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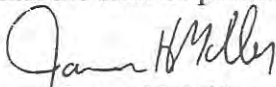
**An Evaluation
of Public and
Private Earnings
in Wisconsin**

Report from the President:

Dale Belman and John Heywood are professors at UW-Milwaukee, specializing in labor economics. The purpose of their study was to examine available data on compensation among the public and private sectors in Wisconsin. Their research was done with very careful academic precision. The database used for this research report did not include teachers but did include over 300,000 workers in Wisconsin.

Some findings are important and surprising. On average, state workers earn 23% more than private workers and 21% more than local government workers. In addition, there are differences in pay depending on education and profession, such as lawyers and psychologists who earn more in the private than the public sector.

It is also clear that public employees, on average, have a higher percentage of fringe benefits than private employees. These trends are important if you wonder why taxes rise in Wisconsin. The existing database for this study is several years old. The fringe benefits that were included in this study would have risen dramatically over the last several years because of rising medical costs. Middle-class jobs, such as typists and bookkeepers, are clearly paid a much higher rate by state government than by the private sector. These middle-class jobs make up a large proportion of government jobs and, therefore, raise the state average. The authors point out that much more research needs to be done in the future on analyzing fringe benefits. In the long run, fringe benefits have more economic impact on state taxpayers than the salaries paid to employees.


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Executive Summary

The setting of public sector compensation should command the attention of all citizens. The level of such compensation helps determine both the competence and efficiency of government services. Too high a level wastes the resources of state and local governments, depriving them of the opportunity to address other objectives or to reduce tax burdens. Too low a level makes it impossible for governments to attract quality workers needed to provide services that citizens demand. This study compares public and private sector compensation in Wisconsin and reaches several conclusions:

1. The public sector in Wisconsin tends to pay more than the private sector for occupations at the bottom of the pay and skill hierarchy but tends to pay less than the private sector for occupations at the top of the pay and skill hierarchy. As a consequence, earnings in the public sector are less dispersed (show less range) than those in the private sector.
2. The per person earnings of the state and local sectors are substantially above those in the private sector. However, the state and local sectors consist disproportionately of occupations which generally receive higher earnings, even in the private sector. State and local governments also have a more educated work force.
3. After adjusting for the composition of the work force (the mix of occupations and the levels of education, among other things), the extent of overpayment in earnings is, on average, modest for the state and nonexistent for the local sector.
4. The public sector spends substantially more on fringe benefits than the private sector. The extent of the gap in benefit spending appears greater than for earnings. However, benefit comparisons are extremely difficult to make and more future attention should be applied here than to earnings *per se*.

I. INTRODUCTION

The setting of public-sector compensation should command the attention of all citizens. The compensation level helps determine both the competence and efficiency of government services. Too high a level wastes the resources of state and local governments, depriving them of the opportunity to address other objectives or to reduce tax burdens. This, in turn, hurts the competitive position of any one state, relative to its neighbors and could result in a reduction of new business activity. Too low a level of compensation makes it impossible for governments to attract the quality workers needed to provide services that citizens demand. The presumption in the setting of governmental compensation is that public-sector workers should have earnings comparable to those of private-sector-workers. As Stephen Venti, an economist at Dartmouth, has written, "Pay comparability between the public and private sectors is supported by both equity and efficiency arguments. Equity considerations dictate a worker do no better or worse in the public sector than in the private sector. Efficiency considerations imply that the federal [public] sector pays no more than is necessary to attract an adequate supply of employees."

Recent debate in Wisconsin has centered upon the comparison of earnings and benefits of state and local workers and their private sector counterparts. The debate has included complaints about the binding arbitration system at the local level, and the widespread belief that public-sector workers enjoy higher earnings and better benefits than workers in the private sector. Indeed, a 1990 *Milwaukee Sentinel* article began with the headline "Benefits Higher for Public Workers" and went on to discuss an evaluation of state data by the Wisconsin Taxpayers Alliance that did, indeed, come to that conclusion. Such reports on benefits are matched by findings that public-sector workers in Wisconsin have enjoyed larger increases in earnings over the 1980s than private sector Wisconsin workers. Cox and Brunelli (1992) present evidence that private-sector earnings increased 44 percent in Wisconsin from 1980 to 1989, while state worker earnings increased 50 percent and local government worker earnings increased 53.7 percent. After adjusting for inflation, these increases amount to a decline in real terms for private sector Wisconsin workers, and modest increases for state and local workers.

Such broad comparisons between public-and private-sector earnings and benefits do not adjust for the occupational composition of the two sectors' workforces. Thus, if one sector is disproportionately composed of a particular occupation that has high earnings, or rapidly increasing earnings, that sector might appear to earn more even if the particular occupation is paid the same in both sectors. One suggestion is to compare "positions." Following this suggestion, the earnings of a clerk-typist, accountant or other similarly narrow position are compared across the public and private sectors. The state of Wisconsin provides data that allows a variety of such comparisons to be made.

This approach, however, has a number of serious limitations. First, it has been contended that government employees are typically promoted more quickly (see Hartman 1983). The consequence is that even though "positions" are comparable, the people doing them (and the consequent flow of services) are not. Second, there are no comparable private sector positions for some of the most important and most numerous public sector positions. For example, some working in the judicial, legislative, police, educational and social service fields simply have no private-sector counterpart that makes for a valid comparison. Ignoring these workers leads to comparisons that are partial at best and possibly misleading.

Labor economists have been trying to overcome these problems for two decades by comparing "people" rather than "positions." The fundamental approach is to hold constant the variety of factors that increase worker productivity and then examine whether state or local employment has an independent influence which increases worker earnings. In this way, the economist can hold constant the average portion of earnings associated with years of education, years of work experience, race, gender, marital status, unionization, city size and other known

determinants of earnings. By also holding constant broad occupational categories, economists can provide detailed estimates of the earnings gap (if any) between public sector and private sector workers.

II. OUTLINE OF THIS STUDY

This study will analyze a variety of data sources in an effort to determine the extent to which local and state workers in Wisconsin receive compensation greater than that received by their private-sector counterparts. The standard that public and private workers should receive comparable earnings has been codified at the federal level in the Federal Pay Comparability Act of 1970. In Wisconsin, statutes on municipal employee relations list comparability with private sector earnings as one of a number of criteria for the interest arbitration system which helps determine the earnings of local public-sector workers (for more on the arbitration system see Hill and DeLacenserie, 1991). At issue is whether or not the general policy presumption of comparability between public and private sector earnings has been translated into reality.

In section three, a variety of specific occupations will be examined to see if any clear pattern emerges in a comparison of positions. The critique of this approach, discussed briefly above, will be expanded, and the rationale for a comparison of people will be presented. Section four will examine three years of data from the U.S. Bureau of Labor Statistics on individual workers in Wisconsin. The earnings of these individuals will be regressed against relevant productivity-enhancing characteristics in order to present estimates of the corrected public-private earnings gap. The methodology will be explained in that section, and the results will be discussed. The section concludes by comparing public-private earnings gaps in Wisconsin with those in other Midwestern states.

The fifth section directly examines fringe benefits. Two steps will be taken. First, we will try to directly estimate the gap in benefit provision as we did with earnings in section three. This is difficult because the available data on fringe benefits are of a more limited nature than on earnings. Moreover, the issues are far more complex and the range for interpretation is far broader. Second, we will attempt to adjust the fringe benefit information available from the state of Wisconsin by using the estimates from the first step as explained in detail in section five. Finally, section six draws conclusions about the compensation of public workers in Wisconsin based on the estimations made in the previous sections.

III. COMPARING POSITIONS

The state of Wisconsin surveys employers in the state on a regular basis to determine the prevailing wages for a wide variety of specific occupations. Prepared by the Labor Market Information Bureau within the Department of Industry, Labor and Human Resources, this "Wage Survey" is designed, in part, to give potential employers a snapshot of what others in their industry are paying particular types of employees. Thus, the survey results break out separate figures for several major industry groupings. In addition, the survey reports prevailing wages for state and local governmental workers. The local governments include school districts, although no figures are reported for teachers per se. While hundreds of occupations are reported, a smaller number are reported for both the private sector than either the state or local sector. Nonetheless, this survey provides the best opportunity to try to make a position based comparison across the sectors.

As of this writing, the most recent Wage Survey was completed in May of 1990. More than 7,500 employers in the state were surveyed, and for each occupation the average wage, typical starting wage and some idea of the dispersion in wages are reported. When the particular occupation is not paid by the hour, an hourly wage equivalent is computed. This is accomplished by determining the basis of the salary (weekly, monthly, etc.), determining how

many hours are typically worked within that period and dividing the salary by the number of hours reported.

To begin comparing the earnings, we took a loosely representative sample of 30 occupations listed in the private sector and at least one public sector and compared the average wages listed in the occupations. Of that total, in 18 occupations the lowest (or lower) average wage was in the private sector. In six cases the private sector had the highest (or higher) average wage. In the remaining six cases, the private wage was between the two public sector averages. To give some sense of this we have reproduced half the occupations we examined in Table 1. The general pattern is that professionals with advanced degrees do best in the private sector. Relatively unskilled or semi-skilled workers do worst in the public sector. Those occupations which require college, but not advanced, degrees seem more likely to have private-sector earnings that land between the two public sectors' earnings.

While this approach offers some insight, there are several crucial shortcomings. First, a general comparison across sectors and occupations is not easily accomplished. Thus, while attorneys earn less in the public sector and mechanics earn more, the issue remains which pattern is more typical. Simply adding up the number of occupations that earn more in the public sectors is misleading if there are many more public employees in the few occupations which earn less than the private sector.

Second, there are a great many occupations that exist in one sector, but not in the other. The Wage Survey gives the average private sector wage in 1990 as \$9.71 (based on 228,281 workers), the average local wage as \$9.90 (based on 60,030 workers) and the average state wage as \$12.19 (based on 17,703 workers). This ordering would show that both public sectors have higher earnings, but these average figures by themselves are not particularly helpful because they are based on very different sets of underlying occupations. In a nationwide study, Belman and Heywood (1988) suggest that the occupations such as police, fire fighters, judges, legislators and others existing only in the public sector are paid according to a very different regime than those public sector occupations which have private sector equivalents. Thus, one reason the Wisconsin state earnings are so high might be that they reflect occupations that have no private-sector counterparts.

Third, there could be substantial variation within occupations in the actual duties being performed across sectors. As an example, a security officer in a department store may have different duties than one in a court or school. Similarly, a therapist working in the prison system may have different duties from one in private practice. The point is that even with the reasonably narrow occupations identified in the Wage Survey, there may exist differences in duties and/or training of the workers which helps to explain the differences in earnings between the sectors.

Despite these three problems, the review of the occupation-based earnings does reveal useful information. At lower levels of the skill and education hierarchy, public-sector earnings appear to exceed private-sector earnings. At the high end of the skill and education hierarchy, public-sector earnings appear to fall short of private-sector earnings. Thus, one influence of public-sector wage setting in Wisconsin seems to be to reduce the dispersion in earnings across occupations. The range between the lowest-paid occupation and the highest is far smaller in the public sector than in the private sector. While valuable, this insight leaves largely unresolved the issue of whether public-sector compensation is excessive on average, once we control for differences in the public and private work force.

Table 1: The average earnings of 15 occupations in three Wisconsin sectors

| Occupation | Private(\$) | Local(\$) | State(\$) |
|------------------------|-------------|-----------|-----------|
| Bookkeeper | 8.31 | 9.91 | 10.22 |
| Clerk Typist | 7.00 | 8.13 | 9.12 |
| Baker | 6.79 | 7.22 | 9.91 |
| Cafeteria Cook | 6.44 | 6.86 | 9.10 |
| Custodian | 5.64 | 8.47 | 8.90 |
| Vehicle Mechanic | 10.14 | 11.56 | 10.77 |
| Drafter | 10.56 | 11.85 | 11.79 |
| Computer Operator | 8.93 | 9.73 | 10.87 |
| Respiratory Therapist | 11.62 | | 13.58 |
| Registered Nurse | 14.10 | 12.35 | 15.23 |
| Civil Engineer | 17.01 | 17.96 | 16.96 |
| Computer Programmer II | 15.52 | 14.43 | 15.90 |
| Dental Hygienist | 14.46 | | 11.73 |
| Attorney | 29.03 | 25.19 | 24.85 |
| Clinical Psychologist | 37.31 | 17.35 | 18.79 |
| AVERAGE | 9.71 | 9.90 | 12.19 |

Source: All data is from the 1990 WAGE SURVEY, Department of Labor, Industry and Human Resources, state of Wisconsin.

IV. COMPARING PEOPLE

The labor economist's technique for alleviating the difficulties of comparison generated by the three problems mentioned above is to compare the actual workers, rather than focus on the narrow occupations they perform. Using regression analysis, the characteristics of the workers are standardized, allowing the examination of any remaining component of earnings that is attributable to being in the public sector as opposed to the private. Years of education, years of experience, race, gender, marital status, broad occupation, part-time status, unionization status and work location are typical variables used to standardize the earnings of workers. These variables routinely help explain the level of earnings in the private sector and are used to ask what earnings would those in the public sector have if their characteristics were rewarded according to the estimated earnings equation from the private sector.

We now turn to an earnings comparison based on the characteristics of the workers in the different sectors of Wisconsin. Our data are drawn from three consecutive years of the Current Population Survey of the federal Bureau of Labor Statistics. The years are 1989, 1990 and 1991. This nationwide survey is conducted to determine, among other things, estimates of the unemployment rate. From the combined cross-year data we extracted all workers from the three sectors in the state of Wisconsin: 5,035 private-sector workers; 757 local-sector workers; and 300 state workers. While not a large sample, it is also not unusually small for this type of examination (see Quinn, 1979).

Table 2 presents the average values and standard deviations for each of the variables used in our analysis. If the worker was paid by the hour, we used the exact measure. If the worker was paid over some other time period, we divided the usual weekly earnings by the usual hours worked during the week. The first row presents the descriptive statistics for the average hourly wage in each of the three sectors. The private sector has the lowest average hourly wage. The average private hourly wage is \$10.23; for the local sector it is \$11.45; and for the state sector it is \$12.68. The standard deviations (a measure of the variable's dispersion) shows a familiar pattern evident in our examination of positions. The private-sector wage has a standard deviation of \$6.44 or 63 percent of its average. The local-sector wage has a standard deviation of \$5.13 or only 45 percent of its average. Finally, the state-sector wage has a standard deviation of \$6.26 or 49 percent of its average. Thus, public-sector earnings are more compressed around their averages relative to private-sector earnings which show much greater variation. This evidence is consistent with a public sector that elevates the earnings of those at the low end of the pay and skill hierarchy, and depresses the earnings of those at the high end of that hierarchy.

Other differences appear between the sample of private-sector and public-sector workers. The years of education for the private sample average about one and a half less than those in the public samples. The occupational composition also varies sharply. In the private sector, about 24 percent of the workers list their major occupation as professional or managerial. These two occupational groups comprise over 51 percent of the local government sector and 37 percent of the state sector. Unionization rates present an even more dramatic difference. The private-sector sample has a unionization rate of 13.4 percent. The local-sector sample has a remarkably high unionization rate of 65 percent, while the state sample figure is 42 percent. Thus, the government work force presents us with a type of worker that is a good deal less likely to be observed in the private work force, a professional or managerial worker who is unionized. These include, but are not limited to, public school teachers, a group not surveyed in the Wisconsin Wage Survey.

Table 2: Descriptive Statistics for Wisconsin Workers (1989,90 and 91)

| Variable | Private | Local | State |
|---------------------|------------------|------------------|------------------|
| Hourly Wage(\$) | 10.23 (6.43) | 11.45 (5.13) | 12.68 (6.26) |
| Yrs. Education | 12.21 (2.22) | 13.61 (2.51) | 13.92 (2.73) |
| Yrs. Wrk Experience | 20.20 (12.8) | 22.80 (10.9) | 21.66 (12.3) |
| Experience Squared | 571.2 (642.6) | 638.9 (545.7) | 620.9 (606.8) |
| Proportion Black | .0296 (.169) | .0396 (.195) | .0267 (1.61) |

Table 2: (Continued)

| | | | |
|-----------------------------|-----------------|-----------------|-----------------|
| Proportion Hispanic | .0050 (.070) | .0092 (.096) | .0133 (.114) |
| Other Minority | .0133 (.115) | .0317 (.175) | .0266 (.115) |
| Female | .5025 (.500) | .5614 (.497) | .5000 (.501) |
| Union Member | .1343 (.341) | .6499 (.477) | .4200 (.494) |
| Works in Urban Area | .6475 (.479) | .5892 (.492) | .6833 (.466) |
| Married | .6032 (.489) | .7199 (.449) | .6401 (.481) |
| Widowed or Divorced | .1331 (.339) | .1136 (.317) | .1433 (.351) |
| Manager | .1247 (.330) | .0885 (.284) | .1633 (.371) |
| Professional | .1156 (.319) | .4240 (.495) | .3133 (.464) |
| Technical Worker | .0439 (.205) | .0119 (.108) | .0933 (.291) |
| Sales Worker | .1400 (.347) | .0066 (.081) | .0067 (.082) |
| Clerical | .1976 (.398) | .1691 (.375) | .2600 (.439) |
| Service | .1355 (.342) | .2431 (.429) | .1167 (.322) |
| Craft | .1764 (.381) | .0357 (.185) | .0400 (.196) |
| Part-time 20 to 34 hrs | .1487 (.355) | .1229 (.328) | .1467 (.354) |
| Part-time 19 or less hrs | .0375 (.190) | .0489 (.216) | .0167 (.128) |

Table 2: (Continued)

| | | | |
|------------------|-----------------|-----------------|-----------------|
| From 1989 Sample | .3535 (.481) | .3355 (.473) | .3667 (.489) |
| From 1990 Sample | .3426 (.474) | .3342 (.472) | .3200 (.467) |
| From 1991 Sample | .3039 (.460) | .3303 (.470) | .3133 (.464) |
| Number of Obs. | 5035 | 757 | 300 |

Sources: The observations are drawn from three consecutive years of the BLS cross year tapes for the Current Population Survey. Standard deviations are presented in parentheses.

Each of the variables in Table 2 are used to explain the earnings of the workers in the sample. The first step is to estimate how each of the variables "contributes" to the earnings in each sector. This results in three equations, one for each sector, in which the wage is a linear function of the other variables. The second step is to use the average values of the other variables from the public sector to predict the private-sector wage with which they would be associated. Finally, we compare this predicted private wage with the actual state wage. This difference is the adjusted, or corrected, earnings difference. Thus, if we find that a year of education raises the earnings of the private-sector workers by five percent, we will use this to account for the fact that state workers have more education. The entire point is to estimate what the state workers would earn if they were rewarded according to the private-sector earnings equation and to compare it to what they actually earn.

Similarly, the technique could ask what the local workers would earn if rewarded according to the private-sector equation and use this value to create an adjusted local-private earnings gap. Estimates could also be generated in an alternative way. Instead of asking what the public workers would earn in the private-sectors, we could ask what each of the private-sector workers would earn in the public sector. This generates two alternative measures of the private-state and the private-local earnings gap. The first set of estimates are typically called the public-base estimates, and the second set are called the private-base estimates. A common summary measure is simply the arithmetic mean of the two estimates.

First, the private base measures are presented. Here, the mean characteristics of the private sector workers are multiplied by the estimated coefficients of local and state equations. The resulting estimate is compared with private sector average earnings. Using the formula discussed in the appendix these differences can be converted to percentage wage gaps and are presented in Table 3. These results indicate that state workers have a gap indicating overpayment of 5.87 percent relative to the private sector, but that local workers seem to have a gap indicating underpayment of 4.30 percent relative to private-sector workers.

We can now provide the public-sector base estimates. Here the private-sector worker mean characteristics are multiplied by the state-and local-sector estimated coefficients and compared with the actual state and local mean earnings. Again, following the appendix, these are presented in percentage form. The state differential is -1.19 percent, and the local differential is -8.42 percent. These numbers are in the second row of Table 3. Because there are not strong reasons to favor one base estimate over the other, the average appears in the third row. These figures indicate the average local differential is -6.36 percent and that for the state is 2.34 percent.

In dollar and cents terms, using the average Wisconsin wage across all sectors, this is a positive gap of about 25 cents an hour or \$500 a year overpayment for state workers, but 68 cents an hour or over \$1,350 a year of underpayment for local workers.

On the basis of numbers presented so far, one would conclude that the state sector compresses earnings, underpaying at the high end of the hierarchy, but overpaying at the low end. Further, when the different composition of the state sector is taken into account (the fact that it has many unique occupations and has a work force with different characteristics), the average earnings in the state sector are a few percentage points above what they would be in the private sector. The local sector seems to engage in the same compression of earnings, but given its work force and mix of occupations, the average earnings are a few percentage points below what local workers could expect in the private sector.¹

Table 3: The Adjusted Percentage Wage Gaps -- Comparing People

| | Local | State |
|--------------|--------|--------|
| Private Base | -4.30% | 5.87% |
| Public Base | -8.42% | -1.19% |
| Average | -6.36% | 2.34% |

These measures follow from the technique described in the text and equations estimated and presented in Appendix A. The technique corrects for the different mix of occupations, education levels and so on.

Although we only have three years of data, it is interesting to compare the rate of increase between the years in the earnings across the three sectors. These increases are given by the coefficients on the year variables in the regressions in Appendix A. Note that these coefficients measure the increase in earnings holding constant the other variables in the regression. They indicate that state earnings are increasing slowly, the private earnings are increasing at a slightly faster pace and that local earnings are increasing at a substantially faster pace. The estimates are in Table 4. Local sector earnings increased 10 percent over the two-year period holding all other characteristics constant. On the other hand, state earnings increased about 5 percent over the two years while private earnings increased just over 6 percent. This pattern of increases would tend to equalize the differences identified earlier if they continue for several more years.

Finally, this section compares Wisconsin with the states of Illinois, Indiana, Ohio and Michigan. We had hoped to include Minnesota as well, but an extremely small number of observations in the state sector made that comparison impossible. For each of the four other states we used the same three years of CPS information to create state-specific samples in the private, local and state sectors. The general pattern of earnings is provided in Table 5. It shows the pattern we are familiar with from the Wisconsin sample. In each case, the average private-sector wage is lowest followed by the average local-sector wage and then by the average state-sector wage.

Table 4: The Normalized Rate of Annual Increase in Nominal Earnings Year to Year

| | Private | Local | State |
|--------------|---------|-------|-------|
| 1989 to 1990 | 3.78% | 5.76 | 3.67 |
| 1989 to 1991 | 6.29% | 9.97 | 4.92 |

Table 5: Relative hourly earnings in the Midwestern States

| Midwestern States | Private(\$) | Local(\$) | state(\$) |
|-------------------|-------------|-----------|-----------|
| Wisconsin | \$10.23 | 11.45 | 12.68 |
| Ohio | 10.40 | 11.38 | 11.89 |
| Indiana | 9.52 | 9.79 | 12.13 |
| Illinois | 11.35 | 12.54 | 12.70 |
| Michigan | 11.03 | 13.07 | 13.64 |

Table 6: Estimates of the Adjusted Earnings Gap in Midwestern states

| Midwestern State | Local Gap(%) | State Gap(%) |
|------------------|--------------|--------------|
| Wisconsin | -6.36 | 2.34 |
| Ohio | -4.11 | -0.14 |
| Indiana | -10.24 | 0.00 |
| Illinois | -4.40 | -1.93 |
| Michigan | -4.11 | 0.37 |

We broke the sample into separate sections for each of the four new states. We then estimated for each state three earnings equations directly analogous to those in Appendix A. This allows us to present estimates of the public-private earnings gaps in these other states. The full set of earnings regressions are available from the authors, but are excluded from this report to save space. The procedure for generating the percentage earnings gaps are identical to those followed earlier.

In Table 6 we present the average of the public and private base estimates for each of the five Midwestern states. The pattern is interesting. According to the approach of comparing people, the average earnings of all the local sectors fall below what earnings of that state's private sector would provide. The estimated degree of underpayment in Wisconsin is neither the highest nor the lowest. On the other hand, the relatively modest overpayment for Wisconsin state workers stands out as the only sizable overpayment in any of the states. The only other state with an estimated overpayment is Michigan, only about one-third of one percent. Thus, each state has a negative earnings differential for local workers from about 4 to 10 percent. Each state has a state sector earnings differential that is nearer to zero, and only Wisconsin has a noticeable positive adjusted state earnings gap.

V. FRINGE BENEFITS

The previous sections of this study have dealt exclusively with earnings, as they remain the largest component of worker compensation. A few decades ago, earnings would have represented the vast majority of compensation. Now it represents an ever-shrinking share. The combination of all fringe benefits has grown as a share of total compensation so that in Wisconsin, fringe benefits represent 27.7 percent of total worker compensation across all three sectors.

Intersectoral benefit comparisons are far more difficult than earnings comparisons. Simple summary measures, the counterpart of the adjusted earnings gap discussed previously, are difficult to come by. The fundamental problem is that data are very incomplete. There are no data which would allow us to compare the value to Wisconsin employees of the public- and private-sector benefit packages. There are relatively good data on benefit costs by industry, but they do not include the information on education or occupational distributions needed to control for the differing characteristics of the public and private labor forces. Although we can generate fairly exact comparisons of the amounts the sectors are paying in benefits per employee, we are unable to determine whether the differences represent differences in the generosity of benefit packages, in the efficiency of providing benefits, or in the odds of having benefits at all divergences reflect differences in workers or in working conditions. Moreover, comparisons in fringe benefit costs are complicated by differences in actuarial assumptions and the timing of funding between the sectors.

A. Fringe Benefit Costs

The figure presented earlier on fringe benefits as a share of total compensation (27.7%) follows from the only recent survey undertaken by the state of Wisconsin specifically on fringe benefits. This study, conducted in 1989, examined 1,641 private companies, 505 local governments and the state itself. The employers interviewed had a total work force of over 151,000 employees. The questions were limited to only full-time, full-year workers. In each interview the per hour costs of a variety of fringe benefits were determined. These are presented in Table 7 for local and state government and for a variety of private industrial groupings.

The highest expense on fringe benefits is in the Transportation, Communications and Public Utilities industry group at \$6.54 per hour. The second highest expense is in the state government at \$6.21 per hour, and the third highest is in the local government at \$5.92 per hour. These figures suggest that the average fringe-benefit compensation is larger in the state and local sectors than in the private sectors. Indeed, the state and local sectors' costs are above the statewide (all sectors) cost from the survey of \$5.22.

Also of interest is how these figures compare to hourly earnings in the various sectors. Table 8 examines this and related issues. The first column lists the average hourly wage in the various industry groups and sectors. The second column lists the fringe compensation from Table 7, while the third column lists fringes as a share of the total hourly compensation (fringe plus earnings). Column four lists the number of employers within each industry and sector on which the data are based. Column five presents an alternative distribution across the industries. These numbers of employees are used to create weighted averages which indicate the average private sector figures (across all industry groups). These numbers are presented in the final two rows of the Table.

A number of implications need to be drawn from Table 8. First, the state and local sectors provide fringe benefits which represent a larger share of total compensation than is true anywhere in the private sector. The state government ranks first in fringe share at 31.6 percent. The local government is right behind at 31.3 percent.² Then a large drop occurs until we reach the transportation, communication and public utility industries which rank third at a much lower 27.2 percent. All other industries fall between that and about 22 percent. If one weights by the industry employment in the sample (the last column), the average private-sector fringe benefit is \$4.58 per hour, much lower than the \$5.92 and \$6.21 per hour for the local and state sectors.

Table 7: Fringe Benefit Costs in Wisconsin

| Sector | Paid Time off | Mandatory Benefits | Retirement & Savings | Insurance | Health | Misc. | Total |
|----------------------------------|------------------|-----------------------|-------------------------|-----------|--------|-------|-------|
| Private: | | | | | | | |
| Const. | \$0.86 | 2.40 | 0.85 | 0.11 | 0.98 | 0.06 | 5.27 |
| Durable Goods | 1.18 | 1.47 | 0.52 | 0.04 | 0.87 | 0.04 | 4.12 |
| Nondurable Goods | 1.17 | 1.30 | 0.40 | 0.06 | 0.87 | 0.03 | 3.83 |
| Trans. Comm. and Pub Util. | 2.17 | 1.59 | 0.83 | 0.17 | 1.48 | 0.30 | 6.54 |
| Whole/Ret. Trade | 0.82 | 1.28 | 0.22 | 0.03 | 0.45 | 0.02 | 2.81 |
| Fin., Ins. Real Estate | 1.56 | 1.08 | 0.88 | 0.11 | 0.94 | 0.05 | 4.62 |
| Other Service | 1.10 | 1.09 | 0.25 | 0.03 | 0.53 | 0.02 | 3.03 |
| Health Services | 1.40 | 1.27 | 0.35 | 0.03 | 0.70 | 0.02 | 3.77 |
| Local Gov. | 1.74 | 1.20 | 1.53 | 0.04 | 1.39 | 0.01 | 5.92 |
| State Gov. | 2.14 | 1.13 | 1.86 | 0.02 | 1.05 | 0.00 | 6.21 |

Source: Employee Benefits 1989, Department of Industry, Labor and Human Resources, May 1990, pg. 72. All figures are expressed in dollars per hour.

Table 8: Per Hour Fringe Costs and their Share of Compensation

| Sectors | Earnings | Fringe Share | Fringe 1989 Survey | # Employees 1990 Survey | # Employees Total |
|------------------------------------|----------|--------------|--------------------|-------------------------|-------------------|
| Private: | | | | | |
| Const. | \$14.16 | \$5.27 | 27.1% | 792 | 9001 |
| Durable | 12.86 | 4.12 | 24.3 | 20474 | 57033 |
| Nondurable | 11.98 | 3.83 | 24.2 | 9473 | 33662 |
| Trans. etc. | 17.52 | 6.54 | 27.2 | 19968 | 16493 |
| Trade | 9.53 | 2.81 | 22.8 | 5671 | 24221 |
| Fin. etc. | 12.89 | 4.62 | 26.4 | 18095 | 16551 |
| Other Service | 10.44 | 3.03 | 22.4 | 4584 | 30211 |
| Health Service | 11.91 | 3.77 | 24.0 | 7637 | 41109 |
| Local Gov. | 13.02 | 5.92 | 31.3 | 27226 | 60030 |
| State Gov. | 13.53 | 6.21 | 31.6 | 37307 | 17703 |
| Ave Private 1989 employee weights. | 14.58 | 4.58 | 23.9 | 86693 | |
| Ave. Private 1990 employee weights | 12.26 | 4.05 | 24.8 | | 228281 |

Sources: Employee Benefits 1989 pg. 72 and 2. The first two columns are expressed as per hour figures.

What is remarkable about these numbers is that they come from a sample that is not representative of the Wisconsin private sector. As the report makes clear, the employers who reported results represent larger firms than those originally surveyed. Moreover, the number of employees in the high earnings and high benefit industries are overrepresented. This is made clear by examining the weighted average private earnings which for the first time in any of our work appear above the state and local sectors. This follows because some 23 percent of the workers in the benefits sample are located in the very high wage transportation, communications and public utilities industries. This is misleading. As the larger and more accurate Wisconsin Wage Survey numbers in the final column indicate, only some seven percent of private-sector workers are actually in these industries.

To adjust the private sector averages for the proper composition of the work force across the industries, new weighted averages are used based on the employment figures from the 1990 Wisconsin Wage Survey. The average private-sector wage comes immediately back into alignment with the other two sectors. The state has the highest average earnings, the local governments the

next highest and the private sector average earnings lowest of the three. The new composition of the sectors is also reflected in the average benefit per hour which is now \$4.05 per hour. Because both the average earnings and average benefits are lower with the more accurate composition from the wage survey, the fringe as a percent of compensation remains very similar for the private sector.

The fundamental point is now clear. Although raw state and local earnings are somewhat above those in the private sector, raw state and local fringe benefits costs are substantially above the average private sector cost. The earnings of local workers are 6.2 percent above those in the private sector. The cost of fringe benefits for local workers is 46.2 percent above those in the private sector. The earnings of state workers are 10.4 percent above those in the private sector while fringe costs are 53.3 percent higher.

These differences in the raw hourly costs of benefits are impressive, but must be examined with care. They could be the result of several factors: differences in the occupational and personal characteristics of state and local workers, greater generosity in benefits, higher costs in providing benefits or a greater probability of workers receiving benefits in the first place. We turn to these issues in greater detail.

As in the case of wages, differences in personal characteristics and occupations are of particular importance in explaining differences in benefit costs. Law firms, which have an interest in developing and retaining trained and experienced workers, have higher fringe benefits costs than a firm in the fast food business which hires unskilled workers with limited opportunities for long term employment. Thus, until the cost figures are adjusted for the differences in occupational and personal characteristics between the sectors, we cannot judge the extent to which the cost differences are unjustified.

B. Provision of Fringe Benefits

Some light can be thrown on the issue of fringe benefits differences by taking advantage of some excellent data on the provision of benefits. As noted previously, there are several influences on the cost of fringe benefits. One is the influence on the provision of the benefit itself. This is the tendency of the public sector to provide a given benefit relative to the same tendency in the private sector. This influence is different than that which alters the generosity of benefits once provided. The greater cost of public sector fringe benefits may be any combination of these two influences.

Approximately once every five years, the U.S. Bureau of the Census collects information on employee benefits as part of the May Current Population Survey. The most recent of these benefits surveys, May, 1988, included information on pension provision and provision of medical insurance. As the data also include information on worker characteristics and occupations, it is possible to generate the probability for coverage for comparable workers. Although this approach is incompatible because the generosity of benefits is not given, it yields additional insight into the differences between sectors.³

Belman's and Heywood's 1991 work with an earlier nationwide sample demonstrated that government employment has an extremely strong influence on provision. Correcting for a wide variety of productivity-enhancing characteristics and holding constant the wage level, local employees are 26.8 percentage points more likely to have pension plans than are otherwise equal private employees. State employees are 31.1 percentage points more likely to have pensions. Local employees are 5.0 percentage points more likely to have health insurance. State employees are 7.1 percentage points more likely to have health insurance. At issue is whether these figures from an earlier nationwide survey carry over to current conditions in Wisconsin.

Using the May, 1988 CPS we examine the probability of receiving either a pension or health insurance. Because the sample is substantially smaller than that used for the earnings comparisons, we are unable to limit ourselves to only workers in Wisconsin. Instead, we limit ourselves to the states in the Midwest we used for the earnings comparisons: Wisconsin, Illinois, Michigan, Indiana and Ohio. We are able to add neighboring Minnesota to these estimates because we do not need to have state specific samples. In the earlier wage estimates, the sample size of Minnesota was too small for a state-by-state comparison.

The top of Table 9 uses the resulting sample and presents the proportion of each work force that receives pension benefits. The numbers in the first column represent a sample of all workers (age 16 and above). They indicate that for Midwestern workers 49.7 percent of private sector workers receive a pension, 70.6 percent of state workers receive a pension and 80.7 percent of local workers receive a pension. The second column of Table 9 presents the proportion of workers who report that they work for an employer who offers a pension (regardless of whether or not the particular worker is covered). A similar pattern emerges. Private employers are much less likely to even offer pensions than are public employers. Indeed, nearly all state and local workers report that their employer offers pensions. The only ones who might not are contract workers or others who simply don't know. Yet, only two-thirds of private-sector workers report that they work for a firm that offers pensions.

The raw results in the first two columns raise an interesting issue. Given that a worker is employed by an establishment that offers pensions, what is the proportion of workers who are covered? This can be determined by limiting the sample to only those workers who report that their employer offers a pension (again, even if they are not covered) and calculating the proportion of this new sample that actually are covered by pensions. These raw figures are presented in the third column of Table 9 as the "conditional probability." The interesting result is that the proportions are far closer together than were the earlier estimates. The state and private figures are about the same, and the local figure is about 10 percentage points higher. This tends to indicate that the primary reason for the differences in pension provision is whether the employer offers a pension, not whether any given individual is eligible.

Table 9: Percentage of Workers with Pension and Health Insurance Provision

| | Worker has Pension | Employer offers pension | Conditional Prob. |
|-----------------------|--------------------|-------------------------|-------------------|
| Private (adjusted) | 49.7% (51.6) | 63.4% (65.2) | 79.2% (79.6) |
| State | 70.6 (62.3) | 94.1 (90.0) | 75.2 (76.3) |
| Local | 80.7 (70.6) | 92.7 (86.7) | 87.1 (84.8) |

Health Insurance

| | Worker has Insurance | Employer offers Insurance | Conditional Prob. |
|-----------------------|----------------------|---------------------------|-------------------|
| Private (adjusted) | 67.6 (68.4) | 83.7 (84.5) | 80.8 (80.9) |
| State | 75.7 (71.1) | 94.6 (91.4) | 80.0 (79.2) |
| Local | 72.7 (67.7) | 94.5 (92.3) | 76.9 (76.2) |

The total sample size was 3,079 of which 4.25 percent were state workers and 11.73 percent were local workers. The sample is for the Midwestern states indicated in the text. The Conditional Prob. is the percentage of workers who receive the benefit, among those who work for employers who offer the benefit to at least some workers.

To check this insight we estimated probabilistic regressions "probits" which allow us to adjust the above figures for differences in the workforce characteristics between the sectors. In each probit equation we enter independent variables to describe worker characteristics (nearly identical to those used in earnings equations), to indicate which Midwestern state the worker is from and to indicate which sector. The coefficient on the sectors gives us a measure of the role that the public sector plays in the provision of pension, once adjusted for differences in worker characteristics and states.⁴

The estimation is repeated for each of the three variables identified in Table 9. The estimation for the first dependent variable is in Appendix B. The adjusted probabilities are presented in parentheses. Those for the private sector change very little. Those for the state and local government drop modestly. For instance, the gap in provision between the state and private using the raw figures was about 20 percent and once adjusted dropped to about 11 percent. It remains the case that most of the difference in provision is driven by the fact that some private establishments offer pension coverage and others do not. This is evident because the adjusted conditional probabilities in the last column remain remarkably close for all three sectors. Thus, for employees where a pension is offered, the odds of actually being covered are nearly the same (slightly higher in local) across the sectors.

The top of Table 10 summarizes the results by presenting the adjusted gap in pension coverage. This represents the difference between the adjusted coverage rate in the private and in the government sectors. It indicates that 10.7 percent more of the state workers would receive pensions even if the workforces were identical. It also indicates that 19 percent more of the local workers would receive pensions even if the workforces were identical.

These numbers give us a way to adjust the cost figures. Assuming that the pension plans are equally generous in the private and public sectors, the 10.7 percentage point state gap represents an increase of 20.7 percent in the rate of coverage on the private sector base of 51.6 percent covered (.107/.516). The 19.0 percentage point local gap represents an increase of 36.8 percent in the rate of coverage on that same private sector base of 51.6 percent covered. These increases in the rate can be applied to a private sector fringe cost of \$4.05 an hour to get an adjusted state cost of \$4.89 per hour and an adjusted local cost of \$5.55 an hour.

While this assumes that all fringe provision behaves like that of pensions, it demonstrates the large relative cost differences implied by the estimates in Table 9.

As a note before leaving pension issues, the estimates upon which Tables 9 and 10 were based indicate no significant differences in pension provision across Midwestern states. Unfortunately, the sample size is too small to examine if there are differences in pension provision across states within the public sector. This will have to wait for a larger sample than those currently provided by the Bureau of the Census.

Table 10: The Adjusted Gap in Pension and Health Insurance Provision

| | Worker has Pension | Employer Offers Pension | Conditional Prob. |
|-------|--------------------|-------------------------|-------------------|
| State | 10.7% | 24.9% | -3.3% |
| Local | 19.0 | 21.5 | 5.2 |

Health Insurance

| | Worker has Insurance | Employer Offers Insurance | Conditional Prob. |
|-------|----------------------|---------------------------|-------------------|
| State | 2.7 | 6.9 | -1.7 |
| Local | -0.7 | 7.8 | -4.7 |

These numbers represent the adjusted difference in the percentage of workers covered across the sectors. Thus if the state had an identical workforce with the private sector it would still provide 10.7 percent more of the workforce with pensions than the private sector does.

An exercise similar to that done for pension coverage can be done for medical insurance coverage. We show the proportion of Midwestern workers in each sector that are covered in the bottom of Table 9. The first column of Table 9 shows that about two-thirds of private workers receive insurance but that three-fourths of state workers receive insurance. The figure for local workers is less than for state workers but higher than for workers in the private sector. This indicates that state workers are most likely to be covered, local workers next most likely and private workers are least likely to be covered.

Again, this pattern results from the fact that some private establishments do not offer medical insurance to workers. The second column indicates that while over 80 percent of all private sector workers respond that they work for an employer that offers insurance (regardless of whether the respondent actually has coverage), the corresponding figure is typically 95 percent or higher for the public sector. This is reflected in the conditional probabilities. Given that the employee works for a private sector establishment that does offer insurance, the odds of being covered is about the same as in the state and actually slightly greater than in the local sector.

None of these estimates corrects for differences in the characteristics of the work forces in the different sectors. To make such an adjustment we again estimate a probabilistic regression (probit) with the insurance provision variables as the dependent variables. The regression is in appendix B. The adjusted estimates of the probabilities are presented in parentheses in Table 9. They indicate that even with identical work forces, state workers would be more likely to have

insurance coverage. On the other hand, with identical work forces, local employees would be slightly less likely to have insurance. These results are summarized in Table 10. The most immediate finding is that these differences are far smaller than those found in pension provision. The state workers enjoy a slightly higher adjusted probability of receiving medical insurance and the local workers about the same as private sector workers.

We could combine these figures with those from pension provision to again estimate the extent of excess fringe costs. By again assuming that all benefit packages are equally generous and costly, but that only provision probability differs, we average the provision differences for pensions and medical insurance and again apply it to the private benefit costs. Thus, an adjusted pension difference of 10.7 and an adjusted insurance difference of 2.7 averages to 6.7 on an averaged base of 58.7 (the average of private sector provision rates for both pensions and insurance) for a percentage difference of 11.4. This translates into excess fringe benefit costs of about 46 cents an hour. A similar exercise for local workers would average 19.0 and -.7 to get 9.15 on the same average base of 58.7 for a percentage difference of 11.5. This yields an additional fringe benefit cost of 63 cents an hour.

C. Final Thoughts about Benefits

Two fundamental findings remain. First, there does appear to be modest excess benefit provision in the public sector. Whether this translates into excessive costs depends on the generosity of the programs and their efficiency. The estimates of the fringe cost differences presented above were based on the assumption that the plans were equally generous. To the extent that public-sector programs are more generous, the estimates are too low. To the extent that public sector programs are less generous, the estimates are too high. The evidence on this point still depends on the availability of an individual-based data set that also has both worker characteristics and measures of fringe benefit generosity. No such data now exist.

The second finding remains that a substantial share of the difference in the probability of pension and medical insurance provision is driven by the relatively large number of private sector establishments which do not offer pensions. To the extent that this result carries over to other fringe benefits, it raises a nontrivial policy issue for the public sectors. Recent changes in benefit regulations and tax laws make it very difficult to exclude a narrow set of an establishment's work force from benefits that all others in the establishment receive (for more on this see Scott, Berger and Black, 1989). Thus, private sector comparability becomes nearly impossible for public sectors to achieve under current rules. In a sense, the public sector is similar to a large private sector employer which, in offering benefits to part of their labor force, is required to provide them to all of their labor force.

Our discussion only touches the difficulties in comparing pension plans. Such plans have many dimensions and may consist of various combinations of pension, IRA and profit-sharing plans. Pension plans themselves may be defined contribution, where the employer places an assured amount into the plan each year, or defined benefit, where the employer guarantees a payment upon retirement based upon some combination of age, years of service and previous earnings. Since one type of plan fixes the costs but provides an uncertain benefit, and the other type of plan fixes the benefit but provides the employer uncertain costs, it is difficult to compare the costs and benefits across different types of plans. This complicates public/private comparisons, as private plans are more likely to be defined contribution, and public-sector plans are more likely to be defined benefit (Lovejoy, 1988).

Complicating the issue further is that the costs of providing pensions depend on the level of funding, the portfolio performance and the timing of retirements. For instance, the cost of the federal pension system increased considerably in the 1980s because Congress had failed to provide adequate funding in earlier decades. Thus, federal pension costs would have looked relatively

cheap before the increase, and relatively expensive after. In a similar vein, many private firms were able to reduce their pension costs in the 1980s by investments in high yield-"junk" bonds. The collapse of that market resulted in some retirees' pension payments being reduced by 30% or more and will cause some firms to face the expensive task of refunding their pension plans. Again, we face a problem of accurately assessing the employer cost and the benefit amount when such uncertainty abounds.

A final method of thinking about the issue of public-sector compensation would be to examine the relative ease or difficulty that private and public employers have attracting workers to vacancies. This notion is sometimes called the examination of the "job queue." The assumption is that if the public sector has superior earnings, fringe benefits or working conditions when compared to the private sector, the number of workers applying for such jobs (or, ultimately, waiting for such jobs) should be greater. Obviously, the size of this job queue will depend on particular openings, regardless of the sector. Theoretically, it is possible to determine the relative sizes of the average job queues by sector and draw conclusions. Unfortunately, our data are far too incomplete to do that fairly for the state of Wisconsin. We can only note: 1) nationwide studies have found that larger job queues exist on average for state and local sector jobs than for private sector jobs (Heywood and Mohanty, 1992) and 2) for certain local positions there are extremely large job queues -- for instance for teachers in suburban districts, having 30 or 40 applicants per opening is not unusual. While these facts are indicative, fairness prohibits us from drawing more general conclusions.

VI. CONCLUSIONS

This study has been a measure of both our knowledge and our ignorance when comparing compensation across the local and state sectors within Wisconsin. Here we summarize the findings and areas for future investigation.

State and local earnings are far more compressed than are those in the private sector. This results because the public sector has higher earnings than the private sector at the low end of the skill and education hierarchy and lower wages at the high end of the skill and education hierarchy. On balance, the state and local sectors pay higher wages than the private sector. This results, in part, because the public sector employs a more educated and professional work force. After correcting for worker characteristics and occupations, the state continues to have higher wages than the private sector. Indeed, Wisconsin appears to be the only state in our sample for which this is true to any significant extent. The local sector appears to have lower wages after corrections than does the private sector.

Comparing fringe benefits is far more complicated than is comparing earnings. Within Wisconsin, the state and local sectors have far higher fringe benefit costs. This, no doubt, reflects the nature of the employees (their education and occupations). It may also reflect differences in benefit generosity, the level of insurance coverage and the expected dollars of pension income. It may also reflect differences in the efficiency of provision, the cost of providing a given level of coverage or pension benefits. We cannot isolate the size of these influences. We have, however, determined that public-sector workers are more likely to have pensions because they work for an employer that offers this benefit. The alternative would be that they are more likely to receive a pension, once they work for an employer who has such benefits. The latter does not seem to be the case.

We come then to the realization that while the state and local sectors may not have exact comparability in the provision of fringe benefits, it is because doing so would require (at least initially) something largely not done by individual, private-sector firms. The private-sector firms are largely divided into those providing benefits and those not. To be comparable the state and localities would have to offer some workers benefits and others not. How this could be done (both legally and in terms of maintaining morale) remains a debate for another time.

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APPENDIX A:

The three log earnings equations are presented in this appendix. The results demonstrate different earnings regimes across the three sectors. An additional year of experience is worth far more to workers in the state sector than in either private or local sector. The coefficients on the experience variable are .025 for the private sector, .025 for the local sector and .047 for the state sector. Recognizing that these coefficients, B's, provide a percentage measure, e^{B-1} , the additional year of experience results in a 2.53 percent increase in earnings for the private and local sector but a 4.81 percent increase in earnings for the state workers. On the other hand, the state and local districts seem to penalize female workers less, holding constant other characteristics. Holding those characteristics constant, the regressions suggest that women in the private sector earn 21.47 percent less than their male counterparts, while in the local sector they earn 10.34 percent less and in the state sector they earn about 1.98 percent less.

The distribution of coefficients on the occupational variables also shows a good deal of difference between the three sectors. In each case the omitted category of occupations is laborers. The coefficient indicates the extent to which the earnings of any of the other occupations are above or below this excluded group. In the private and state sectors, professional workers enjoy earnings about 35 percent above those of otherwise equal laborers. In the local sector that figure is just a few percentage points. Finally, the influence of unionization is also different with the sectors. In the private sector, the unionized worker earns 20.4 percent more than his or her nonunion private counterpart. In local government, this figure is 18.9 percent but in state government that figure is only 11.6 percent. This pattern of union premiums might fit with the power of organized labor during contract discussions within the three sectors. The private sector unionized workers have the ability to strike. The local workers have the ability to arbitrate final offers. The state workers have, in general, the ability to meet and confer (and to lobby). This ranking of legislated powers follows that of the premiums. Again, recall that the local and state governments are far more heavily unionized.

Table A: The Earnings Equations for Each Sector (The individual worker's log wage is the dependent variable in each regression).

| Variable | Private | Local | State |
|---------------------|------------------|------------------|------------------|
| Constant | .9498 (21.8) | 1.067 (8.58) | .4299 (1.68) |
| Yrs. Education | .0637 (20.4) | .0573 (7.76) | .0674 (7.27) |
| Yrs. Wrk Experience | .0246 (14.2) | .0249 (5.91) | .0471 (8.04) |
| Experience Squared | -.0004 (12.0) | -.0004 (4.68) | -.0007 (6.19) |
| Black | -.0923 (2.84) | -.1061 (1.75) | .0243 (0.21) |
| Hispanic | -.0781 (1.65) | -.0058 (0.05) | .0554 (0.33) |

Table A: cont.

| | | | |
|-----------------------------|------------------|------------------|------------------|
| Other Minority | -.0821 (1.07) | -.0895 (1.28) | .0033 (0.03) |
| Female | -.2417 (18.8) | -.1092 (4.04) | -.0200 (0.49) |
| Union Member | .1855 (10.8) | .1727 (6.04) | .1096 (2.69) |
| Works in Urban Area | .1213 (10.3) | .1620 (6.50) | .1056 (2.53) |
| Married | .1356 (8.45) | .0798 (2.18) | .1577 (2.93) |
| Widowed or Divorced | .0683 (3.27) | .0614 (1.28) | .0482 (0.68) |
| Manager | .2857 (10.2) | .1753 (1.87) | .4227 (1.68) |
| Professional | .2979 (10.1) | .0214 (0.24) | .3339 (1.32) |
| Technical Worker | .2740 (7.99) | .1226 (0.90) | .2087 (0.83) |
| Sales Worker | .0417 (1.57) | -.0582 (0.35) | .4426 (1.35) |
| Clerical | .0986 (3.81) | -.1653 (1.88) | .1231 (0.49) |
| Service | -.1097 (4.09) | -.1139 (1.36) | .0756 (0.31) |
| Craft | .1781 (7.13) | .0322 (0.32) | .3740 (1.44) |
| Part-time 20 to 34 hrs | -.1723 (10.4) | -.2269 (6.01) | -.1090 (2.09) |
| Part-time 19 or less hrs | -.2430 (8.19) | -.3766 (6.49) | -.2650 (1.83) |
| From 1989 Sample | .0372 (2.87) | .0557 (1.97) | .0358 (0.82) |
| From 1990 Sample | .0614 (4.59) | .0947 (3.32) | .0480 (1.08) |
| R-squared | .5007 | .5410 | .6444 |
| Number of Obs. | 5035 | 757 | 300 |

Sources: The observations are drawn from three consecutive years of the BLS cross year tapes for the Current Population Survey. T-statistics are presented in parentheses. All t-statistics above 1.96 represent coefficients statistically different from zero at the 5 percent level and above 1.64 represent coefficients statistically different from zero at the 10 percent level.

Appendix B: The "probit" Equations for Benefit Provision

| | Worker has Pension | Worker has Insurance |
|---------------------|--------------------|----------------------|
| Constant | -2.253 (10.91) | -.9116 (4.047) |
| Yrs. Education | .0925 (6.939) | .1170 (7.479) |
| Yrs. Wk. Experience | .0195 (9.121) | .0016 (0.639) |
| Female | -.1196 (2.176) | -.0351 (0.522) |
| Black | -.0874 (0.831) | -.2802 (2.434) |
| Union | 1.040 (16.10) | .7156 (7.731) |
| Married | .2345 (4.474) | .2139 (3.319) |
| Part-time | -.9433 (12.95) | -.8294 (12.10) |
| Manager | .6007 (6.083) | .5742 (4.844) |
| Profession | .5867 (5.487) | .7798 (5.452) |
| Technical | .7396 (4.963) | 1.068 (4.511) |
| Sales | .2783 (2.797) | .3737 (3.820) |
| Clerical | .7189 (8.133) | .6842 (7.185) |
| Craft | .6129 (6.470) | .2541 (2.494) |
| Operative | .6262 (6.215) | .8441 (6.451) |

(Appendix B. cont.)

| | | |
|------------------------|-------------------|-------------------|
| Transport Operative | .2656 (1.980) | .3459 (2.300) |
| Ohio | .0612 (0.679) | -.0277 (0.262) |
| Indiana | -.0396 (0.349) | -.0842 (0.645) |
| Illinois | .0667 (0.727) | .0737 (0.671) |
| Michigan | .0804 (0.883) | .0758 (0.700) |
| Minnesota | .0089 (0.081) | -.0881 (0.688) |
| State Workers | .3672 (2.778) | .1095 (0.775) |
| Local Workers | .6776 (6.950) | -.030 (0.317) |
| Pseudo R-squared | .2606 | .3020 |
| N | 3602 | 3712 |

Note that Wisconsin private sector workers are the excluded base group. The related estimates for the age 25 and above sample and for the other two probit estimates are available from the authors. Asymptotic t-statistics are presented in parentheses.

ENDNOTES

¹Note that none of our comparisons have attempted to hold the size of the employer constant. Previous work by Belman and Heywood (1990) has suggested this is important but such information is not available in our current data source.

²Although transportation, communications and utilities spend more per hour on benefits than the governmental sectors, the higher hourly wage they pay results in fringes representing a lower share of total compensation.

³It may be the case that benefit generosity is not equal. Also important is the realization that certain uniform service workers in public sector may not be fully covered by the social security system. To the extent that retirement plans substitute for social security for these workers, the public mandatory benefits would be otherwise lower and the retirement benefits otherwise higher. The relative ranking of retirement and mandatory benefits in Table 8 provides some support for the importance of this point. While the state and local government rank high in retirement costs, they rank low in mandatory benefit costs.

⁴In each case the mean characteristics for sample were run through the estimated equation. To this added the relevant coefficient from the sectors and then the probability was determined from the cumulative normal distribution.
