

DOCUMENT(S) REVIEWED:	How Much Are Public School Teachers Paid?
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Summary of Review

The Manhattan Institute report, *How Much Are Public School Teachers Paid?*, uses hourly earnings from the 2005 National Compensation Survey (NCS) to contend that teachers are better paid than most white-collar professionals, including many in occupations commonly understood to be quite lucrative.¹ The report relies on hourly earnings data in an attempt to provide an apples-to-apples comparison of pay for a standard unit of work. Unfortunately, this approach is fundamentally flawed because the NCS calculation of weeks and hours worked is very different for teachers and other professionals. In fact, the Bureau of Labor Statistics—which publishes the NCS—has explicitly warned its users *not* to use hourly rates of pay in this exact same context. It is unclear why the authors of this report have apparently have chosen to ignore that warning, but what remains is a measure of compensation that is of very little use in informing policy discussions of teacher pay.

I. INTRODUCTION

A new report from the Manhattan Institute purports to show that teachers are better compensated than editors, reporters, architects, psychologists, chemists, economists, and mechanical engineers. Moreover, the report contends that teachers are better paid than the vast majority of white-collar, professional, and technical workers. In How Much Are Public School Teachers Paid?. Jay P. Greene and Marcus A. Winters make this surprising argument using a national survey of employers from the Bureau of Labor Statistics (BLS). Their findings will likely find receptive readers among those hoping to resist calls for higher teacher pay, but the measures used by these authors are considerably flawed. In fact, the BLS itself has explicitly advised against the exact approach they chose to use.

How teachers are compensated is an important issue. By some measures, teacher quality has been on a long, slow decline for decades,² and there is evidence to suggest that at least some of this trend can be explained by declines in relative teacher pay.³ As higher-paying opportunities have opened up for women, the teaching option has become less attractive. At the same time, mounting evidence has pointed to the significance of teacher quality in promoting student achievement, and the nation has seen many new policy innovations related to teacher compensation, such as merit pay. These changes have increased the importance of research on teacher labor markets.

Unfortunately, this six-page report (and its 17 pages of tables) covers no new ground⁴ and contributes almost nothing to the policy discussion surrounding teacher compensation. We certainly see value in the premise of the report: an apples-to-apples comparison of pay for a unit of work. But the authors ultimately rely on an hourly pay measure from the National Compensation Survey (NCS) that is fundamentally flawed for these purposes.

The authors might be excused for their choice of measure if the same government agency that published these statistics hadn't explicitly advised against such uses of the data. Further, a report we published with Sylvia Allegretto in 2004⁵ demonstrated plainly how hourly rates of pay in the NCS are not measured in the same way for teachers as they are for other professionals. The authors did read our report (as noted below, it's the only authority they cite on this matter that they themselves did not author), but they do not address this measurement issue nor do they explain or justify their omission.

The end result is a missed opportunity to shed light on some of the more pressing and complex issues related to the measurement and structure of teacher compensation. The matter of relative teacher pay has been a subject of substantial interest in the economics of education literature as of late,⁶ yet Greene and Winters elect to ignore these writings in their entirety. Instead, readers are left with an unproductive and irresponsible statistical sleight-of-hand.

II. REPORT'S FINDINGS AND CONCLUSIONS

Greene and Winters use hourly earnings data from the BLS to compare the pay of public elementary and secondary teachers with that of various comparison groups (white-collar, professional specialty and technical, and certain professional occupations). National averages as well as averages within metropolitan areas are presented. From these, they draw the following conclusions:

- "The average public school teacher in the United States earned \$34.06 per hour in 2005 ... 36% more per hour than the average non-sales white-collar worker and 11% more than the average professional specialty and technical worker" (p. 2 and Table 1).
- Comparing teachers to professional workers, "teachers have higher earnings than 61 of these 85 occupations. For example, editors and reporters earn 24% less than public school teachers; architects, 11% less; psychologists, 9% less; chemists, 5% less; mechanical engineers, 6% less; and economists, 1% less" (p. 3 and Table 2). Public school teachers earn 61% more than private school teachers (p. 4 and Table 3).
- "Full-time public school teachers work on average 36.5 hours per week during weeks they are working," compared with white-collar workers' 39.4 hours, professional specialty and technical workers' 39 hours, and private school teachers' 38.3 average hours per week (p. 4 and Table 4).
- Teacher earnings vary considerably across the 60 metropolitan areas for which data are available. For example, "the Detroit metropolitan area has the highest average public school teacher pay among metropolitan areas...at \$47.28 per hour" (p. 2) and Greensboro the lowest, at \$22.38. Elkhart, Indiana has the highest compensation relative to white-collar workers (at 87% more); Detroit has the eighth highest (61% more). In only 11 metropolitan areas do public

school teachers earn less than professional specialty and technical workers, and teachers earn 20%, 23% and 12% more than professionals in New York, Los Angeles, and Chicago, respectively (p. 2-3 and Tables 1A-1C).

• Similarly, teachers' weekly hours worked varied across metropolitan areas, ranging from a low of 32.6 in Grand Rapids to a 'high' of 40 hours per week in Milwaukee and Amarillo.

Finally, the authors use regression analysis to explore the relationship between relative teacher compensation—measured using the hourly pay figures discussed above—and high school graduation rates in a crosssection of metropolitan areas. Controlling for various student and metropolitan area characteristics, they find no statistically significant relationship between relative teacher pay and student outcomes.

III. REPORT'S RATIONALES FOR ITS FINDINGS AND CONCLUSIONS

For this report, Greene and Winters rely on publicly available data from the 2005 National Compensation Survey conducted by the Bureau of Labor Statistics (BLS).⁷ The NCS is a survey responded to by employers (e.g., school districts) for which the BLS randomly selects employers and occupations within selected firms.⁸ Although the NCS (and this new report) state earnings on an hourly basis, they are not necessarily collected in this way. Employers are asked to report occupational earnings on an annual, weekly, or hourly basis as appropriate, together with scheduled hours worked per day or per week, and weeks worked per year.⁹ For salaried workers not on a rigid work schedule, the "typical number of hours actually worked [is] collected."¹⁰

For full-time, professional salaried workers (the class of workers the Manhattan Institute report is primarily concerned with), hourly earnings would be calculated by the BLS as the annual salary divided by weeks worked per year, divided again by the number of hours worked per week. This hourly rate of pay constitutes the basis for all of Greene and Winters' earnings comparisons.

Comparing the compensation of teachers to that of other professionals on a basis other than annual earnings does make an amount of sense, and the authors make this argument on page 5 of their report. After all, schoolteachers are not paid for the same length work year as full-year workers, making annual earnings problematic (particularly when comparing earnings at a single point in time).

Accordingly, the problem lies not in the concept but in the improper use of this data. When one accepts these hourly pay rates as an appropriate measure of compensation, the numbers speak for themselves. On an hourly basis and using the Manhattan Institute figures, teachers could not justifiably be considered the underpaid candidates for sainthood they are often painted to be. Yet if one were to belief these figures, one would also have to believe that English professors (at \$45.84 per hour) are better compensated than chemists (\$32.23) and nuclear engineers (\$39.92), and that airplane pilots (at \$97.51 an hour) are better paid than physicians (\$61.38) and make more than twice as much as aerospace engineers (\$42.27).¹¹

IV. REVIEW OF THE REPORT'S USE OF RESEARCH LITERATURE

Teacher labor markets have been an intensely studied topic in recent years. These authors, however, cite only two publi-

cations on the subject—the first being their own 2005 book with Greg Forster, Education Myths. The other is our 2004 paper with Sylvia Allegretto, How Does Teacher Pav Compare? Methodological Challenges and Answers.¹² The fact that Greene and Winters reference our work is puzzling-it is cited only as "previous research [that] has used BLS data to draw conclusions about the proper level of teacher pay" (p. 2). Nothing in that description informs the reader that a large portion of our 2004 paper was devoted to explaining the methodological problems surrounding the use of the NCS for these very same purposes (discussed in greater detail below).

While one hesitates to harshly criticize a six-page policy report for its lack of a literature review, a recurring frustration here—as we also found to be the case with Education Myths—is that these authors could make a considerably stronger argument for their thesis, if only they bothered to be more thorough in their research. For example, they are correct in pointing out the difficulties inherent in comparing teacher compensation to that of other workers, but they ignore a growing literature that has explored these issues in some depth (literature that has, however, rejected their hourly pay measure).¹³ Likewise, there is a sizable body of research that investigates the relationship between teacher pay and student outcomes as Greene and Winters do here. But a cursory read of this literature reveals that simple cross-sectional regression estimates of this kind are almost nonsensical. While teacher pay might affect student outcomes (through better teacher quality), student outcomes as well as school context also affect teacher pay. In general, teachers tend to be paid more to work in the lowest performing schools. As economists Susanna Loeb and Marianne Page have demonstrated, once these factors are controlled for, conclusions regarding teacher pay are quite

different.¹⁴ This new report addresses none of these nuances.

V. REVIEW OF THE REPORT'S METHODS

Because the NCS hourly rate of pay calculation hinges on the measurement of weeks and hours worked, Greene and Winters defend in some detail the validity of this measure. As explained below, this part of the report is highly misleading. Both weeks worked per year and hours worked per week are measured in different ways for teachers and other professionals.

Citing the BLS policy of collecting the "typical number of hours actually worked" (p. 4) for salaried workers, the authors argue that the reported 30- to 40-hour teacher work week includes time devoted to grading papers, preparing for class, and the like, as well as paid lunches and rest periods. They quote the following from a 1994 BLS bulletin (which we must assume was still applicable in 2005):

Virtually all teachers worked from 30 to 40 hours per week, *which in-cluded paid lunch and rest periods, as well as preparation and grading time if such activities were considered by the school to be a part of the teacher's workday.* Additional hours for extracurricular activities were included only if considered part of the regular work schedule [emphasis added].¹⁵

The same bulletin, however, later reveals important details relevant to the NCS annual weeks worked measure: "Teachers are typically employed for a fixed number of days—for example, 180—over a 9- or 10month contract. For many teachers, *school holidays are not included in the days contracted for* and are therefore not designated as paid holidays [emphasis added]."¹⁶ For example, during Thanksgiving an architect and a teacher might both not work on Thursday and Friday. The NCS data would show an architect as having worked five days, while the teacher is shown to have only worked for three.

Weeks worked per year is critical for weekly and hourly earnings calculations for workers paid annually, yet nowhere in this report do Greene and Winters report these statistics. One can, however, readily calculate these numbers using published NCS tables.¹⁷ By dividing mean annual hours by mean weekly hours reported by the BLS for each occupational group, one can obtain mean weeks worked. For professional occupations broadly defined, this yields (1,829 (39.0) = 46.9 weeks of work; for architects (2,155 / 41.4) = 52.0; for mechanical engineers (2,122 / 40.8) = 52.0; and for lawyers (2,157 / 41.5) = 52.0. In other words, according to NCS data the typical professional is considered to have worked (paid holidays included) about 52 weeks per year. This constitutes the denominator in the calculation of weekly (and by extension, hourly) pay for these groups.

Public school teachers, on the other hand, would be calculated to work an average of (1,403 / 36.5) = 38.4 weeks per year $(38.0 \text{ weeks per year for elementary teach$ $ers})$. These numbers represent the denominator in the calculation of weekly (and thus, hourly) pay for teachers.

Why should these varied denominators matter if indeed teachers work a shorter work year than other professionals? The answer is that weeks worked for professionals *includes* time off, while the same statistic for teachers *excludes* days not spent working, as these calculations and the BLS bulletin show. To illustrate further, assume a teacher works a 180-day school year and eight non-instructional days. This accounts for (188 / 5) = 37.6 of the 38 reported work weeks, leaving only 2-4 days "unaccounted for." What results is a fairly precise measure of weeks spent at work for teachers, but an inflated number of weeks of work for other professionals (unless one assumes that professionals are working the full 52 weeks per year). When translating annual salaries to weekly (or hourly) pay, an inflated number of weeks worked will considerably *deflate* compensation for a week (or hour) of work.

Greene and Winters also contend that preparation and grading—and work completed at home if the job requires it—are all somehow included in teachers' reported average of 32.6 to 40 hours of work per week:

If any of this work at home, either by teachers or other professionals, is considered by the employer to be part of the *actual* hours worked, it is included in the BLS figures. It is possible that teachers, as well as other professionals, put in some hours at home that are not captured in these numbers, but those hours would not be considered part of their jobs and thus are not part of paid employment. (p. 4)

There was no need for the authors to speculate about this. Other published data document the activities that constitute these 30 to 40 hours of work.¹⁸ The U.S. Department of Education, for example, periodically surveys teachers as part of its Schools and Staffing Survey (SASS) program, asking very specific questions regarding time use.¹⁹ In the most recent wave of the SASS, public school teachers reported that they were required to work an average of 37.7 hours per week to receive base pay, with approximately 27 to 29 of these hours devoted to direct instruction.²⁰ These hours correspond closely to those negotiated in the typical

union contract. Accordingly, these are the logical figures that a principal would provide in response to a survey question asking about teacher contracted work hours. When asked to include other school-related activities (including grading), teachers in the SASS report an average of 52.4 hours of work per week. This is consistent with a basic understanding of teacher workload, and it is difficult to believe that the 30- to 40-hour required work week includes all activities realistically required of the job. If indeed it does, teachers should be able to reduce their workload up to 15 hours per week with no harm done, as these extra hours are, according to Greene and Winters, "not considered part of their jobs and thus are not part of paid employment."

The authors go on to argue that teachers' hours of work may further be overestimated in the NCS data because their quoted hours include lunch and "rest periods." They quote again from the BLS:

[T]eachers, more than the other groups, were the most likely to have paid lunch as well as paid rest periods.²¹

What they do not point out is that the measure of weekly hours includes paid lunch and rest time for only a small minority of teachers. The very same BLS bulletin states that only "14 percent of teachers received paid lunch time, and just 20 percent received paid rest time."²² This is not surprising—employers are asked to include paid lunches and breaks only if the worker's contract formally includes these periods. This is rarely the case for most professional occupations, and the comparatively higher fraction of teachers with paid breaks surely stems from instances where collective bargaining agreements specifically delineate these periods.²³

Perhaps what is most frustrating about this report's use of hourly compensation is that the same agency that collects and publishes this data has explicitly advised users *not* to compare hourly rates of pay in these very same circumstances. Prominently displayed on the National Compensation Survey's earnings website is the *frequently asked question*: "When compared with other occupations, the hourly earnings for some occupations, such as teachers and airline pilots, seem higher than expected. Why is this?"²⁴

The BLS responds:

Unfortunately, this method may not work well for certain occupations with unusual hours. Teachers who only work only 9 or 10 months per year are an example of this problem. Another example is the airline pilot occupation... Because of these issues, comparisons of annual salaries published by the National Compensation Survey (NCS) might be more appropriate when considering certain occupations.²⁵

Our published 2004 correspondence with a BLS chief on this matter confirms the agency's reservations:

> because the published NCS wage estimates do not reflect leave entitlements and the work years of teachers are so dissimilar from most other professional occupations, I would only use the annual salary estimates from NCS to compare teacher pay with the pay of other professionals.²⁶

VI. REVIEW OF THE VALIDITY OF THE FINDINGS AND CONCLUSIONS

As shown above, the earnings measures reported by the NCS (and relayed by the Manhattan Institute) are constructed using annual salary data and concepts of "weeks worked" that differ markedly for teachers and other professionals. Further, it is clear from publicly available data that the hours-per-week measure used by the NCS for teachers almost certainly does not include all activities expected for employment, as Greene and Winters incorrectly suggest. Each of these measurement issues is serious, though the latter concern may cause less of a bias in the numbers because, as Greene and Winters point out, reported hours for other professionals may also understate the number of hours they spend in work required for employment. (Without better data, it is unclear which class of workers has the greater understatement of required work hours).

In the end, Greene and Winters rely on a fundamentally flawed measure of relative teacher compensation, and this defect in their study prevents any usefulness. It can add little if anything to the public discussion of teacher pay and school policy. The report's repeated insistence that it is "facilitating a fact-based approach" (p. 1) and "simply offering facts" (p. 6) is disingenuous at best and blatantly dishonest at worst, given that the report ignores existing research and measurement concerns directly related to these "facts." Tacking on a regression analysis purporting to show no association between teacher pay and student outcomes only adds insult to injury. This regression analysis would not past muster even if the relative pay measures were valid.

VII. REPORT'S USEFULNESS FOR Guidance of Policy and Practice

The new report from the Manhattan Institute misses an opportunity to shed light on some of the complexities and policy considerations tied to the measurement and structure of teacher compensation. Rather than leading us down an unproductive path of counting contracted weeks, hours of work, paid lunches, and breaks, analysts should focus on identifying the most efficient policies for attracting high-quality graduates into the teaching profession. While the authors are correct in pointing out the fundamental differences between a teacher's work schedule and that of other professionals, new graduates view potential occupations as "bundles" of amenities that include pay, time off, and working conditions. Policymakers might ask whether the once-attractive 9-month work year (with its correspondingly lower annual pay) has the same appeal to the workforce—in particular, working women—that it once did.

As stated in the introduction to the report, "the policy debate on education reform has proceeded without a clear understanding of these issues" (p. 1). Unfortunately, Greene and Winters have done little to promote such an understanding.

NOTES & REFERENCES

- ¹ Greene, J., and Winters, M. (2007, Jan. 31) *How much are public school teachers paid?* New York: The Manhattan Institute
- ² Corcoran, S.P., Evans, W. N., and Schwab, R.M. (2004), "Changing Labor Market Opportunities for Women and the Quality of Teachers, 1957-2000," *American Economic Review*, vol. 94, no. 2.
- ³ See for example, Bacolod, M.P. (forthcoming), "Do Alternative Opportunities Matter? The Role of Female Labor Markets in the Decline of Teacher Quality," *Review of Economics and Statistics*.
- ⁴ Richard Vedder, for example, also used hourly earnings from the National Compensation Survey to contrast teacher pay with that of other professions. Veder, R. (2003, Summer) "Comparable Worth," *Education Next* 3(3)..
- ⁵ Allegretto, S.A., Corcoran, S. P., and Mishel, L. (2004) *How Does Teacher Pay Compare? Meth-odological Challenges and Answers,* Economic Policy Institute
- ⁶ For examples, see:
- Podgursky, M., and Tongrut, R. (2006, Fall), "(Mis-)Measuring the Relative Pay of Public School Teachers," *Education Finance and Policy*, 1(4)
- Taylor, L.L. (Summer 2006), "Comparable Wages, Inflation, and School Finance Equity," *Education Finance and Policy*, 1(3)
- Allegretto, S.A., Corcoran, S. P., and Mishel, L. (2004) *How Does Teacher Pay Compare? Meth-odological Challenges and Answers,* Economic Policy Institute
- ⁷ Despite the authors' claim that "no one has organized and reproduced [BLS earnings] data so that others can easily observe the information and form their own interpretations" regarding teacher pay (p. 2), all of the National Compensation Survey data used in their report are taken directly from published BLS reports. The data can also be quickly and easily downloaded from the Bureau of Labor Statistics website (<u>http://www.bls.gov/ncs/ocs/home.htm</u>). Greene and Winters use data primarily from the 2005 wave of this survey, and report wages (excluding benefits) for full-time workers only.
- ⁸ That is, in the first stage of the sample selection employers are chosen at random. Then, in a second stage employees (or more precisely, occupations or jobs) are selected for the collection of detailed wage data.
- ⁹ Appendix A ("Technical Note") (2006, August). "National Compensation Survey: Occupational Wages in the United States, June 2005," U.S. Bureau of Labor Statistics. Retrieved Feb. 11, 2007, from <u>http://www.bls.gov/ncs/ocs/sp/ncbl0832.pdf</u>.
- ¹⁰ Appendix A ("Technical Note") (2006, August). "National Compensation Survey: Occupational Wages in the United States, June 2005," U.S. Bureau of Labor Statistics. Retrieved Feb. 11, 2007, from <u>http://www.bls.gov/ncs/ocs/sp/ncbl0832.pdf</u>.
- ¹¹ U.S. Bureau of Labor Statistics (2006, July). National Compensation Survey: Occupational Wages in the United States, June 2005 Supplementary Tables. Retrieved Feb. 11, 2007, from <u>http://www.bls.gov/ncs/ocs/sp/ncbl0831.pdf</u>

Authors' calculations, using data from the above and from Greene and Winters' Table 2 (p. 15).

- ¹² Allegretto, S.A., Corcoran, S. P., and Mishel, L. (2004) How Does Teacher Pay Compare? Methodological Challenges and Answers, Economic Policy Institute
- ¹³ Podgursky, M., and Tongrut, R. (2006, Fall), "(Mis-)Measuring the Relative Pay of Public School Teachers," *Education Finance and Policy*, 1(4)

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- ¹⁴ Loeb, S. and Page, M.E. (2000), "Examining the Link Between Teacher Wages and Student Outcomes: The Importance of Alternative Labor Market Opportunities and Non-Pecuniary Variation." *Review of Economics and Statistics*, vol. 82, pp. 393–408.
- ¹⁵ U.S. Bureau of Labor Statistics (1994, Aug. 24), BLS Bulletin 2444. Retreieved Feb. 11, 2007, from <u>http://www.bls.gov/ebs/sp/chp2sl.txt</u>. Quoted on page 4 of Greene and Winters.
- ¹⁶ U.S. Bureau of Labor Statistics (1994, Aug. 24), BLS Bulletin 2444. Retreieved Feb. 11, 2007, from <u>http://www.bls.gov/ebs/sp/chp2sl.txt</u>. Quoted on page 4 of Greene and Winters.
- ¹⁷ U.S. Bureau of Labor Statistics (2006, July). National Compensation Survey: Occupational Wages in the United States, June 2005 Supplementary Tables. Retrieved Feb. 11, 2007, from <u>http://www.bls.gov/ncs/ocs/sp/ncbl0831.pdf</u>
- All of the following calculations use mean annual hours from Supplementary Table 4.2 and mean weekly hours from Supplementary Table 4.1. We perform similar calculations in Allegretto, Corcoran, and Mishel (2004).
- ¹⁸ See also the survey results in
- Drago, R., et al (1999), "New Estimates of Working Time for Elementary School Teachers," Monthly Labor Review, April, pp. 31–40.
- ¹⁹ See National Center for Education Statistics (undated) Overview, *Schools and Staffing Survey*. Retrieved Feb. 11, 2007, from http://nces.ed.gov/surveys/sass/
- ²⁰ National Center for Education Statistics, (2006, April). "Characteristics of Schools, Districts, Teachers, Principals, and School Libraries in the United States: 2003-04 Schools and Staffing Survey." Retrieved Feb. 11, 2007, from <u>http://nces.ed.gov/pubs2006/2006313.pdf</u>.
- An earlier wave of this survey (1999-00) asked the time use questions somewhat differently; in that year teachers reported that they were required to spend an average of 37.9 hours per week *in school*, 3.2 additional hours per week working with students, and another 8.7 hours per week in grading and preparation activities.
- ²¹ National Center for Education Statistics, (2006, April). "Characteristics of Schools, Districts, Teachers, Principals, and School Libraries in the United States: 2003-04 Schools and Staffing Survey." Retrieved Feb. 11, 2007, from <u>http://nces.ed.gov/pubs2006/2006313.pdf</u>
- ²² National Center for Education Statistics, (2006, April). "Characteristics of Schools, Districts, Teachers, Principals, and School Libraries in the United States: 2003-04 Schools and Staffing Survey." Retrieved Feb. 11, 2007, from <u>http://nces.ed.gov/pubs2006/2006313.pdf</u>
- ²³ Thus, if anything, it is surprising that a *higher* fraction of school employers do not report that their teachers receive paid breaks.
- ²⁴ U.S. Bureau of Labor Statistics (2005, Oct. 21) "People are asking..." Retrieved Feb. 12, 2007, from <u>http://www.bls.gov/ncs/ocs/peoplebox.htm</u>
- ²⁵ U.S. Bureau of Labor Statistics (2005, Oct. 21) "People are asking..." Retrieved Feb. 12, 2007, from <u>http://www.bls.gov/ncs/ocs/peoplebox.htm</u>
- ²⁶ Allegretto, S.A., Corcoran, S. P., and Mishel, L. (2004) How Does Teacher Pay Compare? Methodological Challenges and Answers, Economic Policy Institute pages 34-35.