

# Background

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## Critical Issues in Assessing Teacher Compensation

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**Abstract:** A November 2011 Heritage Foundation report—“Assessing the Compensation of Public-School Teachers”—presented data on teacher salaries and benefits in order to inform debates about teacher compensation reform. The report concluded that public-school teacher compensation is far ahead of what comparable private-sector workers enjoy, and that recruiting more effective teachers will be more difficult than simply raising salaries. The debate over the report’s findings has generated substantive inquiries as well as some misconceptions. Here, the report’s authors respond to questions and concerns, in the process showing that certain critical accusations—such as undercounting teachers’ work hours or overestimating retirement benefits—are simply false. The broader implication of the authors’ research is that the current teacher compensation system is not working. The United States needs a more rational system that pays teachers according to their performance.

Our recent report, “Assessing the Compensation of Public-School Teachers,”<sup>1</sup> concluded that, on average, public-school teachers receive total compensation that is roughly 50 percent higher than what they would receive in private-sector employment. While salaries are at appropriate levels, fringe benefits push teacher compensation far ahead of what private-sector workers enjoy. Consequently, recruiting more effective teachers for public schools will be much more difficult than simply raising salaries.

The report has drawn considerable attention from media outlets, policymakers, and teacher advocates. Several scholars welcomed our report as a valuable

### Talking Points

- A November 2011 Heritage Foundation report—“Assessing the Compensation of Public-School Teachers”—presented data on teacher salaries and benefits in order to inform debates about teacher-compensation reform. The report concluded that public teacher compensation is far ahead of what private-sector workers enjoy, and that recruiting more effective teachers will be more difficult than simply raising salaries.
- The debate over the report’s findings has generated substantive inquiries as well as some misconceptions. Here, the report’s authors respond to questions and concerns, showing that certain critical accusations—such as undercounting teachers’ work hours, or overestimating retirement benefits—are simply false.
- The broad implication of “Assessing the Compensation of Public-School Teachers” is that the current teacher compensation system is not working. The U.S. needs a system that pays teachers according to their performance—encouraging the best teachers to stay and the least effective teachers to leave the profession.

This paper, in its entirety, can be found at:  
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contribution,<sup>2</sup> but a number of misconceptions about the report have also been circulating. In some cases, critics rushing to judgment have made claims that are flatly incorrect. Other commenters have raised more substantive issues about measuring teaching compensation.

Our goal has been to inform debates about how to reform teacher compensation. It is in that spirit that we address common questions and concerns about our argument that public-teacher compensation is above fair market levels, seeking to refocus the discussion on our original objective.

**Issue:** *Teachers work at home and on weekends, not just at the school building during classroom hours. How did you measure teacher work hours?*

Perhaps the most common misconception is that we somehow undercounted the number of hours that teachers work. For example, Stanford University's Linda Darling-Hammond claimed that we generated our conclusions only "by underestimating the actual hours that teachers work—using 'contract hours' rather than the 50-plus hours a week teachers actually spend preparing for classes, grading papers, and communicating with students and parents outside of school hours."<sup>3</sup>

Where Darling-Hammond got the idea that we used "contract hours" is not clear, but it could not

have come from reading our study. We relied on teachers' *self-reports* of the hours they work, not on contract hours.

The Current Population Survey (CPS) asks the following question: "In the weeks that [you] worked, how many hours did [you] usually work per week?"<sup>4</sup> The median number of work hours per week reported by teachers was 40, which is the same as reported by non-teachers.<sup>5</sup> Some teachers in the CPS work more than 40 hours, and some work fewer, but overall their hours are not dramatically different from those of other professionals. If a teacher did report working, say, 60 hours per week, we accepted that number.

Could teachers have misunderstood the CPS question as referring only to hours worked while physically in the school building? The Bureau of Labor Statistics (BLS) took an even more detailed look into teacher hours using a time-use survey, in which individuals create detailed logs of what they are doing over the course of an entire day.<sup>6</sup> The BLS noted that teachers do, in fact, put in more work time at home and on weekends than other professionals. But do teachers work longer hours overall? According to the BLS, the answer is no. The average workweek for teachers is a little under 40 hours, similar to what teachers reported in the CPS.

1. Jason Richwine and Andrew G. Biggs, "Assessing the Compensation of Public-School Teachers," Heritage Foundation Center for Data Analysis Report No. 11-03, November 1, 2011, at <http://www.heritage.org/research/reports/2011/10/assessing-the-compensation-of-public-school-teachers>.
2. See, for example, Robert Costrell, "Are Public School Teachers Overpaid?" remarks at the American Enterprise Institute, November 1, 2011, at <http://www.aei.org/events/2011/11/01/are-public-school-teachers-overpaid/> (December 29, 2011), and personal communication from University of Missouri economist Michael Podgursky and Harvard University political scientist Paul Peterson. For a cautious and balanced perspective, see Frederick Hess, "Making Sense of the Whole 'Are Teachers Overpaid?' Thing," *Education Week*, November 18, 2011, at <http://www.aei.org/article/education/k-12/teacher-policies/making-sense-of-the-whole-are-teachers-overpaid-thing/> (December 29, 2011).
3. Linda Darling-Hammond, "Teachers Paid Much Less Than Their Peers," *U.S. News & World Report*, November 9, 2011, at <http://www.usnews.com/debate-club/are-teachers-overpaid/teachers-paid-much-less-than-their-peers> (December 29, 2011).
4. Current Population Survey, "2009 Annual Social and Economic (ASEC) Supplement," 2009, pp. 8–24, at <http://cps.ipums.org/cps/resources/codebooks/cpsmar09.pdf> (December 29, 2011).
5. These numbers are based on full-time workers (35 or more hours per week) between 2001 and 2010. The mean (as opposed to median) hours per week for teachers and non-teachers are greater than 40, due to some workers reporting very long workweeks. For all non-teachers, mean hours were 43.2. Non-teachers with at least a college degree reported mean hours of 44.8. Mean hours for teachers were 43.7.
6. Rachel Krantz-Kent, "Teachers' Work Patterns: When, Where, and How Much Do U.S. Teachers Work?" *Monthly Labor Review* (March 2008), at <http://www.bls.gov/pub/mlr/2008/03/art4full.pdf> (December 29, 2011).

Though she did not cite a source, Darling-Hammond's claim of "50-plus hours" worked by teachers echoes a survey conducted by the National Education Association (NEA). According to the NEA, teachers report an average of 50 hours per week "spent on all duties."<sup>7</sup>

There are two major problems with interpreting this NEA number. First, only 37.8 percent of teachers to whom the NEA sent its survey completed it.<sup>8</sup> (The minority of teachers who filled out the eight-page, 64-question survey could plausibly work longer hours during the school year than the average teacher.)

Second, the NEA survey specifically probes for extra work time outside normal work hours. Using the NEA data to compare work hours between teachers and non-teachers would require asking *non-teachers* the same set of detailed questions about hours worked both at the office and at home. Otherwise, only teachers (not workers in general) would be nudged to report more hours than their initial intuition tells them.

Do some teachers work long hours? Yes—and when they do our study accounts for it. But do teachers as a whole work longer hours than workers in other occupations? The reliable data say no.

**Issue:** *Shouldn't teachers receive a premium for how hard they work in general?*

Related to the work-hours issue is the difficulty of teaching in general. Teaching certainly does

require hard work and dedication, but many people work hard who are not teachers. One of the ways to assess whether teaching requires a compensating differential for work difficulty is by comparing public-school-teacher salaries to private-school-teacher salaries. Since both sets of workers are teachers, the daily demands they face will be more similar to each other's than to the non-teaching experience. But teachers in public schools receive average salaries that are 10 percent higher than salaries of teachers in private schools, and the disparity persists even after controlling for school and student characteristics.<sup>9</sup>

**Issue:** *Teachers pay for classroom materials out of their own pockets. How does that affect your analysis?*

In a press release responding to our report, the American Federation of Teachers (AFT) cited "hundreds of dollars" per year in personal funds that teachers spend on their classrooms.<sup>10</sup> Barnett Berry of the Center for Teaching Quality made the same point, putting the number at \$356.<sup>11</sup> Other data support an even higher amount: the Schools and Staffing Survey reports that in 2007–2008, 92 percent of public-school teachers reported spending their own funds on school supplies or other needs, with average spending at \$415 per year.<sup>12</sup>

This follows an argumentative pattern similar to the first two objections we have listed: Teacher advocates make a point about the difficulty of being a teacher and then assume, without evidence, that this difficulty must be greater than that of other pro-

7. National Education Association, "Status of the American Public School Teacher 2005–2006," March 2010, p. 9, at <http://www.nea.org/assets/docs/HE/2005-06StatusTextandAppendixA.pdf> (December 29, 2011).
8. As noted in the survey's methodology, "one must assume that nonrespondents (62.2% of the sample in this survey) have the same characteristics and attitudes as respondents." (Emphasis and parenthetical note in original.); *ibid.*, p. 2.
9. Richwine and Biggs, "Assessing the Compensation of Public-School Teachers," pp. 9–10.
10. Press release, "AFT President Randi Weingarten Responds to American Enterprise Institute Report on Teacher Compensation," American Federation of Teachers, November 1, 2011, at <http://www.aft.org/newspubs/press/2011/110111.cfm> (December 29, 2011).
11. Barnett Berry, "Time to Pay Teachers What They Are Worth," *U.S. News & World Report*, November, 9, 2011, at <http://www.usnews.com/debate-club/are-teachers-overpaid/time-to-pay-teachers-what-they-are-worth> (December 29, 2011).
12. National Center for Education Statistics, "Schools and Staffing Survey: Percentage of Public School Teachers Who Spent Their Own Unreimbursed Money on Classroom Supplies and Average Amount Spent During the 2006–07 School Year, by State: 2007–08," at [http://nces.ed.gov/surveys/sass/tables/sass0708\\_004\\_t1s.asp](http://nces.ed.gov/surveys/sass/tables/sass0708_004_t1s.asp) (January 3, 2012). The \$415 figure is the product of 92.4 percent of teachers reporting spending their own funds and \$450 in average annual spending for those who spend out-of-pocket.

fessions. We know of no systematic data on personal funds spent by non-teachers. Even if one assumed, however, that non-teachers suffered zero out-of-pocket expenses, the amounts spent by teachers on classroom supplies would have little effect on our analysis. Average teacher salaries and benefits total well over \$100,000 per year, and our measured teacher compensation premium over the private sector exceeds \$30,000.<sup>13</sup>

In addition, teachers enjoy a special federal tax deduction of up to \$250 for work expenses. The deduction is above-the-line, meaning that teachers are eligible even if they have high-earning spouses or do not itemize their other deductions. According to IRS data, 3.8 million individuals filed for the educator-expense deduction in 2009.<sup>14</sup>

Finally, we note that rising costs for teacher compensation, in particular pensions and retiree health benefits, may constrain or reduce the funding available for classroom materials.

**Issue:** *Teachers with long tenures accrue greater retirement benefits than younger teachers. Did you overestimate the value of retirement benefits by looking only at veteran teachers?*

Education Secretary Arne Duncan claimed that we “exaggerated the value of teacher compensation by comparing the retirement benefits of the small minority of teachers who stay in the classroom for 30 years, rather than comparing the pension benefits for the typical teacher to their peers in other professions.”<sup>15</sup> Similarly, Barnett Berry of the Center

for Teaching Quality claimed that we “didn’t consider” the fact that some teachers leave the profession before collecting benefits.<sup>16</sup>

These claims are false. While we used a 30-year veteran teacher as part of a simple example to begin our pension discussion, our study makes clear that teachers with less tenure receive lower benefits than veteran teachers. For that reason, we valued pension compensation based on the “normal cost” of providing benefits, which is the average value of benefits accruing to all employees in a given year.<sup>17</sup> This value takes into account many factors, including the fact that some teachers do not stay in the profession long enough to collect benefits. So our estimate accurately reflects the value of pension benefits for the *average* teacher.

**Issue:** *Did you account for the fact that some teachers do not collect Social Security benefits?*

Roughly one-quarter of public workers at the state and local level, many of whom are teachers, do not participate in the Social Security system.<sup>18</sup> Our report accounts for this by assigning public-school teachers a lower average value of employer contributions toward Social Security than private-sector workers.

Teachers often suggest that not participating in Social Security is a disadvantage. However, Social Security pays middle-income and upper-income workers a below-market rate of return, generating only about two-thirds of the benefits that workers could receive by investing in safe government

13. Richwine and Biggs, “Assessing the Compensation of Public-School Teachers,” p. 23.

14. The average expense claimed was \$212. Assuming an average marginal income tax rate of 25 percent, this deduction reduces average out-of-pocket costs by \$53. Internal Revenue Service, “2009 Estimated Data Line Counts. Individual Income Tax Returns,” August 2011, at <http://www.irs.gov/pub/irs-soi/09inlinecount.pdf> (December 29, 2011).

15. Arne Duncan, “Teacher Pay Study Asks the Wrong Question, Ignores Facts, Insults Teachers,” *The Huffington Post*, November 9, 2011, at [http://www.huffingtonpost.com/arne-duncan/teacher-pay-study-asks-th\\_b\\_1084881.html](http://www.huffingtonpost.com/arne-duncan/teacher-pay-study-asks-th_b_1084881.html) (December 29, 2011).

16. Berry, “Time to Pay Teachers What They Are Worth.”

17. For an introduction to what a normal cost is, see American Academy of Actuaries, “Fundamentals of Current Pension Funding and Accounting for Private Sector Pension Plans,” July 2004, at [http://www.actuary.org/pdf/pension/fundamentals\\_0704.pdf](http://www.actuary.org/pdf/pension/fundamentals_0704.pdf) (December 29, 2011).

18. The actual figure is 27.5 percent. Dawn Nuschler, Alison M. Shelton, and John J. Topoleski, “Social Security: Mandatory Coverage of New State and Local Government Employees,” Congressional Research Service *Report for Congress* No. R41936, July 25, 2011, Table 1, at <http://www.nasra.org/resources/CRS%202011%20Report.pdf> (December 29, 2011).



bonds.<sup>19</sup> In contrast, public pensions pay employees guaranteed implicit returns more than double those available through government bonds.

Put another way, Social Security imposes an “implicit tax” on participants by collecting more in contributions than it will return to them in benefits. Teachers who do not participate in Social Security are naturally exempt from this implicit tax. By and large, teachers and other public employees *benefit* from not participating in Social Security.

**Issue:** *Standardized tests are unfair measures of teacher skills. What about communication, organization, and management ability?*

Our report notes that teachers score lower on standardized tests than other college graduates. In one section, we used the Armed Forces Qualification Test (AFQT) to measure whether teachers are paid commensurately with their cognitive skills. They are. When controlling for AFQT scores rather than paper educational credentials, teachers receive salaries on par with private-sector workers.

Two critics claimed that the AFQT is designed to measure specialized vocational skills, such as automotive and electronics knowledge.<sup>20</sup> This confuses the AFQT with the Armed Services Vocational Aptitude Battery (ASVAB), a set of 10 tests of which the AFQT modules—word knowledge, paragraph comprehension, arithmetic reasoning, and mathematics knowledge—make up only four.<sup>21</sup> So we are not asking teachers to service a car engine or build a circuit board, as the critics have implied. We measured teachers’ reading and math skills, which

have value both in the classroom and in the broader labor market.

What about other skills not covered on a math or reading test? Teaching certainly does involve important organizational and interpersonal skills that formal tests may not capture, but these skills have wide market applications. If teachers are not fairly paid for their non-cognitive skills, one would expect teachers who shifted to private-sector jobs to receive significant raises. But they do not. Using data from the Census Bureau’s Survey of Income and Program Participation, we are able to track changes in individuals’ salaries as they switch jobs. We have shown that the average public-school teacher suffers a slight wage *decrease* upon leaving the profession.<sup>22</sup>

**Issue:** *Shouldn’t you have controlled for test scores and years of education, not test scores alone?*

Another criticism focuses on the choice of control variables in one of our regressions.<sup>23</sup> Traditionally, economists use statistical techniques (called “regression analysis”) to compare salaries while controlling for a wide variety of differences between workers, including their educational attainment. We have done so in our own work on federal employee compensation.<sup>24</sup>

But years of education is problematic for analyzing teacher pay. Most teachers receive degrees in education, which is widely held to be a less rigorous field of study than the average college curriculum. Research based on the Collegiate Learning Assessment concludes that education majors accumulate significantly less knowledge during college than

19. Office of the Chief Actuary, Social Security Administration, “Moneys Worth Ratios Under the OASDI Program for Hypothetical Workers,” July 2010.

20. Lawrence Mishel and Monique Morrissey, “Garbage In, Garbage Out at Heritage and AEI?” Economic Policy Institute, November 23, 2011, at <http://www.epi.org/blog/garbage-garbage-heritage-aei/> (December 29, 2011).

21. Bureau of Labor Statistics, “National Longitudinal Survey of Youth 1979 User’s Guide,” at <http://www.nlsinfo.org/nlsy79/docs/79html/tableofcontents.html> (December 29, 2011).

22. Richwine and Biggs, “Assessing the Compensation of Public-School Teachers,” pp. 10–11.

23. Mishel and Morrissey, “Garbage In, Garbage Out at Heritage and AEI?” and Jeffrey Keefe, “A Better Way to Slice the Data,” *The New York Times*, January 2, 2012, at <http://www.nytimes.com/roomfordebate/2012/01/02/are-teachers-overpaid/a-better-way-to-slice-the-data> (January 3, 2012).

24. Biggs and Richwine, “Comparing Federal and Private Sector Compensation,” American Enterprise Institute *Working Paper* No. 2011-2, June 2011.

students majoring in social sciences, humanities, math, or science.<sup>25</sup> Likewise, most evidence suggests that master's degrees in education do little or nothing to improve the teaching output of degree holders.<sup>26</sup>

If education programs impart less knowledge, one would expect education majors to earn less after graduation than majors in other fields. Thus, assuming that teachers should automatically earn the same salaries as other workers with bachelor's or master's degrees—and calling teachers “underpaid” when they do not—is highly questionable.

To more accurately compare teacher salaries, we used the National Longitudinal Survey of Youth, a survey that includes scores on the AFQT, a cognitive test battery taken by 94 percent of respondents in the dataset. Unlike years of education, which may differ in quality or rigor, the AFQT is objective: Each person takes the same test.

Should our calculations control for education and AFQT score, or for the AFQT score alone? Some critics preferred the former, while we opted—openly and following discussion in our study—for the latter. Our goal was to replace a noisy and indirect measure of cognitive skills (years of formal education) with an objective one (AFQT score). Including both variables in the regression would make sense if we thought that education alone was a fair measure of skills across occupations but simply leaves out other skills that the AFQT measures. While it may seem natural that “more is better” when it comes to control variables, education is not merely an incomplete skill measure when it comes to teachers—it is a flawed and misleading one.

Our approach is not new. Derek Neal of the University of Chicago, who for most of the past decade was editor in chief of the *Journal of Labor Economics*, coauthored a widely cited 1996 paper in the *Jour-*

*nal of Political Economy* that used the same regression specification (AFQT included, education not included) for many of the same reasons.<sup>27</sup>

Neal and coauthor William R. Johnson showed that the difference in wages between whites and blacks is dramatically reduced when controlling for AFQT scores, but barely reduced when controlling for education. Here is a key passage from their paper:

Some have argued that our specification should include controls for both AFQT and either years of schooling or years of schooling following the AFQT. We prefer the AFQT only specification for several reasons. Given AFQT, schooling measures serve as proxies for skills that either are not captured by AFQT or are acquired after the test date. In either case, schooling is an indirect measure of these skills, and it is straightforward to show that given the other controls in our specification, this source of measurement error introduces a bias toward overstating the black-white wage gap. Further, as we noted previously, this bias will be magnified if years of schooling is not only a noisy measure but also one that systematically overstates the relative skill of blacks.<sup>28</sup>

Replace “black” with “teacher” and “white” with “non-teacher,” and this passage would fit well in our own report. Now, it turns out that including both AFQT scores and education in Neal and Johnson's regression would not change their results much, while with teachers the differences are larger. The point, nevertheless, remains.

The AFQT regression is just one of three major results we use to argue that public-school teacher salaries are at roughly market levels. Another is that public-school teachers receive higher salaries than

25. Richard Arum, Josipa Roksa, and Esther Cho, “Improving Undergraduate Learning: Findings and Policy Recommendations from the SSRC–CLA Longitudinal Project,” Social Science Research Council, 2011.

26. Eric A. Hanushek and Steven G. Rivkin, “Teacher Quality,” in *Handbook of the Economics of Education*, ed. by Hanushek and Finis Welch (New York: Elsevier, 2006), pp. 1051–1078.

27. Derek A. Neal and William R. Johnson, “The Role of Premarket Factors in Black–White Wage Differences,” *Journal of Political Economy*, Vol. 104, No. 5 (1996), pp. 869–895.

28. *Ibid.*, p. 876.

private-school teachers, and the last is that workers who switch between public-school teaching and non-teaching jobs make more when they are teachers. Perhaps most important, we show that—even if public-school teachers received salaries significantly lower than comparably skilled private-sector workers—more generous fringe benefits are more than enough to make up the difference.

**Issue:** *Many teachers have been laid off recently, so how could they have extra job security?*

Secretary Duncan says that we “appeared to create out of thin air an 8.6 percent ‘job security’ salary premium for teachers—despite the fact that hundreds of thousands of education jobs were lost in the recession and teachers continue to face layoffs.”<sup>29</sup>

As our report made clear, job security is not the same as a job guarantee.<sup>30</sup> Some teachers have lost their jobs, but the data show that, over the past five years, public-school teachers were only half as likely as workers in other white-collar occupations to become unemployed. That extra security has a value, and we described in detail our method for quantifying it.<sup>31</sup>

**Issue:** *If teachers are overpaid, why don't more people want to be teachers? And why do so many teachers quit?*

AFT President Randi Weingarten responded to our study by asking, “If teachers are so overpaid, then why aren't more ‘1 percenters’ banging down the doors to enter the teaching profession? Why do

50 percent of teachers leave the profession within three to five years...?”<sup>32</sup>

In fact, teacher colleges nationwide regularly graduate tens of thousands more students than can possibly find teaching jobs. As Stanford University's Eric Hanushek writes:

The U.S. has for a long time trained considerably more teachers than the number of positions that annually become open in schools. For example, in 2000, 86,000 recent graduates entered into teaching, even though 107,000 graduated with an education degree the year before.<sup>33</sup>

These figures underestimate excess demand for teaching positions, since they omit non-education majors who become teachers. Shortages of specific kinds of teachers—math and reading specialists, for example—do exist, but the average teaching position is easily filled.

Turnover is high among new teachers, as it is among most professions. But over a full career, “the average rate of teacher turnover is very close to similar professions,” write Douglas N. Harris and Scott J. Adams in the *Economics of Education Review*.<sup>34</sup> Turnover among public-school teachers is also considerably lower than among private-school teachers.<sup>35</sup>

**Issue:** *Even if current teachers are overpaid, shouldn't we still pay more to recruit better ones?*

Jonathan Chait of *New York* magazine writes that the best interpretation of our findings is: “Pay teach-

29. Duncan, “Teacher Pay Study Asks the Wrong Question, Ignores Facts, Insults Teachers.”

30. “During the recent recession and state and local budget crunch, some public-school teachers were indeed laid off. Employment in education by local government declined by 2.9 percent between September 2008 and July 2011, according to BLS data. Nevertheless, these job losses occurred in a period in which overall private-sector employment declined by 4.4 percent.” Richwine and Biggs, “Assessing the Compensation of Public-School Teachers,” p. 20.

31. Richwine and Biggs, “Assessing the Compensation of Public-School Teachers,” pp. 20–22.

32. Press release, “AFT President Randi Weingarten Responds to American Enterprise Institute Report on Teacher Compensation.”

33. Eric A. Hanushek, “The Economic Value of Higher Teacher Quality,” National Bureau of Economic Research *Working Paper* No. 16606, December 2010, p. 1.

34. Douglas N. Harris and Scott J. Adams, “Understanding the Level and Causes of Teacher Turnover: A Comparison with Other Professions,” *Economics of Education Review*, Vol. 26 (2007), p. 336.

35. National Center for Education Statistics, “The Condition of Education—Teacher Turnover: Stayers, Leavers, and Movers,” at <http://nces.ed.gov/programs/coe/tables/table-tat-1.asp> (December 29, 2011).

ers badly, and you'll get a lot of bad teachers.... If we paid teachers more, we'd get better teachers."<sup>36</sup> This is a misinterpretation. Our study shows that teachers are currently compensated much *more* than the level and quality of their skills. In other words, American taxpayers are paying for better teachers than they are getting.

This is why an across-the-board increase in teacher pay is not likely to improve teacher quality. The fact that public-school teachers are today compensated above market levels implies a fundamental problem with current hiring practices. The money is already there, but higher teacher quality has not come along with it.

Economist Dale Ballou demonstrated in the *Quarterly Journal of Economics* that "Important indicators of a strong academic background and cognitive ability do little to improve the prospects of an applicant for a public school teaching position."<sup>37</sup> Many of the best teaching applicants—those who graduate from more competitive colleges, earn higher GPAs, or hold degrees in specialized areas, such as math or science—are turned down in favor of less qualified candidates who took the traditional route of majoring in education.

Given Ballou's results, raising teacher pay without structural reforms will not put more highly qualified teachers in the classroom. In fact, Ballou and fellow economist Michael Podgursky have argued that higher pay without reforms could *lower* the quality of teachers in the classroom.<sup>38</sup> Higher pay would reduce the number of teacher retirements, lowering the number of job openings for new teachers. Higher pay also would attract more applicants, but as Ballou's paper indicates, this is no guarantee that

the best applicants would be selected. Under these conditions, Ballou and Podgursky estimate that a 20 percent across-the-board salary increase would raise the average SAT scores of teachers in the classroom by only two points, from 925 to 927.

**Issue:** *Education is extremely valuable to society. Shouldn't teachers be compensated for the value they create?*

In labor economics, it is generally held that employees are paid their "marginal product"—that is, they receive compensation equal to their contribution toward producing additional goods or services. If paid less than that, they will move to competitors who pay them more. If paid more than their marginal product, their current employer loses money.

It is important not to confuse marginal product with *total* product. If there were no schools and no education, for instance, future incomes would, obviously, be far lower. But the relevant question is not whether education is important in general, but how much the average teacher improves upon it. Although education is extremely valuable, the marginal product of one additional teacher is much less so. Indeed, the number of teachers per student has risen significantly over the past five decades without a clear impact on student achievement.<sup>39</sup>

One can consider how much a student's future earnings are increased by having good teachers rather than mediocre or poor ones. This is a margin where teacher pay is more relevant, since it is the individual teacher who contributes to students' future earnings. In a well-publicized article, Eric Hanushek estimated that more effective teachers can lead to large increases in students' future earnings.<sup>40</sup> But this finding says nothing about how high

36. Jonathan Chait, "You Get the Teachers You Pay For," *New York*, November 1, 2011, at [http://nymag.com/daily/intel/2011/11/you\\_get\\_the\\_teachers\\_you\\_pay\\_f.html](http://nymag.com/daily/intel/2011/11/you_get_the_teachers_you_pay_f.html) (December 29, 2011).

37. Dale Ballou, "Do Public Schools Hire the Best Applicants?" *Quarterly Journal of Economics*, Vol. 111, No. 1 (February 1996), p. 120.

38. Dale Ballou and Michael Podgursky, "Recruiting Smarter Teachers," *Journal of Human Resources*, Vol. 30, No. 2 (Spring 1995), pp. 326–338.

39. Eric A. Hanushek, "The Failure of Input-Based Schooling Policies," *Economic Journal*, Vol. 113 (February 2003), pp. F64–F98, at [http://web.missouri.edu/~podgurskym/Econ\\_4345/syl\\_articles/hanushek\\_failure\\_of\\_input\\_EJ\\_2003.pdf](http://web.missouri.edu/~podgurskym/Econ_4345/syl_articles/hanushek_failure_of_input_EJ_2003.pdf) (December 29, 2011).

40. Hanushek, "The Economic Value of Higher Teacher Quality."



the *average* teacher's salary should be—it argues only for differential pay, a policy that we would welcome. The larger the effect of high-quality teachers on students, the larger the pay differences should be between high-performing and low-performing teachers. As it stands, in most schools there is little or no compensation bonus for the best teachers.

**Issue:** *Other countries pay their teachers much more than the U.S. pays its teachers. Are they all overpaying their teachers as well?*

Several commenters have cited data from the Organisation for Economic Co-operation and Development (OECD) showing that relative teacher salaries are lower in the U.S. than in other industrialized nations. The OECD ranks the U.S. 22nd-lowest out of 27 industrialized nations, with American teachers receiving just 60 percent of what comparably educated and experienced non-teachers earn in the U.S.<sup>41</sup>

This result is questionable. Both our own report and past studies have demonstrated that American teachers receive an average of 80 percent to 90 percent of what comparably educated American workers earn in salary, with no estimates as low as 60 percent. Furthermore, the OECD report does not compare fringe benefits, which we have shown are the main drivers of the teacher compensation premium.<sup>42</sup>

Even if we accept the OECD report at face value, it does not directly relate to our own research question, which is whether public-school teachers receive compensation on par with their skills. Better paid teachers in other countries may simply be more skilled than American teachers. Countries that impose higher

standards on the teaching profession—by raising entrance requirements to teacher colleges, for example, or by successfully recruiting the best applicants for teacher positions—might be justified in paying higher relative wages than the U.S.

## Conclusion

Teacher quality is a major factor affecting student achievement.<sup>43</sup> Some have suggested a general increase in teacher pay would improve teacher quality.

Our research contradicts this assumption. The average public-school teacher receives more compensation as a teacher than he or she would in the private sector. In other words, the public is already overpaying for the existing teacher workforce.

The current teacher compensation system is not working. Absent structural reforms, an across-the-board pay increase will have little impact on teacher quality. What is needed is a more rational system that pays teachers according to their performance, encouraging the best teachers to stay and the least effective teachers to leave the profession. Unfortunately, public-school administrators rarely have the flexibility in personnel management that is needed to implement this kind of policy. Ultimately, teacher-pay reform is likely to be most successful in school systems free of the regulatory burdens imposed by union contracts and school district bureaucracy.

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41. “Building a High-Quality Teaching Profession: Lessons from Around the World,” Organisation for Economic Co-operation and Development, 2011, Figure 1.1, at <http://asiasociety.org/files/lwtw-teachersummit.pdf> (December 29, 2011).

42. Given that a greater proportion of health and retirement benefits are provided by government in Europe, fringe benefits may be a more important component of compensation in the U.S.

43. Hanushek, “The Economic Value of Higher Teacher Quality.”