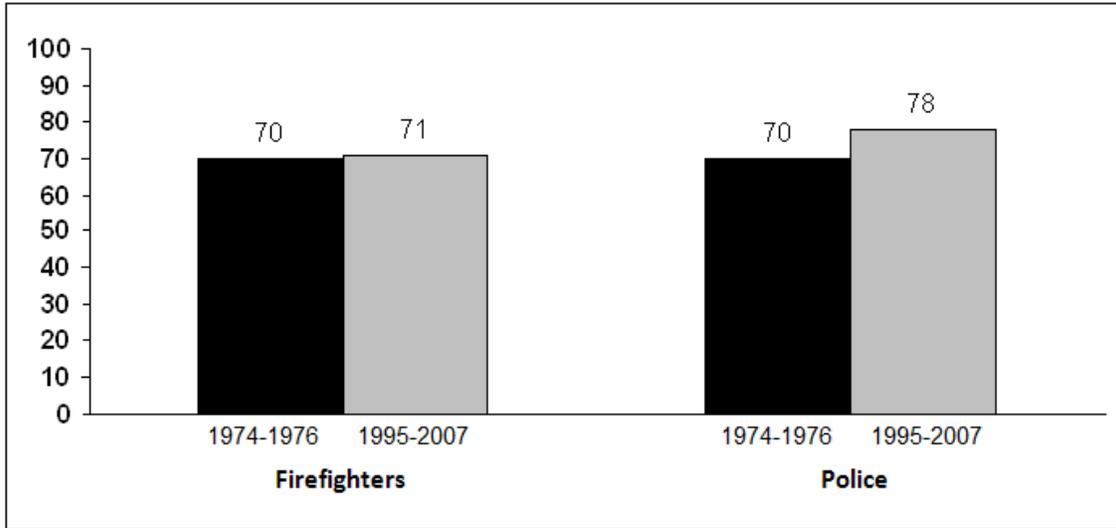


Figure 3
Police Negotiated and Arbitrated Salary Increases, 2001-2006

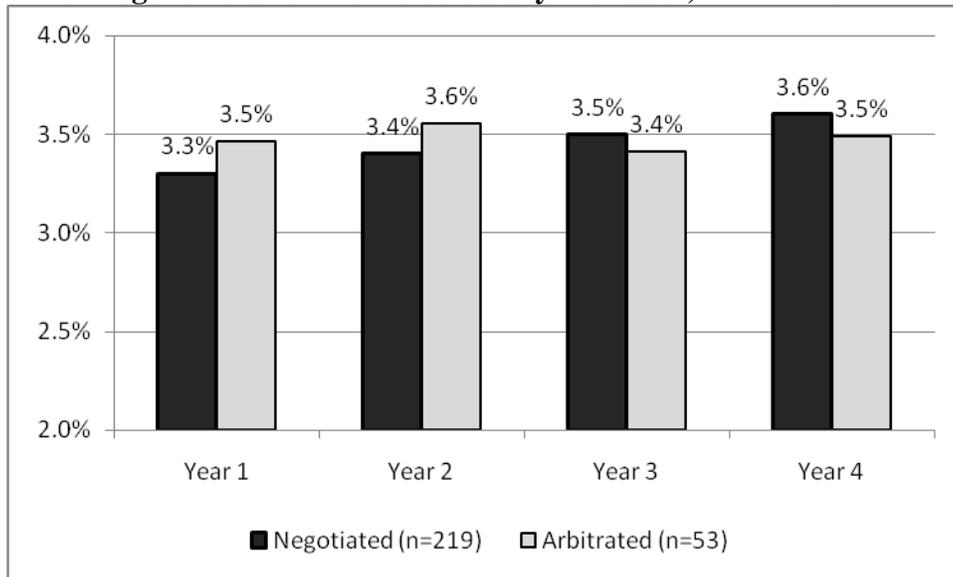


Figure 4
Firefighter Negotiated and Arbitrated Salary Increases, 2001-06

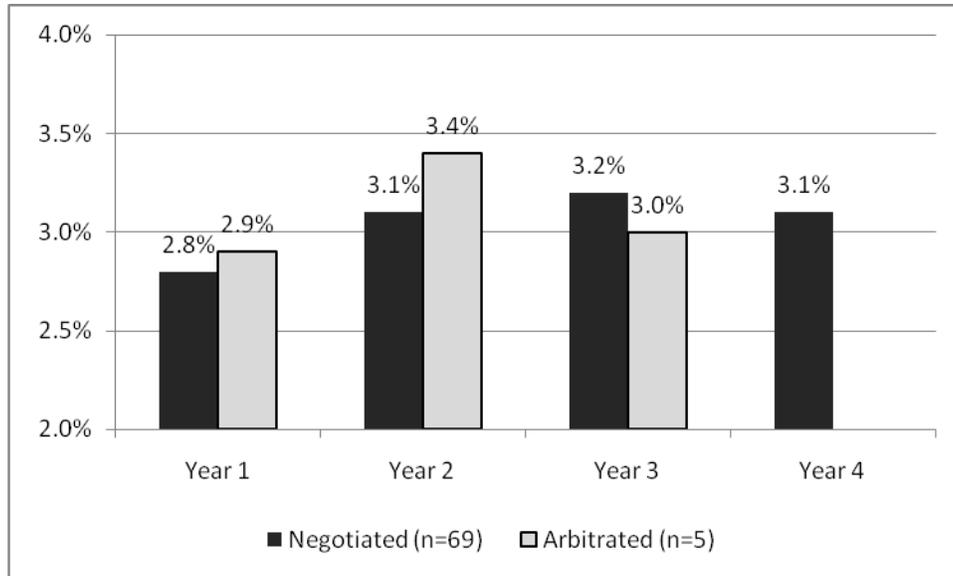
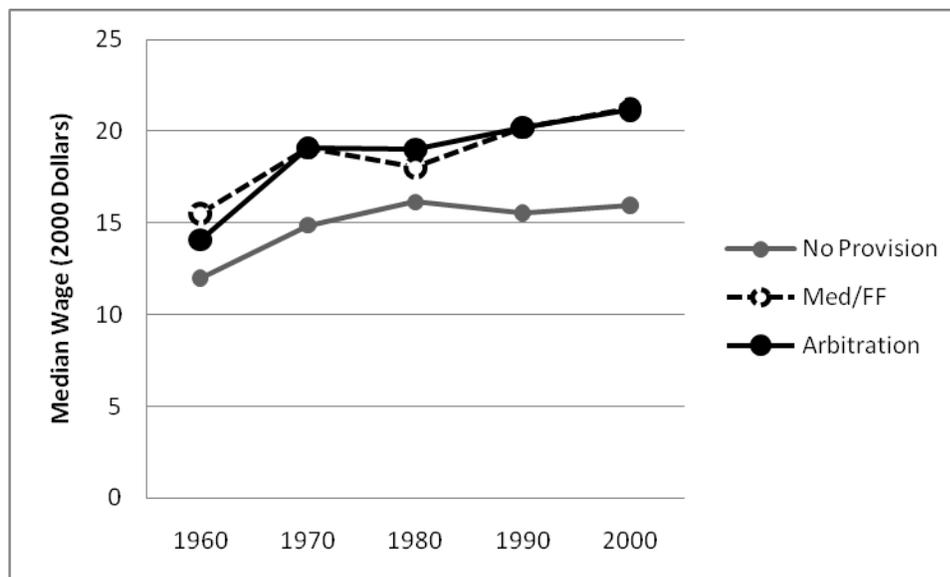


Figure 5

Median Hourly Wages by Impasse Provision and Census Year²⁰



²⁰ Hourly police wages are estimated by taking wage income in the previous year, divided by weeks worked in the previous year times typical hours worked per week. Note that a serious limitation of comparing 1960 and 1970 data is that these Census years report weeks worked per year and hours worked per week in intervals; for the 1960 and 1970 estimates, the mean values from the 1980, 1990, and 2000 Censuses for the associated intervals are imputed. Wages are bottom coded at the 1st and 99th percentiles within years and impasse provision. Because earlier Censuses do not uniquely report place-of-work state, arbitration provisions are associated with police state of residence.

References

Ashenfelter, Orley and Dean Hyslop, "Measuring the Effect of Arbitration on Wage Levels: The Case of Police Officers," Working Paper #421, Industrial Relations Section, Princeton University, July 1999.

Blanchflower, David G. and Alex Bryson, "What Effect Do Unions Have on Wages Now and Would Freeman and Medoff Be Surprised," in James T. Bennett and Bruce E. Kaufman (eds.), *What Do Unions Do: A Twenty Year Retrospective*. New Brunswick, NJ: Transaction Books, 2007, 79-113.

Bloom, David E., "Collective Bargaining, Compulsory Arbitration, and Salary Settlements in the Public Sector: The Case of Police Officers in New Jersey," *Journal of Labor Research*, vol. 2, Fall 1981, 369-84.

Bok, Derek, and John T. Dunlop, *Labor and the American Community*. New York: Simon and Schuster, 1970.

Brock, Jonathan and David B. Lipsky (eds.), *Going Public: The Role of Labor-Management Relations in Delivering Quality Government Services*. Champaign, IL: Industrial Relations Research Association, 2003.

Butler, Richard J. and Ronald G. Ehrenberg, "Estimating the Narcotic Effects of Public Sector Impasse Procedures," *Industrial and Labor Relations Review*, vol. 3, no. 4, July 1981, 3-20.

Cullen, Donald, "Emergency Boards under the Railway Labor Act," in *The Railway Labor Act at Fifty*. Washington D.C.: The National Mediation Board, 1978, 151-86.

Donovan, Ronald, *Administering the Taylor Law: Public Employee Relations in New York*. Ithaca, NY: ILR Press, 1990.

Farber, Henry S. and Harry C. Katz, "Interest Arbitration, Outcomes and the Incentive to Bargain," *Industrial and Labor Relations Review*, vol. 33, 1979, 55-63.

Feuille, Peter, John Thomas Delaney, and Wallace Hendricks, "The Impact of Interest Arbitration on Police Contracts," *Industrial Relations*, vol. 24, Spring, 1985, 161-81.

Feuille, Peter and John Thomas Delaney, "Police Interest Arbitration: Awards and Issues," *Arbitration Journal*, vol. 39, no.2, June 1984, 14-24.

Ghilarducci, Teresa, *When I'm Sixty-Four: The Plot against Pensions and the Plan to Save Them*. Princeton, NJ: Princeton University Press, 2008.

Hart Research Associates, "Public Opinion Regarding the Employee Free Choice Act, National Survey Results," January 8, 2009.
<http://hotlineblog.nationaljournal.com/Employee%20Free%20Choice%20Act%20polling%20memo.pdf>.

Kochan, Thomas A., "Correlates of State Public Employee Bargaining Laws," *Industrial Relations*, vol. 12, October 1973, 322-337.

Kochan, Thomas A. and Jean Baderschneider, "Dependence on Impasse Procedures: Police and Fire in New York," *Industrial and Labor Relations Review*, vol. 31, no. 4, 1978, 431-49.

Kochan, Thomas A. and Jean Baderschneider, "Estimating the Narcotic Effects: Choosing Techniques that Fit the Problem," *Industrial and Labor Relations Review*, vol. 35, October 1981, 28-38.

Kochan, Thomas A., Mordechai Mironi, Ronald G. Ehrenberg, Jean Baderschneider, and Todd Jick, *Dispute Resolution Under Factfinding and Arbitration: An Empirical Analysis*. New York: American Arbitration Association, 1978.

Leftkowitz, Jerome, Melvin H. Osterman, and Rosemary A. Townley (eds.), *Public Sector Labor and Employment Law*, 2d ed. New York State Bar Association, 1998.

Lester, Richard A., *Labor Arbitration in State and Local Government: An Examination of Experience in Eight States and New York City*. Princeton, NJ: Princeton University, 1984.

Lipsky, David B. and Harry C. Katz, "Alternative Approaches to Interest Arbitration: Lessons from New York City," *Public Personnel Management*, vol. 35, no. 4, Winter 2006, 265-281.

Lipsky, David B. and John E. Drotning, "The Relation Between Teacher Salaries and the Use of Impasse Procedures Under New York's Taylor Laws: 1968-1972," *Journal of Collective Negotiations in the Public Sector*, vol. 6, no. 3, 1977, 229-44.

Loewenberg, J. Joseph, "Compulsory Arbitration for Police and Firefighters in Pennsylvania in 1968," *Industrial and Labor Relations Review*, vol. 23, pp. 367-379, April, 1970.

Northrup, Herbert, *Compulsory Arbitration and Government Intervention in Labor Disputes*. Washington, D.C.: Labor Policy Association, 1966.

Oberer, Walter E., Kurt L. Hanslowe, and Robert E. Doherty, *The Taylor Act Amendments of 1969: A Primer for School Personnel (and Others Interested in Collective Negotiations)*. Ithaca, NY: New York State School of Industrial and Labor Relations at Cornell, Bulletin 62, June 1970.

Olson, Craig A., "The Impact of Arbitration on the Wages of Firefighters," *Industrial Relations*, vol. 19, 1980, 325-339.

Phelps, Orne, "Compulsory Arbitration: Some Perspectives," *Industrial and Labor Relations Review*, vol. 18, 1964, 81-91.

Stanley, David, *Managing Local Government under Union Pressure*. Washington D.C.: The Brookings Institution, 1972.

Stern, James L., Charles M. Rehmus, J. Joseph Loewenberg, Hirschel Kasper, and Barbara D. Dennis, *Final-Offer Arbitration*. Lexington, Mass.: D.C. Heath, 1975.

Stevens, Carl, "Is Compulsory Arbitration Compatible with Collective Bargaining," *Industrial Relations*, vol. 5, 1966, 38-52.

Taylor, George W., *Government Regulation of Industrial Relations*. New York: Prentice Hall, 1948.

Thompson, Mark and James Cairne, "Compulsory Arbitration: The Case of British Columbia Teachers," *Industrial and Labor Relations Review*, vol. 27, no. 1, October 1973, 3-17.

U. S. Department of Labor, *Working Together for Public Service: Report of the U.S. Secretary of Labor's Task Force on Excellence in State and Local Government through Labor-Management Cooperation*. Washington, DC: Government Printing Office, 1996.

Valetta, Robert G. and Richard B. Freeman, "Appendix B: The NBER Public Sector Collective Bargaining Law Data Set," in Richard B. Freeman and Casey Ichniowski, *When Public Sector Workers Unionize*. Chicago: University of Chicago Press, 1988.

Wellington, Harry H. and Ralph K. Winter Jr., *The Unions and the Cities*. Washington, D.C.: The Brookings Institution, 1971.

Wirtz, Willard, "Address Before the National Academy of Arbitrators," *Daily Labor Report*, vol. XXIII, February 1, 1963, F1-F4.