Teacher Retirement Benefits: 
Are Employer Contributions Higher Than for Private Sector Professionals? 

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Introduction

During the 2005-06 school year, the most current year for which national data are available, U.S. public schools spent $187 billion for salaries and $59 billion for benefits for instructional personnel. (NCES, 2008) Thus, benefits now add about 32% to salaries, up from 25% in 1999-2000.\(^1\) This includes the well-known rise in health insurance, but also includes the cost of retirement benefits, and evidence suggests they are now also rising as a percent of salaries.

Conventional wisdom holds that, while the salaries of public school teachers may be lower than those of other professionals (by some measures), the value of the fringe benefit package, specifically retirement benefits, is higher. There are several reasons one might expect this to be the case. First, nearly all teachers are covered by traditional defined benefit (DB) pension plans, which typically offer retirement at relatively young ages, at a rate that replaces a substantial portion of final salary.\(^2\) A teacher in her mid-50s who has worked for 30 years under a typical teacher pension plan will be entitled to an annuity at retirement of between 60 and 75 percent of her final salary. In nearly all plans this annuity has some sort of cost-of-living adjustment. One does not generally observe comparable retirement plans for professionals and lower-tier managers in the private

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1 From 1988-89 (the earliest NCES data available online) to 1999-2000, benefits fluctuated between 24.0% and 26.6% of salaries.

2 Data from the U.S. Department of Education show a median retirement age for public school teachers of 58 years (Podgursky and Ehlert, 2007), compared to about 62 for the labor force as a whole (Gendell, 2008).
sector, since most employers have replaced traditional DB plans with defined contribution or similar plans (Bureau of Labor Statistics, 2007). Nor do those traditional DB plans that remain typically reward retirement at such early ages; they more nearly resemble Social Security, where eligibility is age 62 for early retirement, and 66 and rising for normal retirement.

Given this background, we were surprised by the claim made by two researchers at the Economic Policy Institute in a recent Phi Delta Kappan (Mishel and Rothstein, 2007), that, contrary to conventional wisdom, employer contributions for retiree benefits for teachers were no higher than for professionals in the private sector. These authors base their claim on an analysis of data from a major employer survey conducted by the U.S. Department of Labor -- the National Compensation Survey (NCS).

We find this conclusion to be incorrect. In this paper, we reexamine the NCS data and show that, when measured appropriately, districts and states contribute more to teacher retirement benefits. We also expand the Mishel-Rothstein snapshot by examining the full time series of NCS data and find that employer contributions to teacher retirement benefits have been rising sharply in recent years as a percentage of public teacher salaries. In addition, rather than relying solely on survey data in the NCS, we also compute employer contribution rates for the universe of teachers directly from the teacher pension funds. This calculation provides a check on the survey data from the NCS and also allows us to distinguish between teachers covered by Social Security and those who are not, a major problem in making teacher-non-teacher comparisons. We find that employer contributions for public school teacher retirements are higher than for private
sector professionals, even when accounting for the fact that a sizeable minority of public school teachers are not covered by Social Security.

Calculations on BLS Data

We begin by reproducing the Mishel and Rothstein calculations. The BLS data used by Mishel and Rothstein are reproduced in Table 1, columns (A)-(B), lines 1-9.\(^3\) The BLS table presents employer costs, broken down into various components of compensation, expressed both in dollars per hour worked and as a percent of total compensation -- the measure used by Mishel and Rothstein. The occupational detail in this BLS table includes K-12 teachers and “professional and related” (a grouping that includes among the larger occupations, computer programmers and analysts, engineers, lawyers, physicians, nurses, health and other technicians). Note that the percent of total compensation represented by employer contributions to retirement (line 6) is higher for teachers than for all professionals (6.1 versus 4.8 percent). However, as Mishel and Rothstein point out, it is misleading to simply compare employer contributions for retirement for private sector professionals, all of whom are covered by Social Security, to public school teachers, many of whom are not covered. A more complete picture, they argue, would include employer contributions to Social Security. Social Security taxes are subsumed in the category “legally required benefits” (line 7). Thus to make an apple-to-apples comparison, Mishel and Rothstein compare the share of retirement contributions plus legally required benefits. They find that the shares for the two groups are identical –

\(^{3}\) The specific report used by Mishel and Rothstein was the September 22, 2006 report on the June 2006 NCS data. (U.S. Department of Labor, 2006)
11.5 percent – as shown in row 9. From this they conclude that employer contributions for retirement for teachers are no greater than for professionals in the private sector.

There are several problems with this calculation: incorrect use of occupational categories, inappropriate measure of employer contribution, and failure to isolate Social Security contributions. We consider these each in turn.

Using Appropriate Occupational Categories

The first set of problems concerns misleading use of occupational categories. The “teachers” analyzed by Mishel and Rothstein combine public and private school teachers, but the policy debate is clearly about public school teachers. In addition, the “professionals” to whom these teachers are compared include all teachers -- they are one of the largest components of this category. The authors mislabel this column in their article as “all other professionals,” but the BLS report clearly shows that this is the larger occupational grouping that includes teachers. Finally, while Mishel and Rothstein state that the appropriate comparison is with private sector professionals, this group also includes all other public sector professionals, as well as teachers.

Fortunately, the same BLS report provides separate data for the two occupational groups at issue: public school K-12 teachers (BLS, 2006, Table 4) and private sector “management, professional, and related” (BLS, 2006, Table 5).\(^4\) We reproduce these tables' figures for the two groups in columns (C) and (D).\(^5\) When we make the same

\(^4\) This is the most disaggregated occupational grouping provided for private sector professional employees; it includes "management, business, and financial" occupations, as well as "professional and related." This grouping does still include private teachers.

\(^5\) As with BLS Table 2, discussed above, BLS Tables 4 and 5 also present the components of compensation in dollars per hour worked, with more significant digits, and our calculations used these figures as a check on rounding error.
calculation for this group – retirement plus legally required benefits as a percent of total compensation – we get 11.6 and 11.2 percent, respectively, for public teachers and private managers and professionals (line 9, columns (C) and (D) in Table 1). This is a higher employer contribution rate for teachers, but still close.

**Share of Total Compensation vs. Percent of Earnings**

A second issue is the use of shares of total compensation. This is a useful comparison for certain purposes, but not the one at hand. Table 1, for example, shows that teachers receive a larger component of their compensation package in the form of fringe (non-cash) benefits than do private professionals (21.7 percent vs. 17.4 percent, as shown on line 8). This, however, is merely a statement about the comparative structure of compensation and is not informative about how remunerative one occupation is compared to another.

The conventional measure of the employer's cost for retirement benefits is as a percentage of earnings, and this is true both for teachers and private sector employees. Virtually all states specify in law that the employer will contribute \(x\) percent of teacher salaries to the defined benefit pension fund (employee contributions are similarly specified), and it is commonplace to compare these contribution rates among the states. Similarly, private sector employers offering defined contribution plans will typically specify their contribution as a percent of salary (often as a match to employee contributions). Unlike some other benefits (e.g. health insurance), if salaries change, the dollar amount of the costs and benefits for retirement move proportionately.\(^6\) It is natural

\(^6\) The dollar value of retirement costs is discussed in a later section.
to specify retirement costs as a percentage of salary, since the DB formula ties one's starting annuity to final average salary, and the adequacy of a DC plan is also commonly thought of in terms of the salary replacement rate. That is, retirement benefits are gauged by the ability to maintain the standard of living established during one's worklife.

The reason the share of total compensation gives a misleading picture for comparing retirement benefits is that there are other important benefits -- notably health insurance. To take a simple example, suppose both occupations have identical earnings and costs of retirement benefits, but differ in health insurance benefits. If employer contributions to health insurance are higher for teachers, that component's share of compensation will be higher and retirement's share will be lower, since all shares must sum to 100 percent. As Table 1, line 5 shows, insurance does in fact constitute a markedly higher share of compensation for teachers than for private professionals (10.1 percent vs. 6.2 percent in 2006), and this fact alone mathematically reduces the share of compensation that goes to retirement for public teachers, relative to private professionals.

The bottom panel of Table 1 presents the more appropriate calculations, benefits as a percent of earnings (earnings, as recorded on the W-2's, are the sum of lines 1-3). Specifically, retirement plus "legally required benefits" -- the measure used by Mishel and Rothstein -- total 14.8 percent of earnings for public teachers and 13.6 percent for private professionals, as shown in line 10.\footnote{Line 10 can be calculated as line 9 divided by line 4, and similarly for lines 11-12. Alternatively, they can be calculated from the underlying dollar figures in the BLS tables.} Thus using data from the same BLS report, but computing benefit rates as a percent of earnings instead of total compensation, reveals a higher rate of employer contributions for teacher retirement than for private professionals.
Measuring Social Security Contributions

The “legally required benefits” category should be further refined, since it includes much more than just Social Security (i.e., Medicare, workman’s compensation, and Federal and state unemployment insurance). BLS (2006, Table 5) allows us to separate out the Social Security component for private sector professionals, and that is reported in column (D) of Table 1, on line 12. BLS (2006, Table 4) does not allow us to separate out Social Security for teachers, but we can estimate this, using BLS data on teachers covered by Social Security (SS). The NCS survey finds that 73 percent of public school teachers are covered by Social Security (U.S. Department of Labor, 2008, Table 5). Using this percentage to weight the statutory 6.2 percent contribution rate (this assumes, reasonably, that teachers are below the Social Security earnings cap), we estimate that employer SS contributions for all teachers (in and out of SS) are 4.5 percent of earnings. This compares to 5.6 percent for private sector managers and professionals reported by the BLS (less than 6.2 percent because some earn above the cap). Adding the retirement and SS contribution rates in lines 11-12 yields the final estimates, in line 13, of 12.8 percent for public school teachers vs. 10.5 percent for private sector professionals and managers. Thus, the most precise comparison of employer contributions we can make from these BLS data, including SS and excluding non-retirement benefits, indicates a significantly higher employer contribution rate for public school teachers.8

8 The calculations in Table 1 (and Figure 2 below) use the estimate of 73 percent SS coverage for public school teachers reported in U.S. Department of Labor (2008, Table 5). Using teacher employment weights from the Common Core of Data, and information on teacher SS coverage from the NASRA public fund survey and other sources, we estimate a lower coverage rate for public school teachers (61 percent). If we use this lower figure for teacher SS coverage in computing the contribution rate for teachers, we get an overall teacher contribution rate which is 0.7 percent lower (12.1 vs. 12.8 percent in June 2006, and 13.9 versus 14.6 percent most recently). As of this writing we are unable to reconcile the two estimates of teacher SS coverage, other than to note that the NCS is a sample. However, the basic findings of this paper hold using either estimate.
Trends in Contribution Rates

The previous analysis provides a snapshot from the BLS data pertaining to June 2006 (the data used by Mishel and Rothstein). Figures 1 and 2 depict the time series for employer contribution rates calculated from these quarterly reports. Each graph shows four years of data, beginning with the first quarter in which the BLS reported compensation separately for K-12 teachers (March 2004), up to the most recent quarter for which data are available (September, 2008).

Figure 1 presents the data on employer contributions for retirement as a percent of salaries for public K-12 school teachers and private sector “management, professional, and related.” This corresponds to the calculation on line 11 of Table 1, for June 2006, and the figures reported there (8.3 percent vs. 4.9 percent) are depicted in Figure 1 by the enlarged point markers. Note that by September 2008 benefits as a percent of salary are twice as high for the teachers (10.1 percent vs. 4.9 percent). While the contribution rate has been relatively flat for private sector professionals, the rate has risen for public school teachers, from 7.4 percent in March 2004 to 10.1 percent four years later.

The measure in Figure 1 does not include Social Security for either group. Taking the time series of the Social Security contributions, as discussed above with respect to line 12 of Table 1, and adding them to the retirement contributions, we have the combined contributions depicted in Figure 2. This measure, retirement plus SS contributions, as a percent of earnings, corresponds to line 13 of Table 1, for June 2006, and the figures reported there (12.8 percent vs. 10.5 percent) are depicted in Figure 2 by the enlarged point markers. Figure 2 shows the gap has notably widened in the two years since the snapshot by Mishel and Rothstein. The contributions for private professionals
have remained relatively flat at 10.4 percent, while employer contributions for public teachers have risen from 12.8 to 14.6 percent (reported also on line 14 of Table 1). By this measure, employer contributions for public school teachers are now about two-fifths higher than for private professionals.  

Social Security Covered and Uncovered Teachers

While the overall employer contribution rate for public school teachers is higher, this group average may mask differences in SS covered and uncovered teachers. In order to examine this point empirically, we also examined directly the data on employer contributions for teacher pension funds. Most teachers are in state-wide pension funds, with a relatively small number in district funds (e.g., New York City, Denver, St. Louis). Data on employer contributions for these plans are available in annual financial reports for each fund, and these are surveyed by the National Association of State Retirement Administrators (NASRA, 2008).  

Using data on contributions from NASRA and pension fund annual reports where necessary, and using teacher employment weights from the NCES Common Core of Data, it is possible to directly compute average employer contribution rates for teachers. First we consider teachers who are in states and districts covered by SS. For SS-covered

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9 If we use the lower rate of teacher SS coverage (61 percent), discussed in the previous note, this would shift the upper (teacher) line down by 0.7 percent. The measured gap would narrow, but the teacher rate still exceeds the private professional rate and the gap continues to widen.

10 There are 58 plans that cover teachers on the NASRA website, and we added two more, for St. Louis and KC. We accessed the NASRA site on June 30, 2008.

11 For example, NASRA does not provide an employer contribution figure for Massachusetts teachers, but this figure can be calculated from the Commonwealth's annual actuarial report.
teachers, we calculate the weighted average employer contribution to be 9.0 percent.\textsuperscript{12} This can be compared to the estimate of employer contributions to retirement for private sector professionals and managers, calculated from the BLS data as 4.7 percent of earnings for the comparable period (FY07).\textsuperscript{13} This is a 4.3 percent difference favoring public school teachers -- almost double -- in those states and districts where teachers are in SS, so the comparison is apples-to-apples.

For states and districts where teachers are \textit{not} in Social Security, we calculate the average employer contribution at 11.1 percent of earnings. Of course, this is considerably higher than the 4.7 percent retirement contributions for private sector professionals, but, perhaps surprisingly, it even exceeds their employers' \textit{combined} contributions to retirement and SS, which averaged 10.3 percent for FY07. Thus, as Figure 3 shows, comparing teachers with professionals in private sector employment, total employer contributions are higher for teachers, not only for those covered by Social Security, but also for those who are not covered.\textsuperscript{14}

\textbf{Estimating the Dollar Cost of Employer Contributions}

How do the dollar values compare between public teachers and private professionals for the employer contributions to retirement? The comparisons we have as

\textsuperscript{12} Employer contributions are those specified in law. In some states and districts (both SS and non-SS), the employer will also pay the employee's contributions. For example, in Nevada (a non-SS state), employers have paid the employee contribution in lieu of salary increases.

\textsuperscript{13} The NASRA data on the date of access were primarily for FY07 (covering 80\% of the teachers) and FY06 (18\%).

\textsuperscript{14} For all teachers together, we calculate the employer contributions to teacher pensions to be 9.8 percent from this data set. By comparison, the estimate of employer retirement contributions for public K-12 teachers from the BLS survey is 8.8 percent for FY07. Aside from possible sampling error, we have no other explanations for this discrepancy.
a percent of earnings can, in principle, be converted to dollar comparisons using the
dollar value of earnings. These comparisons, however, depend on whether one considers
hourly, weekly, or annual compensation.

The BLS tables that we have been discussing -- the ones that present the various
components of compensation -- do so in hourly terms. For September 2008 (the most
recent report as of this writing), the hourly cost of employer-provided retirement benefits
is $3.99 for public school teachers and $1.95 for private professionals. Adding in the
figures for SS contributions (estimated as explained above for teachers), we get a total of
$5.78 per hour for public school teachers and $4.16 per hour for private professionals.
By this measure, the dollar cost of retirement benefits is 39.0 percent higher for teachers.

Although BLS does not publish the weekly or annual benefit figures that
correspond to the hourly figures, we can use other BLS published data on weekly and
annual hours to approximate these measures. Using the figures for mean weekly hours
for full-time workers in the Supplementary Tables for the NCS for June 2005 (Bureau of
Labor Statistics, 2005), and assuming those hours have not materially changed, we
estimate weekly retirement costs (including SS) in September 2008 at $211 for public K-
12 teachers and $166 for private professionals. By this measure, the dollar cost of
retirement benefits is 27.2 percent higher for teachers. Similarly, using the same sources,
we estimate annual retirement costs (including SS) at $8,114 for teachers and $8,541 for
private professionals. By this measure, the dollar cost of retirement benefits is 5.0
percent lower for teachers.

The disparity in these estimates for the relative dollar cost of retirement benefits
mirrors the disparity in the measures of relative earnings of teachers and private
professionals. These measures of earnings -- hourly, weekly, annual -- have been much debated, and this is not the place to revisit those arguments. Fortunately, the measure we have argued for above -- employer contributions as a percent of earnings -- is the same regardless of whether earnings are calculated on an hourly, weekly, or annual basis. Whichever measure of earnings one prefers, measured as a percent of earnings, retirement costs are higher for teachers.

Conclusion

Our analysis of evidence from the BLS National Compensation Survey and the NASRA Public Fund Survey shows that the employer contribution rates for public school teachers are a larger percent of earnings than for private sector professionals and managers, whether or not we take account of teacher coverage under Social Security. In addition, the contribution rate for teachers is clearly trending upwards.

In one important respect, it is likely that the BLS data significantly underestimate the cost of retirement benefits for public school teachers. Many public school districts (and some states) provide health insurance benefits for retired public school teachers. In the course of this research we were surprised to learn that retiree health insurance benefits are not included in the BLS employer cost estimates. Since private employers have largely eliminated this benefit (Johnson, 2007), this means that our estimate of the gap in retirement benefits favoring public school teachers is underestimated, although we cannot be sure of the extent of the bias.

What are the likely trends going forward for the cost of teacher retirement benefits? No one knows, but we can identify the two key factors that will drive these
costs: future developments in the benefits themselves and in the funding of them. With regard to benefits, the trend through much of the postwar period was to enhance the retirement formulas in various ways, including reducing the age or service requirement for full benefits. In some places this has continued -- New York City recently enhanced its pension formula for younger teachers. But there is some evidence that benefit enhancement has abated in recent years. There are a few states (e.g., Texas) that have moved to reduce benefits for newly hired teachers. However, this is unlikely to reduce costs in the near future, since benefits for existing teachers are protected under the laws and/or constitutions of most states.

The other factor to consider is the funding status of teacher pension plans. The vast majority of plans are not fully funded. This means that contributions include both the "normal cost" of pension liabilities accruing to current employees and the legacy costs of amortizing unfunded liabilities accrued previously. The amortization period varies across states, but the accounting standards call for no more than a 30-year horizon. In theory, if the actuarial assumptions hold true going forward and no new benefits are enacted, this means that future contributions would eventually decline as the unfunded liabilities get fully amortized -- in much the same way that a homeowner's monthly expenses decline when the mortgage gets paid off.

However, the near-term prospects may be very different. For one thing, public pension funds face the possibility of important accounting changes. Unlike private pension funds, public fund actuaries have been allowed to discount future liabilities at rates of 8 percent or more. Finance economists have vigorously argued in recent years

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15 Actuarial practice is to assign employee contributions entirely to normal cost, while employer contributions cover the balance of normal cost and the entirety of amortization.
that such assumptions are imprudent, and there have been signs that government accounting standards might move toward the private sector rules, which could reduce the discount rate to about 5 percent. This would dramatically reduce the funding status and raise the required amortization payments.

Finally, to take the obvious point in the daily news: the market value of pension funds have fallen precipitously as of this writing (February 2009). Barring a major market recovery, pension funds across the country will have growing unfunded liabilities as the actuarial methods phase in recent losses over the next few years. This means the required amortization payments will rise. If the accounting rules also change, reducing the discount rate on liabilities, the employers of public teachers -- along with other public employers -- will face a double hit, requiring sharp increases in employer and/or employee contributions.\textsuperscript{16} By contrast, those private employers who have switched over to defined contribution plans in recent decades will be unaffected. In short, there are good reasons to believe that this gap will continue to widen in coming years.

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\textsuperscript{16} In addition, public school employers will face rising costs for retiree health insurance. Unlike pension benefits, these liabilities have rarely been pre-funded during the employee's active career, but have, instead been funded on a pay-as-you-go basis. Indeed, these liabilities were rarely even reported. Under new government accounting standards districts and states are now required to report unfunded liabilities for these benefits. For some districts the magnitudes of these liabilities are staggering (e.g. $10 billion for LA Unified). Reporting these liabilities is meant to be a first step toward pre-funding them, and the annual costs of doing so will be substantial.
Table 1: Components of Total Compensation for Teachers and Other Occupational Groups, June 2006, BLS data.

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<th>From Mishel &amp; Rothstein</th>
<th>Using appropriate tables</th>
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<td>Public and Private K-12 Teachers</td>
<td>Public and Private Professionals &amp; Related</td>
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<td>BLS, Table 2 (A)</td>
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<td>% of Total Compensation</td>
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<tr>
<td>1 Wages and Salaries</td>
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<td>9 Retirement + LRB</td>
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| % of W-2 Earnings       |                     |                          |                    |
|------------------------|---------------------|--------------------------|
| 10 Retirement + LRB    |                     | 14.8                     | 13.6               |
| 11 Retirement          |                     | 8.3                      | 4.9                |
| 12 Social Security (SS) |                     | 4.5*                     | 5.6                |
| 13 Retirement + SS     |                     | 12.8                     | 10.5               |
| 14 Retirement + SS, Sept. 2008 (see Fig. 2) |       | 14.6                     | 10.4               |

* BLS Table 4 does not provide this detail. Estimated by authors. See text.
Figure 1

Employer Contributions for Retirement Benefits:
Public School Teachers and Private-Sector Managers and Professionals

Source: BLS, National Compensation Survey, Employer Costs for Employee Compensation

- public K-12 teachers
- private mgt & professional
Figure 2

Employer Contributions for Retirement Benefits and Social Security: Public School Teachers and Private-Sector Managers and Professionals

Source: BLS, National Compensation Survey, Employer Costs for Employee Compensation; author est. of teacher SS public K-12 teachers, BLS SS rate private mgt & professional
Figure 3

Employer Contributions for Teachers, by Social Security Status (FY07)

source: teachers -- authors’ calculation from NASRA; private professionals -- BLS
References


