



DO PUBLIC SCHOOL TEACHERS *REALLY* RECEIVE LAVISH BENEFITS?

Richwine and Biggs' recent report doesn't make the grade

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When most people think of the perks of teaching, an image that comes to mind is a shiny apple presented by a gap-toothed pupil. But a recent paper by Jason Richwine of the Heritage Foundation and Andrew Biggs of the American Enterprise Institute claims that public school teachers enjoy lavish benefits that are more valuable than their base pay and twice as generous as those of private-sector workers (Richwine and Biggs 2011). According to Richwine and Biggs, this makes teachers' total compensation 52 percent higher than fair-market levels and amounts to \$120 billion "overcharged" to taxpayers each year.

This finding, and previous research by the same authors (Biggs and Richwine 2011), are at odds with a large body

of research showing that public school teachers and other government workers have total compensation that is lower—or at least no higher—than that of comparable private-sector workers (see, for example, Allegretto, Corcoran, and Mishel 2004, 2008, 2011; Bender and Heywood 2010; Keefe 2010; Munnell et al. 2011; Schmitt 2010). Furthermore, the "teaching penalty" has grown, as teachers' and other public-sector workers' pay has declined relative to that of comparable private-sector workers (Allegretto, Corcoran, and Mishel 2008, 2011; Bender and Heywood 2010).

How do Richwine and Biggs get such different results? Their research comparing public- and private-sector pay has been critiqued elsewhere (Hanauer 2011; Keefe

2011), so this brief will address the authors' specific case against school teachers, focusing on benefits. A separate EPI paper on teacher salaries by Mishel and Roy (forthcoming), as well as an overview by Jeffrey Keefe in the National Education and Policy Center's Think Tank Review Project (2012), challenge Richwine and Biggs' extremely controversial claim that teacher salaries are as high as those of comparable workers, once teachers' supposed "low cognitive ability" compared to other college graduates is taken into account.

This brief will show that, among other things, Richwine and Biggs:

- compare teachers with private-sector workers with much lower educational attainment
- selectively alternate between the cost of benefits to employers and the value to workers, and inappropriately equate the latter with the often much higher cost to individuals of obtaining equivalent benefits
- triple the cost of teacher pensions by assuming a very low rate of return on pension fund assets, or by assuming a very high cost of guaranteeing these benefits
- inflate the cost of retiree health benefits and seasonal leave
- place an arbitrary dollar figure on the value of job security to workers, while ignoring the advantage to employers of employee retention.

What is the appropriate comparison group?

There is near unanimity among economists that, whenever possible, compensation comparisons should compare workers with the same years of education and experience, with age often used as a proxy for experience. It is thus worth pointing out that Richwine and Biggs—despite their protestations to the contrary—generally compare teachers and other public-sector workers with private-sector workers who might be expected to have lower salar-

ies or less-generous benefits. As Mishel and Roy (forthcoming) explain, Richwine and Biggs highlight statistical results for wages that intentionally *exclude* education. Though they include education and a range of other demographic variables in their initial wage regression, they later inexplicably drop the education variable. Likewise, in comparing benefits, they compare public school teachers with *all* private-sector workers employed by large employers, even though public school teachers are much better educated than these private-sector workers.

Gender, race, marital status, and employer size are also significant predictors of compensation—though there is no clear-cut economic rationale for why women, minorities, and unmarried people should be paid less, nor why larger employers should pay more. Nevertheless, it is conventional to include these demographic variables as well as employer size where possible.

Richwine and Biggs imply that they are bending over backward to compare public-sector workers to better-paid private-sector workers. However, researchers, including Richwine and Biggs, are if anything minimizing the overall pay gap by including race and gender controls in wage regressions, which may explain away some of the lower pay of teachers and other public-sector workers, who are more likely to be female and black. Schmitt (2010), for example, finds that while state and local workers are paid 6.4 percent less than private-sector workers with the same education and age, this pay gap shrinks to 3.7 percent if controls for gender, race, and region are included.

Philosophical issues aside, the ability to make a clear, apples-to-apples comparison of the generosity of benefits is limited by the data. Researchers often compare wages using the Census Bureau's Current Population Survey (CPS), which includes detailed demographic information as well as firm size (though Richwine and Biggs actually omit firm size in their wage regression). Research on fringe benefits, on the other hand, is usually based on the Bureau of Labor Statistics' National Compensation Survey (NCS), an employer survey that only provides break-

downs by broad occupation group, industry group, and establishment size.

Since there is no way to directly compare the benefits of workers with the same education and experience, researchers sometimes compare teachers and other public-sector workers to private-sector workers in large establishments, based on the fact that most public-sector workers also work for large employers, which enjoy cost advantages in providing fringe benefits. This is the approach adopted by Richwine and Biggs. Though this may be the least-bad option, Richwine and Biggs falsely claim that they are being “relatively conservative” in choosing this comparison group, even though public school teachers are better educated and therefore better paid than private-sector workers working for large employers—and correspondingly might be expected to have more-generous benefits (which is not surprising when you consider that the comparison group includes Walmart workers, for example).

Public school teachers are very well educated, split roughly evenly between those with bachelor’s degrees and those with graduate degrees (49 percent have a bachelor’s degree, and 45 percent have at least a master’s degree). They are much better educated than private-sector workers with large employers. For example, among private-sector workers working for firms with 1,000 or more employees, only 21 percent have a bachelor’s degree, and just 9 percent have at least a master’s degree (EPI analysis of 2003–2010 IPUMS CPS data [King et al. 2010]).¹

How Richwine and Biggs get to 52 percent

Despite these differences in educational attainment, Richwine and Biggs acknowledge at the outset that National Compensation Survey data show that the relative importance of benefits for teachers and private-sector workers in large establishments is *nearly identical*, amounting to roughly 41 percent of wages (or 29 percent of total compensation). However, after making various adjustments,

Richwine and Biggs estimate that the value of teachers’ benefits is actually more than double the NCS estimate, or equal to 100.8 percent of wages (they also make a much smaller revision to the estimate for private-sector workers). As shown in **Table 1**, this is achieved by almost tripling retirement costs; by adding a benefit missing from the Bureau of Labor Statistics data (retiree health care); and by adding a benefit they call “work-year leave” that is already factored into wage measures.

In addition, Richwine and Biggs inflate teachers’ total compensation by an additional 8.6 percent to account for teachers’ supposedly greater job security. Since, as mentioned earlier, they also adjust teachers’ salaries upward to match those of private-sector workers, teachers’ total compensation is supposedly 52 percent higher than that of private-sector workers.²

However, as will be discussed in this paper, the only one of these adjustments that is relatively uncontroversial is the addition of retiree health benefits (though even this figure appears inflated). Furthermore, the addition of retiree health care does not by itself close the pay gap between public school teachers and comparable private-sector workers, which the authors initially estimate at 19.3 percent (as mentioned earlier, their later assumption that there is no salary gap rests on a highly dubious model that *excludes* education).

Valuing benefits: The cost to employers vs. the value to workers

Richwine and Biggs selectively alternate between the cost of benefits to employers and the value to workers. They inappropriately equate the latter with the often much higher cost to individuals of obtaining equivalent benefits.

When assessing the value of fringe benefits, researchers may be interested in the cost to employers (with or without taking into account indirect costs and benefits,

TABLE 1

Benefits as a percentage of wages, 2010, according to Richwine and Biggs

	INITIAL DATA		ADJUSTED DATA	
	Public school teachers	Private workers in large establishments	Public school teachers	Private workers in large establishments
<i>Paid leave</i>	6.6%	11.4%	6.6%	11.4%
<i>Insurance plans</i>	16.1%	13.3%	16.1%	13.3%
<i>Retirement and savings</i>	11.1%	5.4%	32.0%	6.2%
<i>Legally required benefits</i>	7.4%	11.3%	7.4%	11.3%
<i>Retiree health care</i>	–	–	9.9%	1.3%
<i>Work-year leave</i>	–	–	28.8%	–
<i>Total benefits</i>	41.2%	41.3%	100.8%	43.5%

Source: Richwine and Biggs (2011)

such as employee retention); the value to employees; or the cost of purchasing similar benefits in the private market. Large private employers and the government are often able to provide insurance and pension benefits at much lower cost than individuals can purchase the same benefits for themselves, which is one of the main reasons these benefits are provided by employers in the first place (there may also be tax advantages as well as workforce management considerations).

Large employers and government entities are better equipped to assume many risks than are individuals because individual longevity and medical risks can be reduced or even eliminated by pooling. This is a basic tenet of insurance: Costs fall as pool size increases. This asymmetry, plus economies of scale in administration and the elimination of adverse-selection problems that drive up costs in the individual insurance market (because insurers assume that sicker individuals are more likely to purchase health and life insurance and healthier individuals are more likely to purchase life annuities), make employer-provided pension and insurance benefits a very cost-ef-

fective component of employee compensation for large employers. That is, the value to workers is greater than the cost to employers.

Though the value to workers is generally higher than the cost to employers, this does *not* mean that the value to employees is the relevant measure, nor that the value to employees is the same as the cost of purchasing benefits in the individual insurance market, as Richwine and Biggs seem to suggest. Many workers would purchase less-generous benefits or forgo them entirely if required to purchase them at the higher cost.

It is far from clear that it is the value of benefits to workers that is of interest in this case. Since the main point of Richwine and Biggs' paper is that taxpayers are being "overcharged," the direct cost to employers would seem to be the most straightforward measure. This is what most researchers focus on, including Richwine and Biggs—though not consistently. For example, they arbitrarily value retiree health benefits (which are more common in the public sector) at the higher cost of purchasing equivalent insurance in the private market. They do not,

however, make the same adjustment for group health insurance for active workers, nor for disability and life insurance provided through Social Security. (Since many teachers are not covered by Social Security, the latter adjustment would tend to increase private-sector pay relative to teacher pay.) Richwine and Biggs do not explain this inconsistency, giving the impression that they choose among measures with an eye to inflating teacher compensation.

The perceived value of benefits to workers may be relevant if, say, certain benefits are valued more than others relative to their direct cost, and if this affects recruitment and retention. However, this raises the thorny issue of how to measure the value to workers, since by definition workers are not directly paying for employer-provided benefits (workers' own contributions toward retirement and other benefits are not included in these compensation measures). In any case, the value to workers is not the same as the cost of purchasing equivalent benefits in the individual market, which is irrelevant.

This also raises the issue of why public-sector employers would take greater advantage of the difference between the direct cost of providing certain benefits and their (presumably higher) value to workers. Advocates of high-road employment practices and social insurance might argue that the full value of employer- and government-provided benefits is not fully recognized by private-sector employers. However, this is an odd position coming from the Heritage Foundation and the American Enterprise Institute, organizations that tend to view the private sector as more efficient, and favor shifting the cost and risk of retirement and health care to individuals.

The present value of future benefits

The problem of distinguishing between the cost to employers and the value to workers is compounded in the case of future retiree benefits by the fact that these benefits are uncertain and that they must be translated to present

values. By selectively focusing on the supposed value to workers rather than the direct cost to employers, and by placing a very high value on pension guarantees, Richwine and Biggs value pension benefits at triple their direct cost to employers.

Admittedly, valuing retiree benefits is a complicated task. First, future benefits must be estimated, and these estimates are sensitive to underlying assumptions. The future value of pension benefits, for example, depends in part on salary projections, because service credits are usually multiplied by a percentage of final pay rather than current pay. Similarly, the future value of retiree health benefits depends not only on projected health care costs, but also on whether the benefits will even exist when workers retire. (Unlike accrued pension benefits, which are generally protected by law, retiree health benefits may be reduced or eliminated at any time, with the possible exception of those covered by a collective bargaining agreement.)

Second, future benefits must be translated into present values. In the case of retiree benefits that are funded in advance (including traditional pension benefits and some retiree health benefits), this is equivalent to asking how much employers need to contribute to a trust today to pay for benefits in the future, which depends on investment returns.

Pension benefits

The problem of translating future benefits to present values looms especially large in the case of pension benefits. Importantly, Richwine and Biggs do not directly challenge pension fund actuaries' assumptions about expected returns, which are generally slightly lower than the returns these funds have realized historically. Rather, they argue that since returns are uncertain, the yardstick should be the so-called risk-free rate—the long-run return on Treasury securities—which is roughly half the expected return on pension fund assets. Due to compounding, investing in low-yield assets such as Treasury bonds would triple re-

quired pension contributions by Richwine and Biggs' estimation.

Most economists, including Richwine and Biggs, agree that the risk-free rate is much lower than the expected return on actual pension fund assets, which are invested in balanced portfolios that include stocks. Neither Richwine nor Biggs denies the existence of an equity premium (a higher expected return on stocks than the risk-free rate), and Biggs has been bullish on stock returns in other contexts (Biggs 2002). However, Richwine and Biggs point out that economists would use the risk-free rate, rather than the expected return, to determine how much employers or workers would need to set aside to *guarantee* a similar retirement benefit.

The question boils down to which measure is appropriate in this context. As with benefits for active workers, the issue can be framed as the difference among the direct cost to employers, the total (direct and indirect) cost to employers net of any benefits received, the value of these benefits to workers, and the price of equivalent benefits purchased by individuals.

In this case, the best measure of the direct cost would be the “normal cost” measure used by pension fund actuaries, which in the public sector is based on the expected return on fund assets. This is the best estimate of how much employers need to contribute today to pay for future benefits. The measure preferred by Richwine and Biggs, however, is the largest value: the cost to individuals—specifically, workers with 401(k)s—of funding a similar guaranteed benefit. Richwine and Biggs also interpret this as the total cost to employers, and by extension to taxpayers, including not just the direct cost of pension contributions but also the indirect cost of assuming financial risk.

The two measures would be the same if employers (notably public employers) were as risk-averse as other investors, and if there were no other indirect costs and benefits to consider, such as employee retention. However,

neither of these conditions holds; public employers are properly less risk-averse than most investors (especially individual investors), and pensions promote employee retention.

The logical implication of Richwine and Biggs' position is that public employers and taxpayers would be indifferent between current pension funding practices and investing in Treasury securities, even though this would triple the cost of pension benefits. Richwine and Biggs would have a stronger case for putting a high price tag on the indirect cost of guaranteeing benefits if volatility in pension fund investment returns translated into large swings in state and local taxes. But pension funds are designed to absorb financial market volatility (that is, to diversify across time, not just across assets), since in any given year benefit outlays are typically a small fraction of assets. This allows pension funds to ride out bull and bear markets, unlike individual 401(k) savers, who need to tap all their retirement funds over a specified time period.

In the real world, when public employers face increases in pension costs large enough to warrant taxpayer concern, it is almost always because elected officials have neglected pension contributions, a problem that using the risk-free discount rate does not address. Even including funds to which elected officials neglected to make required pension contributions, as some did during the stock market bubble, a study by the Center for Retirement Research notes that contributions will need to rise by less than a third (from 3.8 percent to 5.0 percent of total state and government spending) to amortize the unfunded liabilities resulting from the bursting of the bubble if pension obligations are discounted using an expected return of 8 percent (Munnell et al. 2010). Though this is a significant increase in the wake of a severe downturn, it does not appear to justify tripling pension contributions to reduce similar risks in the future, especially considering that a significant share of current unfunded liabilities is due to underpayment as opposed to market volatility.

Furthermore, some of the risk of public pension funding falls on teachers and other workers, who typically pay for a portion of their benefits out of their paychecks. Though employee contributions are generally fixed in the short run, they often rise in the event of significant underfunding. In 2010–11, public employees in 18 states saw increases in employee contributions, not including increases that only affected new hires (Snell 2011). In addition, other forms of compensation may be cut back, such as salaries (which factor into pension benefits).³

In addition, Richwine and Biggs do not consider whether the indirect benefits to taxpayers of teacher pensions, such as teacher retention, may offset (or more than offset) these indirect costs. Traditional pension benefit structures inhibit mobility, since teachers who move frequently will tend to receive lower pensions than those who remain within one school district. This is a plus for employers and a minus for workers, who may pay a penalty if they want to change jobs. Conversely, the fact that employers assume financial and longevity risks associated with saving and investing for retirement is a plus for workers and a minus for employers. But large employers with long-term investment horizons, especially government entities, are much better equipped to assume these risks than individuals.

Retiree health benefits

While it is difficult to assign a value to future pension benefits, it is even more difficult to gauge the value of health benefits for future retirees.

Richwine and Biggs correctly point out that retiree health benefits are not included in the NCS. Based on a small sample of plans, they estimate the cost of these benefits at 8 percent of pay, comparable to the 7.6 percent estimate based on a much larger sample of public-sector workers by Munnell et al. (2011).

Munnell et al. point out that many employers are cutting back on retiree health benefits. Richwine and Biggs ignore not just the likelihood that some retiree health benefits

will be cut, but also the uncertainty of these cutbacks, which, if Richwine and Biggs were consistent in their treatment of risk, would itself impose a cost on teachers. In addition, Keefe (2011) notes that these benefits are sometimes paid for through pension contributions, so there is the possibility of double counting. Rather than adjusting their estimate downward, however, Richwine and Biggs inappropriately inflate it to 10 percent of pay based on the fact that these benefits would be more costly to purchase in the individual market. This is a grossly flawed measure, as discussed earlier.

Though retiree health is the one area where the NCS does understate the cost of employee benefits, especially for teachers and other public-sector workers, Munnell et al. (2011) and Keefe (2010) find that public-sector workers are paid less even when taking these benefits into account. Admittedly, the problem of how to estimate the cost of future retiree health benefits is a difficult one, both because future health care costs are unknown and because these benefits may be cut back or eliminated at any time. For this reason, employers were not obliged to account for these future benefits as a liability on their balance sheets until recently.

“Work-year leave”

Just as the cost of retiree health benefits may be double counted in some areas, Richwine and Biggs tack on a “benefit”—time off for seasonal breaks, which they call “work-year leave”—that researchers usually incorporate into wage and salary comparisons. They value this benefit at 28.8 percent of wages, even though the NCS takes this leave into account in determining hourly wages and benefits.

Richwine and Biggs claim to have stumbled upon the issue of work-year leave in a footnote, even though the pertinent information is right in the body of the short Bureau of Labor Statistics article they cite (Schumann 2008). Furthermore, the same article cautions that teachers’ hours in the NCS are *understated* because the survey

does not take into account the considerable time many teachers spend on lesson planning and grading at home, a point that indicates the NCS overstates teachers' hourly compensation—and one that Richwine and Biggs ignore.

Richwine and Biggs' rationale for including seasonal leave as a benefit rather than factoring the shorter work year into their salary comparison is that CPS earnings data may or may not account for teachers' shorter work year, "so in many cases...weekly salaries in the CPS are simply annual salaries divided by 52 weeks." Richwine and Biggs say that "[u]sing weekly salaries without further adjustment for summer vacation will upwardly bias teacher compensation." In fact, it would *downwardly* bias teacher pay, but this is presumably an editing error.

The normal solution in this case would be to adjust CPS earnings measures, as necessary, to take into account teachers' seasonal leave, since these adjustments have already been made to the NCS data that Richwine and Biggs use to compare benefits. Instead, Richwine and Biggs appear to include the unadjusted annual pay in their CPS "wage regression" results; they then tack on "work-year" leave as an additional benefit to the adjusted NCS data. They do not explain why they do this, though they imply it is because the CPS earnings data are unreliable (that is, the shorter work year is not consistently taken into account). If so, this is a problem for their overall analysis.

More likely, their unorthodox approach is designed to inflate teacher pay in comparison to that of private-sector workers, especially since Richwine and Biggs gloss over the rather startling implication of their results, which is that teachers appear to receive higher *salaries* than comparable private-sector workers, even without matching for "cognitive ability" (the exercise that takes up much of the first half of their paper and will be addressed in a forthcoming paper by Mishel and Roy). That is, they find that teachers are paid 80.7 percent as much as full-year private-sector workers even though they work only 71.2 percent of the year.

Compensating differentials and job security

Richwine and Biggs' accounting for differences in working conditions appears equally arbitrary, especially when it comes to assigning a dollar value to job security.

In a perfectly competitive labor market, any pay gap between similarly skilled workers can be explained by what economists refer to as "compensating differentials"—differences in working conditions, job satisfaction, and the like. In practice, labor markets are far from perfectly competitive, and research often turns up results that seem to contradict this theory (e.g., many dangerous jobs, such as working in a meatpacking plant, pay poorly).

Richwine and Biggs treat job security as a form of compensation, akin to a fringe benefit, though many economists would treat it as a compensating differential. There are many reasons why turnover might be lower in some jobs than others, and only some of these could possibly be considered as equivalent to an employee benefit.

Low turnover is often viewed as a boon to both workers and employers, though there may be exceptions—for example, if low turnover reflects the difficulty of firing low-performing workers, or if pension and other benefits serve as "golden handcuffs" for workers. However, to the extent that low turnover reflects job satisfaction and a good employer/employee relationship, it is a win-win for workers and employers.

In the case of teachers, a large body of research finds that employee retention is very valuable to schools because teachers with at least three to five years of experience are much more effective than less experienced teachers (Boivie 2011). The longer a teacher stays within a school system, the easier it is for the employer to recoup the sunk costs of on-the-job training. This fact is not lost on school systems, as pensions and pay scales are designed to promote teacher retention through their years of peak effectiveness. Since reducing turnover is an explicit goal

of teacher pensions, teacher retention should be counted *against* the cost of teacher benefits, not added to them. At the very least, it should not be considered an added cost to taxpayers.

In any case, Richwine and Biggs do not come close to proving that teachers have more job security than equally skilled private-sector workers, especially given recent mass layoffs in many school districts. Though Richwine and Biggs cite anecdotal evidence about incompetent teachers who manage to keep their jobs, there are also incompetent workers in the private sector, and Richwine and Biggs offer no evidence that incompetence is more tolerated in the public sector.

Richwine and Biggs also compare the drop in public education employment to the overall decline in private-sector employment in the recent downturn, but this is not a valid comparison since teachers should be compared to similarly skilled workers, not the entire private-sector workforce. Though it is possible that teachers' employment is less cyclical than employment in other sectors, Munnell et al. (2011) show that public-sector workers have generally seen job losses similar to those of comparable private-sector workers in the recent downturn, after taking into account differences in education.

Finally, Richwine and Biggs compare unemployment rates from 2005–10 for occupations comparable to teaching. This is more pertinent than the comparison with all private-sector workers, though it still does not prove that teachers have more job security, or even job *stability*, than comparable workers. Keefe (2011) points out that differences in unemployment rates reflect not just the probability of job loss, but also the probability of new entrants obtaining a job in the first place. Thus, the low unemployment rate among teachers likely reflects, in part, that the supply of aspiring workers is lower in the teaching profession than in other professions due to teachers' lower pay. Keefe also points out that to put a dollar value on job security, as Richwine and Biggs do, you would normally start by showing that people are willing to accept lower

pay in exchange for a decreased likelihood of being laid off, though Keefe finds no empirical support for this compensating differential across occupations.

Even if teachers enjoyed more job security than comparable workers and were willing to forgo some pay in exchange, this begs the question of why Richwine and Biggs only attempt to put a monetary value on this single job characteristic, especially since they allude to others in the paper. In discussing private school teachers, for example, Richwine and Biggs acknowledge that the lower pay of some private school teachers might reflect the fact that “teachers in sectarian schools often consider their work to be part of their religious service, meaning they may accept below-market salaries.” They also note that “elite private schools often feature specialized curriculums directed at select groups of students.” In other words, many teachers derive personal satisfaction from their jobs and in working for the greater good (Almeida and Boivie 2009). Some teachers may also prefer to teach elite students or students of the same religion. However, other college-educated workers enjoy “perks” not factored into this analysis, such as more-flexible schedules.

As with the possibility that government employers get more “bang for the buck” from their benefits, the possibility that job satisfaction is greater for teachers than for similarly skilled workers may help explain the lower pay of teachers (and the even lower pay of some private school teachers) as well as their lower turnover. However, it is misleading to describe teachers as “overpaid” if their observed compensation is lower than that of other professionals. Furthermore, it would be a mistake to assume that school systems could further reduce teacher salaries or benefits relative to those of comparable occupations without affecting recruitment and retention.

Conclusion

Richwine and Biggs' argument that teachers are overpaid because their benefits are twice as generous as those received by comparable private-sector workers is not per-

suasive. CPS and NCS data show that teachers earn significantly less in wage and salary compensation than comparable private-sector workers or those employed in large establishments, taking into account summer breaks and other differences in time spent at work. Meanwhile, NCS data show that they receive similar benefits to large-establishment workers, even though teachers are likely to be much better educated, on average.

The NCS data does not include the cost of retiree health benefits, which is hard to project with any degree of confidence. Whether or not retiree health benefits close the pay gap, the authors certainly do not prove that teachers are overpaid, let alone overpaid by half. Even if indirect costs and benefits are taken into account, Richwine and Biggs are highly selective in which of these costs and benefits to include, and improperly conflate the cost to individuals of purchasing similar benefits with the generally much lower cost to employers.

In particular, Richwine and Biggs triple the cost of teacher pensions by using a risk-free rate to value pension benefits, which they equate with the cost to individual 401(k) investors of funding equivalent benefits. While employers assume financial risks with defined benefit pensions, Richwine and Biggs do not take into account other indirect costs and benefits of these pensions, such as employee retention. There is no reason to believe that pensions' important role in encouraging employee retention is more than offset by the financial risks employers assume with these plans.

The difference between the cost to employers and the value to workers of some benefits may help explain why public-sector workers appear willing to work for less pay. However, it does not mean that taxpayers are being "overcharged" for these benefits. In practice, the direct cost to employers is the only practical way to compare public-sector and private-sector pay because indirect costs and benefits are innumerable and impossible to measure directly. The direct cost of employee compensation is lower in the public sector, even according to Richwine and Biggs' ini-

tial estimation. In short, their revised estimates are simply not convincing.

Endnotes

1. There are two measures of employer size: Firm size is the total number of employees in an organization, whereas establishment size is the number at a particular location. Unfortunately, CPS and NCS use different measures, though the two are obviously related. Though educational attainment is not readily available by establishment size (as opposed to firm size), it is likely that private-sector workers employed in large establishments (Richwine and Biggs' comparison group) have more in common with private-sector workers employed by large firms than they do with public school teachers.

2. Teachers' compensation as a percent of salary: 108.9 percent x (100 percent + 100.8 percent) = 218.7 percent

Private-sector compensation as a percent of salary: (100 percent + 43.5 percent) = 143.5 percent

Teachers' pay premium: (218.7 percent – 143.5 percent) / 143.5 percent \approx 52 percent.

3. Additional problems with using the risk-free rate to discount projected pension obligations are discussed in Baker (2011a; 2011b), Lav and McNichol (2011), and Morrissey (2011). Gollier (2007) discusses the role of pension funds in intergenerational risk sharing, which allows employers and taxpayers to take advantage of the equity premium.

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