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## Some Salary Effects of Professional Negotiations in the Public Schools: The Nebraska Experience

Gary A. Moore

*University of Nebraska- Lincoln*

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Gary A. Moore

Some Salary Effects  
of Professional  
Negotiations in  
the Public Schools:  
The Nebraska Experience

new series no. 50

*University of Nebraska Studies*

august 1975

**SOME SALARY EFFECTS  
OF PROFESSIONAL  
NEGOTIATIONS IN  
THE PUBLIC SCHOOLS:  
THE NEBRASKA  
EXPERIENCE**



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Some Salary Effects  
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# 1. Introduction

## *The Issue of Public Sector Collective Bargaining*

PERHAPS THE MOST significant single phenomenon in the area of labor relations in the past ten years has been the rapid emergence of collective bargaining in the public sector of the United States economy. This phenomenon has occurred at all levels of government and has encompassed many diverse groups of employees. Of course, the major labor legislation which has been enacted in this country—the Wagner Act, the Taft-Hartley Act and the Landrum-Griffin Act—has excluded consideration of public sector employees. But the signing of Executive Order 10988 by President John F. Kennedy in 1962 opened the door to collective bargaining arrangements for federal employees. It also led state legislatures across the country to pass laws according public employees most of the rights which their private sector counterparts had earlier acquired.

This phenomenon raises some new and important questions for economists. The profession has been concerned for some time with the wage and employment effects of unions, but this concern has centered primarily on those private sector labor markets where unions have historically been strong. The belief persists that labor markets in the public sector are somehow different. Recently, for instance, several attempts have been made to develop theories of wage determination in public employment, and most of these theoretical undertakings have considered unionization in some way as a relevant variable.<sup>1</sup>

Moreover, from a public policy point of view, improvement in our knowledge of the effects of collective bargaining in the public sector is crucial. In the private sector experts have long recognized the social, political, and economic legitimacy of unions. Albert Rees, for example, in his well-known book *The Economics of Trade Unions*, states:

If the job rights won for workers by unions are not conceded by the rest of society simply because they are just, they should be conceded because they help to protect the minimum consensus that keeps our society stable. In my judgement, the economic losses imposed by unions are not too high a price to pay for their successful performance of this role.<sup>2</sup>

However, the applicability of this type of argument to unionization in the public sector has been seriously questioned. In an important recent book, Harry H. Wellington and Ralph K. Winter, Jr., have argued:

Collective bargaining in public employment . . . seems distinguishable from that in the private sector. . . . It imposes on society more than a potential misallocation of resources through restrictions on economic output, the principal cost imposed by private sector unions. Collective bargaining by public employees and the political process cannot be separated . . . the issue is how powerful unions will be in the typical municipal political process if a full transplant of collective bargaining is carried out.

The conclusion is that such a transplant would, in many cases, institutionalize the power of public employee unions in a way that would leave competing groups in the political process at a permanent and substantial disadvantage.<sup>3</sup>

Besides the inconvenience to voters and the possibility that prolonged disruption of public sector service provision would endanger the public health and safety, Wellington and Winter envision another reason, economic in nature, which might give unions in the public sector an advantage greater than that which exists for their private sector counterparts. In their view, the demand for many public sector goods and services is relatively inelastic. Hence, because the demand for labor is a derived demand, the wage-employment trade off is reduced for workers in public employment and union power may be realized more easily and exploited more fully than in the private sector.<sup>4</sup>

The above arguments suggest a need for extensive research into the area of wage and salary effects of collective bargaining in the public sector. For a number of reasons, the group of workers for which research appears most fruitful is public school teachers. First, from a pragmatic point of view, data are more readily available for this public sector profession than for most. This stems from the relative maturity of the teacher organizational movement. Teachers have been organized into professional organizations, some affiliated with organized labor and many not so affiliated, for over 100 years. Since the turn of the century, these organizations have been fairly active in collecting and compiling data on the profession.

Secondly, teachers' salaries have historically been ranked toward the bottom of all professional employments, and cost-of-living increases in the 1960s probably eroded this position even further.<sup>5</sup> Thus the profession was particularly responsive to the recent public sector bargaining movement.

Finally, the early successes with collective bargaining experienced by the American Federation of Teachers have elicited a response from the less militant National Education Association, which now is also insisting upon joint teacher-board of education determination of salaries and conditions of employment. In short, public school teachers have had a much more extensive experience with collective bargaining than most other public sector occupations.

#### *Purpose of the Research*

The purpose of this study will be to determine some of the salary effects which are associated with professional negotiations in the public schools of Nebraska.<sup>6</sup> The state of Nebraska provides an excellent framework within which to estimate such effects. The fact that teacher certification requirements, public employee bargaining statutes, the cost-of-living, etc., vary among states points to the advantage of limiting the study to a single state teacher market. This had been overlooked in much of the research to date. Secondly, Nebraska has an unusually large number of school districts, with both rural and urban influences, owing to the failure of any widespread consolidation attempts, and these districts represent a rather broad spectrum of the successes and failures of professional negotiations.<sup>7</sup> Finally, Nebraska has recently developed a somewhat unusual method of handling labor disputes in public employment through its Court of Industrial Relations.

#### *Organization*

Chapters 2 and 3 will provide some background information which will be helpful in understanding and evaluating the empirical chapters. Chapter 2 will include a very brief history of organized teacher activity, both nationally and in Nebraska. It will also outline and evaluate the Nebraska statutes dealing with teacher negotiations, including within the discussion a summary of pertinent decisions of the above-mentioned Court of Industrial Relations. Chapter 3 will then briefly summarize and evaluate the important empirical studies which have already been undertaken in this area.

Chapter 4 provides evidence on the first empirical question of this study. An analysis of average teachers' salaries by school district in Nebraska from the mid-1960s on reveals a rather unusual decline

in the differential between average secondary salaries and average elementary salaries in many districts, with an equally unusual persistence and even widening of such differentials in some other districts. Chapter 4 will constitute an attempt to explain empirically variations in the magnitude of this secondary-elementary differential among school districts at a point in time following the introduction of Nebraska's teacher negotiation statutes. Among other things, it will be hypothesized that the emergence of professional negotiations in many Nebraska school districts in the late 1960s contributed to the narrowing of this differential in those districts. A multiple regression model will be developed in Chapter 4 to analyze and explain interdistrict variations in the secondary-elementary differential.

The second empirical question, dealt with in chapter 5, concerns the existence of interdistrict variations in teachers' salary levels at a point in time.<sup>8</sup> In other words, the question asked is: Why do some school districts pay equally qualified teachers more than other districts during a particular school year? A salary determination regression model for public schools in Nebraska will be developed in chapter 5 in an attempt to explain these interdistrict salary level variations. Again it will be hypothesized that, after other relevant variables are taken into account, teachers' salaries will tend to be higher in a given district for a given school year where professional negotiations have taken place.

Chapters 4 and 5, then, will provide statistical estimates of the extent to which variations in the magnitudes of two important salary effects may be explained by the existence of professional negotiations between teachers and boards of education in Nebraska. Chapter 6 will draw conclusions and implications from the empirical work and will point out some areas where further research is warranted.

## 2. Historical and Legal Background

CONSIDERATION of the historical and legal framework for teacher negotiations will provide an appropriate perspective for analyzing the impact of such negotiations upon teachers' salaries. This chapter attempts to provide such a perspective. A very brief summary of the history of organized teacher activity, both nationally and in Nebraska, will be presented first. Secondly, an elaboration and analysis of the Nebraska teacher negotiation statutes, including reference to key court interpretations, will be given.

### *The History of Organized Teacher Activity*

*The AFT.* Contrary to popular belief, teacher unionism is not a relatively new phenomenon. As early as 1897, the Chicago Teachers Federation constituted a viable and active organization of teachers, and in 1902 this organization became affiliated with the Chicago Federation of Labor.<sup>1</sup> Prior to World War I at least twenty-one other teacher organizations in eleven states became affiliated with organized labor locals.<sup>2</sup>

Historically, two primary organizations have been active in the organization of teachers, the American Federation of Teachers (AFT) and the National Education Association (NEA). The AFT was formed in 1916 and soon became affiliated with the American Federation of Labor. It experienced sporadic but significant growth after its formation and by 1971 had almost 250,000 dues-paying members.<sup>3</sup> Throughout its history, the AFT has emphasized and sought to improve the salary levels and working conditions of teachers. More recently, it has become actively involved in the organization of teachers at the college and university level. In Nebraska, however, the AFT has met with little success in organizing public school teachers for purposes of collective bargaining. Relatively unsuccessful organizational attempts have been made in Omaha and Lincoln, and virtually no success has been achieved in any other area of the state.

*The NEA.* The NEA, and its state affiliate the Nebraska State Education Association (NSEA), has been the organizing body for

almost all Nebraska elementary and secondary teachers. Hence, most of this section will be devoted to their activities. The existence of teacher organizations which were not affiliated with organized labor predates considerably the emergence of teacher unions. However, the concern of such organizations historically has been with the professional improvement of the teaching profession, rather than with the specific issues of remuneration and working conditions. In 1857 the National Teachers Association (NTA) became the first national organization of teachers and in 1870 the National Association of School Superintendents and the American Normal School Association merged with the NTA to form the NEA.<sup>4</sup>

It was not until 1905, however, that there appears any clear indication of the NEA's active concern for teachers' salaries and working conditions. During that year, the NEA published a major report on teachers' salaries. This report demonstrated the need for substantial improvement in some areas and generated considerable concern within the profession.<sup>5</sup> However, at no time prior to World War II did the NEA call for any form of collective bargaining, although it became progressively more vocal in its demands for higher teachers' salaries during the first few decades of the twentieth century.<sup>6</sup>

During the 1940s and especially after World War II a relatively new tactic, the strike, was adopted by several teacher organizations in the face of a relative decline in earnings. Some sixty-nine strikes occurred during the decade, fifty-seven of which took place after 1946. And surprisingly, as many striking locals were affiliated with the NEA as with the AFT, although both organizations had specifically repudiated the strike as a weapon for solving disputes and the NEA had only just begun to accept any form of "group action" as a means of obtaining professional salaries.<sup>7</sup> Thus it appears that these strikes were attributable to local disenchantment rather than an allegiance to any particular national organization.

By 1951, several states, including Nebraska, had enacted legislation prohibiting strikes in public employment. For instance, Sec. 48-802-(2) of the Nebraska Public and Utility Employees Act of 1947, as amended, states: "No right shall exist in any natural or corporate person or group of persons to hinder, delay, limit, or suspend the continuity or efficiency of any governmental service or governmental service in a proprietary capacity of this state, either by strike, lockout, or other means."<sup>8</sup>

During the 1950s the striking activity largely subsided. There is no evidence of any strike involving an affiliate of the NEA between 1951 and 1963.<sup>9</sup>

Although, as mentioned above, the NEA enacted a policy statement in 1947 encouraging group teacher action, there was very little intensification of these efforts by NEA affiliates in the 1950s. By 1961, however, a new environment had emerged. A local of the AFT had boycotted classes in New York City in 1960 and 1962 and had gained a collectively bargained agreement by July 1962. At the 1961 Atlantic City convention of the NEA a resolution concerning teacher-board of education relations was adopted. It stated, in part:

The National Education Association believes . . . that professional education associations should be accorded the right . . . to participate in the determination of policies of common concern including salary and other conditions for professional service. . . . [This participation] should preclude the arbitrary exercise of unilateral authority by boards of education and the use of the strike by teachers as a means for enforcing economic demands.<sup>10</sup>

The following year at the Denver convention, Resolution No. 18 was adopted, which modified the resolution above. Instead of stating a belief "that professional education associations should be accorded the right" of participatory decision-making, the 1961 resolution was reworded to state: "The National Education Association insists on the right of professional associations" to participate in decisions of common interest. This resolution also contained the first reference to the term *professional negotiations*.<sup>11</sup> By 1965, the reference to the preclusion of the use of strikes by teachers, which was found in the 1961 and all subsequent resolutions, was omitted, and in 1968 the delegation gave official support to striking affiliates.<sup>12</sup> Thus there is evidence of a rather consistent and continual increase in the militancy advocated by the NEA, especially since the emergence of a viable AFT as a competitor for membership.

*The NSEA.* The Nebraska State Education Association is one of sixty-six state and territorial associations affiliated with the NEA. Strictly speaking, however, the NSEA is an independent, incorporated organization whose policies are not controlled or superseded by the NEA. The NSEA was originally founded in 1867 and was reorganized in 1922 into its present form as a corporation with employees. Active voting membership is open to all people engaged

in teaching or the supervision of teaching in Nebraska. The organization had 19,140 members during the 1972-73 school year.<sup>13</sup>

The NSEA's present activities consist primarily of consultation with local associations on negotiations and professional rights and responsibilities, and of lobbying during Nebraska legislative sessions for legislation in the interest of the teaching profession. Six full-time men are employed to work with local associations throughout the state on a continuous basis. And, to a significant extent, the present teacher negotiation laws in Nebraska which are discussed in the following section owe their existence to the lobbying efforts of the NSEA in the mid and late 1960s.

#### *Nebraska Teacher Negotiation Statutes*

*The Nebraska Public and Utility Employees Act.* The Nebraska statutes dealing with teacher negotiations actually may be traced back to the 1947 Nebraska Public and Utility Employees Act mentioned earlier. Owing to an impending telephone strike, the 1947 Unicameral passed this act with an emergency clause putting it immediately into effect. The act called for the formation of the Court of Industrial Relations (CIR), composed of five judges to be appointed by the governor, with the consent of the legislature. A six-year staggered term was established. This court was given the authority to settle labor disputes so as to maintain the uninterrupted operation of Nebraska's public utilities. The original statute specifically excluded employment in governmental service from the jurisdiction of the CIR. The establishment of the CIR, however, set a precedent which was conducive to the extension of its jurisdiction in the 1960s.<sup>14</sup>

By 1965, it was apparent that a need for legislation concerning labor relations in public employment existed. During that year the Nebraska Supreme Court ruled that the CIR did not have the jurisdiction to order bargaining between the city of Hastings and utility employees represented by the International Brotherhood of Electrical Workers.<sup>15</sup>

*The Nebraska Teachers' Professional Negotiations Act.* In 1967 the Nebraska Unicameral amended the 1947 Court of Industrial Relations Act, as it had come to be called, so as to extend the jurisdiction of the CIR to governmental services rendered in a proprietary capacity. In this session the legislature also passed the



Nebraska Teachers' Professional Negotiations Act, the first labor legislation dealing specifically with teachers.<sup>16</sup> This act, submitted as L. B. 485, asserted the right of teachers in Class III, IV, and V school districts to organize for purposes of representation on matters of employment relations.<sup>17</sup> However, this statute required recognition by the school board only if a majority of the board's members so desired. After the teacher organization's request to the board to meet and confer on matters of board-employee relations, the statute allowed the board thirty days to accept or reject this request, in whole or in part, and to notify the organization in writing as to its decision. If the request is granted by the board, and if mutual agreement is reached on the terms and conditions of employment, the statute provides that all matters are to be reduced to writing and signed by representatives of both parties. Where disagreement on employment matters persists, provisions are made for the submission of the dispute to a fact-finding board for review and recommendations. Although these recommendations are to receive the good faith consideration of both parties, they are not binding upon either. If negotiations arrive at an impasse and the recommendations of the fact-finding board are rejected by one or both parties, or if the board rejects the organization's request to negotiate "in whole," the provisions of the act are considered to have been exhausted.

It should be obvious that the statute was intended to be permissive in nature. However, teacher organization, recognition, and mutual board-teacher decision-making did receive legal sanction through the statute and this alone constituted a significant departure from previous unilateral determination of teachers' salaries and conditions of employment. Beginning with the 1967-68 school year and continuing thereafter, local and county teachers' associations throughout Nebraska began to seek legal recognition from their respective school boards for purposes of collective representation on employment matters.

*L. B. 15, the 1969 Amendment.* Despite the progress achieved under L. B. 485, obvious limitations still existed in the statutory framework which had been established. In 1969 a bill was introduced into the Unicameral which was modeled after New York's Taylor Act.<sup>18</sup> This bill originally would have created a Public Employment Relations Board for Nebraska to settle disputes involving governmental service. In its final form, the bill was modi-

fied so as to utilize the existing Court of Industrial Relations rather than creating a new board. Thus the bill became another amendment to the Court of Industrial Relations Act and, after passage, created a method of handling public employee relations which had a more judicial orientation than those which existed in most states.

As amended, the act covers employees of the state of Nebraska, political subdivisions thereof, municipal corporations, and public power and irrigation districts. Under the act persons, organizations, or school districts which are subject to the jurisdiction of the Nebraska Teachers' Professional Negotiations Act (L. B. 485) are excluded from the jurisdiction of the Court of Industrial Relations until all provisions of L. B. 485 are exhausted. Thus, the present CIR has jurisdiction over labor disputes in the above-mentioned public sector entities, and it may determine equitable settlements upon petition by employer or employee groups in these organizations. It has the power to issue summons or subpoenas, to compel production of documents, to make investigations, and to certify secret ballot representation results. Orders of the CIR are appealable directly to the Nebraska Supreme Court. Finally, lockouts, strikes, slowdowns and other work stoppages are still illegal under the amended act.<sup>19</sup>

*Summary of Present Legal Framework.* For public school teachers in Nebraska, the present legal procedures may be summarized as follows. Under L. B. 485, all teachers in Class III, IV, and V districts have the right to organize, where such organizations have the right to represent their members in matters of employment relations with local school boards. Following a request by the organization to the school board to meet and confer, the board may accept or reject the request in whole or in part. If the board rejects the request in whole, the provisions of L. B. 485 are exhausted and the teacher organization may invoke the jurisdiction of the CIR under the 1947 act, as amended in 1969. If the board accepts the request to meet and confer, in part or in whole, then negotiations proceed and a fact-finding board may be convened in the case of impasse. If the recommendations of the fact-finding board are rejected by one or both parties, the provisions of L. B. 485 are again exhausted and either party may take the dispute to the CIR for settlement. If agreement is reached at any stage in the process, all matters are to be reduced to writing and signed

by members of both parties. In practice, this last provision of a signed master contract has often been overlooked by the disputants.

The status of Class I, II, and VI school districts is somewhat less certain. Since these districts are not covered by L. B. 485, but since they are political subdivisions of the state of Nebraska as provided in L. B. 15, the present interpretation is that they fall directly under the jurisdiction of the CIR as stipulated in the 1947 act as amended. This is a less than ideal status for these districts, however, in that there are no provisions for formal recognition, impasse, fact-finding, etc., to which they are subject. To date, the existence of formal negotiations in these districts is fairly uncommon.

#### *Key Court Interpretations*

*CIR Salary-Setting Authority.* With respect to the negotiations laws, perhaps the key element in the Nebraska statutory framework was the establishment of salary-setting authority with the CIR, a highly unusual ceding of budgetary power. Section 48-818 of the Nebraska Public and Utility Employees Act, as amended in 1969, contains the provisions setting forth the salary-setting authority of the Court.

The finding and order or orders may establish or alter the scale of wages, hours of labor, or conditions of employment, or any one or more of the same. In making such findings and order or orders, the Court of Industrial Relations shall establish rates of pay and conditions of employment which are comparable to the prevalent wage rates paid and conditions of employment maintained for the same or similar skills under the same or similar working conditions. In establishing wage rates the court shall take into consideration the overall compensation presently received by the employees, having regard not only to wages for time actually worked, but also wages for time not worked, including vacation, holidays, and other excused time, and all benefits received, including insurance and pensions, and the continuity and stability of employment enjoyed by the employees.<sup>20</sup>

Thus the Court is authorized to make salary and conditions of employment settlements, when petitioned to do so under the provisions of the act, which are in accordance with standards of comparability with similar work, workers, and conditions. Not unexpectedly, the interpretation of comparability and the determination of similar work, workers, and conditions have been the sources of continuing controversy in recent key Court decisions.

*The Milford Case.* In the Milford case,<sup>21</sup> the CIR rejected the petition filed by the Milford Education Association on the grounds

that the over-all compensation in the salary schedule proposed by the school board was comparable to the present wages paid in other similar districts. The teachers' association was asking for only a \$100 increase in the base pay, index increments for every nine hours of additional course work instead of twelve, and \$11 per month instead of \$10 for health and accident insurance. The CIR defined twenty-nine school districts as being comparable to Milford's, primarily on the basis of student enrollment, and found that only one of these twenty-nine districts provided over-all compensation greater than that set by the Milford school board.

*The Weeping Water Case.* Again in the Weeping Water case,<sup>22</sup> the petition of the plaintiff teachers' association was rejected by the Court as it was determined that the salary schedule adopted by the school board met the statutory criteria. Here the CIR noted that the parties had been negotiating for several months and that agreement had been reached on all matters except base salary. The ruling argued that consideration should be given to the history of the negotiations and the litigation between the parties, and that the burden was on the plaintiff to demonstrate that the provisions of the statute had not been complied with.

*The Seward Case.* Perhaps the most significant case to come before the CIR was the 1971 dispute in the Seward, Nebraska, school district.<sup>23</sup> At issue here was not only a disagreement between the disputants with respect to salaries and conditions of employment. Two broader issues also came under consideration, namely the legitimacy and necessity of an index salary schedule and the legality of the salary-setting authority of the CIR. The Seward school board argued that the imposition of a uniform index salary schedule infringed upon the rights of the school district and was discriminatory against beginning teachers. The Court concluded:

We do not hold or infer that an index salary schedule may be required in all cases. Our decision in this case is based on the evidence in the record that an index salary will, in this instance, establish comparable rates of pay and will effectuate the purposes of Chapter 48, Article 8.<sup>24</sup>

Of even more significance was the school district's argument that the salary-setting authority of the Court was negated by Sec. 48-810.01 of the Court of Industrial Relations Act, which states:

Notwithstanding any other provision of the law, the State of Nebraska and any other political or governmental subdivision thereof cannot be compelled

to enter into any contract or agreement, written or otherwise, with any labor organization concerning grievances, labor disputes, rates of pay, hours of employment or conditions of work.<sup>25</sup>

The Court ruled, however, that its order was not a contract or agreement and that acceptance of the Seward district's contentions would nullify the authority granted to the Court in Sec. 48-818 of the act. The ruling of the Court was appealed to the Nebraska Supreme Court and on 12 July, 1972 the Supreme Court affirmed four to three the CIR order.<sup>26</sup>

Thus by the summer of 1972 the statutory framework which recognized the legitimacy of bilateral determination of teachers' salaries and conditions of employment was firmly established in Nebraska. The effects of such negotiations were presumably being felt prior to this time, however, owing to the existence of formal professional negotiations in many districts in the late 1960s. And Nebraska teachers have experienced a modest, although not insignificant, improvement in salaries relative to other states during the general period in question. During the 1966-67 school year, the estimated average classroom teacher salary in Nebraska was \$5,619 whereas the national average was \$6,821. The Nebraska salary figure ranked forty-first nationally for 1966-67. By the 1972-73 school year, the corresponding figures were \$8,730 for Nebraska and \$10,460 nationally. Although still well below the national average, Nebraska had improved its rank to thirty-fourth by this time.<sup>27</sup> Of course, these figures, by themselves, provide no evidence of a relationship between the emergence of professional negotiations and the indicated relative salary improvement of Nebraska's teachers. Before turning to the empirical question of the magnitude of any salary effects associated with professional negotiations in Nebraska, chapter 3 will be devoted to a brief summary and evaluation of related empirical studies which have attempted to determine various economic effects associated with such negotiations.

### 3. Prior Empirical Work

As indicated earlier, the emergence of professional negotiations for public school teachers is a recent phenomenon. It has only been during the last eight to ten years that such negotiations have occurred within a legitimate legal environment. Not surprisingly, therefore, meaningful empirical research attempting to determine the economic effects of such negotiations is of an even more recent vintage. This chapter will briefly survey and evaluate a relatively limited number of studies which deal with these issues. I will conclude by summarizing some general shortcomings of the existing work, so as to provide a convenient perspective for the empirical extensions of chapters 4 and 5.

#### *The Rehmus-Wilner Study*

In a 1968 University of Michigan monograph, Charles Rehmus and Evan Wilner examined a sample of twelve Michigan school districts within which professional negotiations had begun in 1966-67.<sup>1</sup> They estimated the average annual percentage changes in B.A. minimum and M.A. maximum salary levels for these districts for the years from 1961 to 1968. They found that the average annual percentage increase in B.A. minimum salaries from 1961 to 1966 was 2.8%, whereas from 1966 to 1968 it jumped to 8.5%. Much the same pattern was observed for the average annual percentage increases in M.A. maximum salary levels—3.5% annually prior to 1966 and 10.5% thereafter. Rehmus and Wilner concluded that negotiations had produced salary increases nearly three times higher than they would have been in the absence of such negotiations.

Of course, this study is subject to important limitations which cast suspicion upon their conclusion. It is quite possible that other factors could have caused the significant salary increases after 1965. The authors made no attempt to derive a differential or relative salary effect attributable to negotiations. The sample size was severely limited, casting doubt on the external validity of the results. The techniques employed do not allow for the assignment of levels of statistical significance to the results. Finally, there is considerable evidence that the years 1965-67 were ones of very rapid increases in salary levels for both organized and unorganized teach-

ers.<sup>2</sup> Fortunately, somewhat more precise and meaningful statistical techniques have been used in more recent studies.

#### *The Thornton Study*

One of the more comprehensive studies was completed in 1970 by Robert Thornton.<sup>3</sup> Thornton employed a least-squares multiple regression model with minimum and maximum B.A. and M.A. salary levels as alternative dependent variables and a negotiating-nonnegotiating dummy variable as one of the independent variables. Utilizing 1969 cross-sectional data from eighty-three school districts across the nation which were located in cities of at least 100,000 population, as well as negotiations data from a Brookings Institution questionnaire, Thornton formulated a separate regression equation for each of the alternative salary specifications. The coefficients of the negotiation variable were all of the expected positive sign and were all statistically significant. The corresponding salary differentials ranged from \$160 at the M.A. minimum level to \$3,132 for the M.A. maximum, or in relative terms, from 2.3% to 28.8%. After adjustments for spurious correlation, Thornton concluded that professional negotiations had raised teachers' salaries above those in nonnegotiating districts by from 1% to 4% at the three lower salary steps to 23% at the M.A. maximum level.

Although the Thornton study constitutes a significant improvement over previous work, certain weaknesses remain. The coefficient of determination for the M.A. maximum regression drops to .07, which leaves one with diminished confidence in the explanatory power of this specification. Once again, the external validity of the study may be questioned due to Thornton's consideration of only larger city school districts. Finally, the multistate nature of the sample presents problems. As mentioned at the outset, many relevant factors are variable among different state teacher markets, and disregard for these variations may cause errors in the estimation of the effects of teacher negotiations.

#### *The Kasper Study*

A study which has received considerably more criticism than the Thornton work was published in 1970 by Hirschel Kasper.<sup>4</sup> Kasper attempted to estimate the effects of negotiations on average state-wide teacher salaries for the 1967-68 school year, using state per capita income, extent of urbanization, support from state reve-

nues, expenditures per pupil, and the strength of teacher organization as primary independent variables in his model. Data were gathered from state sources and from AFT and NEA headquarters. Several alternative measures of both salaries and organizational strength were used and both single equation and two-stage least-squares estimates were obtained. In the single equation form, Kasper found no significant salary effect related to teacher bargaining strength. The two-stage estimates showed a significant effect attributable to negotiations of no more than 4%.

Both conceptual and statistical problems exist in the study. Teacher negotiations typically occur at the local school district level, not on a state-wide level. No interdistrict, intrastate comparisons were made in the study and no index of local bargaining strength was employed. Misspecification of the organizational strength variable was another limitation. Kasper's primary organizational strength variable was obtained by summing the number of instructional personnel represented in local district negotiations and dividing that number by the total number of classroom teachers in the state. *Instructional personnel* was defined so as to include principals, supervisors, librarians, etc., who are usually not covered under a negotiated agreement. This variable is also defined very broadly so as to include everything from the simplest recognition agreement to formal negotiations. Finally, both Kasper and Thornton hypothesize a positive relationship between teacher salaries and the presence of negotiations, yet each performs a two-tailed significance test of the regression coefficient.

#### *The Landon-Baird Study*

In 1972, John Landon and Robert Baird published a modified version of an earlier study which was designed specifically to overcome the weaknesses of the Kasper and Thornton studies.<sup>5</sup> The authors collected data from forty-four school districts of 25,000 to 50,000 enrollment. These data contained information on membership in teacher organizations and on bargaining arrangements in these districts. Using multiple regression equations similar to those of Kasper and Thornton, with beginning teachers' salaries as the dependent variable, they employed three different specifications for the teacher organization variable. These were: (1) a dummy form similar to Thornton's, (2) the percentage of teachers in a district who were members of the NEA, and (3) the percentage of teachers who were members of the AFT. With the first specification, Landon



and Baird found that salaries tended to be significantly higher in negotiating districts, by 4.9% or \$251.17 on the average. With the NEA variable, the coefficient was positive but of lesser significance than the dummy variable coefficient. The AFT coefficient became negative and insignificant.

Unfortunately, there are also some problems inherent in the Landon-Baird analysis. They seem to fall into the same potential trap as did Thornton in considering only large school districts. And although they are critical of both the Thornton and the Kasper specifications of the negotiation variable, their alternatives appear to offer little improvement. Their first specification is essentially the same as Thornton's and it provides the most significant results. The percentage of teachers who are members of the NEA may not meaningfully indicate bargaining power. In many states in the late 1960s, including Nebraska, unified membership in a local association, the state NEA affiliate, and the NEA was not required. Thus teachers in a given school district might be actively engaged in negotiations while having no members in the NEA. Alternatively, a district might have 100% NEA membership and yet not be negotiating at all. And the AFT variable is clearly inappropriate, as the authors admit, in that the local membership in the AFT averaged only about 10% in their sample. Finally, Landon and Baird's use of beginning teachers' salaries as the sole dependent variable is questionable. Several authors have argued that beginning salaries are still largely set by market forces and that the real opportunity to utilize bargaining power comes at the B.A. maximum, M.A. minimum, and M.A. maximum steps.<sup>6</sup>

#### *The Frey Study*

A study with perhaps the most advanced theoretical base developed to date was undertaken by Donald Frey in his doctoral dissertation completed at Princeton University in 1972.<sup>7</sup> His model used both base pay and maximum pay as dependent variables. Both cross-sectional and pooled data from 298 New Jersey school districts were utilized. The sample was limited to those districts which had at least 750 pupils enrolled. The cross-sectional results revealed no significant effect on either base pay or maximum pay associated with teacher negotiations. For the pooled regressions, the study indicated that negotiations may have raised the base pay from 0.4% to 2% in negotiating districts. However, the impact of negotiations on maximum pay was either insignificant or negative.

Frey's study is in many ways superior to previous work, primarily because he recognizes the importance of limiting the analysis to a single state teacher market. Some shortcomings remain, however. As in previous studies, Frey restricts his sample to relatively large school districts, although this restriction is not nearly so severe as, for instance, in the Landon-Baird study. Nevertheless, almost one half of the school districts in New Jersey were omitted.

Secondly, the New Jersey Labor Mediation Act was amended in 1968 to create a Public Employment Relations Commission. Thus the first year that results of formal bargaining could have been observed was the 1969-70 school year, the last year which Frey considers in his study. Although Frey discounts this possibility, it may be that this first year was a transitional one wherein the full impact of formal negotiations had not yet been felt.

Thirdly, Frey uses a dummy variable for professional negotiations which takes the value of one for districts with contracts on file with the Public Employment Relations Commission for the 1969-70 school year, and zero otherwise. As he admits, this may be a poor indicator of the extent of negotiations. Especially during the first full year of the amended act's existence, many schools could have conceivably failed to file such contracts. Or alternatively, meaningful negotiations may have been occurring in many districts without culminating in a formal contract.

Finally, although Frey considers the effects of negotiations on both base pay and maximum pay, his conception of maximum pay is unclear. He defines maximum pay as "base pay plus the experience increment times the number of steps on the salary schedule."<sup>8</sup> In terms of the salary schedule presented in Appendix A of this study, Frey's maximum pay would presumably be equivalent to the base salary  $+0.06 \times 12$  years, or 1.72 times the base salary. This conception of maximum pay appears to ignore all horizontal increments in salary which may be gained through acquiring additional college credits beyond the B.A. degree. It is obvious from Appendix A that this specification of maximum pay may seriously understate the true maximum salary attainable and the impact of negotiations upon that maximum.

#### *The Hall-Carroll Study*

A more geographically limited study was published in early 1973 by W. Clayton Hall and Norman Carroll.<sup>9</sup> They attempted to estimate the effects of professional negotiations on both salaries

and class size, using data from 118 elementary school districts in suburban Cook County, Illinois, for the 1968–69 school year. Using two alternative salary models, one of which was similar to Kasper's formulation, the authors found a salary effect attributable to negotiations of roughly \$165 to \$200. Curiously, they also found that the existence of negotiated contracts tended to increase the student-teacher ratio by about 1.3 students per teacher. Thus, it appears that school boards may be offering organized teachers higher salaries, but only in exchange for larger classes.

The study is a further improvement in several respects, suffering only in that its methodological explanations are sometimes inadequate or unclear. The limited geographical sample in the study eliminates the aggregation problems of many of the previous studies. However, the authors' specification of the variables used is imprecise, and they give no specific reason for their consideration of only elementary districts.

#### *The Schoenberger Study*

Finally, a recently completed doctoral dissertation by R. E. Schoenberger at Clark University adds more evidence to the questions at hand.<sup>10</sup> For the state of Wisconsin, Schoenberger attempted to measure both the effects of teacher negotiations and of school district monopsony power on teachers' salaries. Strictly speaking, a monopsony labor market is one wherein there is only one employer of a given type of labor, although operationally monopsony power may exist where any small number of employers exert significant wage-setting power. Economic theory suggests that where monopsony power is predominant, wages will be established at levels lower than those which would exist in the absence of such power. For teachers, monopsony forces may exist where there are few geographically proximate school districts competing for teachers' services.

Schoenberger's cross-sectional study covered the school years 1969–70, 1970–71, and 1971–72 and examined 309 of the 368 K-12 school districts in Wisconsin. Utilizing a functional formulation similar to previous studies, he found that teacher negotiations in Wisconsin accounted for salary differentials of about 3% on the average. Schoenberger also found significant negative salary effects attributable to monopsony school board power as measured by the geographic size of the school district.

This study is relatively free of most of the earlier conceptual and statistical problems. Although Schoenberger does observe some problems of multicollinearity in his regression model once a variable for urbanization is included, this does not negate his findings. There are, however, several states which have not yet experienced widespread school district consolidation, as has Wisconsin, and for which a monopsony variable would seemingly be inappropriate. As mentioned earlier, no such widespread consolidation has occurred in Nebraska.

### *Summary*

It should be obvious from the brief survey presented here that meaningful research into the subject of the salary effects of professional negotiations has already been undertaken. Furthermore, many of the conceptual and methodological weaknesses of earlier studies are being eliminated. Yet consistency of the findings is still somewhat lacking. On a pessimistic note, Kasper has observed:

All alternative approaches to the broad question of the effect of representation on wages in the public sector currently deserve the presumption of being a "contribution" because (a) our knowledge of the effects in the public sector is negligible, if not non-existent, however firm our impressions of private sector effects; (b) the nature or style of representation in the public sector is quite different from that in the private sector; (c) the public (nonfederal) sector is large and expanding; and (d) collective representation within it is relatively new and of increasing frequency.<sup>11</sup>

More optimistically, all the studies to date indicate a relative salary effect associated with professional negotiations ranging from 0 to 5%. And, in some cases, the differences within this range are more of interpretation than of magnitude. Baird and Landon find a 4.9% relative salary effect to be a substantial influence, whereas Kasper attaches "little, if any" significance to a 4% effect. Perhaps, as Kasper has suggested, "Teachers will be less inclined to quibble about this difference than economists."<sup>12</sup>

Nevertheless, some general shortcomings of the existing studies may be listed. Only two of the studies, the Frey and Schoenberger contributions, employ precise statistical techniques while limiting the analysis to the most significant population, a state teacher market. Use of aggregate data in the other studies may merely imply that part of the observed impact of professional negotiations on teachers' salary levels was actually attributable to other interstate or interregional influences. Furthermore, there is a general incon-

sistency in the studies with respect to the specifications of the negotiations and salary variables. These inconsistencies will be given further attention in chapters 4 and 5. Also, the samples of the studies tend to be primarily urban in nature, and this may again bias the results. Finally, all of the studies are concerned only with the impact of professional negotiations upon relative salary levels between organized and unorganized teacher groups. This impact is expressed as an inter-school district or interregional effect. It is also possible, however, that negotiations have had an impact upon the internal salary structure of a given school district, and specifically upon the secondary-elementary salary differential. The following chapter is devoted to consideration of this intra-school district effect of professional negotiations.

## 4. Professional Negotiations and the Secondary-Elementary Salary Differential

HISTORICALLY, the average salary levels of secondary teachers in the United States have consistently been higher than those of elementary teachers. Although these secondary-elementary salary differentials may be partially explained by differences in education and experience, there has also been a tendency to view secondary teaching and elementary teaching as two distinct types of occupations, varying in difficulty and in importance, and requiring "equalizing differences" in compensation. As two noted authors on the subject contend, "For a long time it was felt that elementary school teaching was both less difficult and less important than high school teaching, and this was considered justification for paying high school teachers more."<sup>1</sup>

There is considerable evidence, however, that this view is changing or has changed in most school systems, and that secondary-elementary salary differentials are declining.<sup>2</sup> Although several plausible reasons exist for this changing view, perhaps the most significant causal factor has been the emergence of organized teacher groups and their insistence upon the use of uniform single salary schedules for salary determination purposes. This chapter will briefly explore the rationale which organized labor groups in both the private and public sectors have used in attempting to achieve uniform salaries. The major portion of the chapter will then attempt to derive empirically the magnitude and direction of the effect which organized teacher activities have had upon the secondary-elementary salary differential in the Nebraska public schools.

### *The Private Sector Experience*

It has long been a goal of trade unionism in the private sector to impose uniform, industry-wide wage policies. "Unions in highly competitive industries, especially those for which wages are a large part of the cost of production, will almost always pursue a standard wage policy within a given product market. They set uniform time rates or piece rates for all firms so as 'to take labor out of competition.' "<sup>3</sup>

With respect to the internal wage structure of the firm, this standard wage policy typically takes the form of a union contract or other type of collective agreement whereby uniform procedures are applied to all workers in a group, and where such procedures can be changed only at fixed time intervals after negotiations with the union.

The processes by which these agreements are negotiated, administered, and enforced are included in the term "collective bargaining." The word "collective" indicates that the agreement is negotiated on behalf of a group of workers. The workers present a united front to their employer, and the terms of the bargain apply uniformly to all members of the group.<sup>4</sup>

The rationale for such a wage policy of collective uniformity apparently lies in the belief that the potential for wage injustices is substantial in the absence of such policies, especially given the existence of some monopsony power. This view is clearly evident in the following description by two union officials of the wage inequity problems of the preunion steel industry.

Of all the chickens unions stir up during the organizing stage, none comes home to roost with a louder crow than the wage inequality one. . . . Until SWOC [Steel Workers Organizing Committee] won the first collective bargaining contracts its research department functioned almost exclusively as an agent to ferret out wage inequalities within plants and between plants. . . . Loud speakers blared at the mill gates, "Who said a crane man is worth twenty cents more in Pittsburgh than in Chicago? . . . How about your mill? Is a millwright in the blooming mill worth eighteen cents more than a millwright in the electric furnace department? No! . . . join the union and bring justice to all workers!"<sup>5</sup>

Thus the trade union in the private sector has attempted partially to supplant the purely economic forces of wage determination and substitute for these such criteria as "justice" and "equal pay for equal work."

Worker protest against the competitive market concept of the employment relationship is one of the foundation stones upon which the institution of trade unionism in the United States has been erected. It is of the essence of trade union wage policy that wage rates be judged in relation to such non-economic criteria as "fairness" and "equity" and to seek to establish wage relationships that can be rationalized in terms of these non-market values.<sup>6</sup>

The effects of such a standard union wage policy upon the general wage structure in the United States are far from conclusive. With respect to the intraindustry wage structure, however, the evidence seems to support an initial narrowing of wage differentials,

although this narrowing may not continue over time. In their well-known study of the wage structure in the United States, Lloyd Reynolds and Cynthia Taft conclude: "The effect of union efforts to reduce wage differentials among rival producers appears to be moderately favorable—not so completely beneficial as unions sometimes allege, but sufficiently so to warrant a positive score for collective bargaining."<sup>7</sup>

And to the extent that trade unions have been successful in negotiating a uniform wage package with an employer, the effect upon the internal wage structure of the firm seems clearly to have been a narrowing or elimination of any pre-existing intraoccupational wage differentials.

#### *The Public Sector Teacher Market*

*The Structure of Teacher Compensation.* In most school districts, a number of factors exist which might explain salary differentials among teachers. Most of these factors are especially significant in explaining secondary-elementary differentials.

Perhaps the most significant factors in explaining teacher salary determination are experience and training. It is generally felt that teachers become more effective and productive as additional classroom experience is acquired. Training may be considered a determinant in several ways. Teachers will presumably be more effective in the classroom if they are sufficiently educated in terms of college preparation in education-related courses and in courses dealing with the subject matter which they teach. Secondly, teacher salaries may be viewed partially as compensation for the costs incurred in acquiring a sufficient education for teaching purposes. This second factor is not as important today in that the costs of a four-year teacher-training program do not vary significantly among colleges, at least in public institutions.<sup>8</sup> However, teachers may be given additional compensation for college work beyond, say, the B.A. degree. This additional compensation may be viewed either in terms of productivity enhancement or in terms of cost compensation. To the extent that educational levels or experience levels differ among teachers in a given district, salary differentials can be expected.

Teachers are also usually given additional compensation for assuming duties of an extracurricular nature such as coaching, club sponsorship, and the like. The existence of these extra duties in a school district provides further justification for salary differentials.



It is certainly also probable that market forces have some influence upon intradistrict salary differentials, although there is disagreement upon the significance of such forces. Wellington and Winter contend that "in the public sector, too, the market operates. In the long run, the supply of labor is a function of the price paid for labor by the public employer relative to what workers earn elsewhere."<sup>9</sup>

However, two noted experts on teacher markets argue:

Sometimes market forces are recognized but usually in a sub rosa fashion, and they are regarded as a temporary disturbance which will go away soon. In the literature on teacher salaries the terms supply and demand appear frequently enough, but almost always in a quite mechanistic way. . . . But rarely is attention given to the competing demands for teachers.<sup>10</sup>

Although one can quibble about the extent to which market forces operate, there is ample evidence to suggest that such forces have been considered by school officials in establishing the structure of compensation. During a period of relative teacher shortages such as the first three-fourths of the 1960s, it was not unusual to find additional compensation being offered by school systems to teachers whose training was in areas of crucial shortage such as special education, music, mathematics, etc. As Charles Perry and Wesley Wildman have observed:

In the absence of collective bargaining, . . . differentials were set in the interests of minimizing recruiting problems and turnover. [A school system maintains] a compensation structure which enables it to recruit individuals from inside and outside the system into the various positions within the organization and to retain those individuals.<sup>11</sup>

Another factor which may contribute to salary differentials within a school system is employer monopsony power. Even where school district monopsony power may be insufficient to have an impact on the general level of compensation in a district, this power may affect the structure of compensation. School districts may limit the differentials which would otherwise be justified for particular teachers in the system because such teachers might be particularly susceptible to any monopsony power which may exist. For instance, young, unmarried males have much more labor market mobility than do older, married female teachers. The lack of mobility of this latter group makes them more vulnerable to any existing monopsony power. Intensifying this vulnerability is the likelihood that most of these teachers would tend to be secondary

wage earners. In short, the supply of this group of teachers is relatively inelastic.<sup>12</sup>

It is not unreasonable to suspect that a disproportionate number of teachers possessing these vulnerable characteristics would be elementary teachers. The vast majority of elementary teachers in the United States are secondary wage-earning married females who are locked in to the narrow geographic market surrounding their husband's employment location.

Finally, the feeling may persist in some unprogressive school districts that secondary teaching requires greater compensation than elementary teaching for reasons not mentioned earlier. In addition to the misconception that secondary teaching requires more skill, it is sometimes argued that secondary teachers must be more specialized in their academic training. Compensation should then reflect the increased burden assumed in acquiring this specialization. Also the view is often expressed that secondary teachers must deal with more serious discipline problems and that they should be reimbursed for this disamenity.

Although the logic of some of the rationale presented above may be questionable, many of these reasons have been effectively used to justify salary differentials between secondary and elementary teachers. Elementary teachers would seem to be more susceptible to the internal exercise of school board monopsony power and, to the extent that such beliefs still exist, they suffer further from the view that elementary teaching requires less skill or competence.

*Professional Negotiations and the Uniform Salary Schedule.* As in the private sector, organized teacher groups have for some time been concerned with the salary inequality issue. Prior to organized activity, teachers' salaries were established on the basis of an individual agreement between a teacher and the school board. As the dissatisfaction with this type of arrangement became more widespread, a movement led by the NEA began which favored the adoption of some type of schedule which would make the salary-setting process less arbitrary. An education historian, Hazel Davis, has observed: "Payment of teachers' salaries according to a dependable schedule rather than on the basis of individual bargaining has long been recognized as important to the security and dignity of the teaching profession."<sup>13</sup>

The first type of schedule which became popular was the *position type schedule*. "In this type of schedule the school board would establish a salary for each position in the school. . . . Typi-

cally the salaries differed from grade to grade, and high school salaries would almost invariably be higher than those at the elementary level.”<sup>14</sup> Although this type of schedule removed much of the uncertainty and arbitrariness which had earlier typified teacher salary determination, it certainly did little to remove the inequities associated with secondary-elementary salary differentials.

Coincident with the more recent movement toward teacher organization has been the widespread adoption of the type of schedule found in Appendix A, which is commonly called the *single salary schedule*. “The distinguishing characteristic of the single salary schedule is that the salary class to which a classroom teacher is assigned depends on the professional qualifications of the teacher rather than the school level or assignment.”<sup>15</sup>

As the schedule in Appendix A indicates, the term *professional qualifications* is defined in terms of the college training which a teacher has acquired and the number of years of classroom teaching experience which he or she possesses. Many of the earlier disputes over salary inequalities centered on the school board’s contention that different classes of teachers differed in “value” to the school district. Hence, secondary teachers received greater compensation as a group than did elementary teachers, mathematics teachers received more than physical education teachers, etc. As teachers developed a collective voice and began arguing for implementation of single salary schedules, these “value” distinctions have tended to disappear in many school systems. “The single salary schedule was regarded as bringing a feeling of contentment and professionalism. A teacher would no longer be an elementary teacher, but a teacher, a member on equal footing of the profession that now included all teachers.”<sup>16</sup>

The parallel with the private sector should be obvious. The organized activities of teachers have included demands for salary standardization which are similar to the earlier demands made by private sector trade unions. And just as the evidence in the private sector supports the belief that collective bargaining has led to an initial narrowing of intraindustry and intraoccupational wage differentials, a similar narrowing of such differentials should be expected in the public sector teacher market. The following sections of this chapter are devoted to the development and use of a multiple regression model to test this expectation with respect to the secondary-elementary salary differential in the Nebraska public schools.

*The Regression Model*

Most of the variables which may significantly affect the magnitude of secondary-elementary salary differentials in a particular school district have already been discussed in previous sections. For the purposes of the model which will be developed here, the following variables deserve reconsideration. Years of teaching experience was previously indicated as a primary determinant of teachers' salaries. In a given school district, for example, if secondary teachers have accumulated a large number of collective years of experience while the elementary teachers as a group are relatively inexperienced, one would expect the average secondary-average elementary salary differential to be fairly large, other things remaining constant.

Secondly, the training or education of teachers should be a significant determinant of teacher salaries. In those districts where the educational attainment of secondary teachers on the average exceeds substantially that of elementary teachers, a relatively large average secondary-average elementary salary differential would be expected, *ceteris paribus*.

Third, the extent to which the teaching staff, and especially the elementary teaching staff, is composed of immobile, secondary wage earners should affect the magnitude of the differential. As indicated earlier, a school board may be able to exercise some monopsony power over the salaries of such teachers, even in the absence of any power to do so for all teachers in the system. Thus, for instance, in those districts where the elementary teaching staff is composed overwhelmingly of married females, the secondary-elementary differential might conceivably be larger than in the absence of such a situation.

Another factor alluded to earlier was the extra compensation paid for assuming extracurricular duties. Unfortunately, little reliable data exist for Nebraska on this type of compensation by elementary and secondary responsibilities. A priori, it would be expected that more opportunities for such extra compensation would be available at the secondary level. Since this expectation cannot be supported by available data, however, and since the additional duties at the secondary level may in some cases be assumed by elementary teachers, this variable was omitted from the model.

The significance of market forces was also mentioned previously, specifically with respect to teacher shortages in particular subject matter areas. This is another variable which is difficult to specify

operationally. Furthermore, the period of time which will be the central concern of this study is the 1970–71 school year. By this time, the teacher shortages which were projected in the early 1960s had virtually disappeared in Nebraska and nationally. For these reasons, this variable was also omitted from the analysis.

Finally, the central hypothesis running through this chapter has been that formal professional negotiations between teachers and boards of education will tend to narrow salary differentials. It will be expected, therefore, that where professional negotiations are occurring, secondary-elementary salary differentials will be smaller than in nonnegotiating districts.

Assuming linear relationships and temporarily ignoring signs, the model may be summarized symbolically in the following regression equation form:

$$D = a + bE_s + cE_e + dT_s + eT_e + fS + gN + u$$

where:

$D$  = average secondary–average elementary salary differential for a given school district

$E_s$  = teaching experience of secondary teachers in a given school district

$E_e$  = teaching experience of elementary teachers in a given district

$T_s$  = training or education of secondary teachers in a given district

$T_e$  = training or education of elementary teachers in a given district

$S$  = secondary wage earner or immobility variable for a given district

$N$  = the presence of formal negotiations in a given district

$u$  = random error term

Based upon the previous discussion of this chapter, it should be apparent that positive signs are hypothesized for the regression coefficients of the secondary experience ( $E_s$ ), secondary training ( $T_s$ ), and secondary wage earner ( $S$ ) variables. Negative signs are expected for the elementary experience ( $E_e$ ), elementary training ( $T_e$ ), and negotiations ( $N$ ) variables.

### *The Sample*

The sample consisted of 201 of Nebraska's 304 school districts which operate schools providing education from kindergarten through the twelfth grade (K-12 districts). The large number of Nebraska school districts which are K-6, K-8, 7-12, or 9-12 districts were omitted for the obvious reason that no secondary-elementary comparisons could be made in these districts. For the 103 K-12 districts which were omitted, no reliable negotiations data were available. The sample selection process did not seem to seriously bias the sample. It includes 60 of Nebraska's 98 Class II school districts and 141 of the state's 206 Class III, IV, and V districts.<sup>17</sup> The inclusion of numerous small rural districts in this sample provided an urban-rural balance which has not been evident in most of the previous work in this general subject area.

The 1970-71 school year was selected for primary analysis in the study. As indicated in chapter 2, the legal right of teachers to formally negotiate salaries and conditions of employment with their employers had been firmly established in Nebraska by this time. Both the 1967 Teachers' Professional Negotiations Act and the 1969 amendment to the Court of Industrial Relations Act had been enacted and implemented in a large number of Nebraska school districts. Yet this school year was early enough in the Nebraska teacher organization movement so that unilateral school board salary determination was still the rule in many districts. Hence, a valid comparison between negotiating and nonnegotiating districts was possible.

### *Specification of the Variables*

Ordinary least-squares multiple regression analysis was used for the cross-sectional data to estimate the simultaneous effects of the hypothesized variables upon the secondary-elementary salary differential. The dependent variable (D) was specified as the mean secondary salary in a given district minus the mean elementary salary in that district for the 1970-71 school year. The Nebraska Department of Education annually publishes the *Nebraska Educational Directory* which contains average secondary and average elementary salaries by district, as computed from data submitted by each district. The differentials were calculated from these data.

The variable for secondary experience was specified as the mean years of teaching experience of all secondary professional

employees in a district, excluding administrative personnel. Once again, these data were available in raw form from the state Department of Education and district means were calculated therefrom.

Analysis of the data with respect to the elementary experience variable ( $E_e$ ) suggested that more than one specification might be advised. It was not unusual to find elementary teachers with twenty-five or more years of experience, while this was highly unusual for secondary teachers. However, this could not be considered indicative of a superior position for elementary teachers with respect to salary levels for several reasons. Few school districts in Nebraska continue indefinitely to pay annual experience increments beyond a certain maximum. Thus an elementary teacher with thirty years of teaching experience would probably not receive a greater number of salary increases for experience than a similar teacher with fifteen or twenty years of experience. For instance, the NSEA annually compiles a booklet of Nebraska school districts' salary schedules. For the 1970-71 school year only one out of more than 200 reporting school districts allowed more than fifteen years of experience steps on its salary schedule.

Secondly, many districts will not allow years of experience gained in other school systems to be applied for compensation purposes. Finally, for many Nebraska elementary teachers, significant portions of their experience were accumulated prior to receiving the B.A. degree, and this experience might also not be allowed by a school system for compensation purposes.

For all of the above reasons, three different specifications of the elementary experience variable were employed. The first was specified simply as the mean years of total classroom experience of the elementary teachers in a given district ( $E_e$ ). The second specification was the mean years of experience of elementary teachers in their present system, by district ( $E_e'$ ). Finally, the first specification was modified to allow for the experience maximums often imposed by school districts. A maximum of fifteen years of experience was chosen and, for any district whose elementary teachers had greater than fifteen years of mean teaching experience, fifteen was recorded instead of the actual figure ( $E_e''$ ). These means were all calculated from the same Department of Education source used for the secondary experience variable.

It was necessary to find proxies for the secondary and elementary training variables because raw data on years of education were not consistently available. For the secondary training variable two

separate forms were employed, the percentage of secondary teachers in a given district who had obtained at least the B.A. degree ( $T_s$ ), and the percentage who had obtained at least the M.A. degree ( $T_s'$ ). The second specification was added because in only 17 of the 201 districts of the sample did less than 100% of the secondary teachers have at least the B.A. degree.

For the elementary training variable ( $T_e$ ) only one proxy was used, the percentage of elementary teachers in a district who had obtained at least the B.A. degree. For the 1970-71 school year, 141 of the 201 Nebraska school districts in the sample had less than 100% of their elementary teaching staffs with at least the B.A. degree.<sup>18</sup> These data on degrees held by Nebraska school personnel were also obtained from state Department of Education sources.

As would be expected, it was difficult to devise a meaningful specification for the secondary wage-earner variable. Data on marital status and teacher ages were generally not available. Since it was hypothesized that this effect would tend to be felt more strongly at the elementary level, the proxy for this effect was defined as the percentage of elementary teachers in a given district who were female ( $S$ ).

Finally, the negotiations variable was given considerable attention. As was indicated in chapter 3, several of the previous studies were weakened by their questionable specifications of this variable. In order to determine the extent to which meaningful negotiations were occurring for the 1970-71 school year, the files of the Nebraska State Education Association were searched for master contracts or other evidence of negotiations. Since this proved to provide insufficient information, a brief post card questionnaire was devised and mailed to some 325 local teachers' associations, county teachers' associations, and superintendents.<sup>19</sup> The NSEA mailing list was used for the mailing and an NSEA cover letter was enclosed. Two hundred and twenty-one responses were received; of these, 20 were eliminated due to duplication and inconsistencies with NSEA files. The remaining 201 responses were used as the basis for the sample which was selected. A dummy variable, which took the value of one for those districts wherein formal negotiations were occurring and zero otherwise, was used for this specification ( $N$ ).

### *The Regression Results*

The results of the ordinary least-squares estimation which was applied to the data are presented in Table 1. The first three equa-



TABLE 1

Coefficients and other statistics<sup>a</sup> from 1970-71 cross-sectional regressions. Dependent variable: average secondary—average elementary salary differential. Number of observations in each regression: 201.

Equation	N	T <sub>s</sub>	T <sub>s</sub> '	T <sub>e</sub>	E <sub>s</sub>	E <sub>e</sub>	E <sub>e</sub> '	E <sub>e</sub> ''	S	R <sup>2</sup>
1	-512.1 (7.21)***	23.5 (1.96)**		-7.6 (5.15)***	62.0 (5.59)***	-15.8 (2.16)**			6.3 (1.77)**	.53
2	-503.6 (7.14)***	26.8 (2.27)**		-7.5 (5.08)***	60.5 (5.55)***		-31.4 (2.58)***		6.4 (1.82)**	.54
3	-502.0 (6.99)***	27.4 (2.29)**		-7.7 (5.12)***	58.2 (5.19)***			-3.2 (.27)	4.7 (1.28)	.52
4	-499.4 (7.20)***		10.7 (3.74)***	-8.9 (5.93)***	42.6 (3.54)***	-16.1 (2.28)**			4.9 (1.42)*	.55
5	-489.7 (7.14)***		11.7 (4.15)***	-8.8 (5.95)***	39.6 (3.37)***		-35.3 (2.98)***		5.0 (1.49)*	.56
6	-488.6 (6.96)***		11.2 (3.87)***	-8.9 (5.89)***	38.0 (3.14)***			-4.2 (.36)	3.1 (.88)	.54

<sup>a</sup> In this and all subsequent tables the t-values are located in parentheses below the coefficient.

\* Significant at the .10 level in a 1-tailed test.

\*\* Significant at the .05 level in a 1-tailed test.

\*\*\* Significant at the .01 level in a 1-tailed test.

tions use the three different specifications of the elementary experience variable which were described earlier while using the percentage of secondary teachers with at least the B.A. degree ( $T_s$ ) as the secondary training variable. The last three equations use the same three elementary experience variables, each combined with the secondary training variable  $T_s'$ .

All of the regression coefficients exhibit the hypothesized signs in all the forms that were used. As indicated by the table, all of the variables are significant at at least the .01 level, with the exceptions of the third elementary experience specification and the secondary wage-earner variable in equations 3 and 6. In addition, the crucial negotiations variable is significant in all equations at the .01 level. The  $R^2$  values are consistent with those often obtained from state and regional cross-sectional data of this type.

Both secondary training variables ( $T_s$  and  $T_s'$ ) yielded coefficients which were consistent with expectations, and not unexpectedly the percentage of secondary teachers with at least the M.A. degree ( $T_s'$ ) proved to be the more significant determinant, although smaller in magnitude. The secondary-elementary differential did tend to be larger where secondary training was more extensive. Similarly, the differential tended to be smaller in those districts where most or all elementary teachers had obtained at least the B.A. degree. This variable was significant at the .01 level in all six equations.

Experience also proved to be a highly significant determinant of the size of the differential, as a highly experienced secondary staff tended to be associated with larger secondary-elementary salary differentials. And in districts where elementary teachers were relatively inexperienced, the differential also tended to be larger no matter what form the variable took. The second specification, the mean years of elementary experience in the present system ( $E_e'$ ), proved to be the most significant, which is consistent with the observation that many school districts in Nebraska do not accept years of experience acquired outside the present system for compensation purposes.

Although the specification of the secondary wage-earner variable ( $S$ ) was certainly less than exact, the results do indicate that differentials tended to be larger in districts whose elementary staffs were predominantly or solely female. However, the coefficients become insignificant in equations 3 and 6.<sup>20</sup>

Finally the coefficients of the negotiations variable are all highly

significant, as mentioned earlier, and the magnitudes of these coefficients are somewhat surprising. The results suggest that, for the 1970-71 Nebraska school year, secondary-elementary salary differentials did tend to be smaller by some amount between \$488 and \$512 in those districts whose salary package had been formally negotiated. Although a small portion of this effect could be attributable to differences in extracurricular compensation, the estimation still seems to provide strong empirical evidence that formal professional negotiations in the Nebraska public schools have contributed to significantly smaller secondary-elementary salary differentials.

#### *A Check for Spurious Correlation*

It is possible, of course, that the correlation between negotiations and salary differentials is a spurious one. In other words, those Nebraska school districts which exhibited small secondary-elementary salary differentials in 1970-71 may have consistently displayed such small differentials over time, even in the absence of professional negotiations. If this is the case, the negotiations variable may be assuming some explanatory power which actually should be attributed to other omitted variables. It was decided, therefore, to compare the results of the 1970-71 regressions with those for a year prior to the emergence of any widespread negotiations in Nebraska.<sup>21</sup>

The 1965-66 school year was selected for this test. The necessary data were still available but there was no evidence in NSEA files of any formal negotiations in any Nebraska school district for this year. The test employed the same variables which were used for equation 1 in Table 1 and the same estimation procedure. Since some school consolidation did occur between 1965 and 1970 it was necessary to omit 11 of the 201 districts in the 1970-71 sample because these systems were not K-12 districts in 1965-66. With the exception of the negotiations variable, all of the 1970-71 data were replaced with 1965-66 data from the same sources indicated earlier. The negotiations variable was entered as it appeared in the 1970-71 regressions. If the negotiations variable proved to be as highly correlated with the salary differentials of 1965-66 as with those of 1970-71, this would indicate that other omitted factors besides negotiations were responsible for explaining variations in the salary differential. The results of this test are reported in Table 2.

TABLE 2

Coefficients and other statistics from 1965-66 cross-sectional regressions. Dependent variable: average secondary-average elementary salary differential. Number of observations: 190.

N	T <sub>s</sub>	T <sub>e</sub>	E <sub>s</sub>	E <sub>e</sub>	S	R <sup>2</sup>
-88.8 (1.62)*	23.6 (4.17)***	-8.6 (7.32)***	-1.2 (.11)	.81 (.14)	5.98 (1.17)	.36

\* Significant at the .10 level in a 1-tailed test.

\*\* Significant at the .05 level in a 1-tailed test.

\*\*\* Significant at the .01 level in a 1-tailed test.

First, the lower R<sup>2</sup> suggests that those hypothesized variables which tended to be significant determinants of teachers' salary levels and salary differentials in 1970-71 were of less importance in 1965-66. The secondary and elementary training variables were still highly significant and displayed the hypothesized signs. These coefficients were of approximately the same magnitude as in the 1970-71 regressions. This implies that levels of training or education were also important determinants of salary levels and salary differentials in 1965-66.

Curiously, however, the secondary and elementary experience variables not only were statistically insignificant, but also exhibited the wrong signs. This may suggest that fewer salary schedules which specified compensation for experience were in use during this time. It may also be consistent with the general belief that organized labor groups emphasize seniority and seniority rights to a greater extent than would be the case in the absence of such groups. Perhaps market forces may also provide a rationale for these results. The tight labor market for teachers in 1965-66 may have tended to negate experience differentials.

The secondary wage-earner variable was also statistically insignificant. Just as teachers appear to have possessed more monopoly power in 1970-71 than in 1965-66, it may be that school boards also possessed more power to exploit intradistrict differences in labor supply elasticities in the later period.

Finally, the coefficient of the negotiations variable drops in magnitude to -88.8 and is significant only at the .10 level. Thus it does not appear that those negotiating districts which tended to have smaller secondary-elementary salary differentials in 1970-71

had equally small differentials in 1965–66. The original results of Table 1 are generally given more credibility by the failure of the 1965–66 model to display similar explanatory power, especially with respect to the negotiations variable.

### *Summary*

The regression model which was developed and employed in this chapter provides considerable evidence to support the major hypothesis that professional negotiations for teachers have had a significant impact upon the salary structure of the typical school district, and specifically upon the differentials between secondary and elementary teachers' salaries. As a rough estimate, the results which are presented in Tables 1 and 2 suggest a net negative impact upon the average secondary–average elementary salary differential in Nebraska of between \$400 and \$425. The magnitude of this effect is approximately 5% of the 1970–71 average salary of all Nebraska public school teachers, as estimated by the NSEA. These results, however, do not provide any evidence concerning the impact of professional negotiations upon teachers' salary levels for the entire teaching staff in a school district. It is conceivable, of course, that negotiations could have merely prompted a redistribution of the existing wage bill toward elementary teachers with no net effect upon either the school district's average salary level or the size of the wage bill. The following chapter addresses itself to this second empirical question.

## 5. Professional Negotiations and the Relative Wage Effect

As indicated in chapter 2, the salary levels of Nebraska public school teachers improved substantially in the 1960s and early 1970s, both absolutely and relative to several other states. Since this period of time roughly parallels the emergence of professional negotiations in the Nebraska public schools, it is logical to inquire as to the effect that professional negotiations have had upon these improving salary levels. The present chapter deals with this question.

H. Gregg Lewis had distinguished among three different types of union wage effects: (1) an effect upon the general level of money wages, (2) an effect upon the general level of real wages, and (3) a relative wage effect.<sup>1</sup> The primary concern of this chapter is with the relative wage or salary effect which is attributable to professional negotiations in Nebraska, where this relative wage effect is defined simply as "comparisons between wages under union and non-union conditions."<sup>2</sup>

The first portion of the chapter will consider the theory and evidence on the relative wage effects of collective bargaining in the private sector. Methodological difficulties will also be mentioned. In the second portion of the chapter a salary determination model for teachers will be developed and used in an attempt to determine the relative wage effect of professional negotiations in the Nebraska public schools.

### *Relative Wage Effects in the Private Sector*

*The Theory.* The traditional framework within which to analyze the relative wage effects of unionism in the private sector is Alfred Marshall's treatment of derived demand in his *Principles of Economics*.<sup>3</sup> This treatment is based upon the determinants of the elasticity of a derived demand. From this analysis it follows that the more inelastic the demand for union labor, the smaller the adverse employment effect associated with a given wage increase and, therefore, the larger the probable influence of a union on relative wages.<sup>4</sup> Marshall considered four determinants of the

elasticity of a derived demand. The demand for a factor will be more inelastic: (1) the more essential the factor is to the production of the final good, (2) the more inelastic the demand is for the final good, (3) the smaller is the ratio of the cost of the factor to the total cost of the good, and (4) the more inelastic is the supply of other factors.

The Marshallian analysis suggests the conditions which would be most desirable from the viewpoint of the union in affecting the wages of its members. It also suggests the probability that economic constraints will be imposed upon the union, to the extent that these conditions are not simultaneously present. Finally, an inelastic demand is a necessary, but not a sufficient, condition for successfully raising union wages. The union must also possess sufficient bargaining power.

*Methodological Difficulties.* In testing empirically the relative wage effect of collective bargaining within an industry or occupation, the ideal situation would be one wherein all other relevant variables are identical except for the presence or absence of the union. Any observed wage differentials obtained in such an ideal case could reasonably be attributed to unionization. However, this situation can seldom be attained, and the relative wage effects that are actually obtained may reflect factors other than collective bargaining which were omitted from the analysis.

Furthermore, it is often argued that the presence of unions in some plants forces not only union employers but also nonunion employers to raise wages, the latter occurring so as to prevent the unionization of nonunion workers. To the extent that these "threat effects" or "spillover effects" are present, the observed relative wage effect would understate the true union impact.

Because of these difficulties, empirical estimates of relative wage effects cannot be considered precise. It should not be thought, however, that the existence of such difficulties makes meaningful empirical work impossible in this area. The difficulties presented by omitted variables have been lessened in recent years as more sophisticated statistical techniques and more precise variable specification have been used. With respect to the possibility of threat effects, Albert Rees has observed that the outcome from such effects is far from clear.

In some cases, the union wage increase may be emulated. In others, the effect will operate through the labor market in the opposite direction. The higher

wages in the union sector will tend to check the growth of employment in that sector, which will increase the supply of labor to the non-union sector and tend to check increases in non-union wages.<sup>5</sup>

*Some Evidence.* Numerous studies have been undertaken in an attempt to derive the relative wage effect of private sector unions in a given industry or industry group. Only a brief sampling of some findings will be presented here.<sup>6</sup>

Perhaps the first major study of this kind was conducted by Paul H. Douglas in 1930.<sup>7</sup> He analyzed percentage wage changes in fourteen unionized and nonunionized industries and concluded that the unions in these industries were initially a source of wage advantage but that in later years the rates of increase for union workers' wages were no greater than for nonunion workers. A 1948 study by Arthur Ross and a 1950 study by Ross and William Goldner reached essentially the same conclusions.<sup>8</sup>

With respect to single industry studies, the findings vary considerably. These variations may be partially explained by differences in such factors as: the type of union, i.e. craft or industrial; the stage of the business cycle when the study was conducted; the percentage of industry workers who were organized; and whether or not the industry was faced with a declining product demand over time.

Stephen Sobotka's study of the construction industry from 1915 to 1950 found that unions had gained as much as a 25% advantage for highly skilled workers and 5% for unskilled workers.<sup>9</sup> Elton Rayack found an over-all 5% advantage in the men's clothing industry, although this advantage declined over time.<sup>10</sup> In rubber tire manufacturing, Irvin Sobel estimated a union wage advantage of 5%–10%, again declining after World War II.<sup>11</sup> Joseph Scherer found a 10% wage advantage in large city hotels, with most of the significant gains made in the late 1930s.<sup>12</sup>

There is some evidence that the union impact becomes smaller during inflationary periods. Rees found only a negligible union impact on wages in the post-World War II steel industry.<sup>13</sup> The effect was so small that Rees was led to conclude that collective bargaining may have actually retarded the upward movement of wages in this period. Similarly, John Maher found little or no union impact on wages in four of the seven 1950 industries which he studied and only a 5%–10% effect in the other three.<sup>14</sup>

Both Rees and Lewis have estimated an over-all average effect of U.S. unions on wages in the neighborhood of 10%–15%. The studies cited here also seem generally to suggest that the most sig-



nificant gains of private sector trade unions came in the late 1930s and that their wage impact may have been declining since then.

In the public sector, the existing empirical work which was summarized in chapter 3 suggested a relative wage effect no greater than 5% associated with the organized activities of public school teachers. The limited work on state teacher markets found no effect greater than 3%. Given Wellington and Winter's concern with the potential for abuse of public sector unionism, it is somewhat surprising that these effects seem to be smaller than the corresponding private sector effects during initial stages of organization. As indicated in chapter 3, however, there are some general shortcomings of the existing studies which may limit their explanatory and predictive power. The following sections will analyze the impact of professional negotiations on Nebraska teachers' salary levels, and, in the process, an attempt will be made to overcome some of the problems of these earlier analyses.

#### *A Model of Teacher Salary Determination*

In delineating those factors which are considered by school boards in determining teachers' salaries, it was hoped that there existed consistent, objective criteria which were employed by most school boards. Unfortunately, such criteria do not generally exist. As Joseph Kershaw and Roland McKean have observed:

In the first place, the public schools are producing a service—education for the young—which is not marketed at a price to the customers. It is financed by taxing the whole community—both those who do and those who do not use the product. Not only is this product not sold on the market, but it is very difficult even to specify what the product is, and just how the individual teacher contributes to it. This makes the problem of setting teachers' salaries particularly difficult. In a competitive business that markets its output, if wages are set too high, losses will occur; if too low, employees of the right quality cannot be retained and again losses will show up after awhile. Schools have no such clearcut indicator, so that when it is time to determine salary levels, or relations among salaries, this test of the market is not available to assist in the determination. One result is that school boards are forever grappling with the problem of just what factors they should be taking into consideration.<sup>15</sup>

This statement depicts some of the problems inherent in salary determination throughout the public sector. Fortunately, in recent years both theoretical and empirical research on this issue have been conducted which permit the specification of certain factors that are generally of concern to the school board in the salary determination process.<sup>16</sup>

*Ability and Willingness to Pay.* Since the services provided by a school district are not sold to the consumers at a price but rather are financed by general taxation, any market forces which may be operating are constrained by the amount of financial resources available to a school district and its willingness to tap these resources for the provision of educational services. In short, two almost universal determinants of teachers' salaries are the school district's ability to pay and its willingness to pay educational costs. According to Perry and Wildman:

In recent years, the primary determinant of the level of teacher compensation in individual school districts has been the ability of the district to pay. . . . Because teacher compensation is the major cost element in the operation of the school system, it has been the ability of school systems to finance salary increases which has determined the extent to which these market forces have been translated into short-run salary adjustments.<sup>17</sup>

However, ability to pay alone may not be reflected accurately in teachers' salaries if the residents of the school district are not willing to finance such salaries and other costs through taxation. If, as is usually the case, the total wage bill plus other costs is somehow determined first and then tax rates are adjusted so as to generate the necessary revenue, one might expect some negative relationship between ability to pay and willingness to pay in many districts, especially in the absence of professional negotiations. Some evidence of this exists in the regression analysis which follows.

*Size of the School District.* In addition to ability and willingness to pay, it appears from previous work that the size of the school district has some effect upon the level of teachers' salaries. Specifically, salaries tend to be higher in the larger districts. This may be the case for several reasons. The cost of living is generally lower in those smaller communities which constitute the centers of most small school districts. This may be used as a partial justification for paying lower salaries. The cost of living is a factor often mentioned by school boards in their salary discussions, according to Kershaw and McKean.<sup>18</sup> It may also be that larger districts offer more specialized programs which require greater teacher skills. Furthermore, larger districts are typically located in more urbanized areas where competition for teachers' services is keener. Finally, it may be that there is more disutility associated with teaching in a large school district because of the impersonal working environment, the disciplinary problems, or other disadvantages related to

the bureaucratic atmosphere. To the extent that this is the case, larger districts would be required to pay higher salaries so as to overcome these disutilities.

*Labor Market Structure.* Labor market structure considerations may also affect teachers' salaries. Several of the studies surveyed in chapter 3 found that the possession of school district monopsony power did adversely affect teachers' salaries. As mentioned in previous chapters, school district consolidation in Nebraska has not been widespread. There are, therefore, a very large number of independent school districts in the state, which implies that school district monopsony power should be small or nonexistent in most districts. Nevertheless, consideration will be given in the analysis to this possible salary determinant.

Finally, the central hypothesis of this chapter is that teachers' salaries are partially determined by teacher monopoly power. Given the relatively insignificant monopsony power which is expected in Nebraska school districts and the historically low salaries of the state's teachers, the relative salary effect of professional negotiations in Nebraska should provide an estimate approaching the upper limit attainable through organized teacher activities.

*The Formal Model.* The factors discussed above constitute the variables which are hypothesized as determinants of Nebraska teachers' salary levels.<sup>19</sup> Assuming linear relationships, the model may be summarized in the following regression equation form:

$$S = a + bA + cW + dE + eM + fN + u$$

where:

S = teacher salary level by district

A = school district ability to pay

W = school district willingness to pay

E = school district size (enrollment)

M = school district monopsony power

N = teacher monopoly power (professional negotiations)

u = random error term

The preceding discussion suggests that positive signs should be expected for the coefficients of all the independent variables except the monopsony variable (M). As will be seen in the section on specification of the variables which follows, the particular specification of the monopsony variable which was chosen implies a positive sign for this variable, also.

### *The Sample*

The sample consisted of 181 K-12 Nebraska school districts. The key factor in selecting the sample was once again the availability of reliable information on the presence or absence of negotiations in a given school district. Thus, the same sample of 201 school districts which was used in chapter 4 was first selected. Of these 201 districts, 20 more were omitted because salary data of the type needed for the model were not available. Again, the sample seemed generally to be representative of the entire population of Nebraska's K-12 school districts, including the rural-urban balance noted earlier. For the same reasons which were given in chapter 4, the 1970-71 school year was selected once more for primary analysis in the study.

### *Specification of the Variables*

Ordinary least-squares multiple regression analysis was again employed in deriving all the estimated coefficients. Specification of the dependent variable (S) was of special importance and five different specifications resulted. Following the lead of previous studies, four points on the salary schedule of a given school district were selected for the first four specifications. These points were the B.A. minimum ( $S_1$ ), B.A. maximum ( $S_2$ ), M.A. minimum ( $S_3$ ), and M.A. maximum ( $S_4$ ) salary levels as read off the salary schedule. These points are representative of the entire salary schedule for a district, and they are often considered the strategic targets of professional negotiations.

However, these points may not be indicative of actual salaries paid by a district because actual salaries are dependent upon where teachers are placed on the schedule. For this reason, a fifth specification was defined as the average actual salary level of all classroom teachers in a district ( $S_5$ ). Although average salaries may not be the direct target of professional negotiations, they may be said to reflect the economic benefits derived from such negotiations.

There is a problem involved with the inclusion of this last specification. An average salary measure presumably includes the influence of interdistrict variations in the education and experience of teachers, and no independent variables were included to account for these variations. However, since the effects of these variations in education and experience were considered in the previous chapter, it was concluded that the advantages of being able to estimate the economic benefits of professional negotiations through this variable outweighed the disadvantages.

The 1970-71 data on school district salary schedules were obtained from the annual publication, *Nebraska Salary Schedules*, compiled by the NSEA. Average salary figures were obtained from the 1970-71 *Nebraska Educational Directory*, published by the Nebraska Department of Education.

A given school district's ability to pay (A) is dependent upon its local financial resources plus any state supplements to those resources which may be forthcoming. The following formula was used in deriving the measure for ability to pay:

$$A = \frac{(V + \frac{A_s}{M})}{E}$$

where:

V = 1970 assessed property valuation by district

A<sub>s</sub> = 1970 state aid by district

M = 1970 general educational fund mill levy by district

E = 1970-71 resident enrollment by district

The  $\frac{A_s}{M}$  ratio is a measure of the additional assessed valuation which would be necessary to generate local tax revenues equal to the state aid. This formulation allows both sides of the numerator of the formula to be expressed in comparable terms.<sup>20</sup> Inclusion of current enrollment (E) as the denominator of the formula allows the expression of the measure on a per pupil basis. Property valuation, mill levy, and enrollment data were all available from the *Nebraska Educational Directory*. State aid figures were obtained from the 1970-71 *Financial Report* submitted by each school district to the state Department of Education.

Devising an appropriate measure of a school district's willingness to pay (W) was not as difficult as first expected.<sup>21</sup> Although several variations of this variable have been defined in other work, they all amount to some measure of a community's willingness to tax itself for educational purposes. The simplest and yet most precise measure of this willingness, and the one utilized here, is the general educational fund mill levy of a district.

The school district size variable (E) was simply defined as total resident enrollment, but for the monopsony variable (M) only a rough proxy could be specified. Following the work of Landon and Baird and of Schoenberger, monopsony power was defined in terms of the number of school districts in a county. If monopsony power exists in a school district, it presumably could be exercised more easily in those geographic areas where only a few school districts exist to compete for the services of teachers. Although a county may not be the ideal geographic unit to use for this purpose, it appeared to be as good as any other. Since monopsony power should be greater where the number of competing districts is small, the expected sign of the coefficient of this variable is positive, as mentioned earlier. Again, the *Nebraska Educational Directory* provided the data on number of school districts per county.

The negotiations variable (N) employed was once more a dummy variable of the same form and obtained from the same sources as the one used in chapter 4.

### *The Regression Results*

The results of the regressions are summarized in Table 3. One regression equation was estimated for each of the five specifications of the salary variable. With the exception of the monopsony variable, all of the regression coefficients exhibited the expected signs and were significant at at least the .10 level. The negotiations variable was again significant in all cases at the .01 level.

The  $R^2$  values show somewhat more variation than the values derived in chapter 4. This is not totally surprising, however, nor is it inconsistent with the similar variations found in other studies using salary specifications of this type. One would not expect the hypothesized variables to have equal explanatory power for all points on the salary schedule. The values of these points are partially determined by the recruiting and retention needs of

individual school districts. Furthermore, it would be expected that these values are affected by the number of teachers who actually qualify for placement on the different steps in particular districts.

TABLE 3

Coefficients and other statistics from 1970-71 cross-sectional regressions. Dependent variables: BA minimum ( $S_1$ ), BA maximum ( $S_2$ ), MA minimum ( $S_3$ ), and MA maximum ( $S_4$ ) salary schedule steps; and average salary level ( $S_5$ ). Number of observations in each regression: 181.

Equation	Dependent Variable	A	W	E	M	N	R <sup>2</sup>
1	$S_1$	.002 (2.51)***	3.97 (4.37)***	.009 (6.69)***	8.39 (2.07)**	122.92 (7.98)***	.54
2	$S_2$	.006 (1.35)*	17.56 (4.63)***	.041 (7.23)***	12.52 (.74)	293.55 (4.56)***	.44
3	$S_3$	.006 (2.74)***	4.63 (2.20)**	.005 (1.46)*	-7.35 (.78)	301.08 (8.43)***	.39
4	$S_4$	.025 (3.80)***	24.86 (4.10)***	.049 (5.32)***	41.48 (1.53)*	795.37 (7.72)***	.50
5	$S_5$	.012 (2.67)***	11.93 (2.90)***	.030 (4.85)***	-9.96 (.54)	609.30 (8.71)***	.47

\*Significant at the .10 level in a 1-tailed test.

\*\*Significant at the .05 level in a 1-tailed test.

\*\*\*Significant at the .01 level in a 1-tailed test.

The coefficients of the ability to pay variable (A) were all consistent with the hypothesis. The drop in significance of the coefficient when associated with the B.A. maximum salary level ( $S_2$ ) is interesting. Presumably, many districts with a substantial ability to pay as defined are able to employ a higher quality teacher. Therefore, they may wish to establish a relatively low B.A. maximum salary so as to provide an incentive for their teachers to seek the M.A. degree. Relatively poor districts may have few teachers with the M.A. degree. Teachers in such poor districts would tend to concentrate their salary demands at the B.A. maximum level.

The willingness to pay variable (W) also proved to be a significant determinant of teachers' salaries. As mentioned earlier, however, there is evidence that willingness to pay and ability to pay are negatively related. The simple correlation coefficient between the two variables was  $-.29$ , not large enough to cause any significant multicollinearity problems but of sufficient magnitude to suggest such a negative relationship in some districts.

Teachers' salaries also seemed to be significantly affected by the size of the school district (E), although this factor loses some of its significance at the M.A. minimum step. No explanation was apparent for this loss of significance.

As suspected, school board monopsony power (M) was not found to be a very important factor in salary determination. The coefficients of the monopsony variable were statistically insignificant in three of the five equations, and they even became negative for the M.A. minimum and average salary specifications.

Finally, the negotiations variable (N) proved to be a highly significant determinant of teachers' salary levels in all equations used. In terms of points on the salary schedule, the results suggest that those districts which were engaged in professional negotiations did pay higher salaries than those which were not, even when the other factors are taken into account. At the B.A. minimum level, the difference was \$123, or about 2% of the average B.A. minimum salary in nonnegotiating districts. At the B.A. maximum step the differential was about \$293, or 4.2%. For the M.A. minimum step, negotiating districts paid \$301 more, or 4.1%, and at the M.A. maximum level, the differential was \$795, or 7.2%.

It is not surprising that professional negotiations seemed to have a greater impact at the upper steps than at the lower steps. As indicated previously, it has been argued that market forces are more predominant at the entering step and that bargaining is more effectively manifested at the upper steps.<sup>22</sup> Furthermore, those teachers who are most active in the negotiations process tend to be career teachers who fall on the upper steps of the salary schedule. As Perry and Wildman conclude:

The exercise of teacher power has led to larger increases for long service teachers and for teachers with an M.A. degree than would have been forthcoming in the absence of the exercise of power. These increases have tended to benefit the most active members of the teacher organization at the expense of inactive members or non-members.<sup>23</sup>



Finally, in terms of average actual salaries equation 5 indicates that negotiating districts paid salaries averaging \$609 higher than nonnegotiating districts in 1970–71. This is 8.4% of the average salary in nonnegotiating districts. Although no variables for the composition of the teaching staff were included, this effect is still somewhat larger than those which have been estimated in previous studies.

#### *The Spurious Correlation Check*

It was again possible that those negotiating districts which paid higher teachers' salaries in 1970–71 had always paid higher salaries, irrespective of negotiations. A check for spurious correlation similar to the one employed in chapter 4 was used to explore this possibility.

Once again, the 1965–66 school year was selected for the test. However, there were no reliable data on salary schedules for this year. The test was therefore limited to the variables used in equation 5 of Table 3, the data for which were available from the same sources indicated earlier. The same estimation procedure was employed and the same eleven consolidated districts which were omitted in chapter 4 were deleted from this sample. Data from 1970–71 were replaced with 1965–66 data, except that the negotiations variable was entered as in the 1970–71 regressions.

As before, if the results showed that the negotiations variable was as highly correlated with 1965–66 salary levels as with those of 1970–71, the implication would be that omitted variables other than professional negotiations were responsible for explaining variations in Nebraska teachers' salary levels. The results of this test are presented in Table 4.

The  $R^2$  value suggests that the model has somewhat greater explanatory power for 1965–66 than for 1970–71. On the surface this may seem surprising, but with further thought it appears to be consistent with expectations.

The ability to pay variable is again a significant determinant. The magnitudes of the coefficient and the t-statistic imply that ability to pay may have been a more important factor in teachers' salary determination in the earlier year. A similar observation can be made for both the willingness to pay variable and the district size variable.

Although school district monopsony power did not prove to

be of much importance in the salary determination process for 1970-71, it assumes somewhat more significance in the 1965-66 regression. It is conceivable that teacher monopoly power overwhelmed any school board monopsony power which existed in 1970-71. This was clearly not the case in 1965-66.

TABLE 4

Coefficients and other statistics from 1965-66 cross-sectional regressions. Dependent variable: average teacher salary by district. Number of observations: 170.

Dependent Variable	A	W	E	M	N	R <sup>2</sup>
S <sub>5</sub>	.028 (8.26)***	28.54 (10.57)***	.030 (6.75)***	22.82 (1.99)**	52.77 (1.33)*	.61

\*Significant at the .10 level in a 1-tailed test.

\*\*Significant at the .05 level in a 1-tailed test.

\*\*\*Significant at the .01 level in a 1-tailed test.

The negotiations variable is the least important of all the 1965-66 variables, being significant only at the .10 level. The coefficient suggests that 1970-71 negotiating districts paid salaries which were only about \$53 higher on the average than other districts in 1965-66.

These results once again support the major hypothesis that professional negotiations have contributed significantly to increased teachers' salary levels. The 1970-71 negotiations variable loses most of its explanatory power when applied to 1965-66 data, although collectively the increased explanatory power of the other variables more than compensates for this loss.

### *Summary*

The results of the estimation procedure conducted in this chapter, as summarized in Tables 3 and 4, do suggest that professionally negotiated Nebraska teachers' salaries were significantly higher than unilaterally determined salaries for the 1970-71 school year. The relative wage effect associated with professional negotiations, in terms of points on the salary schedule, ranged from \$123

to \$795, or from roughly 2% to 7% of nonnegotiating districts' salary levels. In terms of actual average compensation levels, the net relative wage effect was in the neighborhood of \$550, or approximately 8% of unorganized districts' salary levels.

As mentioned previously, these effects are somewhat larger than those found in most other studies of teachers' salaries. At least two tentative reasons have already been suggested for this. First, Nebraska teachers' salary levels were among the lowest in the country in the early 1960s. The emergence of professional negotiations in the late 1960s provided a convenient mechanism through which to facilitate the "catching up" process. Secondly, monopsony school board power does not seem generally to be as influential a force in Nebraska as in many other states and regions. The teacher organization movement was, therefore, not confronted with the market resistance which apparently typified several other teacher markets. A possible third explanation for the magnitude of the effect is that Nebraska school districts enjoyed almost total spending autonomy in 1970-71 and previously. The effectiveness of professional negotiations was not hindered in any significant way by state-imposed spending lids or by restrictions on local mill-levying authority. As suggested earlier, given this relatively favorable environment for the introduction and growth of organized teacher activities, it may be that the relative wage effects which were estimated in this chapter are among the highest which can be expected from professional negotiations for public school teachers, at least in the existing economic climate.

## 6. Conclusions and Suggestions For Further Research

### *Further Interpretation of Results*

IT HAS BEEN a basic hypothesis of this study that professional negotiations for public school teachers have had an impact upon both the structure and the level of teacher compensation. This expectation has been confirmed in the analysis of chapters 4 and 5, at least insofar as Nebraska teachers are concerned. The results of chapter 4 suggest that secondary-elementary salary differentials within a given Nebraska school district tended to be significantly smaller, by over \$400, where salaries were professionally negotiated. There is little other evidence on the wage structure impact of professional negotiations, and further research is clearly warranted on this subject.<sup>1</sup>

With respect to the impact of professional negotiations upon relative salary levels, the results presented in chapter 5 suggest a salary differential ranging from approximately \$123 to almost \$800 associated with organized school districts. The relative wage effect varies from roughly 2% to 8%. Although this effect is somewhat larger than those found in previous similar studies, it has been argued here that Nebraska may not truly be a representative teacher market due to the unusually favorable economic and political environment for professional negotiations found in this state. Nevertheless, the relative wage effects which were derived for Nebraska in this study may be extremely useful as rough estimates of the upper extreme presently attainable through professional negotiations.

Even though the magnitudes of the estimated relative wage effects may not seem large in an absolute sense, it should be noted that the period of time in question was one of rather persistent inflation. H. Gregg Lewis has estimated a relative wage effect range of from 0% to 5% attributable to unions for the private sector of the economy during such periods of inflation.<sup>2</sup> Relative to these estimates, the magnitudes of the effects derived here assume somewhat greater significance.

However, it is still probable that ability-to-pay constraints which confront public sector organizations are a characteristic which distinguishes them from most private sector institutions. To the extent that this is the case, public sector unions may have considerable difficulty in fully exploiting any existing labor demand inelasticities. Perhaps these ability-to-pay constraints explain why the relative wage effects derived in this and other studies have not been as large as those which Wellington and Winter envisioned.

Although the favorable environment found in Nebraska may have introduced an upward bias in the magnitudes of the observed effects, the sample selection process of this study may actually have resulted in a bias in the opposite direction. The availability of salary and negotiations data necessitated limiting the samples of chapters 4 and 5 to K-12 Nebraska school districts. The lowest teachers' salaries in Nebraska, however, tend to generally be found in small rural school districts of a K-6 or K-8 structure. As indicated previously, there is little evidence of the existence of formal negotiations in these rural districts. Had the data been available, the inclusion of a number of these districts in the sample would undoubtedly have resulted in both a greater structural impact and a larger relative wage effect associated with professional negotiations.

Finally, on a somewhat more speculative note one must certainly consider the future prospects for professional negotiations in Nebraska as being relatively favorable. All available evidence, presented here and elsewhere, suggests that the teacher organization movement will continue to be dominated by the NEA in Nebraska, with little successful encroachment by the AFT. The relatively conservative political environment found in Nebraska and the successful development of the public sector bargaining framework culminating with the CIR are both factors which suggest that the strike will be a very uncommon recourse in future public sector disputes, as it has been in the past. Short of a renewed constitutionality challenge, the present statutory provisions would appear to be more than adequate for dealing with foreseeable disputes.

#### *Suggestions for Further Research*

In addition to the need for further research on the salary structure effects of professional negotiations, a number of other related areas of inquiry deserve mention. The persistent problem

of spill-over effects has always plagued research efforts on the impact of organized labor. There is a need for the development of a research methodology which isolates these effects with some precision so that the union effect may be estimated more accurately.

Also, the impact of professional negotiations may not be limited to salary effects. Little is known about the influence of organized teacher activities on class size, fringe benefit compensation, the incidence of teacher moonlighting, teaching staff turnover rates, etc. For instance, it would be especially interesting to estimate the extent to which organized teacher groups are successful in maintaining present staff levels in the face of projected declining public school enrollments in the near future. In the long run effects of this type may actually be of greater importance than the salary effects, and research attention should be given to them.

In terms of long-run considerations, several other questions arise. In the private sector, long-run time-series estimates of union relative wage effects generally have shown significant initial wage gains followed by a declining impact over time. It remains to be determined whether such a trend will also become prevalent in the public sector, although recent occurrences lend support to this expectation. Certainly, resistance to public sector union demands can be expected to intensify over the long run, both because of ability-to-pay limitations and because of clearly observable recent changes in sentiment toward public employees. In the past, the relative salary disadvantage of public sector workers was common knowledge. During the last ten years, however, this disadvantage has largely disappeared, and this change has also become common knowledge. For teachers, specifically, there is some a priori justification for expecting such a declining effect. As Perry and Wildman have concluded:

In the absence of technological change which reduces the ratio of certificated personnel to students, there is no strong basis to predict that collective bargaining and teacher group power can or will have a permanent effect on the level of teacher salaries and compensation. Without such a change, there is no certainty that either the community or the school system will, over the long run, provide the funds required to finance such increases. Thus, the short-run increases in compensation achieved through collective bargaining and the exercise of teacher group power should perhaps, at this time, be regarded as the result of a shift in time of compensation increases.<sup>3</sup>

There is the further question of whether school boards in states such as Nebraska will be able to retain their spending autonomy

in the future, and of what effect any lost autonomy will have on the power of local teacher organizations. According to Myron Lieberman and Michael H. Moskow:

It seems likely, therefore, that there will be decreasing fiscal independence for school boards and greater emphasis upon the preparation and approval of school budgets as part of a larger scheme of public finance. Negotiations by teachers and other groups of public employees will have to be coordinated, and such coordination will result in some decrease in the autonomy of local school boards.<sup>4</sup>

This diminished local autonomy may come in the form of the aforementioned state-imposed spending lids, restrictions on local mill-levying authority, and/or legislation for the mandatory equalization of resources among districts. The issue of equalization has gained added support from recent court decisions, and its emergence has very significant implications for the future effectiveness of professional negotiations. According to Lieberman and Moskow:

Collective negotiations could intensify existing inequalities of educational opportunity. In affluent school districts, teacher pressure may be effective in achieving greater expenditures for education. In poor school districts, such pressure will be relatively ineffective; the local school district may simply not have the resources to meet teacher demands. . . . Should this happen, the result might be even greater pressure to finance education from state and federal instead of local sources.<sup>5</sup>

There is some evidence from this study that those districts with greater available resources do pay higher teacher salaries. However, the contention of Lieberman and Moskow that professional negotiations may intensify inequalities in educational opportunity is one which should be given a thorough empirical analysis.

Finally, it is possible that professional negotiations may have an effect upon the rate of school district consolidation in different parts of the country. As teachers become more unified at the local, state, and national levels in their demands for higher salaries and improved working conditions, some pressure may be felt by local school districts to unite in order to effectively resist such demands. Consolidation would also offer certain advantages for districts which are faced with the necessity of generating additional school revenues. The extent to which this effect actually materializes is another important empirical question for future researchers.

## 1. Introduction

1. See, for instance, Donald Gerwin, "Compensation Decisions in Public Organizations," *Industrial Relations*, VIII (February, 1969), pp. 174-184; Robert J. Carlsson and James W. Robinson, "Toward a Public Employment Wage Theory," *Industrial and Labor Relations Review*, XXII (January, 1969), pp. 243-248; James Craft, "Toward a Public Employment Wage Theory: Comment," *Industrial and Labor Relations Review*, XXIII (October, 1969), pp. 89-95.
2. Albert Rees, *The Economics of Trade Unions* (Chicago: University of Chicago Press, 1962), p. 195.
3. Harry H. Wellington and Ralph K. Winter, Jr., *The Unions and the Cities* (Washington, D.C.: The Brookings Institution, 1971), pp. 29-30.
4. *Ibid.*, pp. 30-32.
5. See, for instance, Leon Keyserling, *Goals for Teachers' Salaries in our Public Schools* (Washington, D.C.: Conference on Economic Progress, 1967).
6. The term *professional negotiations* is definitionally equivalent to the term *collective bargaining*. However, the former term has been adopted by the National Education Association and, since the vast majority of all public school teachers in Nebraska are represented by the NEA, this term will be used hereafter in the interests of consistency. Its usage throughout is not meant to suggest that all successes achieved by organized teacher groups have resulted from affiliation with the NEA.
7. For the 1972-73 school year, Nebraska had 1,250 operating school districts, more than any other state. The vast majority of these districts are very small rural elementary districts.
8. Most public school teachers in Nebraska, as well as elsewhere, are now reimbursed on the basis of a uniform salary index schedule. Much of chapter 5 will be concerned with interdistrict variations in these salary schedules. See Appendix A for an example and explanation of such a schedule.

## 2. Historical and Legal Background

1. Commission on the Educational Reconstruction of the American Federation of Teachers, *Organizing the Teaching Profession* (Glencoe, Ill.: The Free Press, 1955), p. 21.
2. Wellington Fordyce, "The Origin and Development of Teachers' Unions in the United States" (Ph.D. dissertation, Ohio State University, 1944), pp. 167-199.
3. American Federation of Teachers, *AFT Membership* (Chicago: American Federation of Teachers, 1971).
4. Fordyce, "Origin and Development of Teachers' Unions," pp. 19-59.
5. Edgar B. Wesley, *NEA: The First Hundred Years* (New York: Harper and Brothers, 1957), p. 335.
6. Robert Thornton, "Collective Negotiations for Teachers: History and Economic Effects" (Ph.D. dissertation, University of Illinois, 1970), p. 27.
7. Bernard Yarbrough and Lily Mary David, "Collective Bargaining and Work Stoppages Involving Teachers," *Monthly Labor Review*, LXXVI (May, 1953), pp. 475-479.



8. *Neb. Rev. Stat.*, sec. 48-802-(2), (reissue 1968).
9. Ronald W. Glass, "Work Stoppages and Teachers: History and Prospect," *Monthly Labor Review*, XC (August, 1967), pp. 43-46.
10. National Education Association, *Addresses and Proceedings* (Washington, D.C.: National Education Association, 1961), pp. 216-217.
11. National Education Association, *Addresses and Proceedings* (Washington, D.C.: National Education Association, 1962), p. 178.
12. Thornton, "Collective Negotiations for Teachers," p. 55.
13. Nebraska State Education Association, *We Have Met the NSEA and They Are Us!* (Lincoln: Nebraska State Education Association, 1973).
14. Wallace E. Good, "Public Employee Impasse Resolution by Judicial Order: The Nebraska Court of Industrial Relations," *Journal of Law and Education*, II (April, 1973), pp. 253-265.
15. *IBEW v. City of Hastings*, 179 Neb. 455, 138 N.W.2d 822 (1965).
16. *Neb. Rev. Stat.*, secs. 79-1287 to 1295 (reissue 1971).
17. Nebraska classifies its school districts as follows:

- Class I—Districts maintaining only the elementary grades from kindergarten through the eighth grade.
- Class II—Districts under 1,000 population, maintaining both elementary and high school education.
- Class III—Districts of 1,000 to 50,000 population, maintaining both elementary and high school education.
- Class IV—(Lincoln only) Districts of 50,000 to 200,000 population, maintaining both elementary and secondary education.
- Class V—(Omaha only) Districts of 200,000 or more population, maintaining both elementary and secondary education.
- Class VI—Districts which are organized to maintain high school education only.

Classes I, II, and VI school districts were omitted from L.B. 485 due to a political compromise during the 1967 session of the Unicameral.

18. L.B. 15, 1969 Session.
19. Good, "Public Employee Impasse Resolution," pp. 254-255.
20. *Neb. Rev. Stat.*, sec. 48-818 (reissue 1968).
21. *Milford Education Association v. School District of Milford*, No. 43 (Nebraska Court of Industrial Relations, July 16, 1971).
22. *Weeping Water Education Association v. School District of Weeping Water*, No. 46 (Nebraska Court of Industrial Relations, October 7, 1971).
23. *Seward Education Association v. School District of Seward*, No. 34 (Nebraska Court of Industrial Relations, August 9, 1971).
24. *Ibid.*, at 10.
25. *Neb. Rev. Stat.*, sec. 48-810.01.
26. *Seward Education Association v. School District of Seward*, 188 Neb. 772, 199 N.W.2d 752 (1972).
27. Nebraska State Education Association, *How Does Nebraska Compare?* (Lincoln: Nebraska State Education Association Research Division, 1966-67 through 1972-73).

### 3. Prior Empirical Work

1. Charles Rehmus and Evan Wilner, *The Economic Results of Teacher Bargaining: Michigan's First Two Years* (Ann Arbor: University of Michigan-Wayne State University, Institute of Labor and Industrial Relations, 1968)). Michigan's public employee bargaining law, Public Act 379, was enacted in 1965.

2. See Mary Sproull, "Salary Changes for Urban Teachers," *Monthly Labor Review*, XCII (April, 1969), pp. 49-52.
3. Robert J. Thornton, "Effects of Collective Negotiations on Teachers' Salaries," *Quarterly Review of Economics and Business*, XI (Winter, 1971), pp. 37-46.
4. Hirschel Kasper, "The Effects of Collective Bargaining on Public School Teachers' Salaries," *Industrial and Labor Relations Review*, XXIV (October, 1970), pp. 57-71.
5. John H. Landon and Robert N. Baird, "The Effects of Collective Bargaining on Public School Teachers' Salaries: Comment," *Industrial and Labor Relations Review*, XXV (April, 1972), pp. 410-417.
6. See, for instance, A. W. Smith, "Collective Negotiations in the Public Schools: Indiana, A Case Study" (Ph.D. dissertation, Indiana University, 1970), pp. 116-117.
7. Donald E. Frey, "Wage and Employment Effects of Collective Bargaining in Public Schools in New Jersey" (Ph.D. dissertation, Princeton University, 1972).
8. *Ibid.*, p. 77 n.
9. W. Clayton Hall and Norman E. Carroll, "The Effect of Teachers' Organizations on Salaries and Class Size," *Industrial and Labor Relations Review*, XXVI (January, 1973), pp. 834-841.
10. R. E. Schoenberger, "The Determination of Wisconsin Teacher Salaries under Conditions of Bilateral Monopoly: Some Econometric Evidence" (Ph.D. dissertation, Clark University, 1973).
11. Hirschel Kasper, "The Effects of Collective Bargaining on Public School Teachers' Salaries: Reply," *Industrial and Labor Relations Review*, XXV (April, 1972), p. 418.
12. *Ibid.*, p. 418.

#### 4. Professional Negotiations and the Secondary-Elementary Salary Differential

1. Joseph A. Kershaw and Roland N. McKean, *Teacher Shortages and Salary Schedules* (New York: McGraw-Hill Book Company, 1962), p. 20.
2. See, for instance, International Labour Organization, "The Determination of Teachers' Salaries," *International Labour Review*, LXXX (July, 1959), p. 51.
3. Albert Rees, *The Economics of Trade Unions* (Chicago: University of Chicago Press, 1962), p. 60.
4. Lloyd G. Reynolds, *Labor Economics and Labor Relations*, 5th ed. (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1970), p. 395.
5. Clinton S. Golden and Harold J. Ruttenburg, *The Dynamics of Industrial Democracy* (New York: Harper and Bros., 1942), pp. 169-170.
6. E. M. Hugh-Jones, ed., *Wage-Structure in Theory and Practice* (Amsterdam: North-Holland Publishing Company, 1966), p. 8.
7. Lloyd G. Reynolds and Cynthia H. Taft, *The Evolution of Wage Structure* (New Haven: Yale University Press, 1956), p. 179.
8. See Kershaw and McKean, *Teacher Shortages*, p. 20.
9. Harry H. Wellington and Ralph K. Winter, Jr., *The Unions and the Cities* (Washington, D.C.: The Brookings Institution, 1971), p. 18. For this argument as specifically applied to teachers, see Michael Moskow, *Teachers and Unions* (Philadelphia: University of Pennsylvania Press, 1966), pp. 79-86.
10. Kershaw and McKean, *Teacher Shortages*, p. 21.
11. Charles R. Perry and Wesley A. Wildman, *The Impact of Negotiations in Public Education: The Evidence from the Schools* (Worthington, Ohio: Charles A. Jones Publishing Company, 1970), p. 152.

12. On this point, see Charles S. Benson, ed., *Perspectives on the Economics of Education* (Boston: Houghton Mifflin Company, 1963), p. 303.
13. Hazel Davis, "Salary Schedules," *Encyclopedia of Educational Research* (New York: Macmillan Company, 1960), p. 1178.
14. Kershaw and McKean, *Teacher Shortages*, p. 22.
15. National Education Association, "Analysis of Single Salary Schedules," *Research Bulletin*, XXV (1947), p. 81.
16. Kershaw and McKean, *Teacher Shortages*, p. 25.
17. See note 17, chapter 2, for the Nebraska school district classification scheme.
18. Since 1963, Nebraska statutes have required that all teachers in Classes III, IV, and V school districts must have at least the B.A. degree within two years after first applying for certification within the state. However, this requirement was not made retroactive for teachers already holding permanent or life certificates. See *Neb. Rev. Stat.*, sec. 79-1247.06 (reissue 1971).
19. See Appendix B for reproductions of the questionnaire forms.
20. It was suspected that some multicollinearity might be present between the secondary wage-earner variable and the training and/or experience variables. However, an analysis of the correlation matrix associated with this data showed no simple correlation coefficient as high as .3 between (S) and any of the other independent variables.
21. See Robert J. Thornton, "The Effects of Collective Negotiations on Teachers' Salaries," *Quarterly Review of Economics and Business*, XI (Winter, 1971), pp. 43-44, for use of a similar test.

## 5. Professional Negotiations and the Relative Wage Effect

1. H. Gregg Lewis, *Unionism and Relative Wages in the United States* (Chicago: University of Chicago Press, 1963), p. 1.
2. Albert Rees, *The Economics of Trade Unions* (Chicago: University of Chicago Press, 1962), p. 69.
3. Alfred Marshall, *Principles of Economics*, 8th ed. (London: Macmillan & Co., 1920), pp. 383-386.
4. Marshall's analysis was a general one dealing with any factor of production. For a specific application of the Marshallian framework to labor markets, see Milton Friedman, "Some Comments on the Significance of Labor Unions for Economic Policy," in David McCord Wright, ed., *The Impact of the Union* (New York: Harcourt, Brace and Company, 1951), pp. 204-234.
5. Rees, *Economics of Trade Unions*, p. 74.
6. For an excellent survey of these studies, see Lewis, *Unionism*, chaps. 3 and 4.
7. Paul H. Douglas, *Real Wages in the United States, 1890-1925* (Boston: Houghton Mifflin Company, 1930).
8. Arthur Ross, *Trade Union Wage Policy* (Berkeley: University of California Press, 1948), chap. 6. Arthur Ross and William Goldner, "Forces Affecting the Inter-Industry Wage Structure," *Quarterly Journal of Economics*, LXIV (May, 1950), pp. 263-286.
9. Stephen Sobotka, "Union Influences on Wages: The Construction Industry," *Journal of Political Economy*, LXI (April, 1953), pp. 127-143.
10. Elton Rayack, "The Impact of Unionism in the Men's Clothing Industry, 1911-1956," *Labor Law Journal*, IX (September, 1958), pp. 674-688.
11. Irvin Sobel, "Collective Bargaining and Decentralization in the Rubber Tire Industry," *Journal of Political Economy*, LXII (February, 1954), pp. 12-25.

12. Joseph Scherer, "The Union Impact on Wages: The Case of the Year-Round Hotel Industry," *Industrial and Labor Relations Review*, IX (January, 1956), pp. 213-224.
13. Albert Rees, "Postwar Wage Determination in the Basic Steel Industry," *American Economic Review*, XLI (June, 1951), pp. 389-404.
14. John E. Maher, "Union-Nonunion Wage Differentials," *American Economic Review*, XLVI (June, 1956), pp. 336-352.
15. Joseph A. Kershaw and Roland N. McKean, *Teacher Shortages and Salary Schedules* (New York: McGraw-Hill Book Company, 1962), p. 19.
16. See note 1, chapter 1. Three studies which deal specifically with the nonbargaining determinants of teachers' salaries are Henry M. Levin, "A Cost-Effectiveness Analysis of Teacher Selection," *Journal of Human Resources*, V (Winter, 1970), pp. 24-33; John D. Owen, "Toward a Public Employment Wage Theory: Econometric Evidence on Teacher Quality," *Industrial and Labor Relations Review*, XXV (January, 1972), pp. 213-222; and John H. Landon and Robert N. Baird, "Monopsony in the Market for Public School Teachers," *American Economic Review*, LXI (December, 1971), pp. 966-971.
17. Charles R. Perry and Wesley A. Wildman, *The Impact of Negotiations in Public Education: The Evidence from the Schools* (Worthington, Ohio: Charles A. Jones Publishing Company, 1970), p. 139.
18. Kershaw and McKean, *Teacher Shortages*, p. 20.
19. A school district per capita income variable was also employed in preliminary regressions. The coefficient of this variable was found to be extremely small and statistically insignificant in all equations.
20. This formula was originally developed by R. E. Schoenberger in "The Determination of Wisconsin Teacher Salaries under Conditions of Bilateral Monopoly: Some Econometric Evidence" (Ph.D. dissertation, Clark University, 1973).
21. See John E. Drotning and David B. Lipsky, "The Outcome of Impasse Procedures in New York Schools under the Taylor Law," *Arbitration Journal*, XXVI, no. 2 (1971), pp. 95-99, for a discussion of this concept.
22. See note 6, chapter 3.
23. Perry and Wildman, *Impact of Negotiations*, p. 159.

## 6. Conclusions and Suggestions for Further Research

1. The only other known study on this subject is Richard Charles Pegnetter, "Collective Bargaining and Relative Dispersion among Teacher Salaries: The Pattern in Upstate New York from 1964 to 1971" (Ph.D. dissertation, Cornell University, 1971).
2. H. Gregg Lewis, *Unionism and Relative Wages in the United States* (Chicago: University of Chicago Press, 1963), p. 190.
3. Charles R. Perry and Wesley A. Wildman, *The Impact of Negotiations in Public Education: The Evidence from the Schools* (Worthington, Ohio: Charles A. Jones Publishing Company, 1970), p. 152.
4. Myron Lieberman and Michael H. Moskow, "The Future of Collective Negotiations," in Robert T. Woodworth and Richard B. Peterson, eds., *Collective Negotiation for Public and Professional Employees* (Glenview, Ill.: Scott, Foresman and Company, 1969), p. 360.
5. *Ibid.*, p. 361.

## Appendix A.

### A Hypothetical Salary Index Schedule For Teachers

Step	BA	BA+9	BA+18	BA+27	BA+36 or MA	MA+18	MA+36	Ed. D.
0	1.00	1.05	1.10	1.15	1.20	1.30	1.40	1.60
1	1.06	1.11	1.17	1.22	1.28	1.38	1.49	1.69
2	1.12	1.17	1.24	1.29	1.36	1.46	1.58	1.78
3	1.18	1.23	1.31	1.36	1.44	1.54	1.67	1.87
4	1.24	1.29	1.38	1.43	1.52	1.62	1.76	1.96
5		1.35	1.45	1.50	1.60	1.70	1.85	2.05
6			1.52	1.57	1.68	1.78	1.94	2.14
7				1.64	1.74	1.86	2.03	2.23
8				1.71	1.82	1.94	2.12	2.32
9					1.90	2.02	2.21	2.41
10					1.98	2.10	2.30	2.50
11						2.18	2.39	2.59
12							2.48	2.68

In the above schedule, the vertical increments under the heading "Step" represent years of teaching experience. The horizontal steps are for the successful completion of additional hours of college credit beyond the indicated degree. Given a base salary, a uniform schedule of this type allows for the computation of any teacher's salary by merely multiplying the base salary by the index number located at the appropriate horizontal and vertical step.

## Appendix B.

### Reproductions of Questionnaires

*Form sent to local teachers' associations:*

Name of School _____
1) For what school year did teachers at your school <u>first</u> engage in formal or informal professional negotiations which resulted in a bilateral agreement? _____
2) Would you classify these first negotiations as formal or informal? _____
3) Have annual negotiations occurred continuously since the above date? _____
4) Additional Comments _____ _____

*Form sent to county teachers' associations:*

Name of schools represented _____ by your organization _____
In as many of the above schools as you can determine, for what school year did teachers in that school <u>first</u> engage in formal or informal professional negotiations which resulted in a bilateral agreement? (If no negotiations have as yet occurred, write <u>none.</u> ) _____ _____
Additional Comments _____ _____

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