

(MIS-)MEASURING THE RELATIVE PAY OF PUBLIC SCHOOL TEACHERS

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Abstract

Statistics on the relative pay of public school teachers are routinely cited by plaintiffs in school finance (“adequacy”) lawsuits. However, comparisons of pay and benefits for public school teachers to those of professional employees in other sectors are complicated by the fact that most teachers work under contracts that are nine or ten months in length rather than a full year. The authors show that this makes household survey data on weekly earnings in the widely used Current Population Survey (CPS-ORG) unreliable. In general, employer-reported data on salaries and benefits such as the National Compensation Survey (NCS) or state administrative data are preferred for this type of comparison. NCS data on weekly earnings in metropolitan labor markets suggest that pay of public school teachers compares much more favorably to that of nonteachers than CPS-ORG data suggest.

1. INTRODUCTION

The Current Population Survey–Out-Going Rotation Group (CPS-ORG) is a widely used database in applied labor economics research. Many studies of union/nonunion earnings gaps, returns to education, earnings inequality, and labor market discrimination have relied on these data. Not surprisingly, economists have also used them to examine levels and trends in the relative pay of teachers (Flyer and Rosen 1997; Loeb and Page 2000; Allegretto, Corcoran, and Mishel 2004). In this article we argue that the CPS-ORG household survey data on the weekly pay of teachers are seriously flawed and underestimate substantially the true weekly pay of teachers. Given the peculiar nature of the way most teachers are compensated—thirty-eight weeks of contract pay spread over fifty-two weeks—it is not surprising that a general-purpose household survey instrument such as the CPS is likely to yield unreliable estimates of weekly pay. The most reliable way to measure weekly or annual earnings of teachers is to collect these data directly from employers. For this reason we conclude that the employer-based National Compensation Survey data are a far more accurate gauge of relative teacher pay (and benefits).

2. ANNUAL WEEKS OF WORK

A vexing problem in comparing pay (or benefits) of teachers to nonteachers is the difference in the length of the work year. The standard approach in labor economics is to assess the relative pay of two jobs by comparing relative remuneration for an identical period of work—for example, hourly, weekly, or monthly. For professions the usual metric is annual pay, which implicitly assumes that annual hours of work for the professions compared (e.g., doctors and lawyers) are relatively similar. The problem with comparing doctors or lawyers to K–12 teachers is that there is a large difference in annual hours of work on site. Teacher contracts typically run nine or ten months in duration, as opposed to other professions, where twelve-month contracts are the rule.

Teacher contracts are tied to the public school year. Data from the 1999–2000 Schools and Staffing Surveys finds that the median number of days for a school year is 181. Most teacher collective bargaining agreements add several additional workdays for grading, parent teacher meetings, and so on. If we generously assume an additional nine days, this gives us a 190-day work year, or thirty-eight weeks.¹ Over summer months, teachers are not employees of the public school system.

Thus, there are two ways to make an apples-to-apples comparison of teachers to nonteachers. One approach is to annualize teacher pay. If we assume a

1. A representative survey of 524 school districts by the Education Research Service finds an average contract year of 186 days for teachers (*Education Week* 2005).

thirty-eight-week contract for teachers, we can simply multiply annual teacher pay by 1.37 (52/38) and compare it to annual nonteacher earnings. Alternatively, we can compare weekly pay while under contract for teachers and nonteachers.

Several researchers have taken the latter approach and use household survey data on weekly earnings from the monthly Current Population Survey (Flyer and Rosen 1997; Loeb and Page 2000; Allegretto, Corcoran, and Mishel 2004). The Current Population Out-Going Rotation Group file (CPS-ORG) combines weekly earnings data from one quarter (two of eight rotation groups) for all twelve CPS surveys during the calendar year. One attractive feature of the CPS-ORG is that it reports earnings and detailed social and demographic data for a large, nationally representative sample of U.S. workers. For this reason, it has been widely used in labor economics research. However, these household survey data have several important limitations. First, on matters such as pay or weeks worked, these survey data may have considerable measurement error, since the CPS relies on one respondent in the household to report earnings, hours, and weeks worked for all other members of the household. Although researchers typically assume reporting errors on earnings in household data are mean zero i.i.d., this assumption is rarely tested and is sometimes problematic (Bollinger 1998).

In addition, a large and growing share of respondents simply refuse to report earnings. Rather than exclude these households, in published reports the Census Bureau keeps nonrespondents in the sample and imputes earnings. This is a large and growing problem for public school teacher pay. In 1980, 10.6 percent of public school teacher pay responses were imputed. By 2003 this share had grown to 26 percent. Use of imputed earnings records has come under sharp criticism from some labor economists (Hirsch and Schumacher 2004).

Another problem with household CPS-ORG earnings data is “top-coding.” In order to preserve confidentiality, public-use weekly earnings data are top-coded (in 2003 at \$2,884.61, or fifty-two-week annual earnings of \$150,000). While this has little effect on average teacher pay, 3 percent of college-educated nonteachers have top-coded records. In these cases most researchers replace the top-coded value with an estimate of the conditional mean earnings for all workers above the top code. This procedure thus introduces yet another source of measurement error into teacher/nonteacher earnings comparisons.

With these caveats in mind, in table 1 we report regression estimates of the gap between teacher and nonteacher weekly pay using the 2003 CPS-ORG. Following Allegretto, Corcoran, and Mishel (2004), we include only those records for which teacher pay was not imputed. These authors use both public and private school teachers in their analysis. However, the relevant estimates for the public policy discussion are those for public school teachers

Table 1. Relative Annual and Weekly Earnings of Public and Private School Teachers: 2002 CPS-ORG and March 2003 CPS Estimates (t-values in parentheses)

	Female					Male				
	(1) OLS ORG	(2) OLS ORG	(3) OLS March	(4) M-reg ORG	(5) M-reg March	(1) OLS ORG	(2) OLS ORG	(3) OLS March	(4) M-reg ORG	(5) M-reg March
All	-0.113 (8.91)	—	—	—	—	-0.315 (14.82)	—	—	—	—
Public	—	-0.078 (5.77)	-0.078 (4.15)	-0.078 (5.23)	-0.073 (4.98)	—	-0.291 (12.75)	-0.304 (9.63)	-0.315 (13.66)	-0.306 (10.04)
Private	—	-0.304 (10.31)	-0.243 (6.47)	-0.240 (7.38)	-0.232 (7.85)	—	-0.449 (8.36)	-0.388 (5.33)	-0.448 (8.28)	-0.387 (5.54)
N	12,785	12,785	9,784	12,785	9,784	15,267	15,267	12,828	15,267	12,828

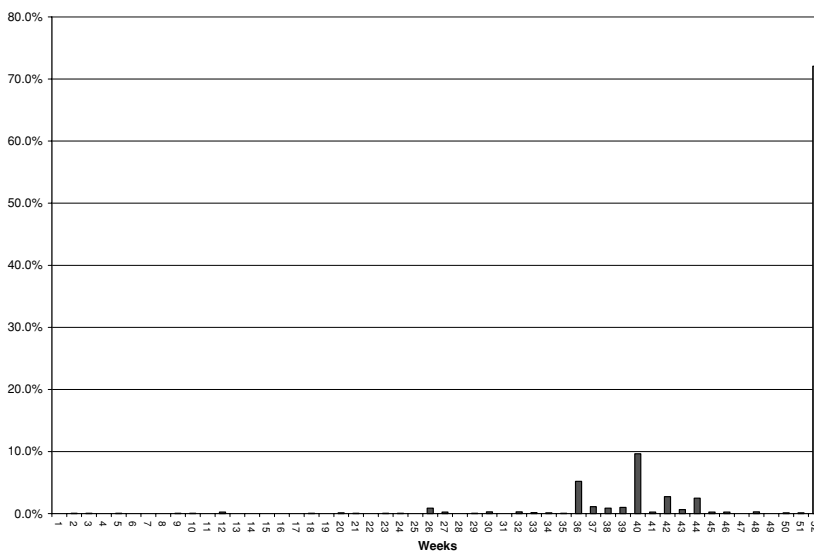
Note: Regression estimates controlling for education, age as quartic, region, marital status, and race. ORG restricted to records for which weekly earnings were not imputed.

Source: CPS-ORG and March CPS public use data files, Unicon Research Corporation.

in the second row of the table. The majority of private school teachers work in religious schools, where many work as a religious calling for very low pay. For this reason, pooling the two groups of teachers makes little sense. Our focus will be on the public school estimates in the middle rows of the table. The ordinarily least squares (OLS) estimates in column 2 show statistically significant log earnings gaps of $-.078$ for females and $-.29$ for males. We noted above the problem of top-coding of earnings in the CPS-ORG. This is particularly troublesome for teacher/nonteacher comparisons, since only .5 percent of the public school teachers but 3.2 percent of the nonteachers are top-coded.² For this reason, our preferred approach is to use median regression estimates in column 4, which are less sensitive to the value chosen for the top code. They are also very close in value to the OLS results.

It is instructive to compare the CPS-ORG estimates with annual pay gap estimates from the March CPS. In the March survey, respondents are asked about the annual earnings of household members for the previous year (e.g., the March 2003 survey elicits data on 2002 annual earnings). Thus, if the CPS-ORG is measuring weekly earnings while teachers are working or under contract, we would expect the annual earnings estimate in the March survey to be roughly one-third larger in absolute value than the gap estimate in weekly earnings in the CPS-ORG (i.e., larger by a factor of $52/38 = 1.37$). In fact, the

2. The top-codes in the OLS estimates are those used by Allegretto, Corcoran, and Mishel (2004) and provided to us by the authors. These, in turn, are based on a technical paper by BLS economist Polivka (1999).



a. Respondents stating that the easiest way to report earnings for a public school teacher was annual (58 percent of respondents)

Figure 1. Reported Weeks of Work for Public School Teachers in 2003 CPS-ORG^a

estimated annual gaps in the March survey are virtually identical to the weekly CPS-ORG gaps, whether estimated by OLS or median regression.³

What explains this anomaly? We believe that a significant part of the answer lies in the inability of the CPS survey instrument to adequately detect and accommodate the part-year nature of teacher contracts. In the CPS-ORG, respondents are asked the most convenient way to report earnings: “For [person/your] job, what is the easiest way to report [your/his/her] earnings BEFORE taxes or other deductions: hourly, weekly, annually or some other basis (such as bi-weekly, twice monthly, monthly)?”

For respondents who report “weekly,” the weekly earnings measure is simply the value they report. For those who report “monthly,” weekly earnings is computed as (monthly earnings/4.3). Neither of these cases is informative for our dilemma. However, for the 58 percent who respond that annual is the most convenient way to report pay, we have some evidence. These individuals are asked for weeks of work associated with the annual pay data. Figure 1 displays results. Roughly 72 percent of respondents reported fifty-two weeks of work. However, the vast majority of public school teachers do not work under

3. For the sake of consistency, these and all subsequent estimates use the “total all jobs” annual earnings estimate from the March CPS. In more recent but not earlier survey years, a value for “longest job held” is available as well. The results reported here are very similar if the “longest job held” earnings are used instead.

twelve-month contracts. Tabulations from the Schools and Staffing Surveys (SASS) show that only 21 percent of teachers report receiving any summer pay at all for teaching or other school-related work. Unfortunately, SASS does not report hours of work for these teachers. However, of those who report summer education work, summer earnings amount to just 5.6 percent of their nine-month salaries, suggesting that even for these teachers, the weeks of summer work are well below potential.

Why would teacher weeks be misreported in the CPS-ORG? The answer, we suspect, results from the manner in which most public school teachers are paid. Although we are aware of no systematic data on this point, our conversations with school administrators lead us to believe that most public school teachers (like many college professors) have their nine-month pay spread over twelve months. We asked a former budget analyst with the Missouri School Board Association about this. He ventured an estimate that such pay-spreading was nearly universal in Missouri public school districts. Thus, the easiest way for a respondent to report pay to a Bureau of Labor Statistics (BLS) enumerator (over fifty-two weeks) is not actual weekly pay under contract.⁴

Further evidence on this point is found in table 2. Here we compare public school teacher weekly pay in the CPS-ORG and annual earnings in the March CPS for a number of years. Of particular interest is the last column in the table, where we compute the ratio of annual to weekly earnings. If the CPS-ORG were measuring pay of teachers while under contract, we would expect this ratio to be close to thirty-eight. On the other hand, if it is simply measuring annual pay spread over fifty-two weeks, we would expect this ratio to be roughly fifty-two. In fact, we see that between 1997 and 2003 the ratio ranged between fifty-one and fifty-four weeks.

The CPS samples in table 2 (March versus prior-year ORG) are largely independent. In other words, the households responding to the annual earnings question in 2003 are, for the most part, not the same households as those responding to the weekly earnings questions in 2002. However, thanks to the household rotation design of the CPS, it is possible to match a subsample of household records in the ORG of year t to the March CPS of year $t + 1$.⁵ We

4. In the course of a hurried labor force survey, with computer-based branching of questions, it is easy to imagine that the path of least resistance is to simply report weeks or months of “work” that correspond to the paycheck amount reported in an earlier question, rather than the true term of the contract. (“The easiest way to report my wife’s pay is monthly. She gets twelve paychecks of \$4,000 each. But she doesn’t work twelve months. I think she works nine or ten months.” Recall that the teacher herself may not be the household respondent.) It is possible, of course, that many public school teachers on thirty-eight-week contracts believe that they are actually working for the school district fifty-two weeks a year, even if not formally under contract. Pay-spreading may encourage this thinking.
5. Households in the CPS are divided into eight rotation groups denoting month in sample. Households entering the sample are interviewed for four consecutive months (rotation groups 1–4), dropped for eight months, then reinterviewed for four months (rotation groups 5–8), and then

Table 2. Median Weekly and Annual Earnings for Public School Teachers: CPS-ORG and March CPS

Year	CPS-ORG			March CPS			March CPS/CPS-ORG	
	<i>n</i>	Median Weekly Earnings (\$)	Mean Weekly Earnings (\$)	<i>n</i>	Median Annual Earnings (\$)	Mean Annual Earnings (\$)	Ratio Median	Ratio Mean
1980	5,864	200	247	1,662	15,500	16,216	77.50	65.63
1981	5,009	280	300	1,510	17,690	17,972	63.18	59.81
1982	4,873	250	275	1,474	19,000	19,465	76.00	70.87
1983	4,709	300	324	1,423	20,000	20,853	66.67	64.35
1984	4,512	333	346	1,468	22,000	22,328	66.07	64.62
1997	2,479	692	750	1,150	35,000	37,472	50.56	49.94
1998	2,409	711	769	1,182	36,000	38,936	50.63	50.64
1999	2,749	731	785	1,214	37,000	39,426	50.63	50.20
2000	2,802	750	814	1,130	38,000	41,415	50.67	50.88
2001	2,834	769	822	1,944	40,000	42,625	52.00	51.87
2002	3,281	769	848	1,826	41,600	43,638	54.08	51.49
2003	3,264	808	865	1,955	41,600	44,579	51.50	51.52

Source: CPS-ORG and March CPS public use data files, Unicon Research Corporation.

Table 3. Relationship between Reported Weekly Earnings and Annual Earnings for Matched CPS Records, 2002: Public School Teachers

Mean Annual Earnings, 2002 March, CPS	\$43,092	Median Annual Earnings, 2002 March, CPS	\$41,000
Mean Weekly Earnings, 2002 CPS-ORG	\$839.41	Median Weekly Earnings, 2002 CPS-ORG	\$763.27
Ratio (1)/(2)	51.3	Ratio (1)/(2)	53.7
N	109	N	109

Notes: Rotation group 4 in March 2002 and rotation group 8 in March 2003. Match based on household ID, sex, and age.

Source: CPS-ORG and March CPS public use data files, Unicon Research Corporation.

report these results for 2002 in table 3. Again, we emphasize that the difference between tables 2 and 3 is that in the latter, we are reporting 2002 weekly and annual earnings *for the same teachers*. The results mirror those in table 2.

For a final test of this thesis we turn to Missouri data. The Missouri Department of Elementary and Secondary Education maintains a detailed

dropped permanently. The earnings questions are asked of rotation groups 4 and 8, the Outgoing Rotation Groups (ORG). For example, rotation group 8 in the March 2003 CPS was rotation group 4 in March 2002. Thus it is possible to compare the 2002 reported annual and weekly earnings for this group.

Table 4. Missouri Teacher Earnings: Administrative Data and CPS-ORG Estimates

Average Annual School Year Earnings, Missouri Teachers School Year 1999–2000 to School Year 2002–3	\$37,489
Row (1)/38	\$987
Row (1)/52	\$721
CPS-ORG 95% Confidence Interval	\$694–\$787

Source: Missouri Department of Elementary and Secondary Education administrative records, CPS-ORG files. Both estimates are teacher weighted averages over the four years.

administrative database on public school teachers, including teacher base and supplemental pay. These data are reported by the school districts to the state education agency; they are not self-reported by the teachers. Moreover, this is not a sample but includes all public school teachers in the state. These data have been collected for many years and are error-checked by the state agency. Thus, they give us a highly accurate measure of the true school year pay of teachers in Missouri. Since the CPS-ORG sample of Missouri public school teachers in any year is rather small, we pooled four years of data. The first row of table 4 is the teacher-weighted average pay from school year 1999–2000 to 2002–3 from the state administrative database. This includes all payments to teachers during the regular school year, including extra-duty pay, but excludes summer pay. In other words, these are the total 38-week earnings of public school teachers in Missouri. The next two rows divide these 38-week totals by 38 and 52 weeks, respectively, giving us two estimates of weekly pay. Since this is explicitly school year pay, the appropriate divisor for computing weekly pay while under contract is 38. The final row of the table reports a 95 percent confidence interval for average public school teacher pay in Missouri using the CPS-ORG (September through June) for the same years. The (annual earnings/52) statistic falls neatly within this 95 percent confidence band, whereas (annual earnings/38) is far above the upper bound of the interval. In other words, at least for Missouri teachers, the CPS-ORG is clearly understating true weekly pay and seems to be measuring (annual earnings/52).

In sum, our analysis leads us to conclude that the CPS-ORG is not measuring teacher pay while under contract or while teachers are working. Rather, it seems to be measuring annual teacher pay divided by fifty-two weeks, at least in recent years. As a consequence it simply replicates pay gaps observed in annual earnings.

Does this problem render the CPS-ORG useless for examining the relative pay of teachers? Given the widespread use of the CPS-ORG in labor economics

Table 5. Missing and Top-Coded Data in the CPS-ORG

Year	Public School Teachers		College-Educated Non-PS Teachers	
	Allocated (%)	Top-coded (%)	Allocated (%)	Top-coded (%)
1980	10.6	0.0	11.6	0.1
1981	11.3	0.0	11.4	0.1
1982	10.0	0.0	9.8	0.2
1983	10.6	0.0	9.9	0.2
1984	10.4	0.0	10.5	0.2
1997	17.6	1.5	23.5	6.0
1998	20.1	0.4	25.0	2.0
1999	22.5	0.5	27.6	2.2
2000	24.5	0.8	29.8	2.5
2001	24.5	0.4	31.0	2.8
2002	24.3	0.6	30.8	3.2
2003	26.0	0.5	32.2	3.2

Source: CPS-ORG, various years.

research, its large sample size, and the fact that it is available for three decades, it is tempting to make the following argument: “Yes, the CPS-ORG provides a biased cross-section measure of relative teacher weekly pay while under contract, but if the bias is constant, we can still use the CPS-ORG to measure *trends* in the relative pay of teachers.” In fact, we consider the CPS-ORG even less reliable for trends than for cross-section estimates for three reasons. First, the most disturbing problem is the growing nonresponse on teacher and nonteacher pay. Data from table 5 show that in 1980, 11 percent of teacher and 12 percent of nonteacher earnings were allocated (imputed). By 2003 these shares had grown to 26 and 32 percent, respectively. There is no reason to assume that this nonreporting is random with respect to earnings. Nor is there a satisfactory fix for this problem. Excluding allocated records risks censoring the sample. Imputing teacher earnings with nonteacher earnings (as the Census Bureau does) begs the question of the size of the gap (as pointed out in Allegretto, Corcoran, and Mishel 2004). Second, the ratio of annual to weekly earnings, while fairly stable around fifty to fifty-two weeks in recent CPS-ORG years, was inexplicably higher in the early 1980s (table 2). We have no explanation for this phenomenon. Finally, returning to table 2, the percent of college nonteacher earnings top-coded has increased from roughly .2 percent in the early 1980s to 3.2 percent in recent years. Thus, we have three sources of bias that have not been constant over time. Moreover, unlike

the weeks-worked cross-section bias, we generally do not know the direction or magnitude of these biases. As a consequence, we cannot be sure whether the relatively modest changes over time we observe in the ratio of teacher to nonteacher earnings are real or a statistical artifact.

3. EMPLOYER-BASED DATA ON PAY AND BENEFITS ARE MORE RELIABLE

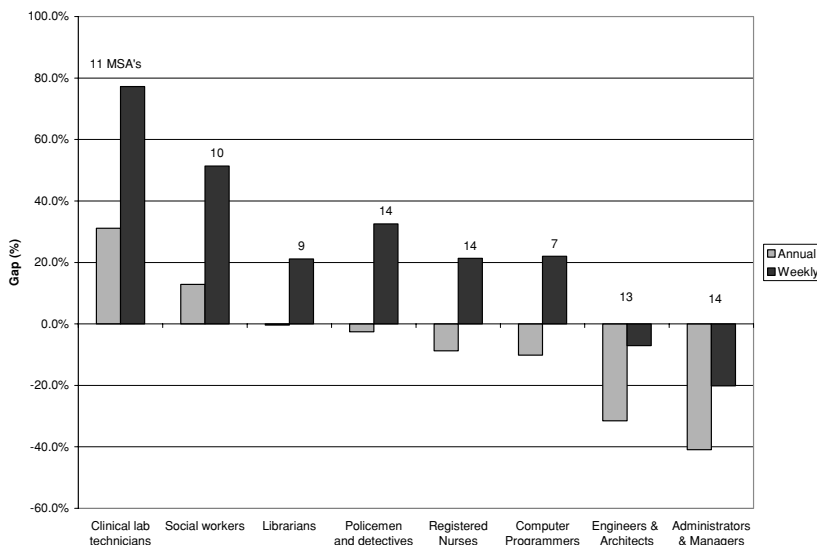
All of the problems identified above arise from the fact that teacher pay is gleaned from household respondents. Obviously, a much more accurate way to measure pay would be to collect such data directly from payroll offices. In the case of teachers, school district administrators are fully aware of the length of teacher contracts as well as their annual remuneration, thus making calculation of teacher pay while under contract a simple matter. In fact, administrative data on teacher pay are available in many states and have been used in numerous studies of teacher pay and mobility (e.g., Murnane and Olsen 1990; Hanushek, Kain, and Rivkin 2004; Podgursky, Monroe, and Watson 2004). These data could, in principle, be used to compare teacher to nonteacher pay in local labor markets.⁶ The problem, of course, is getting data on nonteacher pay.

However, many employers, including the federal government, have need for reliable data that permits comparison of pay and benefits for similar jobs in the public versus private sector or across different metropolitan areas. This led to the development of the National Compensation Survey (NCS) by the Bureau of Labor Statistics (BLS), the data-gathering arm of the U.S. Department of Labor. The NCS is an establishment survey of employee salaries, wages, and benefits. It is designed to produce reliable earnings and benefit estimates at local levels, within broad regions, and nationwide (www.bls.gov/ncs/ocs/comfaq.htm).

One attractive feature of the NCS is that it provides data on earnings by occupation in dozens of metropolitan statistical areas (MSAs). This is important because teacher labor markets tend to be local, not regional or national. Boyd et al. (2003), for example, find that 85 percent of New York teachers take their first teaching job within forty miles of their home town. Similarly high rates occur outside New York City as well. Data for Missouri show that large shares of the teaching workforce come from the nearest teacher training programs, which, in turn, are generally housed in four-year colleges that tend to attract students from the same or contiguous counties.⁷

6. A researcher at the National Center for Education Statistics estimated that roughly twenty states maintain administrative data files with teacher records that include earnings and other teacher data.

7. See Missouri Department of Elementary and Secondary Education 2003.



Source: Bureau of Labor Statistics, National Compensation Survey, various issues. Data not available for all MSAs. Number of MSAs indicated above each bar.

Figure 2. Weighted Average Percent Pay Gap in Largest U.S. Metropolitan Statistical Areas: Teacher Pay versus Selected Occupations (15 Largest MSAs)

These NCS data are available for dozens of MSAs. However, in our examination we limit our analysis to the fifteen largest MSAs. These MSAs accounted for roughly one-third of the U.S. population in 2003, therefore we may assume that they represent roughly one-third of the public school teachers as well. For this comparison, our selection was guided by occupations for which college degrees (but generally not postgraduate degrees) are common or required and for which data are available for many of the MSAs.

In figure 2 we report a population-weighted average over all the MSAs for which data are available. The number of MSAs is indicated on top of the histograms. We have chosen for comparison a variety of occupations for which a baccalaureate degree is required or commonplace. The first bar indicates the percent teacher/nonteacher gap in annual earnings and the second in weekly earnings. We have ranked the occupations from most to least favorable vis-à-vis teaching. Starting at the left, teachers have a huge premium in comparison to clinical lab technicians and social workers. They have virtual parity in annual earnings but a 20 percent premium in weekly earnings with respect to librarians. Their annual pay is roughly 10 percent below computer programmers, but on a weekly basis it is 20 percent above. Pay is less favorable overall for architects and engineers and managers and administrators; however, for the former, weekly pay is very similar. In short, NCS data suggest that on a weekly basis, teacher pay is quite competitive with that of many other professions.

Table 6. Paid Leave for Public School Teachers and Private Sector Workers as a Percent of Total Compensation: June 2004

	Paid Leave as a Percent of Total Compensation
Public School Teachers	5.1 %
Management, Professional and Related, Private Industry	7.9 %
All Private Industry	6.0 %

Source: Bureau of Labor Statistics, "Employer Costs for Employee Compensation: June 2004," Tables 4 and 5, 15 September 2005. Available at www.bls.gov/ncs/ect/sp/ecnr0052.pdf.

Finally, note that the general pattern observed in figure 2 is consistent with the regression results for the March CPS in table 1. If teachers and nonteachers had identical weekly earnings but thirty-eight- and fifty-two-week contracts, respectively, then in an annual earnings regression teachers would earn 27 percent less than nonteachers. In table 1 female public school teachers earned 8 percent less on an annual basis than female nonteachers. Male teachers earned 26 percent less. Thus, the March earnings regressions suggest that on a weekly basis, on average teachers earn more than nonteachers. The lower annual earnings for women (80 percent of teachers) are entirely due to fewer annual weeks of contract work, not lower pay per week.⁸

4. PAY PER WEEK WORKED VERSUS PAY PER WEEK UNDER CONTRACT

Do the NCS weekly data represent a fair or accurate comparison of teacher to nonteacher pay? Allegretto, Corcoran, and Mishel (2004) argue that they do not. They make the following argument (we are rounding weeks for simplicity). Nonteachers work under fifty-two-week contracts. In computing weekly pay, the BLS simply divides annual earnings by fifty-two weeks. For teachers, the BLS divides by thirty-eight weeks. However, if nonteachers have, say, four weeks of paid vacation, then Allegretto, Corcoran, and Mishel claim that the comparison is "biased" as a measure of pay for weeks worked. In our simple example above, nonteachers' weekly earnings are underestimated by 8 percent (i.e., 4/48 weeks).

If teachers actually worked every day during their thirty-eight-week contracts, then this critique would be valid. In fact, even under thirty-eight-week contracts, teachers have a good deal of paid leave. Table 6 reports the percent of total compensation represented by paid leave for public school teachers, managers, and professionals in private industry, and all private sector workers

8. These findings are mirrored in Taylor 2005 using data from the public use sample of the 2000 Census of Population.

Table 7. Scheduled Hours of Work per Week by Occupation in Two Large Metropolitan Areas

	New York MSA		Los Angeles MSA	
	Scheduled hours	Index	Scheduled hours	Index
Elementary teachers	34.9	100.0	33.9	100.0
Registered nurses	37.8	108.3	39.3	115.9
Clinical lab technicians	37.8	108.3	39.8	117.4
Social workers	36.1	103.4	39.1	115.3
Policemen and detectives	39.2	112.3	40	118.0
Computer programmers	39.6	113.5	—	—
Engineers and architects	40.2	115.2	40	118.0
Administrators and managers	38.3	109.7	40.4	119.2

Source: U.S. Department of Labor 2002, 2003.

in June 2004. Paid leave, including vacations, amounted to 7.9 percent of total compensation costs for managers and professionals in the private sector as compared to 5.1 percent for public school teachers.⁹ Thus, in the example above, if we want to compute a measure of pay per week actually worked (versus weeks under contract), we could multiply 52 by $(1 - .079)$ for managers and professionals and 38 by $(1 - .051)$ for public school teachers. This calculation suggests that a “weeks worked” comparison would result in roughly a 4 percent upward adjustment in relative weekly pay for nonteachers. While not trivial, this adjustment is much smaller than is suggested by Allegretto, Corcoran, and Mishel (2004).

In fact, this gap in workdays per year is more than offset by the shorter scheduled hours of work for teachers. Data on the scheduled workweek are reported for the two largest MSAs in table 7. In every case the scheduled hours of nonteachers are considerably longer than those of comparison occupations, and in nearly every case the gap is greater than 4 percent. Thus, in terms of an hours-standardized workweek, the NCS understates teacher pay (or overstates nonteacher pay).¹⁰

5. CONCLUSION

School finance “adequacy” cases and the more general policy debate about teacher quality have raised concern about the relative pay of public school

9. At first glance it may seem surprising that the paid leave of teachers is so close to that of private sector workers. In fact, teachers on average take many sick and personal days during their thirty-eight-week contracts (Podgursky 2003).

10. As far as teacher pay is concerned, the NCS is conservative in another sense as well: It does not include pay supplements for additional duties such as coaching or other after-school activities, mentoring, or bonus pay (e.g., National Board certification).

teachers. However, comparisons of pay and benefits for public school teachers to those of professional employees in other sectors are complicated by the fact that most teachers work under contracts that are nine or ten months in length rather than a full year. This makes data on weekly pay particularly useful in teacher/nonteacher comparisons. The CPS-ORG provides weekly pay estimates and is widely used in applied labor economics research; however, we find that its weekly earnings estimates for teachers are unreliable. In recent years, the values being reported for teachers are clearly annual earnings spread over fifty-two weeks rather than the purported measure of weekly pay while the teacher is under contract. We argued that employer-reported data on salaries and benefits, such as the National Compensation Survey (NCS) or state administrative data, are much more reliable for weekly earnings comparisons. NCS data on weekly earnings in metropolitan labor markets suggest that pay gaps between teachers and nonteachers are much narrower than CPS-ORG estimates.

A troublesome corollary to this finding is that the flawed measures of weekly teacher earnings contaminate estimates of professional females earnings generally, as well as gender earnings gaps in CPS-ORG-based studies. Currently, 79 percent of the 3.1 million public school teachers are female. Hence, roughly 14 percent of the female college-educated workforce are public school teachers.¹¹ Underestimation of teacher pay will thus lead to overestimates of gender pay gaps. Moreover, since the pay of female teacher respondents is used to impute the pay of female, college-educated nonrespondents, the flawed teacher pay estimates will contaminate female professional earnings generally. We believe this issue warrants further study.

An earlier draft of this article was presented at the American Education Finance Association Annual Meetings, March 17–19, 2005, Louisville, KY. The authors wish to thank Christopher Cornwall, Lawrence Mishel, and Kenneth Troske for helpful comments, the Smith-Richardson Foundation for research support, and Samantha Dalton for research assistance. The usual disclaimers apply.

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11. This estimate is based on teacher data in U.S. Department of Education (2005, table 69), and female employment data in U.S. Department of Labor (2005, table 8).

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