



# EPI BRIEFING PAPER

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## PUBLIC VERSUS PRIVATE EMPLOYEE COSTS IN PENNSYLVANIA

### Comparing apples to apples

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#### Executive summary

This paper investigates whether Pennsylvania public employees (which in this report refers to state and local employees, not federal workers) earn more or less than comparable private sector workers. The research is timely. In the debate about Pennsylvania’s state and local budget challenges, a steady drumbeat has maintained that Pennsylvania public sector workers’ pay is excessive and that their benefits, in particular, are too high. These claims have been accompanied by calls for wage freezes and benefit cuts to balance state and local budgets.

The research shows, however, that controlling for education, experience, organizational size, gender, race, ethnicity, citizenship, and disability, employees of Pennsylvania state and local governments earn lower wages than comparable private sector employees.

- Average annual wages and salaries of full-time state and local public employees in Pennsylvania are 12.1% lower than those of comparable private sector employees.
- On a per-hour basis, full-time state and local employees earn 8.7% less in wages and salaries than similar private sector workers.
- Moreover, looking at *total compensation*, which includes all wages and all nonwage benefits (such as health insurance and retirement), Pennsylvania public employees annually earn 5.4% less than comparable private sector employees and 2.1% less on an hourly basis.

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These comparisons account for critical factors that affect earnings, the most important of which is level of education. Because occupations in the public sector require much higher levels of education, Pennsylvania public sector workers, on average, are more highly educated than private sector workers: 53% of full-time public sector workers in the state hold at least a bachelor's degree, compared with 32% of full-time private sector workers. Pennsylvania state and local governments pay employees with a bachelor's degree 21% less in annual total compensation, on average, than private employers.

The comparisons of compensation packages also reflect a large difference between the mix of wages and nonwage benefits in Pennsylvania's public and private sectors. State and local government employees receive a higher portion of their compensation in the form of nonwage benefits, and the composition of overall benefits is different from that typical in the private sector.

- For example, 28.2% of state and local government employee compensation expenses are devoted to nonwage benefits, compared with 18.6% to 21.4% of private sector employee compensation costs.
- Public employers devote a larger share of their compensation packages to health insurance and pension benefits. Health insurance accounts for 13.2% of state and local government compensation but only 6.2% to 9.0% of private sector compensation.
- Retirement benefits also account for a substantially greater share of public employee compensation—8.2% compared with 2.5% to 4.7% in the private sector.
- Most public employees have an advantage in participating in defined-benefit plans (which provide a set monthly payment after retirement) managed by the state, while most private sector employers have switched to defined-contribution plans (which provide the accumulated value of those contributions), particularly 401(k) plans, and many private sector employers do not provide any contribution toward their employees' retirement compensation beyond Social Security.

- In comparing public and private sector pay, including nonwage benefits such as pensions, the issue is not which plans are better but what are the costs to employers (evaluated below) (Keefe 2011).

Although public employees receive a higher share of compensation in the form of nonwage benefits, they receive considerably less supplemental pay (e.g., annual bonuses, etc.) and somewhat less vacation time, and public employers contribute significantly less to legally mandated benefits financed through payroll taxes.

To summarize, while some benefits are more generous in the public sector, it would be wrong to surmise that comparability of compensation between the public and private sectors requires that every element of compensation be the same. What is important is this: Considering both the cost of nonwage benefits and direct wages, public sector workers in Pennsylvania receive slightly lower overall compensation than with their private sector peers.

## Introduction: The challenge to public employee compensation

Pennsylvania Gov. Tom Corbett has made statements implying that public employees are overcompensated when compared with private sector employees. Is he right? Does a balanced, systematic evaluation show that Pennsylvania employees are overpaid? This paper presents a methodical and deliberate answer to that question.

To assess whether Pennsylvania public employees are overpaid, we need to ask two simple and related questions: compared with whom, and by what elements of compensation?

Usually, public employees are compared with private sector workers with similar education, experience, and hours of work. However, while we ideally would use this standard of comparison, it is impossible to find private sector matches for the entire spectrum of public employees. Too many critical occupations in the public sector—for example, police, fire, and corrections—lack appropriate private sector counterparts. Even public and private teaching are significantly different in character. Public schools accept all students, while private schools can be highly selective and may exclude or remove poor performing, special needs, or disruptive students.

Consequently, comparing workers of similar “human capital” (fundamental personal characteristics and labor market skills) is considered the best alternative. These analyses capture the attributes shown by comparable work studies to have the most impact on earnings. Education level is the single most important earnings predictor. Education helps develop work-relevant skills. People invest heavily in their own and their children’s education by paying for housing in communities with good schools and by funding attendance at schools, colleges, and universities.

Experience is the next most important variable impacting earnings. People learn by doing and handling a variety of job tasks as they advance within occupations. Most occupations reward experience, since on-the-job learning delivers more competent and complex performance. Gender, race, ethnicity, and disability also affect compensation through an intermingling of productivity-related human capital differences and labor market disadvantages stemming from historical patterns of discrimination. We control for all these factors in our study.

When analyzing hours of work, most studies exclude part-time workers because they earn considerably less than comparable full-time workers, are more weakly attached to the labor force, and often lack benefit coverage. This study follows standard practice by focusing on full-time public and private sector employees (who represent over 80% of the state’s labor force), and controls for hours worked per year. The study includes only year-round workers who have worked a minimum of 1,100 hours, which is often the minimum threshold to qualify for full employer-provided benefits.

In our methodology, we are fortunate to be able to include a control for the organizational size of each sampled full-time worker’s employer by pulling compensation data from the Integrated Public Use Microdata Series of the Current Population Survey (IPUMS-CPS), a monthly survey of U.S. households conducted by the Census Bureau and the Bureau of Labor Statistics. An employer’s organizational size greatly influences employee earnings: It can produce a wage gap of 35%. Large firms with 500 or more employees comprise less than one-third of 1% of all firms but provide jobs for nearly half of all private sector employees (Oi and Idson 1999; U.S. Bureau of Labor Statistics 2005). While large organizations employ more educated, experienced, and full-time workers, they nonetheless pay a premium, even after accounting for these factors (Troske 1999). And the compensation premium grows when nonwage benefits are included. The private sector has relatively few large organizations, whereas the public sector has relatively few small organizations. More than 59% of all private sector employees in Pennsylvania work in organizations with 500 or more employees, compared with 67% of public employees (U.S. Census Bureau 2006).

To summarize, our study compares workers of similar “human capital,” and it controls for personal characteristics found to affect compensation as well as for hours worked and size of employer. In addition to defining *who* will be compared, we must also define *what* should be compared. This is a more complex task than it initially appears. Comparing wages is insufficient because employee compensation increasingly includes employer-provided nonwage benefits. Regardless of the mix of wages or benefits, the essential feature for comparison is what it costs to employ

someone. Employer costs may include not only wages but also paid time off for holidays, vacations, and personal and sick days; supplemental pay, including overtime and bonuses; insurance, particularly health insurance but also life and disability insurance; retirement plan contributions, whether defined benefit or defined contribution, including 401(k) plans; and legally mandated benefit contributions, such as unemployment insurance, Social Security, Medicare, disability insurance, and workers compensation. These costs, rather than just wages, must be included in the cost of employing an individual worker. However, the complexities don't end there: More difficult is finding the appropriate data to make the comparison.

This study uses wage and demographic data from the IPUMS-CPS March Annual Demographic File and Income Supplement, which is the source for earnings data most widely used by social scientists (King et al. 2009). To ensure comparability, the Pennsylvania data excludes self-employed, part-time, agricultural, and domestic workers. We enhance the reliability of the sample by expanding the number of observations by five additional years of data covering 2005 through 2010.

There is only one reliable source of nonwage benefit information in the United States: the Employer Costs for Employee Compensation (ECEC) survey, which is collected by the Bureau of Labor Statistics. The ECEC includes data from both private industry and state and local government, and provides data for private employers by firm size. Larger employers, those with 500 or more employees, are significantly more likely to provide employee benefits, in part because they can distribute administrative costs and risks over a larger group. State and local governments resemble larger private employers in this regard.

## Education level: The most important factor in earnings

Public employees in the state of Pennsylvania are substantially more educated than their private sector counterparts. Approximately 53% of full-time Pennsylvania public employees have a bachelor's degree, compared with 32% in the private sector. Higher levels of education are strongly associated with higher earnings in the labor market. **Table 1**, column 1 reports the returns to education in comparison with workers who have not completed high school.<sup>1</sup>

TABLE 1

### Composition of private and public employment by education in Pennsylvania

Highest degree earned	Earnings return to education compared *	Percent of total employment				
		All private employers	Private 1 to 99 employees	Private 100 to 499 employees	Private 500 and more employees	State and local government
<i>Less than high school</i>	0%	5%	7%	5%	4%	2%
<i>High school</i>	20	39	45	44	35	26
<i>Some college</i>	37	14	12	14	14	10
<i>Associate's degree</i>	45	10	10	9	10	9
<i>Bachelor's degree</i>	77	22	18	18	24	29
<i>Professional degree</i>	141	2	1	1	2	1
<i>Master's degree</i>	96	7	5	6	8	21
<i>Doctorate</i>	134	2	0	1	2	1
<b>Total **</b>		100	100	100	100	100
<b><i>Bachelor's degree and more</i></b>		32%	25%	27%	36%	53%

\* For all Pennsylvania full-time workers, adjusted for gender, race, and other variables in a conventional earnings model. Comparison to "less than high school".

\*\* Rows may not add up to 100% due to rounding.

**SOURCE:** Author's analysis of March Current Population Survey (U.S. Census Bureau) and Employer Costs for Employee Compensation Survey (Bureau of Labor Statistics). See data appendix for more information..

A high school graduate, all else equal, earns on average 20% more than someone without a high school diploma. The education premium jumps to 37%, on average, if the worker attended some college, and increases to 45% if the worker has an associate's degree. Completing college with a bachelor's degree yields a 77% earnings premium, obtaining

a master's degree yields a 96% premium, and earning a doctorate produces a 134% return. Earning a professional degree (such as law or medicine) increases average earnings by 141% compared with failing to complete high school.

The public sector employs more highly educated workers. While private sector organizations rely more on

**TABLE 2**

**Public and private pay comparison by education in Pennsylvania, unadjusted for other variables**

	Annual wage earnings		Difference public over private (public sector penalty)**	
	Private	Public	Dollars	Percent
<b>Full-time*</b>	\$50,271	\$45,580	-\$4,691	-9%
<i>Less than high school</i>	27,658	27,017	-641	-2
<i>High school</i>	36,232	34,703	-1,529	-4
<i>Some college</i>	40,491	39,745	-747	-2
<i>Associate's degree</i>	43,522	43,073	-449	-1
<i>Bachelor's degree</i>	65,622	47,980	-17,642	-27
<i>Professional degree</i>	153,299	63,379	-89,920	-59
<i>Master's degree</i>	87,077	57,777	-29,300	-34
<i>Doctorate</i>	123,553	87,427	-36,127	-29
<b>All</b>	\$50,271	\$45,580	-\$4,691	-9%

  

	Total compensation		Difference public over private (public sector penalty)**	
	Private	Public	Dollars	Percent
<b>Full-time*</b>	\$64,433	\$62,237	-\$2,196	-3%
<i>Less than high school</i>	36,612	38,394	1,783	5
<i>High school</i>	47,521	48,388	867	2
<i>Some college</i>	52,355	55,635	3,280	6
<i>Associate's degree</i>	55,906	58,778	2,872	5
<i>Bachelor's degree</i>	82,628	65,097	-17,531	-21
<i>Professional degree</i>	193,262	83,886	-109,375	-57
<i>Master's degree</i>	109,561	77,939	-31,621	-29
<i>Doctorate</i>	155,433	113,474	-41,959	-27
<b>All</b>	\$64,433	\$62,237	-\$2,196	-3%

\* For full-time workers with 1,100 or more annual hours.

\*\* For a more comprehensive measure of the public sector premium/penalty, see Table 4.

**SOURCE:** Author's analysis of March Current Population Survey (U.S. Census Bureau) and Employer Costs for Employee Compensation Survey (Bureau of Labor Statistics). See data appendix for more information.

educated labor as they get larger, smaller private sector organizations employ more workers who lack education above the high school level than do larger private employers or state and local government. Only 2% of state and local government workers lack a high school education, compared with 7% of employees of private firms with less than 100 employees and 4% of employees of private firms with 500 or more employees.

Additionally, the returns to education are not equally distributed between the public and private sectors in Pennsylvania. **Table 2** provides computations of the annual earnings of full-time workers in Pennsylvania by educational attainment, comparing the wages and compensation of state and local government employees with private sector employees. These comparisons do not adjust for the many factors accounted for in more refined analyses presented later (such as experience, annual hours worked, race, gender, etc.). Across most levels of education, public sector employees earn less than similarly educated private sector employees.

Average annual *wages* of full-time workers without a high school education are 2% lower in state and local government (\$27,017) than in the private sector (\$27,658). Average total *compensation* of full-time workers without a high school education is 5% more in state and local government (\$38,394) than in the private sector (\$36,612).

High school graduates, on average, earn 2% more in total compensation (\$48,388) working for state and local government than for private employers (\$47,521). For those with some college or an associate's degrees, public employment pays 2% less and 1% less in wages, respectively, and delivers 6% more and 5% more in total compensation.

However, Pennsylvania state and local governments pay substantially less in wages and compensation to their college-educated employees. State and local workers with a bachelor's degree make, on average, 27% less in salary and receive 21% less in total compensation than those in the private sector. There is an even greater gap for workers with master's and professional degrees: In state and local government, workers with a master's degree earn 34% less in salary and receive 29% less in total compensation than in the private sector, while those with a professional degree earn 59% less in salary and receive 57% less in total compensation. For those with a doctorate, the gap

contracts to 29% less in salary and 27% less in total compensation. As noted below, better nonwage benefits and fewer average work hours in the public sector reduce these large public-private sector wage gaps for college-educated labor. Nevertheless, the wage gaps are an important factor in accurate comparisons of public and private sector compensation: Without controls for education, Pennsylvania appears to pay 9% less in annual wages and 3% less in total compensation for full-time employees, a misleading statistic.

## **The growing role of nonwage benefits in employee compensation costs**

Nonwage benefits, once referred to as fringe benefits, account for an increasing portion of employee compensation costs. Nonwage benefit growth is partially fueled by the tax deductibility of health insurance payments and pension contributions, allowing employers to compensate employees without either the employer or employee paying income tax at the time of compensation; a practice sometimes referred to as "tax efficient" compensation. The federal government foregoes \$300 billion annually in income tax revenue to subsidize these benefits (U.S. Congress, Joint Committee on Taxation 2006). Health insurance and pension benefits are particularly attractive to middle- and upper-income employees, who face higher marginal income tax rates.

Organizational size is the single strongest predictor of employee benefit participation and compensation. For example, organizations with 1 to 99 employees have employee pension participation rates of 38%, while organizations with 100 to 499 employees have participation rates of 64%; in organizations with 500 or more employees, 81% of employees participate in retirement plans. The pattern is similar for health insurance benefits: Organizations with 1 to 99 employees have employee participation rates of 43%, while those with 100 to 499 employees have participation rates of 61%. In organizations with 500 or more employees, 71% participate in medical insurance plans. This pattern is replicated for prescription drug and dental care plans (Bureau of Labor Statistics 2009a).

Public sector employees received more of their compensation in the form of nonwage benefits than private

TABLE 3

**Employee compensation component as share of compensation cost,  
by employer type and size, December 2010  
Mid-Atlantic Census Division (Pa., N.Y., N.J.)**

Compensation component	Private industry						State and local government
	1-99 workers			100 workers or more			
	1-99 workers	1-49 workers	50-99 workers	100 workers or more	100-499 workers	500 workers or more	
<b>Total compensation</b>	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
<b>Base wages and salaries</b>	73.0%	73.5%	71.6%	66.7%	68.4%	65.1%	63.0%
<b>Paid leave</b>	<b>6.2%</b>	<b>6.0%</b>	<b>6.8%</b>	<b>8.2%</b>	<b>7.2%</b>	<b>9.2%</b>	<b>8.0%</b>
<i>Vacation</i>	<b>3.0</b>	<b>2.9</b>	<b>3.1</b>	<b>4.1</b>	<b>3.5</b>	<b>4.7</b>	<b>3.0</b>
<i>Holiday</i>	2.1	2.0	2.4	2.4	2.2	2.6	2.2
<i>Sick</i>	0.9	0.8	1.0	1.2	1.0	1.3	2.1
<i>Personal</i>	0.4	0.3	0.4	0.5	0.4	0.6	0.7
<b>Supplemental pay</b>	2.1%	1.8%	2.7%	3.7%	3.2%	4.3%	0.8%
<i>Overtime and premium</i>	<b>0.7</b>	<b>0.6</b>	<b>0.9</b>	<b>0.8</b>	<b>0.9</b>	<b>0.8</b>	<b>0.4</b>
<i>Shift differentials</i>	0.1	0.0	0.1	0.3	0.2	0.4	0.1
<i>Nonproduction bonus</i>	1.3	1.2	1.7	2.6	2.0	3.1	0.2
<b>Nonwage benefits*</b>	<b>18.7%</b>	<b>18.6%</b>	<b>18.8%</b>	<b>21.3%</b>	<b>21.2%</b>	<b>21.4%</b>	<b>28.2%</b>
<b>Insurance</b>	6.9%	6.7%	7.6%	9.4%	9.1%	9.6%	13.5%
<i>Life</i>	0.1	0.1	0.1	0.2	0.2	0.1	0.1
<i>Health</i>	6.4	6.2	7.1	8.8	8.5	9.0	13.2
<i>Short-term disability</i>	0.2	0.2	0.3	0.3	0.3	0.3	0.1
<i>Long-term disability</i>	0.1	0.1	0.1	0.2	0.1	0.2	0.0
<b>Retirement and savings</b>	2.8%	2.9%	2.5%	4.3%	3.9%	4.7%	8.2%
<i>Defined benefit</i>	<b>1.2</b>	<b>1.1</b>	<b>1.3</b>	<b>1.8</b>	<b>1.5</b>	<b>2.0</b>	<b>7.5</b>
<i>Defined contribution</i>	1.6	1.8	1.2	2.5	2.3	2.7	0.7
<b>Legally required benefits</b>	9.0%	9.1%	8.7%	7.7%	8.3%	7.1%	6.5%
<i>Social Security</i>	4.8	4.8	4.9	4.5	4.6	4.4	4.2
<i>Medicare</i>	1.2	1.2	1.2	1.1	1.1	1.1	1.0
<i>Federal unemployment insurance</i>	0.2	0.2	0.1	0.1	0.1	0.0	0.0
<i>State unemployment insurance</i>	1.1	1.1	1.0	0.7	0.9	0.5	0.3
<i>Workers' compensation</i>	1.8	1.8	1.5	1.3	1.6	1.0	1.1
<b>Total benefits**</b>	<b>27.0%</b>	<b>26.5%</b>	<b>28.4%</b>	<b>33.3%</b>	<b>31.6%</b>	<b>34.9%</b>	<b>37.0%</b>

\* CPS definition of benefits, which only includes benefits that are not included in W-2 wages, or workers' regular paychecks. Specifically, insurance, retirement, and legally required benefits are included. BLS categorizes paid leave and supplemental pay as part of benefits, but since those items are paid out in regular paychecks they are incorporated in the CPS measure of wages. That is why adjustments to the CPS to capture total compensation are made using nonwage benefits.

\*\* BLS definition of benefits, which includes both non-wage benefits such as insurance, retirement, and legally required benefits, but also paid leave and supplemental pay, which BLS categorizes as benefits but CPS does not.

**SOURCE:** Author's analysis of March Current Population Survey (U.S. Census Bureau) and Employer Costs for Employee Compensation Survey (Bureau of Labor statistics). See appendix for more information.

sector workers. **Table 3** provides the distribution of employer costs of compensation in December 2010. The Employer Costs for Employee Compensation (ECEC) survey provides the only valid and reliable estimate in the United States of benefit costs incurred by employers. It is conducted quarterly by the Bureau of Labor Statistics. The ECEC includes data from both private industry and state and local government, and provides data for private employers by firm size. Our study uses these ECEC sample estimates to calculate relative nonwage benefit costs for private and public employees in Pennsylvania. (A more detailed description is provided in the data appendix.) Nonwage benefits costs range from 18.6% of total compensation in small private companies (fewer than 50 employees) to 21.4% in private companies with 500 or more employees, compared with 28.2% for state and local government employees. The compensation data reveal considerable variation within the private sector by organization size and between the private sector and state and local government. However, large private sector employers most closely resemble public employers in the proportion of compensation devoted to nonwage benefits.

Compared with private sector employees, public employees not only receive more of their compensation in nonwage benefits, but also a different proportion of wages and benefits spread among paid leave, supplemental pay, insurances, retirement security, and legally mandated benefits. Although overall paid leave costs are similar, public employees receive greater sick leave compensation, while most private sector employees (those in companies with 50 or more workers) receive more vacation pay. And although holiday and personal time compensation is similar, public employees receive less than 1% of compensation in supplemental pay, whereas private sector employees in large organizations (500 or more workers) gain 4.3% of their earnings from supplemental pay, particularly bonuses.

On the other hand, public employees receive considerably more of their compensation from employer-provided health insurance. Health insurance accounts for 13.2% of state and local government employee costs but only 8.8% of employee costs in private companies with 100 or more employees. Retirement benefits also account for a substantially greater share of public employee com-

pensation costs: 8.2%, compared with 4.3% in private sector organizations with 100 or more employees.

As with all nonwage benefits, the difference between private and public employee compensation costs shrinks as the private organization in comparison increases in size. Legally required benefits account for a greater share of employee compensation costs in smaller firms; as organizational size increases, these benefit costs decrease in relative degree. In local and government employment, legally required benefits represent a substantially smaller share of nonwage benefit costs for several reasons. First state and local governments do not participate in the federal unemployment system. Second, since state and local governments offer more stable employment than the private sector, they contribute proportionally less to the state unemployment insurance trust fund because an employer's unemployment insurance contribution rate is partially based on the extent to which the employer has tapped the fund. Third, not all public employees in Pennsylvania participate in Social Security.

In summary, state and local government workers receive more of their compensation in employer-provided nonwage benefits, specifically in the form of health insurance and retirement benefits. Public employees receive a smaller share of their wages in the form of supplemental pay, and they save employers the costs of some benefits (financed through payroll taxes, such as workers' compensation and unemployment insurance) that are legally required to be paid by private sector employers. To determine whether public employees are overpaid, this analysis examines whether the higher nonwage benefits paid to public employees in Pennsylvania offset the lower wages they are paid. That is the question we turn to next.

## **Assessing private and public relative pay and benefits**

To assess relative public and private employee costs we will use the microdata from the IPUMS-CPS, which provides a sample of Pennsylvania employees broken down by demographic characteristics, including full-time status, education level, years of experience, age, gender, race, disability, citizenship, employer organizational size, and industry. Compared with Pennsylvania's private sector employees, its state and local government employees, on

**TABLE 4**

**Wages and compensation of public employees relative to private employees in Pennsylvania**

<b>Pennsylvania employees</b>	<b>Employees' annual wages</b>	<b>Employees' hourly wages</b>	<b>Employees' annual total compensation</b>	<b>Employees' hourly total compensation</b>
<i>All public employees</i>	-12.1% ***	-8.7% ***	-5.4% ***	-2.1%
<i>State government employees only</i>	-15.0 ***	-10.2 ***	-8.5 **	-3.8
<i>Local government employees only</i>	-10.6 ***	-8.0 ***	-3.9 *	-1.3
prob 0<.0001 *** <.01 ** <.05 *				

Observations = 9,681 Total = 1,368 public employees.

**Note:** Differential between all state or local public employees and private employees after controlling for demographic characteristics (full-time, education, years of experience, gender, race, citizenship, and organizational size). See data appendix for details.

**SOURCE:** Author's analysis of March Current Population Survey (U.S. Census Bureau) and Employer Costs for Employee Compensation Survey (Bureau of Labor Statistics). See data appendix for more information..

average, are more experienced (22.6 years compared with 21.8 years); are more likely to be female (56% compared with 44%); and work fewer weekly hours (42.0 versus 43.3). They also are equally likely to be black (10.1% compared with 10.0%), but are less likely to be Asian (0.6% compared with 2.3%) or Hispanic (1.7% compared with 4.4%). Public employees are more likely to be citizens (99.1% compared with 96.4%), and are slightly more likely to be disabled (1.2% compared with 1.0%) than private sector employees (King et al. 2009).

The Employer Costs for Employee Compensation data allow us to use the statistics on the nonwage benefit share of compensation by employer size to calculate total employer compensation costs for each employee in the sample. **Table 4** reports the results of eight earnings equations comparing Pennsylvania's state and local government employee earnings with similar private sector employees. Columns one and two provide estimates for employee wages. Column one shows that annual wage earnings of all Pennsylvania state and local government employees are a statistically significant 12.1% lower than those of comparable private sector employees, reflecting annual wage earnings that are a statistically significant 15.0% lower for state government employees and a statistically significant 10.6% lower for local government employees. Column two shows that the hourly wages of Pennsylvania public

employees are a statistically significant 8.7% lower than those of comparable private sector employees (10.2% lower for state government employees, and 8.0% lower for local government employees).

When we compare total compensation of Pennsylvania public with its private employees, that earnings gap persists. Columns three and four report the estimates for total compensation. Column three shows that Pennsylvania public employees' annual total compensation costs are a statistically significant 5.4% lower than that for comparable private sector employees, with state employees earning 8.5% less and local government employees earning 3.9% less in annual compensation than comparable private sector employees. As shown in column four, Pennsylvania public employees earn a statistically insignificant 2.1% less in hourly compensation. State government hourly compensation is 3.8% less and local government hourly compensation is 1.3% less, but neither of these results is statistically different from zero. In short, Pennsylvania state and local public employees cost essentially the same as comparable private sector workers.

**Conclusion: Pennsylvania's public employees are *not* overpaid**

The earnings estimates indicate that state and local government employees in Pennsylvania are not overpaid.

Comparisons controlling for education, experience, hours of work, organizational size, gender, race, ethnicity, citizenship, and disability show a pay penalty for public employee compensation costs. Even though Pennsylvania's public employees receive better benefits, they more than pay for them in lower wages. In fact, a standard earnings equation that controlled for education, experience, and other variables produced what some may feel is a surprising result: Full-time employees of public sector organizations are undercompensated by 5.4% compared with similar private sector employees. We observed, however, that public employees work fewer hours, particularly, college-educated employees. An earnings equation controlling for work hours of full-time employees found that public employees are undercompensated by 2.1% when compared with their private sector counterparts. These comparisons account for the substantially different approaches to staffing and compensation between the private and public sectors. Specifically, occupational categories in the public sector require more educated employees, while public compensation practices favor a relatively higher proportion of nonwage benefits.

On average, Pennsylvania public sector employees are more highly educated than private sector workers; 53% of full-time Pennsylvania public sector employees have at least a four-year college degree, compared with 32% of full-time private sector workers. Pennsylvania state and local governments pay significantly less than private employers for college-educated labor. These earnings differences—which are greatest for professional employees such as lawyers and doctors—may indicate opportunities for cutting costs by shifting some work now performed under professional outsourcing contracts to lower-cost public employees.

Nonwage benefits are allocated differently in the public and private sectors in Pennsylvania. State and local government employees receive a higher portion of their compensation in the form of employer-provided nonwage benefits, and the mix of benefits is different from that received in the private sector. Public employers allot 28.2% of employee compensation costs to nonwage benefits, whereas private employers devote between 18.6% and 21.4% of compensation to nonwage benefits. Specifically, public employers provide more of employee compensation in the form of health insurance and pension

benefits. Health insurance accounts for 13.2% of state and local government compensation but only 6.2% to 9.0% of private sector compensation. Retirement benefits also account for a substantially greater share of public employee compensation costs—8.2% compared with 2.5% to 4.7% in the private sector. Public employees also continue to participate in defined-benefit plans managed by the state, while private sector employers have often switched to defined-contribution plans, particularly 401(k) plans, or have simply stopped providing retirement compensation altogether. On the other hand, public employees receive considerably less supplemental pay and less vacation time, and public employers contribute significantly less to legally mandated benefits.

In summary, simply comparing private and public employee nonwage *benefits* leads to an obvious but incorrect conclusion that public employees are overcompensated.

Similarly, simple comparisons of private and public sector average *earnings* are ill-informed. Many estimates reported in the press that show that public employees' earnings are higher than private sector workers fail to control for education, experience, hours of work, and important demographic variables. Such comparisons are inherently misleading because they do not compare apples to apples: Specifically, they do not control for the substantially higher level of education in the public sector. When we do make the appropriate comparisons, any premium for public employees disappears.

Focusing on one or another component of compensation for comparison misses the essential point that different employee groups have different preferences and respond differently to various mixes of compensation. For example, young people have a greater preference for cash, while older workers prefer retirement benefits. What citizens need to focus on in this debate is the cost of comparable levels of total compensation, controlling for education, experience, hours of work, and other characteristics that influence employee productivity. When we look at overall compensation we learn that Pennsylvania public employees pay for their better nonwage benefits through lower wages and salaries than comparable private sector employees.

Union status was omitted from this study on earnings comparisons. This means that, in essence, we are statis-

tically comparing unionized public sector workers with all private sector workers—both union and nonunion—rather than with their union counterparts. Unionized private sector workers have both better pay and higher nonwage benefits, of course, making our standard of comparison a very conservative one. It is alleged that public employee unions and collective bargaining have produced an overcompensated workforce. Eligible public employees are highly unionized in Pennsylvania (approximately 53% of public employees are covered by a labor agreement). Public employment critics have claimed that unions are the source of supposed excessive compensation. It is an interesting and provocative hypothesis, but its main premise has been refuted by the research reported in this study—state and local government employees are not excessively compensated. This finding has been replicated nationally by two other studies (Schmitt 2010; Bender and Heywood 2010). Alternatively, high unionization rates may be a response to monopsony power exercised by government over many critical occupations, where employees have no viable labor-market alternatives to government employment.

Rather than a cause of excessive compensation, unionization is a counterbalance to downward pressure on compensation. It is well known that taxpayers oppose higher taxes and thus exert considerable pressure on elected representatives to resist increases in compensation, creating a formidable incentive and opportunity to hold govern-

ment pay below market. Unionization represents a viable legal response to employer labor market power.

Public sector employees' compensation is neither the cause of, nor can it be the solution to, the state's financial problems. Only an economic recovery can begin to plug the hole in the state's budget. Unfortunately, the state's own current budget balancing efforts may prolong the economic downturn by increasing unemployment and reducing demand for products and services. Thousands of Pennsylvania public employees have lost jobs, and more will follow, causing considerable pain and disruption for their families. Other public employees will have their wages frozen and benefits cut. Not because they did not do their jobs, or because they perform services that are no longer needed, or because they are overpaid. They too will join the list of millions of hard-working innocent victims of a financial system run amok and an economy operating far below full employment. They do not deserve our condemnation.

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## Data appendix

This study uses the Integrated Public Use Microdata Series (IPUMS) of the March Current Population Survey (CPS). The CPS is a monthly U.S. household survey conducted jointly by the U.S. Census Bureau and the Bureau of Labor Statistics. The March Annual Demographic File and Income Supplement is the most widely used source for earnings used by social scientists (King et al. 2009). This sample provides organizational size, a critical variable for our analysis of benefits. The sample is restricted to private sector and public sector state and local employees and excludes federal employees, the self-employed, and part-time, agricultural, and domestic workers. The IPUMS-CPS identifies an employee's fulltime status, education level, experience level as a function of age minus years of education plus five, gender, and race; and an employer's organizational size, and industry. The IPUMS-CPS sample was selected for this analysis because the March CPS Annual File provides information on organizational size, not provided by the larger CPS sample in the Merged Outgoing Rotation Groups (MORG).

The Employer Costs for Employee Compensation (ECEC) data, part of the National Compensation Survey, was used to calculate total compensation costs as a markup on wages. Because the survey's method of data collection

is expensive, the sample is not sufficiently large enough to provide reliable estimates of state-level benefits costs. We would have preferred to analyze compensation costs by each state. The Bureau of Labor Statistics did share their unpublished sample estimates for 10 major occupations by organizational sizes for private employers and state and local government in the Mid-Atlantic Census division. This study uses the ECEC sample estimates to calculate relative nonwage benefit costs for each private and public employee in the sample. It calculates the relative benefit markup for each private sector employee based on the size of the employing organization and the employee's occupation. State and local government employees' wages were similarly marked up by an occupational benefit weight calculated using the ECEC data. It is assumed that when employees share information about their earnings they do not distinguish paid time off from time worked in salary data. Therefore paid time off is not included in the markup. CPS wages also include supplemental pay (Table A1). Specifically, this is a markup of total compensation relative to W-2 wages.

The IPUMS CPS sample for March 2007 to 2010 was used for the estimates, covering pay for 2006 through 2009. The sample size was 9,681 total observations and 1,368 public employee observations.

TABLE A 1

### Wage-to-compensation ratio in Pennsylvania

	Private employers				State and local government
	All	1 to 99	100-499	500+	
<i>All workers</i>	1.20883	1.19949	1.21474	1.21352	1.28402
<b>Occupational Markups</b>					
<i>Management, business, and financial</i>	1.16896	1.16035	1.17126	1.19138	1.23860
<i>Professional and related</i>	1.19268	1.17850	1.19208	1.17485	1.26650
<i>Sales and related</i>	1.24195	1.19642	1.24556	1.27763	1.33138
<i>Office and administrative support</i>	1.16613	1.16509	1.18467	1.14337	1.32540
<i>Service</i>	1.22884	1.21244	1.23487	1.24719	1.32429
<i>Construction</i>	1.31492	1.31164	1.32702	1.27133	1.29269
<i>Installation, maintenance, and repair</i>	1.23941	1.22476	1.25955	1.25794	1.28915
<i>Production</i>	1.23721	1.20963	1.24668	1.26264	1.30648
<i>Transportation and material moving</i>	1.25439	1.24523	1.26162	1.25919	1.33068

**SOURCE:** Author's analysis of March Current Population Survey (Census Bureau) and Employer Costs for Employee Compensation Survey (Bureau of Labor Statistics).

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## Endnotes

1. A standard Mincer earnings equation using CPS data for full-time workers in Pennsylvania was estimated to produce the estimates of the returns to education.

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