

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
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Executive Summary

Ohio's Senate Bill 5, which increases the health and pension contributions of certain public-sector workers and narrows the scope of collective bargaining, goes before voters in a statewide referendum on November 8. The wisdom of the bill depends crucially on how the current compensation of Ohio's public employees compares to the compensation of similar private-sector workers. Proponents of SB 5 believe that public compensation is already higher than the market, and climbing at an unsustainable rate that must be slowed in order to bring public spending to competitive levels vis-à-vis other states. Opponents of SB 5 argue that Ohio public workers currently receive less compensation than they could receive in the private sector, and that SB 5 would worsen the problem. This report compares current public- and private-sector compensation in Ohio, focusing on how the wages, benefits, and job security of public employees compare to those of private-sector workers with similar skills. We conclude that:

- Ohio public employees receive nearly the same wages as comparable private workers (2.5 percent less), but
- Fringe benefits for Ohio public workers are more than twice as generous as those paid in the private-sector, meaning that when pay and benefits are taken into consideration public workers receive 31.2 percent more in total compensation than private-sector counterparts.
- Ohio Public employees enjoy significantly greater job security than private-sector workers. That job security has an economic value equal to approximately 10 percent of compensation.

- In total, considering wages, benefits (including retirement), and the value of job security, Ohio public-sector workers are paid 43.4 percent more than those in private-sector employment.
- Even if the provisions of SB 5 were implemented in full, it is very likely that Ohio public-sector workers would continue to enjoy a substantial compensation premium over private-sector Ohioans.

Introduction

State and local governments around the country are taking difficult steps to balance their budgets amid one of the most painful recessions in memory. In Ohio, these steps include Senate Bill 5 (SB 5), which was passed by the General assembly and signed into law by Gov. John Kasich in April. Since that time, the controversy over the bill has not abated. Opponents of SB 5 have organized a statewide referendum that will allow voters to decide its fate.

Under SB 5, few direct reductions in public employee compensation would occur. The bill prohibits public employers from picking up part of the employee contribution to pension financing, currently set at 10 percent. It would also require public employees to pay 15 percent of their healthcare costs; state workers already cover this share of health costs, but some local government employees pay less than 15 percent. Both provisions would impact some workers in the short term.

The main impact of SB 5, however, would be to reduce the number of employment issues that are collectively bargained. Firefighters, teachers, police officers, and other government workers will still have the right to form unions and bargain collectively over wages. However, SB 5 would disallow collective bargaining over most non-wage benefits and workplace conditions. This approach is designed to give state and local governments greater flexibility in generating pay packages that balance employee compensation with other budgetary requirements. Restricting collective bargaining to wages will make it easier for governments to hold down the rate of growth of employee compensation. However, public employees argue that narrowing collective bargaining opens the door to unfair reductions in public-sector pay both now and in the future. They argue that public employees are already underpaid compared to private-sector workers, and that SB 5 would only make matters worse.

Indeed, the image of the “underpaid” Ohio public worker is central to the opposition to SB 5. If Ohio public employees already earn less than comparable private-sector workers, then pay cuts would further weaken the state’s ability to recruit and retain quality public workers. If budget savings are necessary,

surely less painful ways to cut are available. On the other hand, if Ohio public workers are already paid *more* than their value in the private marketplace, then the rate of growth in public-sector compensation could be slowed to generate budgetary savings without adversely affecting the quality of Ohio's workforce.

What do the data on public versus private compensation show? Although economists have been studying the issue at the national level for decades, only one Ohio-specific public-private comparison has been published in recent times. Rutgers University Professor Jeffrey Keefe, in a study published by the Economic Policy Institute, wrote that: "Ohio state employees are paid 3.4% less than comparable private-sector employees, but the results are statistically not different from zero. I conclude they are neither overpaid, nor underpaid."¹

This study has been widely cited in the SB 5 debate, including by the AFL-CIO in testimony before the state legislature. *Columbus Business Journal* reporter Jeff Bell wrote: "Get ready to hear a lot about a study by a Rutgers University professor as the heat begins to rise in the campaign to repeal Senate Bill 5, Ohio's divisive collective bargaining law. I got that sense this week when interviewing Melissa Fazekas, the spokeswoman for the anti-S.B. 5 group We Are Ohio.... ...Fazekas quickly steered to me to a study on the compensation issue completed this year by Jeffrey Keefe, a labor and employment relations professor at Rutgers in New Jersey."²

Amid a debate too often marred by anecdotal evidence and emotional outbursts, Keefe's study is commendable for being data-driven. Unfortunately, its pay comparison is based only on wages and a portion of non-wage benefits. Missing from the Keefe study are several aspects of compensation; specifically, retiree health benefits, the guaranteed nature of public-sector pensions, and the value of job security.

In this paper, we conduct our own independent analysis of public-sector compensation in Ohio, one that we believe is the most careful and complete to date. We consider in turn the three major components of compensation: salaries, benefits, and job security. We find that public-sector wages in Ohio are roughly in line with market rates, but that benefits are substantially greater for public workers than for

¹ Jeffrey H. Keefe, "Are Ohio Public Employees Over-Compensated?" Economic Policy Institute *Briefing Paper* No. 296, February 10, 2011, at <http://www.epi.org/page/-/old/briefingpapers/BriefingPaper296.pdf?nocdn=1>

² See <http://www.bizjournals.com/columbus/blog/2011/07/sb-5-opponents-citing-study-showing.html>

Why not compare job-to-job?

Some public-private comparisons attempt to match the salaries paid in government employment to those paid in similar jobs in the private sector. Though it sounds superficially plausible, this method has two major problems.

First, there are many jobs in the public sector that do not have close analogues in the private sector.

Second, each sector may place workers with different levels of education and experience into similar jobs. There is evidence that this practice occurs at the federal level. If so, differences in pay may reflect differences in the productivity of workers rather than in the generosity of overall compensation. This is why labor economists overwhelmingly favor the worker-to-worker comparisons of the human capital model.

private ones. In addition, Ohio public workers enjoy greater job security than their private-sector counterparts, increasing the public-sector advantage in compensation. Given that collective bargaining in the public sector is associated with only small increases in worker compensation, SB 5 is not likely to shortchange public workers in Ohio. In fact, the public sector will likely continue to enjoy a compensation premium whether SB 5 is approved by voters or not.

Wages and Salaries in the Public Sector

Wage and salary income is the most straightforward component of compensation to analyze.

Economists utilize what is known as the "human capital" approach to pay comparisons, which assumes that workers with similar levels of education, skills, experience, and other earnings-related attributes will receive the same compensation even if they work in somewhat different jobs. The human capital method applies a regression analysis to survey data containing information on worker earnings and a wide range of earnings-related characteristics--education, experience, race, gender, marital status, region, and several other factors. By controlling for differences in these characteristics, the human capital method allows analysts to isolate the effect on earnings of being employed in the public sector.

The Congressional Budget Office (CBO) has termed the human capital approach "the dominant theory of wage determination in

the field of economics,”³ and for good reason. Similar methods have been utilized for studies of the union pay premium and discrimination by race or gender.

We analyze public employee salaries using the U.S. Census Bureau's Current Population Survey (CPS), which provides detailed data on a large sample of individuals. We averaged the 2006 through 2010 years of the CPS. The five-year average is more representative of recent trends in government pay, and the larger sample size allows us to add more detailed control variables. We used the Annual Demographic Supplement of the CPS, which contains information on annual earnings. We limited the analysis to adult civilians working full-time for a wage or a salary during the whole previous year. We dropped workers with imputed earnings from our sample, since the imputation process does not take government status into account. People with annual earnings less than \$9,000 were also dropped.

In addition to dummy variables for federal, state, and local government employment, we used the following controls: usual hours worked per week, experience (age – education – 6), experience-squared, years of education, firm size (6 categories), broad occupation (10 categories), immigration status, race, gender, marital status, and year dummies to account for inflation. We also included interaction terms: experience x education, experience-squared x education, marital status x gender, and gender x race.

Most control variables in wage regressions are uncontroversial, but there is some debate among economists over whether to include certain ones. For example, our inclusion of firm size means that Ohio state workers are compared only to workers at large firms (1,000+ employees), which tend to pay higher salaries than smaller firms.

Since firm size is a characteristic of employers rather than employees, this is controversial. Some argue that larger firms tend to pay higher wages because they are more successful, that a state government cannot be “successful” in any market sense, and therefore that a firm size control is inappropriate. However, working at a large firm reflects to some extent an employee’s preferences for whatever characteristics large firms tend to exhibit. If state workers quit in favor of private-sector jobs, they would likely choose a private firm that is above-average in size. For that reason, we believe controlling for firm size is the better choice for both wages and benefits. Excluding the firm size control would eliminate the small wage penalty we report below.

³ Congressional Budget Office. “Comparing the Pay of Federal and Nonfederal Law Enforcement Officers.” August, 2005.

Some economists also control for union status, but we do not believe that is appropriate. Collective bargaining drives up wages, and a government's decision to allow state workers to unionize is essentially another means of boosting compensation. One could argue that union membership, like firm size, is also a state worker's revealed preference that he would continue to seek in the private sector. Unlike firm size, however, this preference could be driven mainly by the higher wages and benefits of unionized labor, which should be included in the public-sector wage effect. Controlling for union status would likely raise our estimate of the wage penalty but would not change any of our conclusions.

Table 1: Wage Regression Results	
Independent Variable	Coefficient (%)
Hours worked (per week)	1.2
Experience (in years)	1.1
Education (in years)	7.7
Foreign-born	-11.4
Married	20.1
Black	-11.5
Hispanic	1.0
Woman	-13.6
Federal worker	16.7
State worker	-6.3
Local worker	-1.0
Observations	7,436
Adjusted r-squared	0.43
Source: Authors' calculations from 2006-2010 Current Population Survey.	

The first column of Table 1 lists some key independent variables, and the second column indicates how a one unit change in those variables affects wages in Ohio, when all other variables are held constant. For example, one more year of experience increases the average wage by 1.1 percent. Similarly, a foreign-born person receives 11.4 percent less than a native-born person, all else equal.

The most important variables in the list for our purposes are state and local government status. State workers in Ohio face a wage penalty of 6.3 percent, while local workers face a smaller 1.0 percent penalty. Together, state and local workers in Ohio receive a statistically insignificant wage penalty of 2.5 percent (not shown in the table). That is, Ohio public workers appear to receive 2.5 percent less in wages than comparably-skilled private workers in their state, though we cannot be fully confident that a penalty exists.

Applying a similar regression nationwide, state and local government workers typically face a salary penalty of around 10 percent. Ohio public workers actually earn relatively more in salaries than typical state and local workers; nevertheless, their salaries are at most even with comparable private workers in their state. We now turn to benefits, where public workers have a large advantage.

Fringe Benefits

In addition to salaries, public employees receive a wide variety of fringe benefits. Non-wage compensation—“benefits,” for short—is an important part of overall compensation and must be evaluated if meaningful comparisons are to be made. Common benefits include paid leave, health and life insurance, retirement plans, and taxes paid on employees’ behalf.

The Bureau of Labor Statistics (BLS) compiles data on benefits for private-sector employers and for state and local governments. These data are collected through the National Compensation Survey and published through the Employer Costs for Employee Compensation series.⁴ For simplicity, benefits are expressed as a fraction of worker salaries. This makes total compensation equal to *salaries x (1 + benefits)*.

We compare public-sector benefits to those paid to individuals employed in establishments of 100 or more employees, which BLS data indicates includes around 43 percent of the workforce. This produces a similar match to the firm size controls used in the CPS salary regressions, where the Ohio public-sector firm size is categorized as 1,000 or more. “Establishment size” refers to the number of employees at one work site, whereas “firm size” is the total number of employees working at a firm regardless of location. About 44.5 percent of full-time workers in the CPS work for firms with 1,000 or more employees. As larger firms pay higher salaries and more generous benefits, this means that we are effectively comparing public employees to private-sector workers with above-average total compensation.

The BLS does not release benefits data on a state-by-state basis due to small sample sizes. Instead, data is available by Census regions consisting of multiple states. Ohio is part of the East North Central Census Division, consisting of Illinois, Indiana, Michigan, Ohio, and Wisconsin, of which Ohio has the second largest population after Illinois. We use these data to estimate the value of fringe benefits for Ohio public-sector employees. In the cases of pensions and retiree health coverage, however, we use state-specific data. This provides more accurate measures of Ohio public-sector benefits and allows us to correct several important omissions in previous work on public-sector pay.

The BLS data show that Ohio public-sector employees receive slightly lower paid leave than comparable private-sector workers; in the public sector paid leave is worth an average of 10.9 percent of salaries,

⁴ See <http://www.bls.gov/news.release/ecec.toc.htm>

versus 11.5 percent in the private sector. Private-sector employees receive significantly higher supplemental pay, which includes overtime, shift differentials and non-production bonuses, at 4.5 percent versus 1.3 percent for public employees. However, supplemental pay is already captured in the CPS's measure of wages, so while we list the data here we do not incorporate supplemental pay into our overall measure of benefits. Ohio state and local workers receive insurance payments – meaning employer provision of life, health, and disability insurance – around one quarter larger than private-sector employees, at 20.5 percent of salaries versus 15.2 percent. Comparing only paid leave and insurance, public-sector workers have a small advantage in terms of benefits.

Before tabulating the remaining benefits categories – retirement and savings, and legally required benefits – we first turn to several analytical issues to be sure that our measurements of employer contributions in these categories accurately reflect the total benefits that public- and private-sector employees actually will receive.

Accounting for the Value of Public-sector Pension Benefits

Pension benefits are an important part of most workers' compensation package. But because we cannot measure these benefits directly – for active workers, retirement by definition has not yet taken place – we must instead estimate what we call “pension compensation,” which represents the present value of future employer-funded pension benefits accrued in a given year of employment.

An important difference between public- and private-sector compensation is the prevalence of traditional defined benefit (DB) pensions in the public sector versus 401(k)-type defined contribution (DC) plans in the private sector. Benefit comparisons must accurately capture important distinctions between the two.

For a DC retirement plan, pension compensation is easy to measure: it simply equals the employer contribution to the employee's 401(k) or similar pension account. These employer contributions can be measured through BLS benefits data.

Another way to think about pension compensation

This section adjusts employer contributions to defined benefit pensions to account for differences in how pension plans fund their benefits.

However, another way to look at this issue is to consider the implicit return on investment under different pension programs. A public-sector pension plan that assumes an 8 percent return on investments also pays participants a guaranteed 8 percent average return on both their own contributions and employer contributions to the plan. If the plans investments fall short of 8 percent, it is the taxpayer that makes up the difference.

In a defined contribution plan, by contrast, participants can receive a guaranteed return of only around 4 percent, by holding US Treasury securities. This difference in implicit rates of return can generate large differences in benefits at retirement. Looking only at employer pension contributions while ignoring the implicit return paid on those contributions will produce an inaccurate measure of employee pension compensation.

To be clear, it is not that public-sector pensions can actually generate 8 percent returns without risk. It is that taxpayers, not workers, bear the risk if investment returns fall short.

Unlike a DC pension, where the employer contribution *is* the compensation the worker receives, employer contributions to DB plans are only *representative* of the benefits to which employees become entitled. The true benefit is a payment upon retirement determined by prior salary and years of service. How a DB pension is funded is legally and substantively distinct from the benefit owed at retirement. Indeed, even if an employer made zero contributions to its pension plan in a given year, the obligation to pay pension benefits would remain unchanged. In the public sector, including in Ohio, these pension obligations are guaranteed by state laws, legal precedents, and provisions of the state constitution.

However, using knowledge of employer contributions and the funding standards by which they choose these contributions, it is possible to calculate the level of future benefits these contributions represent.

BLS data on employer DB pension contributions present two problems. First, BLS data include both payments to fund benefits accruing in the current year and payments to amortize the cost of unfunded liabilities from prior years. Only the first category of payments should count as current compensation. For that reason, we substitute the “normal cost” of pensions published in plan actuarial reports. The normal cost represents only the value of benefits accruing in a given year.

Second, public-sector DB pensions use significantly different accounting standards than private-sector DB pensions or DC pensions. As a result, for any given level of future benefits promised to the employee, public-sector pensions will contribute significantly less during that employee’s working years. In other

words, the normal cost of public-sector pensions will be significantly lower than that of private-sector pensions, even if benefits to retirees are exactly the same. Since actual benefits are the relevant issue, we must control for these accounting-driven differences in pension funding.

Differences in pension accounting standards manifest themselves through the discount rate used to calculate the present value of future benefits. DB pension contributions are calculated by discounting the future benefit liabilities accrued in a given year using the interest rate expected to be earned on the plan's investments, usually around 8 percent. Private-sector DB plans must discount their benefits using the yield on high quality corporate bonds, currently around 5 percent. For a DC plan to generate a similarly guaranteed retirement benefit, it must invest in safe investments such as U.S. Treasury securities, currently yielding around 4 percent over the long term. Thus, the same dollar of retirement benefits could have three different reported values based upon how that dollar of benefits is delivered.

It is said that compound interest is the most powerful force in the universe, and the effects of these different discount rates is large. They imply that a public-sector pension could provide a dollar of retirement benefits for roughly 41 percent of the cost of a private-sector DC plan and 28 percent of the cost of a DC plan.⁵ Put another way, one dollar of employer contributions to a public-sector DB pension implies 3.6 times higher guaranteed benefits in retirement than a dollar contributed to a DC plan.

To be clear, economists almost universally believe that public pensions' practice of discounting benefits at the expected return on assets is incorrect.⁶ For these purposes, however, all that matters is that the accounting be made consistent between different pension types. Not to do so would generate incorrect estimates of the actual benefit public-sector employees will receive in retirement.

⁵ These estimates derive from an actuarial analysis of pension plans under the Florida Retirement System, but are generally applicable across different plans. Robert S. DuZebe. "Study Reflecting Impact to the FRS of Changing the Investment Return Assumption to one of the following: 7.5% percent, 7.0% percent, 6.0% percent, 5.0% percent, 4.0% percent and 3.0% percent. Milliman. March 11, 2011. A similar analysis was conducted in Jones, Norman L., Brian B. Murphy, and Paul Zorn. "Actuarial Methods and Public Pension Funding Objectives: An Empirical Examination." Presented at Society of Actuaries Public Pension Finance Symposium. May 2009, and Office of the State Actuary. "Washington State 2009 Actuarial Valuation Report." October 2010; and Office of the State Actuary. "2010 Risk Assessment: Moving Beyond Expectations." August 31, 2010.

⁶ For instance, see Brown, Jeffrey R. and Wilcox, David W., "Discounting State and Local Pension Liabilities," *American Economic Review*, vol. 99, May 2009. Congressional Budget Office. "The Underfunding of State and Local Pension Plans." May 2011.

Our estimates of public- and private-sector pension compensation use DC plans as a baseline. Adjustments to public- and private-sector DB plan contributions calculate the percentage of salary that, contributed to a DC plan, would produce the same level of guaranteed benefits in retirement.

As of 2008, the Ohio Public Employee Retirement System (PERS) had a normal cost of 15.44 percent of payroll and an employee contribution of 10 percent. Some public employers in Ohio have given their employees a partial “pick-up” of that 10 percent, a practice that SB 5 would outlaw. We have been unable to find reliable data on the extent of pick-ups, so we assume the full 10 percent employee contribution. The levels of pension compensation presented reflect the assumption that SB 5’s ban on pension pick-ups has been implemented; under current practices where the pick-up takes place, pension compensation for Ohio public employees would be higher.

Employer contributions cover the remaining normal cost as well as the cost of financial unfunded liabilities from prior years. Ohio PERS assumes a future annual investment return of 8 percent. Using these inputs, the adjusted pension compensation can be calculated.⁷ An adjustment factor of 3.59 is applied to the total normal cost of 15.44 percent of wages, from which is subtracted the employee contribution of 10 percent. Total DB pension compensation then equals 45.4 percent of salaries.⁸ Put another way, a private-sector worker would need to contribute 45.4 percent of his salary to a 401(k) plan to produce the same level of guaranteed benefits in retirement.

We follow a similar adjustment process for private-sector DB pension plans, although the effects are smaller because private-sector DB pensions use a lower discount rate and constitute a much smaller

⁷ The adjustment process is as follows. The adjustment factor for a given pension plan equals the ratio of the normal cost of the Florida Retirement System at a 4 percent discount rate to the FRS normal cost at Ohio PERS’ chosen discount rate of 8 percent. This factor is multiplied by the total normal cost of the DB pension of the particular sector at that sector’s chosen discount rate, and then employee contributions are subtracted. Thus, the adjusted normal cost equals:

$$\frac{NC_{FRS}^r}{NC_{OH}^r} * NC_{sector}^r - \text{employee contribution}$$

where *NC* designates normal cost, the superscript designates the Florida Retirement System (*FRS*) or the plan in questions (*s*), and *r* denotes the interest rate at which the plan discounts its liabilities. This calculation produces an adjustment factor of 3.59, which is multiplied by the total normal cost of the pension plan. From this, the employee contribution of 10% is subtracted.

⁸ In a case where the employer picked up the entire employee pension contribution, pension compensation would rise by 10 percentage points relative to salaries.

share of an employee's total compensation.⁹ Total retirement compensation for private-sector employees in establishments of 100 or more employees is roughly six percent of salaries. Failure to account for differences in how pensions are funded hides the fact that public-sector pension benefits are far more generous than those commonly paid in private-sector employment. Inclusion of Social Security benefits would narrow the gap somewhat, as most Ohio public employees do not participate in Social Security and most private-sector workers do. The valuation of Social Security benefits is discussed in a later section. However, even when Social Security is included, total employer contributions toward retirement benefits in the private sector are just a fraction of those paid to Ohio public employees.

Retiree Health Coverage

BLS does not collect data regarding retiree health benefits. The principal reason is that most retiree health benefits are not pre-funded, meaning there no explicit employer contribution to be measured. Retiree health coverage can nevertheless be extremely valuable, particularly for early retirees who otherwise would need to purchase coverage in the individual market. Most existing studies of public-sector pay, including Keefe's analysis of Ohio, do not include the value of retiree health coverage.

This omission is relatively unimportant for private-sector workers, where retiree health benefits are increasingly uncommon and becoming less generous where they still exist. As of 2009, only 6 percent of private firms and 34 percent of the largest firms (1,000+ employees) offered coverage, down from 11 percent and 52 percent, respectively, in 1997.¹⁰ Around 21 percent of all employees, public and private, were eligible for retiree health care as of 2007, down from 40 percent in 1993.¹¹ Since public-sector workers, almost all of whom are offered some form of retiree health coverage, make up around 17

⁹ For private-sector DB plans, the discount rate is assumed to be 5.5 percent and the adjustment factor equals 1.48, and the assumed normal cost of accruing benefits is 2 percent of wages. Private DB plans generally require no employee contributions. It is difficult to quantify the share of current private-sector DB contributions dedicated to funding new benefit accruals versus unfunded liabilities from prior years, given the data available. As many or most private-sector DB pensions have been frozen, we assume that half of current employer contributions fund of accruing benefits and the other half amortize unfunded liabilities.

¹⁰ Employee Benefit Research Institute, "Employers Offering Retiree Health Benefits to Early Retirees: How Has it Changed?" EBRI *Fast Facts* No. 182, October 28, 2010, at <http://www.ebri.org/pdf/FFE182.26Oct10.EarlyRets.Final.pdf> (March 25, 2011).

¹¹ "Mercer National Survey of Employer-Sponsored Health Plans" in Employee Benefit Research Institute, "Trends in Retiree Health Benefits Offered by Employers," EBRI *Fast Facts* No. 156, February 24, 2010, at <http://www.ebri.org/pdf/FFE156.24Feb10.Final.pdf> (March 25, 2011).

percent of the total workforce, offerings of retiree health to private employees have clearly fallen significantly.

In the private sector, employers have both tightened eligibility standards and increased cost-sharing through new formulas or explicit global caps on employer subsidies.¹² We have shown elsewhere that, even where offered, private-sector retiree health coverage appears significantly less generous than in the public sector.¹³ Given the lack of access to and generosity of retiree health coverage in private-sector employment, we do not attempt to calculate the value of retiree health care for private-sector workers.

In contrast, most public-sector employees continue to accrue the right to receive employer provided health benefits in retirement, and these benefits are generous in some cases. For public employees in Ohio we rely upon disclosures required by the Governmental Accounting Standards Board (GASB). These disclosures document what is referred to as the "normal cost" of retiree health coverage, which reflects the current value of the future benefits accrued in a given year. Ohio is required by GASB Rules 43 and 45 to publish the "normal cost" of Other Post-Employment Benefits (OPEB), principally retiree health coverage.

Ohio is unusual in delivering pension benefits and retiree health benefits from a single integrated program. Ordinarily there are separate programs that file separate financial disclosures, allowing for analysis of the two benefit types distinctly. Making matters more difficult, Ohio's public pension plans do not make available on their websites the actuarial reports that would provide the level of detail necessary to analyze pension and retiree health benefits.¹⁴ In analyzing the value of retiree health coverage for Ohio workers, we rely on an evaluation of the Ohio State Teachers Retirement System (STRS) conducted by the actuarial firm Milliman. Milliman estimates the normal cost of OPEBs for the STRS at 3.86 percent of worker payroll.

¹²"Retiree Health Benefits Examined," Kaiser Family Foundation and Hewitt Associates, December 2006, at <http://www.kff.org/medicare/upload/7587.pdf> (March 25, 2011).

¹³ For instance, on a per-employee basis California's retiree health accruals were anywhere from two to 30 times larger than in selected large private-sector firms that continue to offer retiree health coverage. See Biggs, Andrew and Jason Richwine. "Public-Sector Compensation: Correcting the Economic Policy Institute, Again." Heritage Foundation Backgrounder #2539. March 31, 2011

¹⁴ Email requests to the Ohio PERS program for actuarial reports received no response.

However, Ohio is again unusual in that it prefunds a part of its retiree health benefits, which allows the state to discount its future benefits using a higher interest rate than other states. Ohio uses an interest rate of 6.5 percent in valuing its OPEB liabilities while other states generally use interest rates in the range from 3.5 to 5 percent. The use of a higher discount rate means that Ohio will report a lower cost of funding OPEBs even if its benefits were exactly the same as those offered in other states. As with pensions, it is important to distinguish the value of benefits provided from how those benefits are financed.

To isolate the value of the benefit distinct from the accounting assumptions used in calculating the funding cost to the government, we turned to two states that report their OPEB liabilities under three discount rates: California and Connecticut.¹⁵ Using these calculations and how they affect the value of the states' own reported OPEB liabilities, we can estimate the value of Ohio OPEB benefits assuming a more conventional discount rate of 4.5 percent. The Connecticut and California examples indicate that Ohio OPEB liabilities would rise by around 30 percent if discounted consistently with other states. For that reason, we adjust the reported value OPEBs of 3.86 percent of pay up to 5 percent of pay.

However, even this figure does not capture the full value of OPEBs to employees. Lacking retiree health coverage, a retired public-sector employee would purchase coverage in the individual market, where costs are on average 25 percent higher than under group coverage.¹⁶ For that reason, we gross up the value of retiree health coverage to 6.3 percent of salaries. Roughly speaking, the average Ohio public employee would be indifferent between the value of the retiree health coverage they receive and a 6.3 percent increase in salary.

The Treatment of Social Security Contributions

In the private sector almost all employees are covered by the Social Security program, which requires a contribution of 12.4 percent of wages, evenly split between employer and employee. In Ohio, public-sector employees generally are not covered by Social Security and instead receive pension, disability,

¹⁵ See Clark, Robert L. and Morrill, Melinda Sandler. "The Funding Status of Retiree Health Plans in the Public Sector." NBER Working Paper Series, Vol. w16450. October 2010.

¹⁶Melinda Beeuwkes Buntin, José S. Escarce, Kanika Kapur, Jill M. Yegian, and M. Susan Marquis, "Trends and Variability in Individual Insurance Products," *Health Affairs*, September 24, 2003, at <http://content.healthaffairs.org/content/early/2003/09/24/hlthaff.w3.449.full.pdf+html> (March 25, 2011).

and survivor benefits through Ohio PERS or another pension plan. For that reason, we enter a value of zero for Social Security employer contributions in the BLS data table.

For private-sector employees, an adjustment of Social Security contributions is also necessary. Just as part of an employer's DB pension contribution goes toward financing unfunded liabilities from prior years, part of the Social Security contribution effectively finances a "legacy debt" from prior generations, who received more in benefits than they paid in taxes.¹⁷ This means that only part of the Social Security contribution paid on behalf of current employees is dedicated to paying future benefits for those employees. While public-sector DB pensions pay an effective rate of return above the riskless rate, Social Security pays an effective rate of return below the riskless rate.

According to Social Security's actuaries, individuals with earnings in the \$40-\$60,000 range receive retirement and other benefits equal to around two thirds of what their contributions would equal if compounded at a riskless rate of return.¹⁸ To adjust for this, we multiply the 12.4 percent combined employer/employee Social Security payroll tax by 0.66, then subtract the 6.2 percent employee share of the tax, leaving a net employer contribution of 2.0 percent of salaries. This value reflects the fact that, unlike Ohio public-sector employees, private-sector workers must participate in a pension program that imposes a significant tax net of benefits paid.

In sum, Ohio public employees receive a significant implicit subsidy toward their pensions, while private-sector employees participating in Social Security receive a penalty. Ohio public employees receive a guaranteed rate of return of eight percent on their and their employers' contributions toward DB pensions, far above what they could earn while investing in low risk assets, while private-sector workers participating in Social Security receive a return below the government bond interest rate. While some believe that public-sector employees are disadvantaged by not taking part in Social Security, they actually receive a significant subsidy by not doing so.

¹⁷ For instance, see Diamond, Peter A. and Orszag, Peter R. "A Summary of Saving Social Security: A Balanced Approach." MIT Department of Economics Working Paper No. 04-21. May 2004.

¹⁸ See Office of the Chief Actuary, Social Security Administration. "Moneys Worth Ratios Under the OASDI Program for Hypothetical Workers." July 2010.

The Total Wage-Benefit Compensation Premium

Total benefits by component are displayed in Table 2. For Ohio public employees, average benefits equal 87.7 percent of salaries, versus 39.5 percent of salaries for private-sector workers in establishments of 100 or more employees. This implies that state and local government workers on average receive over twice as much in benefits per dollar of salaries as do comparable private-sector employees.

Table 2. Fringe benefits as a percent of salaries, Ohio state and local government employees and private-sector workers in establishments of 100 or greater.

	Public sector	Private sector
Total benefits	87.7%	39.5%
Paid leave	10.9%	11.5%
Vacation	4.1%	6.0%
Holiday	3.1%	3.6%
Sick	2.7%	1.3%
Personal	1.0%	0.6%
Insurance	20.5%	15.2%
Life	0.2%	0.3%
Health	19.9%	14.2%
Short-term disability	0.1%	0.5%
Long-term disability	0.3%	0.3%
Retirement and savings	52.7%	6.0%
Defined benefit	45.4%	2.9%
Defined contribution	1.0%	3.1%
OPEB	6.3%	0.0%
Legally required benefits	3.7%	6.8%
Social Security and Medicare	1.6%	3.7%
Social Security	0.0%	2.0%
Medicare	1.6%	1.7%
Federal unemployment insurance	0.0%	0.1%
State unemployment insurance	0.4%	0.9%
Workers' compensation	1.7%	2.1%
Authors' calculations from BLS data and pension and OPEB disclosures.		

This measure of benefits can be combined with our prior calculation of the public-sector salary penalty of 2.5 percent to calculate an overall salary and benefit penalty or premium. Put in simple terms, if a private-sector worker earns a salary of \$100, then a comparable public employee would receive a salary of \$97.50. The private-sector worker's total compensation would be $\$100 * (1 + 39.5\%) = \139.50 , while the public-sector employee's total

compensation would equal $\$97.50 * (1 + 87.7\%) = \183.01 . These figures produce a total Ohio public-sector salary and benefit premium of $(183.01 - 139.50) / 139.50 = 31.2$ percent over comparable private-sector employees. In other words, Ohio state and local government employees receive total salaries and benefits almost one-third above those payable to private-sector workers with similar skills.

A Note on the Treatment of Teacher Compensation

We are likely understating the total value of public-sector compensation due to the presence of so many elementary and secondary teachers among Ohio's public workers. Measuring both the skills and the compensation of teachers includes added challenges. In standard wage regressions such as the one we have presented, education is measured either in years of schooling or in level of degree obtained. The implicit assumption is that education's effect on future earnings is consistent across fields of study—that is, differences in educational quality at any given educational level tend to average out in heterogeneous groups. However, a problem exists when comparing the salaries of a single occupational group to the salaries of comparably educated workers in the general population. A large proportion of teachers have Bachelor's or Master's degrees in education and most individuals with education degrees are teachers. Because fields of study for teachers are considerably less diverse than for the general population, relying solely on differences in educational *quantity* (years of schooling) may mask important differences in educational *quality* between teachers and non-teachers. Research has shown that teachers tend to enter college with below-average SAT scores and education is one of the least demanding college majors.¹⁹ Given this, the standard years-of-education variable may be an overestimate of teacher skill, causing teachers to appear underpaid relative to other workers with similar years of education.

Additionally, teachers generally work only a nine- or ten-month year. Our wage analysis is limited to full-year workers (employed for 52 weeks), but most teachers indicate that they worked 52 weeks in the past year and are thus included in the analysis. This means that further adjustment for teacher summer vacations (essentially additional paid leave) could be warranted. Unfortunately, the BLS data on benefits do not separate teachers from other public workers within the same region; moreover, BLS benefits data for teachers is based upon a shorter work year, and so summer vacations are not included as paid leave in such data. We can make an educated guess about the value of summer vacations. However, given the uncertainty of the data and our desire not to stray from standard approaches to comparing compensation, we do not include this additional paid leave in our official estimates.

While it is likely that in-depth examination of the influence of both teacher education and teacher summer vacation would increase the average premium enjoyed by public employees above the levels

¹⁹ Koedel, Corey. "Grading Standards in Education Departments at Universities." University of Missouri Working Paper. June 2011. Available at <http://i.bnet.com/blogs/education-major-study.pdf>

found in this study, we have been conservative in our approach and elected not to stray from standard methods of comparing compensation

The Value of Public-Sector Job Security

It is well-known that public employees enjoy greater job security than private-sector workers, and public-sector unions place an emphasis on retaining it. Job security is a clear benefit to the employee but comes at a cost to employers, limiting their ability to fire poor performers or to recast the skill set of the workforce according to changing needs. Enhanced job security is a benefit to public employees, but is it possible to assign a dollar value to it?

Doing so is not a straightforward task, but we have developed a model that gives some sensible estimates. Details of this model and some of the complications with valuing job security are outlined in Biggs and Richwine (2011).²⁰

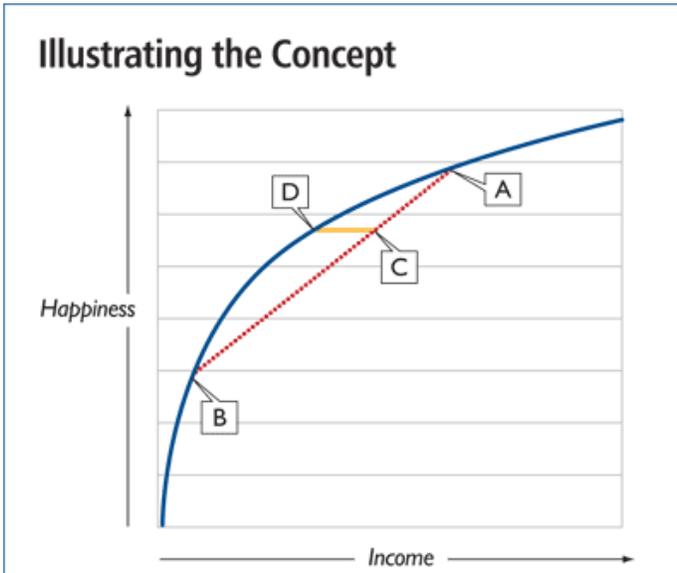
We use what in financial economics is termed a “certainty equivalent,” a guaranteed payment that individuals would find equally attractive compared to a higher but uncertain payment. For example, an individual might be willing to accept a guaranteed payment of \$45,000 in lieu of a 50 percent chance of winning \$100,000; in terms of the welfare provided to the individual, the two payments are deemed to be equivalent. The more risk-averse individuals are, the lower the certainty equivalent is relative to the expected value of the risky payment.

Similarly, we might ask, how much salary reduction would a private-sector worker accept to have the job security of a public employee? We begin with the standard assumption that the utility or welfare generated by income will rise as income rises, but at a decreasing rate as basic needs are satisfied. Moreover, the rate at which utility declines increases with the risk aversion of the individual. A more risk-averse individual will be willing to accept a lower guaranteed income because the increase in expected utility by accepting a risky job is lower.

The theory may be more understandable with a graphical illustration that appears in most economics textbooks. The graph below shows a stylized utility function, where the curved line shows the relationship between income (on the horizontal axis) and utility (on the vertical axis). Higher income

²⁰ Biggs, Andrew G. and Jason Richwine. “Comparing Federal and Private Sector Compensation.” American Enterprise Institute Working Paper. June 08, 2011.

generates more happiness, but at an ever-declining rate. Point A represents the income and utility if the individual keeps his job throughout the year, while Point B represents the income/utility should he lose



his job. Point C, which lies between the two, represents the individual’s expected utility from his employment—that is, the probability-weighted average of the utilities at Points A and B.

Point D lies to the left of Point C and represents the certainty-equivalent income—that is, the compensation with zero probability of discharge that would generate the same utility as the non-guaranteed compensation the individual currently receives.

The model demands input parameters on the differences in job security between public- and private-sector employees. We use the difference in unemployment rates between the two sectors as measured in the CPS, which is the federal government’s main source of data on unemployment. While we would ideally use discharge rates, these are not commonly available. However, consistent data on unemployment can be found for both worker types. Between 2001 and 2010, the broadest unemployment rate (out of work for any reason) for private-sector workers in Ohio was 7.7 percent. For state and local workers in Ohio the unemployment rate was 2.1 percent, a difference of 5.6 percentage points. However, some of this difference may be driven by differences in the skills of public and private-sector employees. For that reason, we control for differences in education and experience and find a difference in unemployment rates of 3.4 percentage points.

Our model incorporates the risk-aversion of public-sector employees, the probability of becoming unemployed, the duration of unemployment, and the loss of working income net of unemployment benefits.²¹ It calculates the reduction in salary a private-sector employee would willingly accept in return

²¹ The model assumes that 85 percent of public employees discharged are laid off rather than fired for cause and therefore eligible for unemployment benefits.

for an increase in job security to public-sector levels. That salary reduction is the dollar value of extra public-sector job security.

The baseline value of extra job security is just 1.8 percent of compensation. But job security becomes more valuable when it protects a position that pays a wage and benefit premium relative to alternate employment. We have shown above that Ohio public employees receive compensation approximately 31.2 percent higher than they would be likely to receive in alternate private-sector employment. Lacking job security, a public-sector worker who lost his job would likely return to work at a lower level of pay. Job security protects not just the job, but the pay premium as well. Incorporating the premium into the model, the value of job security rises to 9.3 percent of compensation.

Since greater or lesser job security should generate a “compensating wage differential,” we can add the value of job security to the wage and benefit premiums already calculated. If the wage and benefit premium totals 31.2 percent, including a job security premium of 9.3 percent increases total compensation to 43.4 percent above market rates.²²

The Impact of SB 5

Given the large compensation premium they already enjoy, SB 5 would not leave Ohio public workers shortchanged even if it mandated major reductions in pay. As we noted in the introduction, SB 5 actually calls for few direct reductions. The ban on pension “pick-ups” does not affect the results described above because we have already assumed that public employees pay their full 10 percent share. The requirement on health care contributions would impact some local government employees, but the overall impact would likely be limited given the size of the overall compensation premium.

SB 5 could impact compensation for teachers through its restrictions on teacher tenure. Under current practice, once a teacher attains tenure his job is essentially guaranteed; discharges for cause are rare and layoff are generally handled on a “last in, first out” basis. SB 5 would restrict teaching contracts to five years and would weaken—but not eliminate—the role of seniority in considering new job contracts. These provisions could reduce the value of the job security premium currently paid to Ohio public employees, but it would be unlikely to eliminate it.

²² In calculating the wage and benefit premium, we used a value of \$139.50 for private compensation and \$183.01 for public compensation. Adding job security raises public compensation to $(1+9.3\%)*183.01 = \$200.03$. The new total premium becomes: $(200.03-139.50)/139.50 = 43.4\%$.

We are left to ponder the effects of restricting collective bargaining. Not all public-sector employees are unionized and there is a salary premium paid to unionized over non-unionized workers. However, the union salary premium in the public sector is significantly smaller than in the private sector. Thus, one could estimate that if SB 5 eliminated public-sector collective bargaining entirely – which it does not – even the maximum reduction in salaries would not be nearly enough to eliminate the compensation premium currently enjoyed by Ohio public-sector employees.

Conclusions

SB 5 would not directly limit the compensation of Ohio public-sector employees, but its limitations on certain aspects of collective bargaining could allow the state and local governments to reduce compensation in the future. One argument against SB 5 is that Ohio public employees are already underpaid relative to private-sector levels and that the provisions of SB 5 would increase the size of this pay penalty. We examined these claims of public-sector under-compensation in detail, examining how Ohio salaries, benefits, and job security compare to those paid to private-sector workers with similar levels of education and experience.

We found that salaries paid to Ohio workers are only slightly below private-sector levels, while benefits properly measured are over twice those paid to private-sector employees in large firms. Combined, Ohio public-sector employees receive a wage and benefit premium of 31.2 percent over private-sector levels. In addition to higher direct compensation, Ohio public employees receive greater job security, with an average unemployment rate 3.4 percentage points lower than Ohio private-sector workers with similar education and experience. We calculate that this increased job security is equivalent to an increase in total compensation of around 9.3 percent, raising the total public-sector pay premium to 43.4 percent above market levels.

Even post-SB 5, most Ohio public employees are likely to receive a compensation premium over what they would receive in private-sector employment. Fears that public employees are being treated unfairly, or that many will quit their jobs and the government will be unable to recruit replacements, are almost certainly unfounded.