

MPRA

Munich Personal RePEc Archive

Collective Bargaining and Job Benefits in Florida Municipal Police Agencies, 2000-2009

William M. Doerner and William G. Doerner

Florida State University, Department of Economics, Florida State
University, College of Criminology & Criminal Justice

January 2011

Online at <https://mpa.ub.uni-muenchen.de/86548/>
MPRA Paper No. 86548, posted 9 May 2018 04:09 UTC

**COLLECTIVE BARGAINING AND JOB BENEFITS
IN FLORIDA MUNICIPAL POLICE AGENCIES, 2000–2009**

by

William M. Doerner
Department of Economics
Florida State University
Tallahassee, FL 32306-2180
wmdoerner@fsu.edu

and

William G. Doerner
College of Criminology & Criminal Justice
Florida State University
Tallahassee, FL 322306-1127
Phone: 850-644-7372
Fax: 850-644-9614
wdoerner@fsu.edu

**COLLECTIVE BARGAINING AND JOB CONDITIONS
IN FLORIDA MUNICIPAL POLICE AGENCIES, 2000–2009**

ABSTRACT

While a recent analysis of unionization among Florida county sheriff deputies was informative, that study failed to provide a comprehensive picture of all law enforcement unionization activity in that state. More specifically, county sheriff offices account for only 20% of all local law enforcement agencies in the state, represent approximately half the sworn personnel in Florida, and have only been engaged in collective bargaining for the past ten years. As a result, the present study incorporates municipal police agencies, a hitherto neglected portion of the Florida law enforcement community, in an effort to gain a fuller understanding of how unionization influences salaries and other job conditions. The results underscore the importance of adopting a broader orientation to understand the progression of collective bargaining objectives.

Keywords: *collective bargaining; unionization; salary; job benefits*

Introduction

Public employee unions, including police labor groups, were catapulted into the political limelight recently. Some lawmakers have blamed these employee organizations for the woeful budgetary conditions that many beleaguered local and state governments are facing. As a result of this orientation, various proposals to rein in unions, slash public employee salaries, reduce government pensions, and restrict collective bargaining activities have surfaced in such places as Florida, Indiana, Minnesota, New Jersey, Ohio, and Wisconsin. The ostensible hope is that reducing union influence will help counterbalance shrinking governmental revenues and control expenditures.

Several years ago when economic conditions were much more benign, the Florida Supreme Court ruled that sheriff deputies had the unrestricted constitutional right to engage in collective bargaining (*Coastal Florida Police Benevolent Association, Inc. v. Phillip B. (Phil) Williams*, 2003). That decision ignited a flurry of union activity. By the end of 2008, 28 agencies representing over three-quarters of all Florida sheriff deputies were covered by collective bargaining agreements (CBAs).

That chain of events prompted Doerner and Doerner (2010) to analyze how this court case impacted entry-level salaries and select job benefits. Several interesting findings emerged. First, although unionization increased beginning salaries for sheriff deputies, this influence did not extend to other fringe benefits. Second, agency size shaped the economic impact of union representation. Unionization produced an appreciable pay differential in smaller agencies (less than 100 sworn members) compared to larger sheriff offices (SOs). Third, union tenure, the number of years a CBA has been in place, played a pivotal role in molding and enhancing the

overall financial package agencies extended to employees. Interestingly, past research had not included this novel indicator.

While the Doerner and Doerner article (2010) represents an admirable start, it highlights the pressing need for a more comprehensive examination of the influence of unionization in all Florida law enforcement agencies. Strictly speaking, Doerner and Doerner (2010) studied the impact of a single court decision and not unionization *per se*.¹ In addition, their findings are constrained by at least two other factors. First, and understandably so, municipal police departments were not included in the original analysis because the *Coastal Florida PBA* ruling applied only to county SOs. Second, Florida municipal police officers have engaged in collective bargaining since 1968, a right that county sheriff deputies secured in 2003.

Another way to frame the present inquiry is to look at the relative size of Florida county and city law enforcement agencies. The 67 SOs employed 19,229 sworn members during 2010, while the 266 city police departments housed 17,536 sworn personnel (Florida Department of Law Enforcement, 2011). When placed in this context, the Doerner and Doerner (2010) findings are restricted to statements regarding union benefits relative to 52% of the law enforcement personnel and 20% of the local agencies within the state of Florida.

Extending Doerner and Doerner (2010) to city police officers targets four nagging concerns. First, this endeavor incorporates a hitherto neglected portion of the local law enforcement community. Second, the original study period is expanded from six to ten years. Third, it provides a firmer understanding of how unionization influences job conditions. Fourth, such an analysis permits yet another assessment of whether the common practice of studying only agencies with at least 100 sworn members confounds the ensuing results.

The Context of Police Unionization

Early efforts to unionize law enforcement officers ground to a halt in 1919. The members of the Boston Police Department went on strike and refused to report for duty after city official rejected their demands for higher wages and other concessions. Episodes of vandalism, looting, and other sporadic violence prompted the governor to activate the state militia. A series of violent confrontations between the soldiers and the public left a handful of civilians dead and others injured. Once order was restored, the striking officers were fired and the city hired replacements. This action had a chilling effect for years to come.

The dormant police labor movement was revived when President Kennedy signed an executive order in 1962 that allowed federal government employees to engage in collective bargaining (Hunter & Merritt, 2000). That directive, along with subsequent developments, paved the way for public sector employees, including police officers, to unionize. Today, it is estimated that 66% of all local law enforcement officers are covered by a collective bargaining agreement (Reaves, 2010, p. 13).

Despite this expanded police labor activity, researchers characterize the existing literature as being antiquated, silent on key issues, and hampered by methodological shortcomings (Briggs, Zhao, Wilson, & Ren, 2008; Walker, 2008; Wilson et al., 2006; Zhao & Lovrich, 1997). Recent works have described the ability to unionize and negotiate as important and inherent rights that can promote morale and protect special interests (Adams, 2008; Berry, O'Connor, Punch, & Wilson, 2008). In other words, contrary to the period before the Boston riots, unionized police now believe their complaints are being heard and that collective bargaining can improve their work environment. The literature implies a *perception* that concessions have been achieved. The present study examines whether unionization results in *actual*, quantifiable gains for police officers.

Theoretical Framework

The policing literature on collective bargaining is void of any graphical or mathematical framework that could help generate hypotheses and predict outcomes. Although theoretical models cannot account for every possible situation perfectly or predict every potential outcome given a certain change in the minutest detail, it would be extremely helpful to have a general orientation that provides an underlying foundation which anchors our foray into police unionism.

For expositive purposes, assume there are four fundamental events that portray the inner workings of any police organization. First, agencies hire law enforcement officers. Second, the public pays these officers to provide protective services. Third, agencies invest in their personnel by providing pre-service and in-service training to the incumbents. Finally, the normal ebb and flow within any organization means that members eventually exit through retirement or other forms of attrition and replacements move into these vacancies. The first two events reflect the “job market,” the demand for officers and the supply of potential officers. The last two events represent a “public security market” which determines how much money taxpayers are willing to pay for a certain level of services and how much value is placed on the development of police employees.

The upper portion of Figure 1 displays the “job market” for police officers and the lower half portrays the “public security market.” Officer demand in Panel A is expressed as an inverse relationship between the salary package and the number of police officers. As remuneration decreases, agencies are willing to hire more officers. The officer supply turnover has an opposite, positive relationship in Panel B. As an agency grows, it increases both the total number of police officers and the number of new officers at a set proportion, which happens to

be the constant slope of the graph. The slope is less than unity because the number of new officers is typically less than the number of veteran police officers.

[Insert Figure 1 about here]

Turning to the “public security market” in the bottom portion of Figure 1, Panel C shows that a more attractive salary package is coupled with a higher valuation or expectation for protective services. In places where officers earn more, the public expects departments to be innovative and offer a wider litany of services like public alerts, online crime mapping, community policing, and school resource officers. The last panel shows how the number of new officers receiving training and investment is directly proportional to the value the public places on its protective services. Better trained and more professional officers create more value and public approval lends itself to the availability of more training funds. The intercept in the panel suggests that even when there are no new officers receiving any positive investment, there is still some value to the protective services.

The similarities between the axes imply that one can combine these four panels by rotating them into different quadrants of a single graph.² Figure 2 yields the transformation into an interactive police labor market. Labels are also provided to show the relationships between the variables. The top-right quadrant conveys that the total number of police officers (P) is a function of salary (S) in dollars, benefits (B) in days or hours off, and other economic determinants (E). Demand for police officers can shift outward or inward with changes to department budgets, the number of police agencies, the salaries of other law enforcement officers, how technology influences the role of police officers, or in future expectations of salaries and benefits. The top-left quadrant compares the ratio of salary and value (V) to the public for protective services to form a public approval factor (ρ). The ratio can change if public

opinion is altered by factors such as crimes rates or community awareness of policing practices. The bottom-left quadrant has the value to the public expressed as a positive function of the number of new officers (N). This ratio can change as the public becomes more or less receptive to investing in or professionalizing its police officers. The bottom-right quadrant provides a turnover factor (τ) where the number of new officers is related to the total number of police officers. The curve can shift with changes in how police officers utilize technology, the number of officers willing to work, the number of training academies or university law enforcement programs, or in future expectations of how much officers will earn in salaries or benefits.

[Insert Figure 2 about here]

If we impose a functional form to the relationships in the top-right and bottom-left panels, we can begin to solve a system of equations that provide unique equilibrium conditions as depicted by where the dotted lines intersect each axis. To conduct the same exercise algebraically, let the functions be linear where:

$$\rho V = S \quad (1)$$

$$V = \alpha + \beta N \quad (2)$$

$$\tau P = N \quad (3)$$

$$S = \omega + \phi P \quad (4)$$

is an expression of each relationship. Combining (1) with (2) and (3) with (4) yields:

$$S / \rho = \alpha + \beta N \quad (5)$$

$$S = \omega + \phi (N / \tau) \quad (6)$$

which can be further combined to find the first equilibrium condition that

$$N^* = (\omega - \rho\alpha) / (\rho\beta - \phi/\tau) \quad (7)$$

Substituting the equilibrium number of new officers back into the other equations gives:

$$S^* = \omega + (\varphi / \tau) (\omega - \rho\alpha) / (\rho\beta - \varphi/\tau) \quad (8)$$

$$P^* = (\omega - \rho\alpha) / (\tau\rho\beta - \varphi) \quad (9)$$

$$V^* = \omega + \varphi (\omega - \rho\alpha) / (\tau\rho\beta - \varphi) \quad (10)$$

These four equilibrium conditions are useful for comparative statics. Comparative statics allow the extraction of meaningful information from these equations and the prior graphs when one shifts (increases or decreases a variable) or pivots a line (diminish the effect of a variable). For example, what might happen if police officers can unionize? Unionization could lead police officers to unite together and bargain more effectively. Two situations are offered to show how algebra and graphs can assist in the understanding of how unions might impact the police labor market.

Situation 1: Unions Bargain for an Increase in the Number of New Officers

Unions cannot survive without support from their membership. Unions must sign up officers to have bargaining power. If existing officers oppose collective bargaining strategies, a union might attempt to dilute this opposition by supporting an increase in new hires.

Algebraically, this strategy could be quantified by adding another π officers into the job market.

In other words, the bottom-right panel in Figure 2 is affected. There is no shift in the turnover factor so adding π directly into (3) alters the equations to read:

$$\tau P + \pi = N \quad (3b)$$

$$S = \omega + \varphi (N - \pi) / \tau \quad (6b)$$

and one can repeat the same set of exercises to solve for the first new equilibrium as

$$N^{**} = (\omega - \rho\alpha - \varphi \pi / \tau) / (\rho\beta - \varphi/\tau) \quad (7b)$$

where $N^{**} > N^*$ since $\pi > 0$ and $\tau > 0$ but $\varphi < 0$. In words, the equilibrium number of new officers increases when unions become more powerful. Substituting back into (3b), P^* will go

down when the increase in N^* is less than π . From (4), S^* will rise because $\phi < 0$ and P^* falls. Finally, from (1), $\rho > 1$ so V^* goes up with S^* .

All those algebraic changes are also shown graphically in Figure 3. When π is positive, the line in the lower-right quadrant shifts down to the grayed line. A dark gray arrow emphasizes the shift. The new equilibriums are noted by where the heavier dotted gray lines pass through the axes and the black arrows show how the new equilibriums increase for N , S , and V but fall for P .

[Insert Figure 3 about here]

Situation 2: Unions Bargain for Minimum Wages above the Equilibrium Level

Unions may also influence the police labor market by the changes they implement. Assume that the police labor market is operating efficiently so that the labor supply and demand are in equilibrium. What could happen if the union and administration agree on a minimum salary? If the minimum salary is below the equilibrium wage level, then nothing changes. However, if the minimum salary exceeds the minimum wage level, the new policy will have a binding effect as shown in Figure 4.

[Insert Figure 4 about here]

To determine what happens when a minimum salary policy is installed, draw a horizontal line that runs through the top-right and top left quadrants. The minimum salary line can be used to find the total number of police officers that agencies would be willing to employ at that rate, as well as the officers who would be willing to work at that rate. First, draw a perpendicular line downward to the police officers axis from where the minimum salary line intersects the officer demand curve in quadrant one. Label the intersection on that axis as P^D for the quantity of police officers agencies are willing to employ. Second, from where the minimum salary line intersects

the public approval line in the top-right quadrant, draw another vertical line downward through the bottom-left quadrant to the other curve and, where it touches it, extend a perpendicular horizontal line into the bottom-right quadrant until it touches the officer supply turnover curve. Draw a perpendicular vertical line upward to the axis from the lower-right quadrant. Label the intersection as P^S for the quantity of police officers who are willing to work for the minimum salary line.

Before the minimum salary was implemented, there were an equivalent number of officers whom agencies were willing to employ and who were willing to work so $P^* = P^D = P^S$. This relationship is not true after the minimum salary is imposed. Now, Figure 4 shows that $P^S > P^D$, which means more police officers are willing to work at that minimum salary than agencies are willing to employ. Although the union negotiation has increased the minimum salary line, the tradeoff is an oversupply of total police officers. This abundant supply does not take place if the minimum salary is non-binding, or set either at or below the equilibrium wage level of S^* .

Summary

The takeaway from these two algebraic and graphical exercises is that unionization can certainly affect the police labor market. In the first situation, unionization is predicted to increase the number of new officers (more union supporters), decrease the number of total police officers, increase the value to the public for protective services, and increase the salary and benefits. In the second situation, unionization increases the salary package police officers receive, but also causes an oversupply of total police officers. The results in both situations are, nonetheless, conditional upon the model's assumptions. Different functional forms, intercepts, and slopes (or labor elasticities) will affect the magnitudes and directions of the results. The outcomes will also vary by manipulating which quadrants are affected by unions or other outside

forces. Even so, this framework provides a powerful new way of thinking formally about how different aspects of policing relate to each other. It also provides justification for using empirical methods to test the hypothesized outcome that unions should, in a variety of conditions, be expected to increase employee salaries and benefits.

Methods

Data Source

Several years ago, the legislature directed the Florida Department of Law Enforcement (FDLE) to undertake a comprehensive study of salaries and benefits paid to law enforcement officers throughout the state (*Florida Statutes*, 1995, § 943.18). That mandate also required FDLE to gather information about any educational requirements, training, retirement and pension provisions, and other forms of employee compensation. FDLE responded to this decree by instituting an annual survey called the *Criminal Justice Agency Report* (CJAP). Although CJAP became operational in 1997, an item inquiring about agency collective bargaining status was not added to the survey until 2000. Hence, the years 2000 through 2009, the last year that data were available when the current project began, bracket the study period.

Every October, FDLE distributes a survey to all law enforcement agencies within the state. The items ask about job conditions that existed on June 30th of that year. In many ways, the questionnaire resembles the *Law Enforcement Management and Administrative Statistics* (LEMAS) survey conducted by the U.S. Department of Justice (Reaves & Hickman, 2004). However, there are at least four important differences between the two approaches.

First, CJAP is administered annually, whereas LEMAS is conducted every three to four years. This strategy means that CJAP is more adept at detecting organizational changes as soon as they occur or shortly thereafter.

Second, CJAP is restricted to Florida agencies; LEMAS has a national scope. Interstate variation in labor law provisions is an important determinant of public employee union activity (Delaney, Feuille, & Hendricks, 1984; Feuille & Delaney, 1986; Ichniowski & Zax, 1991; Ichniowski, Freeman, & Lauer, 1989; Zax & Ichniowski, 1990). Unfortunately, previous police studies ignore these influences. Since all Florida agencies are subject to the same state public-sector bargaining regulations, reliance upon CJAP data corrects this oversight and holds this source of variation constant.

Third, LEMAS coverage includes all agencies that employ 100 or more sworn full-time personnel, along with a stratified sample of smaller departments. The routine inclusion of all large departments enables observers to track organizational changes within these agencies from one survey administration to the next. However, reliance upon a sampling strategy for the smaller agencies means it is conceivable that there could be a complete turnover of participants included in the study group from one survey administration to the next. What this sampling strategy means is that while LEMAS gathers information during every administration for the larger agencies, it only has cross-sectional capabilities for departments with a roster of 100 or fewer officers. Thus, CJAP is more conducive to a panel analysis because it tracks the exact same agencies year after year.

Finally, researchers find it necessary to exclude the smaller agencies when they pool LEMAS data sets over time (Briggs, Zhao, Wilson, & Ren, 2008; Wilson, Zhao, Ren, & Briggs, 2006). Other investigators routinely include only the larger agencies when they analyze LEMAS data and eliminate departments with less than 100 sworn members (Wilson & Buckler, 2010). As Doerner and Doerner (2010) illustrate, there is a very real risk of reaching divergent conclusions when looking at large versus small Florida SOs. A glance at the 2010 CJAP data

reveals that 18% ($n = 47$) of Florida's municipal agencies employed more than 100 officers and 48% ($n = 129$) contained 25 or fewer officers. Thus, the CJAP inclusion of smaller agencies provides a much more balanced picture of all local police organizations operating within Florida.

The Study Group

There were 294 different municipal agencies that existed at some point during the 2000–09 interval. However, the study group is restricted to just those Florida municipal police agencies that operated continuously from 2000 until 2009 and that participated regularly in the CJAP surveys and the *Uniform Crime Reports* (UCR) program. A handful of agencies, primarily consisting of one or two full-time sworn officers, were chronic non-participants in the CJAP and/or the UCR programs. They, along with agencies established after 2000 or disbanded prior to 2009, were excluded from the analysis. The final study group, then, consists of the 237 city police departments from the state of Florida that were active throughout the entire study period.

Dependent Variables

Wherever possible, there was a deliberate effort to parallel the dependent variables that Doerner and Doerner (2010) drew upon in their analysis of Florida sheriff deputy benefits. Six indicators (starting salary, the availability of a deferred retirement option program, a buy-back program for converting unused hours into annual leave, longevity pay, a shift differential plan, and a college tuition reimbursement policy) are probed to determine the influence that collective bargaining exerts upon employee compensation.³

The annual CJAP survey asks respondents to report the starting salary at which new officers are hired.⁴ The instructions that accompany the query advise respondents not to include performance bonuses, overtime pay, employer contributions to retirement or pension plans, any

insurance subsidies, the value of an agency-provided vehicle, or any other source of money.⁵ These annual figures are converted into real 2009 dollars.

The second indicator was whether an agency offers a Deferred Retirement Option Program (DROP). Employees who enter DROP are considered to have retired, although they continue to work for the agency. The benefits that accumulate during this post-retirement period, usually a maximum of five years, are deposited into a special employee account which earns interest. When the DROP period ends, officers exit the agency, receive a lump-sum payment from the DROP accumulations, and begin to draw their regular retirement benefits.⁶

Some agencies offer a buy-back option. This benefit allows employees to cash in unused leave or swap those hours for annual leave or personal holidays. Sometimes, there might be a ceiling or maximum number of hours an employee can transfer. Agencies that offer such a program are coded as 1 and a zero value is reserved for departments that do not make such an opportunity available to employees.⁷

The fourth variable reflects whether an agency rewards veteran officers with seniority or longevity pay. Longevity pay refers to a stipend or bonus that is added to the regular paycheck after an officer serves for a set number of years. The actual number of years needed to reach this threshold and the size of the stipend may vary from one agency to the next.⁸

Some agencies have instituted a shift differential supplement. Officers who work undesirable hours, such as the midnight shift or weekends, receive a bonus for staffing these assignments. Because the actual amounts may vary from one agency to the next, this variable is recorded as simply the presence (coded as 1) or absence (coded as 0) of such a plan.⁹

Finally, a dichotomous variable indicated whether an agency had a reimbursement plan for officers who enroll in college courses in their spare time. While the exact details may depend

upon the nature of the courses and the final course grade, any employer support is signified by a value of one.¹⁰

Table 1 summarizes the dependent variables for each year and for the entire series. The salary figures exhibit a general upward trend over this time frame. However, consistent with the broader deteriorating economic conditions, entry-level payroll figures displayed a negligible gain in 2007, followed by a drop in 2008 and then a slight rebound in 2009. The availability of a DROP option for retirees climbed during the study period, starting with a base of 38% in 2000 and ending with two-thirds of the agencies providing such a benefit in 2009. The buy-back benefit whereby employees can cash in or restructure unused leave shows very little change. Likewise, longevity pay, shift differential pay, and tuition reimbursement show very limited variability over the ten-year study period.

[Insert Table 1 about here]

Independent Variables

The independent variables selected for inclusion in the current study mirror the predictors that appear in Doerner and Doerner (2010). These variables reflect agency characteristics and local economic conditions. Agency characteristics include union status, the length of time a union was in place, and sworn size.¹¹ Two additional agency traits that Doerner and Doerner (2010) did not include, accreditation status and violent crime rate, are incorporated into the current study. Local economic conditions are represented by the unemployment rate and median household income.¹²

The CJAP survey contains one question designed to tap union activity. It reads, “Does your agency belong to a collective bargaining unit (Police Benevolent Association [PBA], Fraternal Order of Police [FOP], etc.) for sworn personnel?” Agencies that respond in the

affirmative are coded as being unionized. Occasionally, agency representatives would fail to answer the CJAP item. If an annual series is interrupted by a missing value, that cell is converted to the dominant value in the sequence. Other discrepancies are resolved by cross-referencing records maintained by the Florida Public Employees Relations Commission (PERC). PERC is the state regulatory agency that monitors public employee bargaining units, certifies union election outcomes, and handles allegations of unfair labor practices.

A related consideration that Doerner and Doerner (2010) probed was the length of time that a union was in place. They found that substantial gains do not materialize immediately after PERC certifies a labor organization as the lawful representative in contract negotiations. Instead, salary demands appear to be the most visible issue that unions pursue in their formative years. As unions gain a foothold and their tenure increases, collective bargaining officials branch out and address allied job concerns, especially in larger agencies. The present study entertained the notion of including the number of years a collective bargaining agent conducted business. However, two concerns derailed this strategy. First, although Florida municipal police departments began unionizing in 1968 (Pynes & Corley, 2006), the current study is able to track union status only from 2000 onward. This 32-year gap means that it is not possible to monitor union activity as these labor groups matured. Second, only 100 agencies became unionized during the study period.¹³ This timing makes it difficult to assess the benefits these newer unions reaped from neighboring chapters and statewide labor organizations.¹⁴ As a result, the reluctant decision was to sidestep these thorny issues and not include union tenure.

Previous researchers have found that sworn size, the number of full-time certified officers an agency employs, sometimes emerges as a significant, but very modest, predictor of job

benefits (Briggs et al., 2008; Doerner & Doerner, 2010; Wilson et al., 2006; Zhao & Lovrich, 1997). Those counts are derived from CJAP and there are no missing observations.

Florida has developed its own state accreditation body. The Commission for Florida Law Enforcement, Inc. (CFA) is modeled after the national Commission on Accreditation for Law Enforcement Agencies (CALEA). The ostensible purpose of accreditation is to foster increased professionalism by prompting agencies to adopt current “best practices” in the field. However, many smaller agencies are reluctant to participate in the CALEA process because they believe it is too expensive, too time-consuming, and insensitive to local needs (Doerner & Doerner, 2009). As a result, the Legislature directed the Florida Sheriffs’ Association and the Florida Police Chiefs’ Association to produce a more palatable state version. CFA became operational in 1997 and continues to attract participants throughout the state (Doerner & Doerner, 2009), even though the exact benefits of accreditation remain amorphous and unsubstantiated (Doerner & Doerner, 2012). The inclusion of this Florida-based indicator enables the present researchers to explore yet another feature of this law enforcement professionalization movement.¹⁵

The local violent crime rate per 10,000 inhabitants, as reported by FDLE in the annual state version of the *UCR*, is added to the current study. The expectation is that areas exhibiting relatively higher violent crime rates would find it necessary to extend more attractive job benefits to counter the more perilous duty that officers encounter.¹⁶

Prior studies that examine police unionization have included the unemployment rate and median household income to gauge local fiscal capacity (Briggs et al., 2008; Doerner & Doerner, 2010; Wilson et al., 2006). The thinking is that governments blessed with an abundance of resources at their disposal are in a better position to attract more qualified personnel and do so by offering attractive salaries and fringe benefits. Unfortunately, such annual information is not

readily available for relatively small geographical units. For example, the figures contained in the annual U.S. Census Bureau's *Small Area Income and Poverty Estimates* series and the yearly *Florida Statistical Abstract* (Bureau of Economic and Business Research) are limited to jurisdictions that have at least 25,000 inhabitants. If such a restriction were put into place in the current study, that decision would levy a huge toll on the data set. More succinctly, 73% or 178 of the 244 cities in the study group fall below the 25,000 population threshold in 2009 and, thus, would be eliminated from the analysis. One alternative to the lack of information regarding city economic climate is to substitute the corresponding county data in lieu of actual city values. While such approach does invite some error, its influence does not appear to be unduly large.¹⁷ Thus, there appears to be reasonable empirical support to proceed in this manner. The median county household income, expressed in 2009 real dollars, is substituted for a municipal measure for the same reason.¹⁸

Table 2 displays summary statistics for the independent variables. Unionization did not gain many footholds during the study period. Fifty-eight percent of the Florida municipal police departments came under a CBA in 2000. That figure inched up to 64% by the end of the decade. The typical Florida police agency employs well under 100 sworn members, demonstrating the sensitivity of the CJAP collection to the issue of agency size and the need to expand beyond a LEMAS database. While one-third of the departments had gained accreditation by the end of the decade, the trend in FCA approval peaked and then leveled off in 2006. The overall crime rate exhibits a downward trend over this time period. Both the unemployment rate and the median household income contain bounces, with pronounced changes at the end of the decade.

[Insert Table 2 about here]

Model

The previous discussion suggests that police officers unionize because the perception is that collective bargaining will result in higher salaries and better fringe benefits. Drawing from Doerner and Doerner (2010), this relationship is expressed simply as:

$$\text{Benefit}_{it} = a_{it} + \beta_1 * \text{Union}_{it} + \beta_2 * \text{Controls}_{it} + P_t + T_t + \epsilon_{it} \quad (1)$$

where subscript i refers to the particular law enforcement agency and t to the year. If a police department has a certified union in place during a particular year, then *Union* takes a value of one and its estimated coefficient is assumed positive. The vector *Controls* houses other independent variables (sworn size, median household income, unemployment rate, accreditation, and the violent crime rate). Additional heterogeneity is controlled between police departments with P and across years by T .

Results

Table 3 summarizes a series of zero-order annual comparisons that pit unionized against non-unionized agencies. Difference-of-means tests indicate that unionized police departments record significantly higher entry-level salaries in every year of the study period. The same pattern emerges when the focus turns to shift differential pay and tuition reimbursement. Agencies with a CBA report significant gains in these areas. Longevity pay demonstrates a similar propensity. However, these patterns are not as pronounced when examining DROP retirement options and buy-back provisions. Overall, unions prevail in 51 of the 60 comparisons for an 85% rate. In other words, collective bargaining is accompanied by significantly higher salaries and better job benefits at the zero-order. Whether these significant differences stem from unionization or from other variables becomes the focus of attention in the ensuing multivariate analyses.

[Insert Table 3 about here]

Table 4 summarizes the results from the fixed-effects analyses for each of the six dependent variables. The most notable observation is that the pronounced impact of unionization observed at the zero-order level vanishes when control variables are introduced. In other words, collective bargaining does not appear to be responsible for the gains in starting salaries, DROP, buy-back provisions, longevity pay, shift differential pay, nor tuition reimbursement practices.

[Insert Table 4 about here]

The only other variables that attain significance in the equations are the unemployment rate, median household income, and the year trend.¹⁹ The likelihood of gaining a DROP option increases by 17% as unemployment declines and the availability of a tuition reimbursement plan increases by 37%. The only other significant predictor, household income, portends a small change in the ability to offer a shift differential pay plan. The year trend, which takes on values as year takes on the values 2000, 2001, 2002, and so forth, suggests that several factors change over time.²⁰ For example, entry-level salaries increase every year by a real constant dollar amount of \$413 and certain benefits (like a DROP option, shift differential pay, and tuition reimbursement) become more prevalent over time.

Discussion

At first blush, unionization gave the impression that it produced a clear positive impact on starting salaries and the other job benefits. However, that apparent influence waned with the introduction of control variables. The multivariate results suggest that police unions are able to gain substantial concessions when general economic conditions are favorable. The recent economic downturn, though, has squeezed revenue streams and restricted the funds available for upcoming budgets. Among other things, the precipitous decline in the housing market, the looming mortgage foreclosure crisis, and elevated unemployment rates have diminished the

collection of local tax receipts. This dire situation has governmental leaders scrambling to find ways to deliver services while balancing local budgets. The pursuit of diametrically opposed options has led to an ensuing scrum between politicians and public employee unions.

A number of Florida municipalities have tried to cope with these pressing woes by instituting layoffs, furloughs, and demanding other employee concessions. While the measures analyzed in the current paper do not reflect these activities, police unions have lobbied vigorously on behalf of their members. For example, the Miami FOP chapter resisted demands from city officials to give up \$12 million in contracted benefits (Litz & Campbell, 2011), but did negotiate a minimal across-the-board pay cut as a way to avoid laying off 118 officers (Mazzei, 2012). Unions have also forced other locales to spare employees from the cutting block and, instead, seek other creative arrangements. Closing substations, curtailing applicant background checks for businesses, shortening operating hours for public records and other non-essential services, restricting take-home car practices, and adopting other belt-tightening measures have been some of the financial alternatives municipalities have pursued (Boukari, 2011; No Author, 2011; Port St. Lucie Police Department, 2012; Wyman, 2011).

Relying upon panel data is both a strength and a weakness for the current investigation. While it is hard to dispute that a panel analysis offers many advantages, selection of the 2000–09 study period presents some definite challenges. First, the information used to construct the dependent variables does not exist prior to 2000 for all the municipalities in Florida. Second, a systematic database that tracks prior union certification and decertification elections does not exist and the limited information which is available is marred by inadequate record-keeping. Third, only 15% of the agencies covered by a CBA in the study group gained union status during the relevant time frame. The remaining 85% became organized at some point between 1968 and

1999. Our hunch is that newly-formed unions focus on salary gains and then branch out into other areas as they mature. Unfortunately, the absence of any definitive temporal data precludes an examination of what happens as police unions grow and move through various stages. Finally, unionized agencies do not exist in a vacuum. When an agency gains certification, it joins a network of similarly situated organizations. This umbrella allows newcomers access to an inventory of proven and unsuccessful strategies which enables new generations to pursue more sophisticated bargaining strategies without duplicating past mistakes.

This might be an appropriate time to chart a broader research agenda concerning police unions. First, the existing literature tends to focus on tangible economic benefits. Yet, as Wilson and Buckler (2010) demonstrate, police unions have the potential to encourage, block, or even dictate organizational reform and the format any changes may take.

Second, very little is known about the career patterns of union officials. Local unions are affiliated with regional chapters which, in turn, are tied to state groups that are linked with national organizations. How incumbents traverse those paths and the activities they undertake along the way have yet to gain attention from researchers. Finally, unions have become more adept at wielding political acumen. How various lobbying strategies are coordinated, the influence they exert, and whether these efforts are productive pose interesting terrain.

Conclusion

Union activity in the law enforcement sector has undergone radical change in little more than a decade. For example, Florida recently granted sheriff deputies the right to engage in collective bargaining, even though municipal police officers had possessed the same right for several decades. Despite these developments, many academicians have overlooked the opportunity to study the growth of unionization. Part of that omission stems from the dearth of

administrative data on law enforcement organizations. National surveys were virtually non-existent until the 1990s and statewide surveys only began cropping up at the turn of the century. Law enforcement institutions must confront the realization that skillfully constructed datasets offer much more valuable insights than do summary statistics printed in glossy annual reports. As agencies standardize their formats and consistently track themselves over time, panel analyses will become increasingly richer and able to address issues like the ones this paper raises.

The results of this study suggest that unionization has a limited effect on salaries and other fringe job benefits when all agencies are utilized, regardless of size. It is not clear, though, whether this finding is a consequence of including agencies that have been unionized for many years, an artifact of the collective bargaining process needing more time to generate a significant effect in newly unionized agencies, an indication that particular union chapters are less effective, or evidence that the purpose of collective bargaining units has changed over time. The Florida story about collective bargaining has been explored from the perspective of sheriff deputies and, now, municipal police officers. We invite other researchers to advance the issues raised here while carefully noting state-specific laws or institutional details that could hinder the generalizability of results.

Notes

1. The 2000 Florida Legislature enacted special bills to permit collective bargaining representation in the Broward, Charlotte, Escambia, Jacksonville, Miami-Dade, and Volusia SOs. Additional legislation in 2001 granted similar privileges to the Flagler, Monroe, and Nassau SOs. Doerner and Doerner (2010) wisely excluded these nine agencies from their analysis because the *Coastal Florida PBA* decision could have no possible impact on these departments.
2. DiPasquale and Wheaton (1992) introduced the idea of connecting four related events into a single, four-quadrant model while examining real estate markets. Here, we adapt their model to the topic of police unionization.
3. The original plan was to include four more dependent variables in the current study. Those indicators included the number of paid holidays, personal days, sick days, and vacation days granted to employees. However, these data were riddled with missing information. The number of absent observations for each variable was 69, 152, 162, and 223, respectively. FDLE apparently took steps to address this issue because none of these variables exhibited any missing data in the 2007, 2008, and 2009 reports. However, the decision was made to refrain from looking at these variables because the missing values were concentrated in the first seven years of the series, effectively truncating the study period to just the last three years of the series.

4. Nominal starting salary is reported. Values in the analysis are converted to real 2009 dollars using the annual non-seasonally adjusted consumer price index (CPI) for all Urban Consumers in the South urban area as reported by the Bureau of Labor Statistics (BLS).
5. A total of 23 observations out of a possible 2,370 salary data points were missing. Following the lead of Doerner and Doerner (2010), the absent entries were converted into usable data by averaging the reported salaries from the preceding year and the subsequent year.
6. There were 48 instances in which DROP observations were not available. All these missing values were reconciled by converting them into the regularly occurring values in the ongoing series.
7. Missing values for buy-backs existed in 45 cases and these were converted according to the pattern observed in a series of ongoing values. However, 14 cases could not be resolved because they exhibited opposing values in the year prior to and in the year after the errant case. They are treated as unusable or missing data.
8. The original longevity information contained 40 missing cases. Because they were part of an identifiable ongoing series, 27 cases were converted into usable data. That left 13 instances which could not be resolved satisfactorily. They are treated as unusable or missing data.
9. The researchers were able to resolve all but one of the 38 missing cases regarding a shift differential supplement.

10. There were 41 tuition reimbursement cases that exhibited missing values. The researchers were able to reconcile 29 values because they were part of an ongoing series of consistent values. However, 12 cases were indeterminate and remained as missing data.

11. Another agency trait was pursued, but later dropped from consideration. That variable dealt with the education level agencies sought in recruits. The thinking was that agencies that required incoming personnel to hold a college degree would pay a premium for this attribute. Unfortunately, the observed variation was insufficient to be of much utility. Only 11% of the agencies in the study group expected new officers to possess either a two- or four-year college degree.

12. A thwarted effort was made to tap a standard measure of fiscal capacity that commonly appears in the literature. Previous studies (Briggs et al., 2008; Wilson et al., 2006; Zhao & Lovrich, 1977) have analyzed the number of per capita dollars local governments expend on police protection. An earlier analysis of Florida county sheriff offices attempted to include such a measure. However, Doerner and Doerner (2010) had to abandon that path after encountering numerous obstacles with the data. The present study met with a similar fate. Although local municipalities provide the Florida Department of Financial Services with annual fiscal reports, the values displayed extreme fluctuations for no apparent reason and these instabilities could not be remedied independently.

13. Although Florida municipal police departments began unionizing in 1968 (Pynes & Corley, 2006), the present study tracks union status only from 2000 onward and sets the clock at that point. In addition, a handful of agencies voted to decertify or oust their current labor representative. PERC will not allow these agencies to select another labor representative for at least one calendar year. As a result, the tenure clock was reset for agencies that decertified and then re-certified another union. Two agencies (Bunnell and Davenport) went through this process once, while one department (Mulberry) changed union representation twice. Eight other agencies decertified completely.
14. An original intent of the present study was to assess the impact of diffusion upon subsequent unionization. Based upon a contagion model, one might expect proximity to an agency that already engages in collective bargaining would help explain the spread of unionization. In other words, observing the success of neighboring departments in winning labor concessions would encourage non-unionized agencies to reconsider their collective bargaining stance. Unfortunately, the inability to track the date when a union came into existence from 1968 through 2000 rendered it impossible to pursue this line of inquiry.
15. There are no missing cases for the state accreditation variable.
16. Two cities had missing observations for 2009. These values were rectified by averaging their 2008 and 2010 violent crime rates.

17. The annual correlations between city (25,000+ population) and county unemployment rates for 2000 are .76 ($n = 63$), .69 for 2001 ($n = 63$), .58 for 2002 ($n = 61$), .58 for 2003 ($n = 61$), .37 for 2004 ($n = 60$), .34 for 2005 ($n = 60$), .50 for 2006 ($n = 59$), .63 for 2007 ($n = 59$), .68 for 2008 ($n = 54$), and .54 for 2009 ($n = 54$).

18. Household income is adjusted for inflation in the same manner as starting salary.

19. Recent criminological literature promoting panel data analysis has raised concerns about autocorrelation, heteroskedasticity, and unobserved heterogeneity (Worrall, 2010). The current study addresses the first two worries using robust standard errors clustered on counties in linear panel regressions and bootstrapping in logistic panel regressions. The last issue is overcome partially by using municipal-level fixed effects (and clustering standard errors at the county-level for cross-sectional heterogeneity) and partially with a year trend (for temporal heterogeneity). If the data had permitted, the panel analysis could have been enriched in other ways. For example, the economics literature has long suggested a simultaneous link between unions and benefits (see Ashenfelter & Johnson, 1972). A police organizational story might be that certain types of agencies pursue collective bargaining agreements because of their relative levels (or lack of) benefits. In turn, the unions argue on behalf of officers and obtain more benefits. Unfortunately, the data limited the current analysis in two dimensions: few newly unionized agencies and a short period for collective bargaining. The first aspect is problematic because nearly all unionized agencies (85%) began engaging in collective bargaining prior to 2000. The second dimension is tricky because collective bargaining efforts typically take multiple

years between union mobilization activities, contract negotiations, and achieving any demonstrable results. In the future, a study that utilizes a longer panel might be in a position to address these ideas by regressing on simultaneous equations or salary differences prior to and after unionization.

20. Another approach to including a year measurement is to use binary variables for each year, or year dummies instead of a trend. The interpretation would change to a non-linear impact that can be unique in each year instead of a constant marginal effect. Practically, one would expect real salary increases to be relatively similar across time when smoothed over labor contracts. With the exception of the first year in the current database, this is true. The average real salary increase over time is \$417 and a regression with the constant year trend returns an estimate of \$413. For these reasons, a year trend is used instead of year dummies. Further results are available upon request.

Figure 1

Relating Two Markets and Four Events

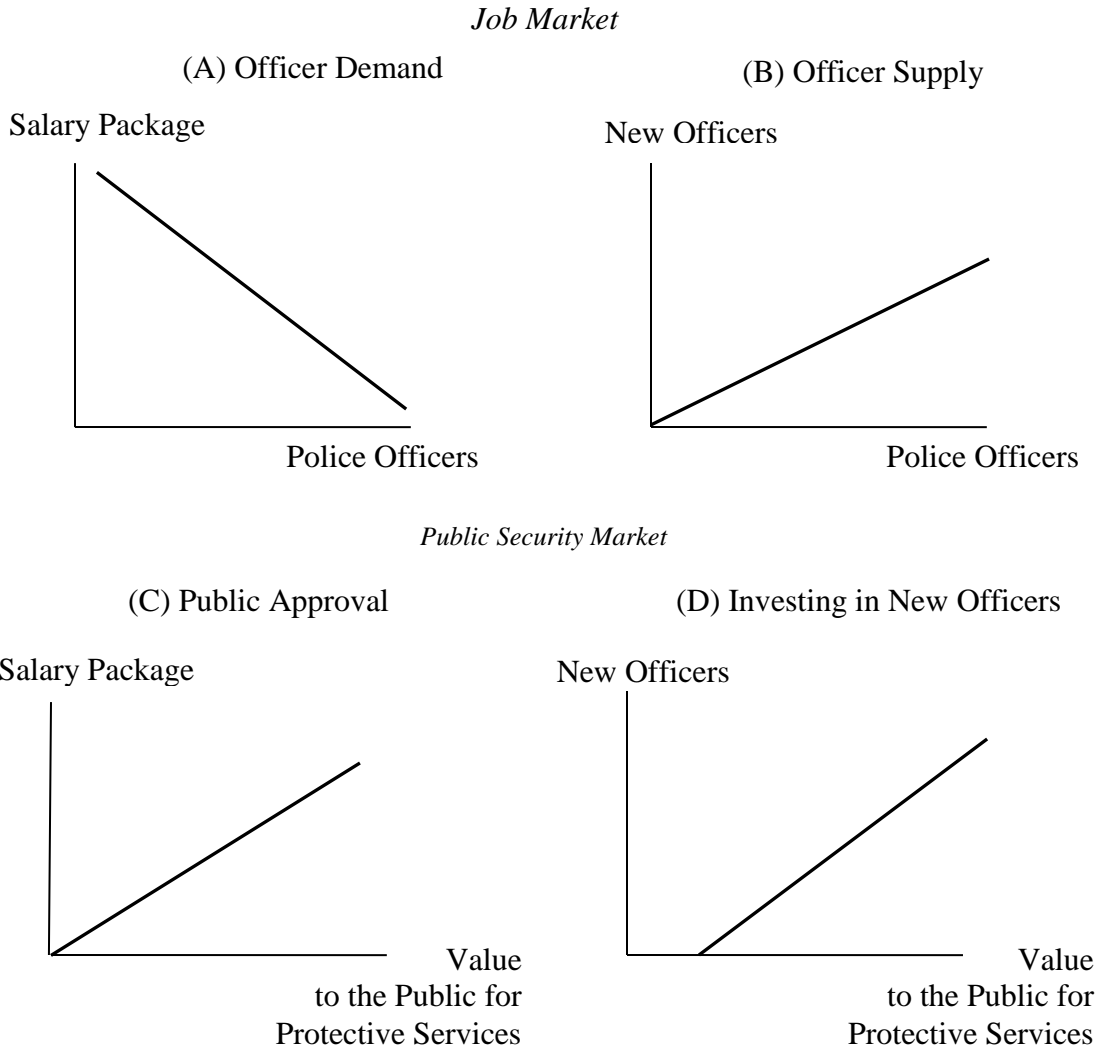


Figure 2

Four Panels Showing an Interactive Police Labor Market

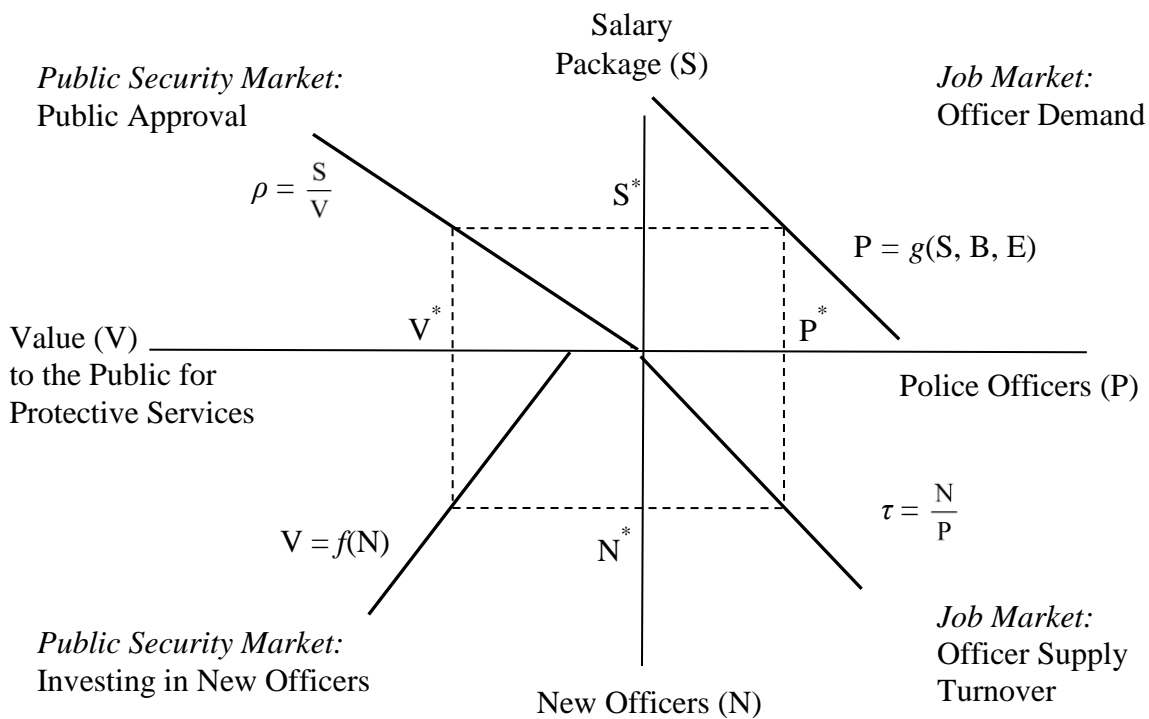


Figure 3

Union Presence Adds New Officers and Increases Salaries

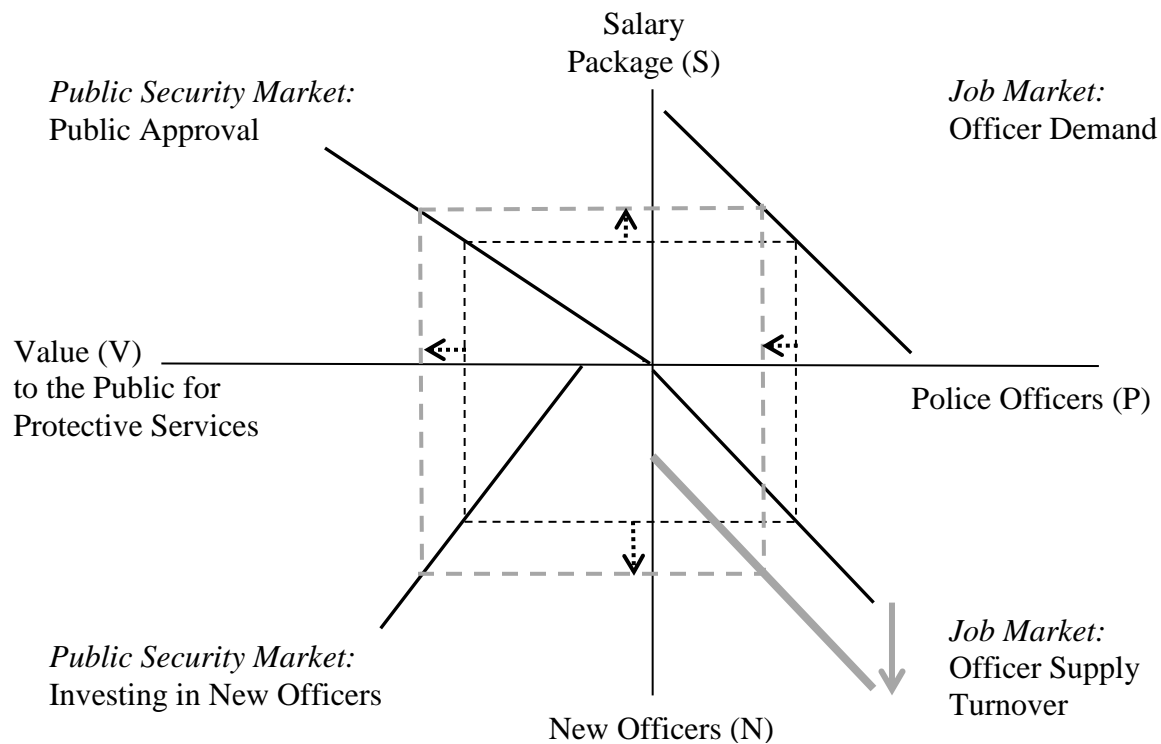


Figure 4

Union Presence Implements a Binding Minimum Wage

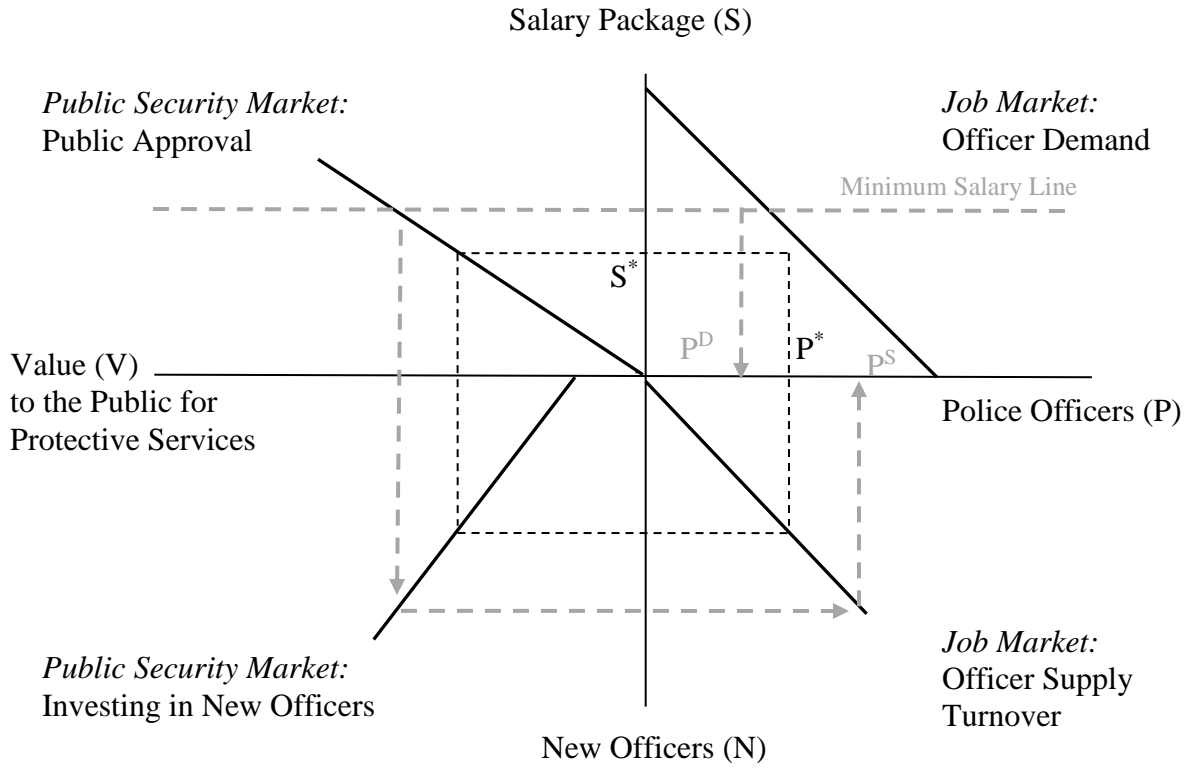


Table 1

Summary Statistics, Dependent Variables^a

Year	Entry Salary	DROP	Buy-Back	Longevity Pay	Shift Differential Pay	Tuition Reimbursement
2000	\$33,594	.38	.60	.48	.22	.76
2001	\$34,235	.41	.59	.48	.22	.60
2002	\$35,274	.46	.63	.47	.24	.73
2003	\$35,692	.51	.62	.50	.18	.84
2004	\$35,932	.55	.67	.52	.25	.82
2005	\$36,257	.59	.64	.49	.28	.83
2006	\$36,909	.63	.69	.51	.30	.85
2007	\$37,133	.64	.59	.52	.31	.84
2008	\$36,743	.64	.65	.50	.32	.79
2009	\$37,349	.65	.65	.49	.30	.76
Mean	\$35,912	.55	.63	.50	.26	.78
s.d.	\$6,917	.50	.48	.50	.44	.41
N	2,370	2,370	2,354	2,357	2,368	2,358

^a Nominal salary figures are converted to real 2009 dollars using the annual non-seasonally adjusted Consumer Price Index for the Southeast Region. The remaining variables are dichotomous where a code of one represents the presence of a program and a code of zero reflects the absence of a program.

Table 2

Summary Statistics, Independent Variables^a

Year	Union	Sworn Size	Accredited	Violent Crime Rate	Unemployment Rate	Median HH Income
2000	.58	65	.14	73	3.8	\$46,998
2001	.59	65	.17	76	5.0	\$44,999
2002	.59	65	.21	72	5.6	\$44,546
2003	.60	67	.24	67	5.2	\$44,716
2004	.60	67	.27	65	4.8	\$45,358
2005	.61	68	.31	72	3.8	\$45,900
2006	.61	70	.33	67	3.4	\$47,480
2007	.61	72	.33	64	4.1	\$48,446
2008	.62	73	.33	62	6.3	\$46,825
2009	.64	75	.33	57	10.6	\$44,161
Mean	.60	69	.27	67	5.3	\$45,943
s.d.	.49	126	.44	70	2.2	\$6,576
N	2,370	2,370	2,370	2,370	2,370	2,370

^a Nominal household income figures are converted to real 2009 dollars using the annual non-seasonally adjusted Consumer Price Index for the Southeast Region. The remaining variables are dichotomous where a code of one represents the presence of a program and a code of zero reflects the absence of a program.

Table 3

Summary Table Regarding the Impact of Union Representation on Job Benefits^a

Year	Entry Salary	DROP	Buy-Back	Longevity Pay	Shift Differential Pay	Tuition Reimbursement
2000	+			+	+	+
2001	+			+	+	+
2002	+	+	+	+	+	+
2003	+			+	+	+
2004	+	+	+	+	+	+
2005	+	+		+	+	+
2006	+	+		+	+	+
2007	+	+	+	+	+	+
2008	+	+	+	+	+	+
2009	+	+	+		+	+

^a A positive sign indicates that unionized agencies have a significantly higher value compared to non-unionized agencies when utilizing a difference-of-means test.

Table 4
Fixed-Effects Panel Data Analysis^a

Variable	Entry Salary ^b	DROP	Buy-Back	Longevity Pay	Shift Differential Pay	Tuition Reimburse
Union (1 = Yes)	-0.48 (0.44)	-0.77 (0.76)	-0.52 (0.41)	-0.30 (0.42)	1.76 (6.58)	1.23 (1.19)
Sworn Size (log)	0.00 (0.01)	0.06 (0.04)	0.00 (0.01)	-0.02 (0.01)	0.00 (0.02)	-0.02 (0.02)
Accredited (1 = Yes)	0.39 (0.24)	0.08 (0.64)	0.51 (0.34)	0.30 (0.40)	0.57 (0.64)	-0.33 (0.63)
Violent Crime Rate	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.01)	0.00 (0.00)
Unemployment Rate	-0.07* (0.03)	-0.17* (0.08)	0.01 (0.04)	-0.04 (0.06)	0.00 (0.07)	-0.37* (0.07)
Median HH Income	-0.05 (0.03)	-0.13 (0.08)	0.02 (0.04)	-0.04 (0.04)	0.17* (0.07)	-0.02 (0.06)
Year Trend	0.41* (0.04)	0.51* (0.09)	0.02 (0.04)	0.06* (0.04)	0.27* (0.08)	0.33* (0.07)
Observations	2,370	1,010	1,544	1,727	669	1,028
Agencies	237	101	156	174	67	104
R ² within	0.29	—	—	—	—	—
F-statistic	24.77	—	—	—	—	—
χ ²	—	51.68	6.46	4.48	25.07	32.79
Log-likelihood	-4,735	-280	-658	-563	-200	-297

^a Entry salary is a linear solution; the others are logistical solutions.

^b Parentheses contain standard errors. Linear solutions are robust to serial correlation and heteroskedasticity and clustering at the county level. Logistical solutions are bootstrapped using 1,000 repetitive draws from the full sample with a seed set as 6447647.

* Denotes significance at the .05 level of analysis.

References

- Adams, R. J. (2008). The human right of police to organize and bargain collectively. *Police Practice and Research: An International Journal*, 9, 165-172.
- Ashenfelter, O., & Johnson, G. E. (1972). Unionism, relative wages and labor quality in U.S. manufacturing industries. *International Economic Review*, 13, 488-508.
- Berry, J., O'Connor, G, Punch, M., & Wilson, P. (2008). Strange union: Changing patterns of reform, representation, and unionization in policy. *Police Practice and Research: An International Journal*, 9, 113-130.
- Boukari, B. (2011). Alachua police strike deal with city. *Alachua County Today*, July 9. Retrieved February 25, 2012, from http://www.alachuacountytoday.com/index.php?option=com_content&view=article&id=1643:alachua-police-strike-deal-with-city&catid=102:local&Itemid=426
- Briggs, S. J., Zhao, J. S., Wilson, S., & Ren, L. (2008). The effect of collective bargaining on large police agency supplemental compensation policies: 1990–2000. *Police Practice & Research: An International Journal*, 9, 227-238.
- Bureau of Economic and Business Research (annual). *Florida Statistical Abstract*. Gainesville: University of Florida.
- Coastal Florida Police Benevolent Association, Inc. v. Phillip B. (Phil) Williams*, 838 So. 2d 543 (Fla. 2003).
- Delaney, J., Feuille, P., & Hendricks, W. (1984). Police salaries, interest arbitration, & the leveling effect. *Industrial Relations*, 23, 417-423.
- DiPasquale, D. & Wheaton, W. C. (1992). The markets for real estate assets and space: A conceptual framework. *Journal of the American Real Estate and Urban Economics Association*, 20, 181-197.
- Doerner, W. G., & Doerner, W. M. (2009). The diffusion of accreditation among Florida police agencies. *Policing: An International Journal of Police Strategies & Management*, 32, 781-798.
- Doerner, W. M., & Doerner, W. G. (2010). Collective bargaining and job benefits: The case of Florida deputy sheriffs. *Police Quarterly*, 13, 367-386.
- Doerner, W. M., & Doerner, W. G. (2012). Police accreditation and clearance rates. *Policing: An International Journal of Police Strategies & Management*, 35, 6-24.
- Feuille, P., & Delaney, J. T. (1986). Collective bargaining, interest arbitration, and police salaries. *Industrial and Labor Relations Review*, 39, 228-240.
- Florida Department of Law Enforcement. (2011). *2010 Criminal Justice Agency Profile Report*.

Retrieved February 25, 2012, from <http://www.fdle.state.fl.us/Content/getdoc/7514ef94-d83d-4c05-b26f-fd20b73f65bb/2010-CJAP-Police-Department-Index-Page.aspx>

Florida Statutes (1995).

Hunter, R. D., & Merritt, J. B. (2000). Labor relations, pp. 159-186 in Doerner, W. G., & Dantzker, M. L. (eds.), *Contemporary Police Organization and Management: Issues and Trends*. Boston: Butterworth-Heinemann.

Ichniowski, C., & Zax, J. S. (1991). Right-to-work laws, free riders, and unionization in the local public sector. *Journal of Labor Economics*, 9, 255-275.

Ichniowski, C., Freeman, R. B., & Lauer, H. (1989). Collective bargaining laws, threat effects, and the determination of police compensation. *Journal of Labor Economics*, 7, 191-209.

Litz, S., & Campbell, J. (2011). City of Miami, police union still at odds over cba. *NBC Miami*, September 14. Retrieved February 25, 2012, from <http://www.nbcmiami.com/news/Miami-Police-Union-Still-At-Odds-Over-CBA-129841543.html>

No Author (2011). Cape weighs outsourcing public safety departments. *Wink TV News*, September 15. Retrieved on February 25, 2012, from <http://www.winknews.com/Local-Florida/2011-09-07/Cape-weighs-outsourcing-public-safety-departments>

Port St. Lucie Police Department (2012). *Important information*. Port St. Lucie, FL: Port St. Lucie Police Department. Retrieved on February 25, 2012, from <http://www.pslpd.us/pdweb/Home/tabid/36/Default.aspx>

Pynes, J. E., & Corley, B. (2006). Collective bargaining and deputy sheriffs in Florida: An unusual history. *Public Personnel Management*, 35, 299-308.

Reaves, B. A. (2010). *Local Police Departments, 2007*. Washington, DC: Bureau of Justice Statistics. Retrieved on August 10, 2012 from <http://bjs.ojp.usdoj.gov/content/pub/pdf/lpd07.pdf>

Reaves, B. A., & Hickman, M. J. (2004). *Law enforcement management and administrative statistics, 2000: Data for individual state and local agencies with 100 or more officers*. Retrieved May 7, 2011, from Bureau of Justice Statistics website: <http://bjs.ojp.usdoj.gov/index.cfm?ty=pbdetail&iid=1052>

U.S. Census Bureau. (2009). *Model-based small area income and poverty estimates (SAIPE) for school districts, counties, and states*. Retrieved May 7, 2011, from U.S. Census Bureau website: <http://www.census.gov/did/www/saipe/>

Walker, S. J. (2008). The neglect of police unions: Exploring one of the most important areas of American policing. *Police Practice and Research*, 9, 95-112.

Wilson, S., & Buckler, K. (2010). The debate over police reform: Examining minority support for citizen oversight and resistance by police unions. *American Journal of Criminal Justice*, 35, 184-197.

Wilson, S., Zhao, J. S., Ren, L., & Briggs, S. (2006). The influence of collective bargaining on large police agency salaries: 1990–2000. *American Journal of Criminal Justice*, 31, 19-34.

Worrall, J. L. (2010). A user-friendly introduction to panel data modeling. *Journal of Criminal Justice Education*, 21, 182-196.

Wyman, S. (2011). Wilton Manors police union suggests city explore bsp merger. *Sun Sentinel*, September 15. Retrieved on February 25, 2012, from <http://www.southfloridagaynews.com/news/local-news/4481-wilton-manors-police-union-suggests-city-explore-bso-merger.html>

Zax, J. S., & Ichniowski, C. (1990). Bargaining laws and unionization in the local public sector. *Industrial and Labor Relations Review*, 43, 447-462.

Zhao, J., & Lovrich, N. (1997). Collective bargaining and the police: The consequences for supplemental compensation policies in large agencies. *Policing: An International Journal of Police Strategies & Management*, 20, 508-518.