Rejoinder by Jeffrey Keefe to the Response by Andrew Biggs to Keefe’s review of “Assessing the Compensation of Public School Teachers" by Jason Richwine and Andrew Biggs

Original review available at http://nepc.colorado.edu/thinktank/review-assessing-compensation

Richwine and Biggs in their paper “Assessing the Compensation of Public School Teachers" – the one I recently reviewed for the Think Twice project – claimed that teacher total compensation is 52 percent greater than fair market levels, equivalent to more than $120 billion overcharged to taxpayers each year.¹ What is new in this study is their claim that public school teachers and education majors have lower cognitive ability than other college educated workers. According to them, the widely accepted finding that teachers’ wages are below market by 10 to 15 percent (their own estimate finds a 19% penalty), disappears when they account for teachers’ lower cognitive ability as measured by the Armed Forces Qualification Test (AFQT).

Misusing the National Longitudinal Survey of Youth (NLSY), the report states that Teacher scores on the AFQT lag behind other full-time workers with the same education levels by about 0.25 standard deviations. These data indicate that, on average, teachers do not have the same cognitive skills as other college graduates (p. 8). AFQT scores are used by the Armed Forces as a general measure of trainability and a primary criterion to determine enlistment eligibility, on a pass/fail basis. Nonetheless, Richwine and Biggs treat the AFQT scores as a measure of IQ.

Their report presents three teacher wage regression models using the NLSY data. The first shows a teacher salary penalty of 12.6% (meaning that teachers are paid 12.6% less than non-teachers with the same education level, an unexplained difference with their 19% CPS penalty, but probably more accurate). The second regression adds the AFQT score, still including education level in the model; the teacher penalty falls to 10.7%. This could arguably be the adjustment to the wage equation that Biggs claims he wants to make for cognitive ability. Instead, he and Richwine go where no one else has dared to go: they estimate a wage equation without education level and only the AFQT score as the alternative predictor of earnings. Their study contends that eliminating education as a control variable and letting AFQT be the lone predictor provides the most accurate wage estimates, and they conclude that the “wage gap between teachers and non-teachers disappears when both groups are matched on an objective measure of cognitive ability rather than on years of education.” In other words, they are attempting to estimate whether teachers are paid in proportion to their “intelligence.” They conclude that teachers’ lower cognitive ability explains their lower earnings. My review points out, among other things, that the premise here is nonsense: there are few if any jobs where hiring depends solely on measured intelligence. By such logic, Mensa Society members are all systematically underpaid regardless of their occupation, experience, skill, or performance.
My review points to multiple econometric problems with the report’s analyses. Biggs’ response focuses on a particular element of my critique – that I don’t address their argument that the widely accepted human capital wage equation that uses level of education is inadequate as a skill measure:

Keefe instead concentrates on our regressions using the National Longitudinal Survey of Youth, in which we show that controlling for a cognitive ability score rather than years of education suggests no wage penalty for teachers. In arguing against our specification, Keefe never seriously addresses our fundamental point about the inadequacy of education as a skill measure.

I concentrated on the NLSY estimate because it is what is new and uniquely wrong with their new research. Contemporary labor economics is premised on two widely accepted views: (1) workers become more productive as they accumulate education and market work experience, and (2) that economy-wide increases in average levels of education and work experience contribute to observed growth in productivity. Empirically both premises have been widely investigated and several Nobel prizes have been awarded for the original work in this area.

Nonetheless, there is indeed measurement error. The standard human capital wage equation can explain only 40% to 50% of the observed variance in wages. This performance, however, is better than any of the alternatives. Ideally, we want to develop a single universal measure of skilled productive work performance. We have not, and the best alternative is the human capital wage equation. The Richwine and Biggs’s NLSY estimates explains variance at 31% with education only, 33% with education and the AFQT score, and 29% with AFQT alone (dropping educational level).

Unsurprisingly, the AFQT without education is the worst-performing specification and does not help accomplish their stated goal of improving the wage equation’s specification. As noted, we need to be able to explain relative variations in productive work performances. Education and years of work experience do not do that directly, but do vary in a manner one would expect a good approximate measure to perform. The AFQT score equation moves us further away from – not closer to – the performance we seek to measure.

In my review, I listed several other econometric reasons why we should reject the report’s main conclusion that the “wage gap between teachers and non-teachers disappears when both groups are matched on an objective measure of cognitive ability rather than on years of education.” In other words, the gap disappears if teachers were to be paid in proportion to their “intelligence.” Instead, current policy generally pays teachers (akin to similar types of employees) according to their skilled performance both learned in school and further advanced by experience in the classroom and in their professional lives. It is hard to imagine a workable personnel system that would in fact base teachers’ pay on the AFQT or even a genuine IQ test.
Biggs’ response also claims that “Regarding our wage analysis, Keefe has little to say about our result showing that teachers who switch to private sector jobs receive salary cuts while private sector workers switching to teaching receive pay increases.” However my review states that

*The report also finds that public-school teachers earn higher wages than private-school teachers. However, the comparison fails to control for differences in working conditions between private and public schools. It also finds that workers who switch to teaching jobs from non-teaching jobs receive a wage increase of roughly 9%, while teachers who change careers (many because their contracts are not renewed) to non-teaching jobs see their wages decrease by 3%.*

Simply put, there is not much here. The report’s analysis fails to control for differences in working condition between private and public schools. “Teachers in private schools generally enjoy smaller class sizes and more control over establishing the curriculum and setting standards for performance and discipline. Their students also tend to be more motivated, since private schools can be selective in their admissions processes.”2 The report also ignores that over one-third of the teachers who leave teaching did not get their contracts renewed. Most of this movement out of teaching occurs in the earliest stages of careers, which is to be expected. People who invest in one career path and then switch to another are expected to earn a lower wage and those who invested in a career path and then find employment in that career should experience a pay increase – as the data in this report suggests. It is not a demonstration or confirmation that teachers have lower cognitive ability than other college graduates or that teachers are overpaid – the main points of the report.

Biggs asserts that “It has long been known, contra Keefe, that the AFQT is not racially biased.” However, tests of this sort, including genuine IQ tests, consistently show a large racial “intelligence” gap. What explains that gap? Is it the greater intelligence of whites, a racially biased test, or something else? Consider these IQ test findings:

- Rushton and Jensen report that the black-white IQ difference is about 15 to 18 points, which implies that between 11 and 16 percent of the black population have an IQ above 100 (the white mean) which puts the IQ distribution for the black population about 1.1 standard deviations below that of the white population.3
- The 1996 American Psychology Association report, “Intelligence: Knowns and Unknowns,” gave similar estimates.4
- Roth, Bevier, Bobko, Switzer, and Tyler in a meta-analytic review of the results of a total of 6,246,729 participants on other tests of cognitive ability or aptitude found a black-white gap of 1.1 standard deviation.5 Consistent results were found for college and university application tests such as the Scholastic Aptitude Test (N = 2.4 million) and Graduate Record Examination (N = 2.3 million), as well as for tests of job applicants in corporate sections (N = 0.5 million) and in the military (N = 0.4 million).6
The vast majority of reputable scholars reject as racist nonsense the idea that these tests are measuring innate intelligence. While Biggs is confident the debate over racial bias of such tests is settled, there remains considerable range of dispute about what these tests measure and how the information generated by these tests should be used for admissions, job placement, and career advancement.

Another Biggs claim is that I misrepresented their report’s engagement with the research literature. He is technically correct that most of the peer reviewed citations did not come from a single scholar; for this mistake, I apologize. I stand by the larger point that the report is does a poor job including and addressing the main body of scholarly knowledge in this area. It is less a matter who is or who is not cited, but whether the authors engage with those who disagree with their research. Most importantly, the report fails to address the voluminous literature on the measurement of cognitive ability. I stated in the review:

When the report uses the AFQT to measure workforce intelligence, it fails to engage the extensive literature that questions the role of IQ and the AFQT test scores in social-stratification research, the inability of the AFQT to measure IQ, and the unreliability of AFQT scores in predicting worker performance or earnings. For example, Cawley, et. al. concluded that measured cognitive ability is only weakly correlated with wages and that it explains little of the variance in wages across individuals and over time.7

It is Cawley, Conneely, Heckman, and Vytacil who conclude that measured cognitive ability is only weakly correlated with wages and that it explains little of the variance in wages across individuals and over time. They are the experts; I merely cited their finding. Unsurprisingly Biggs disagrees, while ignoring the vast amount of research generated in response to the highly controversial book, The Bell Curve, by Richard Herrnstein and Charles Murray. That book set out to prove that American society was becoming increasingly meritocratic, in the sense that income and wealth were being distributed more and more according to people’s intelligence and less and less according to their social backgrounds. The evidence for this thesis came largely from an analysis of data compiled in the National Longitudinal Study of Youth (NLSY). The academic literature that this contentious thesis inspired is massive, substantial, and contradictory; nevertheless, it is completely overlooked by Richwine and Biggs.

I was greatly surprised to learn that Biggs approvingly cites the 2012 Congressional Budget Office study, “Comparing the Compensation of Federal and Private-Sector Employees,”8 as well as the 2011 study by Munnell, et al., “Comparing Compensation: State– Local Versus Private Sector Workers.”9 The CBO disagrees with Richwine and Biggs’s claim that federal workers receive a 14% wage premium, finding instead that there is no wage premium. However, Richwine and Biggs have finally found one employer, the U.S. federal government, that has a pension plan that is fully invested in U.S. Treasuries. Therefore, the federal government’s discount rate approaches the riskless discount rate advocated by Richwine and Biggs. While Richwine and Biggs claim to be concerned that actuaries for states’ pension funds have over-estimated the returns on investments, I find if anything they have underestimated returns based on historical
returns. There is no 30-year contiguous period since World War II where a portfolio composed of one-half S&P 500 stocks and the other half containing Corporate AAA bonds has produced a return on average below 8.83%, and this portfolio has returns that have averaged 10.31%. Using a discount rate of 4% on the returns of investments, rather than 8% used by the actuaries, Richwine and Biggs find that the current pension plans are significantly underfunded, requiring the states to increase their pension contributions to repair their alleged deficits and to adequately fund pensions into the future. Over two-thirds of pension payments to retirees are derived from the pension fund’s investment earnings, not contributions. Reducing the estimate of expected investment earnings, as Richwine and Biggs insist upon, would require a well-managed plan to increase employer and possibly employee contributions. These increases in pension contributions would greatly raise employers’ cost of employee benefits and are the main source of the supposed over-compensation of teachers and other public employees, as contended in the report.10

Biggs also salutes the pension calculations of Munnell and her co-authors, but their research results are consistent with my own since they conclude that state and local workers receive lower wages and are not over compensated. They also clearly disagree with Richwine and Biggs’s claims that public employees are substantially overcompensated. Munnell, et al. also concur with me that the Biggs-Richwine job security premium is unsupported by the evidence. They find, as I do, public sector workers’ job stability reflects public employees’ higher levels of education, which is comparable to the experience of college-educated private-sector workers.

Richwine and Biggs also apparently disagree with the actual survey data reported by Health and Human Services in Medical Expenditure Panel Survey (MEPS), which finds that only 36.4% of state and local governments provide health insurance to retirees under the age of 65, with 25.4% providing health insurance to retirees over age 65. Some public employers cease funding health insurance once retirees qualify for Medicare. As the table below from the MEPS survey11 shows, there is very little variation for public employers in the provision of health benefits for current full-time employees by size as claimed by Biggs. We might assume this is also true for retiree health benefits, since most state and local governments and school districts participate in state plans. While size may not matter, the daunting requirement for those benefits are the minimum years of service necessary to qualify and whether the governmental unit has determined whether it will offer retiree benefits to an employee group. In practice, these benefits are most often conferred upon public safety employees (police and firefighters).

Richwine and Biggs persist in confounding the terms qualified, covered, and eligible for retiree health benefits. While most full-time state and local employees can qualify for retiree health benefits, most in fact do not. This is because the service requirements to
receive these benefits are substantial. It is common for those states that confer substantial retiree health benefits to require employees to accumulate a minimum 25 or 30 years of full-time service to become eligible. And it is also common for employees with fewer years of service than the minimum to receive no retiree health benefits. Many state and local employees leave their public jobs, have breaks in service, or reduce hours to part-time before they acquire adequate years of service, so they fail to qualify for retiree health benefits, even if they qualify for a pension payment.

Most states fund the retiree health benefits on a pay-as-you-go basis by allocating the costs from current revenue. Since I (and Biggs) lack the appropriate actuary data on what percent of the public work force collects retiree health insurance, the rules of the plans, life expectancy, Medicare integration and the different types of plans retirees can select and what the retiree premium shares, co-pays, and deductibles, I cannot make a direct estimation of their costs. Instead, I rely on the GAO survey’s calculation that retiree health insurance adds 2% to wage cost, which is a more reliable estimate – as compared to the report’s mere concocting of its number. Finally, Biggs reports

Robert Clark of North Carolina State University, one of the nation’s leading academic experts on public sector benefits, notes that retiree health insurance plans “cover virtually all full-time public sector employees." This cite is in our original report—but no comment from Keefe.

I will comment. The statement is misleading. It is a deliberately mis-informative equivocation based on an appeal to authority. If less than 80% of full time public employees receive health benefits from their employer, how can 100% obtain retiree health coverage? They cannot. What does “cover” mean? They equivocate; it certainly does not mean that “virtually all” public employees will receive retiree health benefits from the state or local government, as that statement implies. Simply put, it is another misleading device to raise the alleged costs of teacher benefits.

Dr. Biggs insists that their work-leave-benefit is accurately constructed based on the National Compensation Survey. However, BLS explicitly warns users of this survey about work schedules:

The actual hours worked by elementary and secondary school teachers (who are exempt) are often not available. Time spent in lesson preparation, test construction and grading, providing additional help to students, and other non-classroom activities are not available and therefore not recorded. The NCS uses contract hours for teachers in determining the work schedule. Contracts usually specify the length of the school day, the number of teaching and required nonteaching days, and the amount of time, if any, teachers are required to be in the school before and after school hours. These hours are used to construct the work schedule13 (My emphasis).

The report cites this article but it ignores the key warning.
I stand steadfast behind my conclusion in the review:

_The Department of Labor’s ECEC data show that the value of benefits for public-school teachers is 29.7% of their compensation, which is slightly less than the 32.3% figure for private-sector workers in establishments with 100 or more employees. The ECEC omits the costs of retiree health benefits, which adds 2% of salary to teacher compensation costs—making the two sectors almost identical. This report, however, concludes that a more complete accounting puts the true value of benefits not at 29.7% or 31.7%, but at 100.8% of salary. It’s a startling claim—a claim that cannot be reasonably supported._

Adding together teacher wages at market level and benefits so generous that they allegedly represent more than the salary itself, this report concludes that teachers receive total compensation 52% greater than market levels, which translates into more than a $120 billion “overcharge” to taxpayers each year. Built on a series of faulty analyses, this study misrepresents total teacher compensation. Nonetheless, this problematic study will be used for headline-grabbing claims of dramatic overpayment of teachers. This is particularly troubling in the current political climate of budget cuts for education, weakening or elimination of teacher tenure, reduction of pension benefits, implementation of unproven merit pay policies, and the privatization of public education through charter schools and vouchers. Any discussion of teacher compensation should be based on high-quality evidence; this report does not advance that discussion.

Addendum:
Let me put “Assessing the Compensation of Public-School Teachers,” into context. In 2011, 12 states enacted major changes to public sector bargaining laws to strengthen state and local governments as employers and weaken public employees and their unions or associations. The states that made these changes were Idaho, Illinois, Indiana, Massachusetts, Michigan, Nebraska, Nevada, New Jersey, Ohio, Oklahoma, Tennessee and Wisconsin. The Ohio legislation was overturned by a voter referendum in November and, therefore, never went into effect.

Teachers were a particular focus of many of these reforms, which shifted both power and discretion to superintendents and school boards. Tennessee abolished collective bargaining for teachers. Idaho limited teacher scope of bargaining to salaries and benefits for contracts that must expire every year, and its new law allows school districts to impose conditions if unions have not agreed to a new contract in June each year. School districts in Idaho can also dismiss teachers at any time as part of a layoff, and the law forbids those districts from taking seniority into account. Wisconsin limited negotiations to base wages and requires unions to recertify every year in every bargaining unit. In addition to Idaho and Wisconsin, Indiana and Michigan restricted the issues of negotiations for teachers only to compensation. Illinois amended its Educational Labor Relations Act to limit, in the Chicago Public Schools, the right to strike and to expand management rights to unilaterally make changes in the school day and school year.
As federal stimulus funding to bolster states’ revenue expired in fiscal 2011, governors and state legislators in the spring of 2011 became focused upon public employee compensation as a means to grapple with acute revenue shortfalls brought about by the most serious economic contraction and financial crisis since the Great Depression. Some dire fiscal circumstances unleashed a search for solutions. Forty-five states projected budget deficits in fiscal year 2012, totaling $103 billion; state tax revenue had declined by $101 billion since 2008. Several governors identified excessive public employee compensation as a major cause of their states’ fiscal duress. Some prominent newly elected governors mobilized their legislatures to cut public employee pay, reduce benefits, modify collective bargaining procedures, privatize public services, and adopt constitutional amendments to cap public employee pay and pay increases into the future.

In this caldron of controversy and voter anger, evidence, facts, and deliberations were expendable. No blue ribbon committees were established and no comprehensive studies were undertaken. Legislation was often passed without hearings or delay; the stealth reforms were rushed through before opposition could fully mobilize.

Policy papers by Andrew Biggs, a resident scholar at the American Enterprise Institute, and Jason Richwine, a senior policy analyst at the Heritage Foundation, have been used in part to fuel this broadside attack on public-sector services, public employees and public education. I have publicly disagreed with them during these last two years. Their analysis of California data, for example, concluded that California public employees are overpaid by 30%, whereas I had earlier published paper with Sylvia Allegretto of Berkeley, which concluded that California public employees are neither overpaid nor underpaid when compared with comparable private sector workers. Their research arrived just in time to be used by Meg Whitman to bolster her sagging and eventually failed gubernatorial campaign; a campaign where she had argued that she could save California tax payers money by cutting the wages and benefits of allegedly overcompensated California public employees.

In Ohio, Richwine and Biggs entered the referendum debate about Ohio’s Senate Bill 5, on September 14, 2011; there study funded by the Ohio Business Roundtable was released with the title of Public vs. Private Sector Compensation in Ohio: Public workers make 43 percent more in total compensation than their private-sector colleagues. It quickly became part of a television ad campaign that played throughout Ohio. Nonetheless, Senate Bill 5 was defeated by voters with a margin 61% to 39%.

Teachers in districts with a year-round schedule typically work 8 weeks, are on vacation for 1 week, and have a 3-week winter break. During the vacation break, those on the 10-month schedule may teach in summer sessions, take other jobs, travel, or pursue personal interests. Many enroll in college courses or workshops to continue their education. Teachers in districts with a year-round schedule typically work 8 weeks, are on vacation for 1 week, and have a 3-week winter break. Many teachers work more than 40 hours a week, including school duties performed outside the classroom. Middle, and Secondary states:
Andrew Biggs and Jason Richwine, “The Public Worker Gravy Train: Many government employees are paid up to 30% more than those in the private sector,” Wall Street Journal Opinion, February 24, 2011, http://online.wsj.com/article/SB10001424052748704657704576149941061124736.html#printMode;


Public vs. Private Sector Compensation in Ohio: Public workers make 43 percent more in total compensation than their private-sector colleagues. A Report Prepared for the Ohio Business Roundtable by Andrew G. Biggs, Ph.D. and Jason Richwine, Ph.D. September 14, 2011


My paper then prompted an effort by James O'Keefe of Project Veritas to allege through a video that I was willing to engage in pay-to-play in my research. Ironically, I have not received a single penny for my public sector research, except for the honorarium I will receive from the Think Tank Review Project.