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## ARE MISSOURI PUBLIC EMPLOYEES OVERCOMPENSATED?

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### Executive summary

This paper investigates whether Missouri public employees are overpaid at the expense of Missouri taxpayers. The research is timely. Legislative battles are under way in several state capitals in the Midwest, as governors seeking to close state budget gaps propose restricting not only government workers' wages and benefits but their collective bargaining rights. Proponents of such measures argue that they are justified because public employees are overpaid compared with workers in the private sector. While such drastic measures are not heading for a vote in Missouri, other actions being taken imply that public employees are overcompensated. For example, Gov. Jay Nixon plans to reduce the state workforce again in 2011, after cutting 3,300 state jobs in 2010 (Noble and Kraske 2011). Additionally, a pension reform bill passed last summer now requires newly hired state workers to contribute 4% of their salaries to the state pension system (Hemingway 2010).

However, the data indicate that state and local government employees in Missouri are not overpaid. Comparisons controlling for education, experience, organizational size, gender, race, ethnicity, citizenship, and disability reveal that employees of both state and local governments in Missouri earn less than comparable private sector employees. On an annual basis, full-time state and local government employees in Missouri are undercompensated by 15.7% compared with otherwise similar private sector workers. This compensation disadvantage is just slightly smaller but still significant when hours worked are factored in. Full-time public employees work fewer annual hours, particularly employees with bachelor's, master's, and professional degrees (because many are teachers or university professors). When comparisons are made controlling for the difference in annual

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hours worked, full-time state and local government employees are undercompensated by 15.6%, compared with otherwise similar private sector workers. To summarize, our study shows that Missouri public employees earn 15.6% less in total compensation per hour than comparable full-time employees in Missouri's private sector.

These compensation comparisons account for important factors that affect earnings, the most important of which is the educational levels of public employees. When comparing public and private sector pay, it is essential to consider the much higher levels of education required by occupations in the public sector. As a consequence of these requirements, Missouri public sector workers are on average more highly educated than private sector workers; 53% of full-time Missouri public sector workers hold at least a four-year college degree, compared with 27% of full-time private sector workers. Missouri state and local governments pay college-educated employees 37% less in annual compensation, on average, than private employers. The compensation differential is greatest for professional employees, lawyers, and doctors. On the other hand, the public sector appears to set a floor on compensation, which benefits less-educated workers. The 3% of state and local government workers with less than high school educations earn more than comparably educated workers in the private sector.

State and local government employees also receive a higher portion of their compensation in the form of employer-provided nonwage benefits, and the mix of those benefits is different from those provided in the private sector. Public employers devote, on average, 24.5% of employee compensation expenses to nonwage benefits, whereas private employers devote between 19.2% and 22.1% to those benefits. Public employers devote a larger share of their compensation packages to health insurance and pension benefits than do private employers. Health insurance accounts for 11.1% of state and local government compensation compared with 6.5% to 9.4% of private sector compensation. Retirement benefits account for 6.4% of state and local government compensation costs compared with 3.2% to 5% in the private sector. Social Security costs are relatively lower for public employers than private employers because some public employees are

not in the Social Security system. Most public employees also continue to participate in defined-benefit plans managed by the state, while most private sector employers have switched to defined-contribution plans, particularly 401(k) plans. 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 financed through payroll taxes.

Although some nonwage benefits are more generous in the public sector, it is a serious error to imagine that comparability requires that each and every element of compensation is the same. What is important is that considering both the cost of employer-provided nonwage benefits and direct wages, public sector workers in Missouri earn less in annual or hourly compensation than they would earn in the private sector.

## **Introduction: The challenge to public employee compensation**

Since taking office, the administration of Gov. Jay Nixon has reduced the state workforce and, with the state legislature, cut benefits—actions presented as the antidote to the state's budget deficit and implying that state employees are overcompensated. These actions beg the question: Does a balanced, systematic evaluation show that state and local government employees are overpaid to the detriment of Missouri taxpayers? This research seeks to methodically and deliberately answer that question.

## **Making a comparison: Are Missouri public employees overpaid?**

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

When determining the groups to be compared, the standard of comparison for public employees is usually private sector workers with similar levels of education and experience and similar hours of work. However, this standard, based on comparing similar workers, is inadequate to the task.

While we ideally would compare public sector workers with private sector workers performing similar work, it is not possible 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 private sector analogues. Even public and private teaching differ significantly. Public schools accept all students, while private schools are sometimes 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. Analyses based on comparisons of personal characteristics and labor market skills capture what comparable work studies have shown to be the most important and salient attributes affecting compensation.

Prior research reveals that education level is the single most important earnings predictor. Education helps foster work-relevant skills. People invest heavily in their own and their children’s education, by paying for housing in communities with good schools and funding attendance at schools, colleges, and universities.

Empirically, experience follows education in advancing earnings. People learn by doing and by 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 are also widely found to affect compensation. Here, an intermingling of productivity-related human capital differences and labor market disadvantages stemming from historical patterns of discrimination affect compensation. We control for all these factors in our study.

When analyzing hours of work, most studies exclude part-time workers; because their hours vary, 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 employees, who represent more than 80% of Missouri’s labor force (King et. al 2009), and by controlling 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.

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 U.S. household survey conducted jointly by the U.S. Census Bureau and the Bureau of Labor Statistics (a more detailed description of the IPUMS-CPS is provided in the data appendix). An employer’s organizational size greatly influences employee earnings; it produces a basic wage gap of 35%. Large firms with more than 500 employees comprise less than one-third of 1% of all firms but provide jobs for nearly half of all private sector workers (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 benefits are included in the comparison. The private sector has a relatively small number of large organizations, whereas the public sector has relatively few small organizations. More than 65% of *all* employees in the state work in organizations with more than 100 employees, whereas 84% of *public* employees in Missouri work in organizations with more than 100 employees. (U.S. Census Bureau 2006).

In summary, our study compares workers with similar “human capital” and 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 issue than it initially appears. Comparing wages is insufficient because employee compensation increasingly includes employer-provided nonwage benefits. Regardless of how employees are paid—whether in wages or benefits—the essential issue in making a comparison is what it costs a private or public sector entity to employ an individual. Employer costs may include not only wages but paid time off for holidays, vacations, and personal and sick days; supplemental pay including overtime and bonuses; insurances, particularly health insurance but also life and disability insurance; retirement plan contributions, defined benefits or defined contributions, 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 considered when computing the costs of employing an individual worker.

However, the complexities do not end there. The more difficult issue is finding the appropriate data to make the comparison.

To obtain wage and demographic data, this study uses the IPUMS-CPS. The March Annual Demographic File and Income Supplement of the CPS is the source of earnings data most widely used by social scientists (King et al. 2009). For the purpose of comparability, the Missouri data excludes self-employed, part-time, agricultural, and domestic workers. We enhance the reliability of the sample by expanding the number of observations by six years of data, covering 2004 through 2009.

There is only one reliable source of benefit information in the United States: 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 employees with benefits,

in part because they can spread administrative costs over a larger group and more readily diversify insurance risks over a larger group. State and local governments resemble larger private employers. The compensation cost comparison that follows controls for employer size.

## Education level: the most important factor in earnings

Public employees in the state of Missouri are substantially more educated than their private sector counterparts. Approximately 53% of full-time Missouri public employees hold at least a bachelor's degree compared with 27% of full-time employees in the private sector. Higher educational levels 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> A high school graduate, all else equal, earns on average 22% more than someone without a high school diploma. The education premium jumps to 41% on average if the worker attended some college, and increases to 54% if the worker holds an associate's degree. Completing college with a bachelor's degree yields a 78%

TABLE 1

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

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%	6%	8%	6%	5%	3%
<i>High school</i>	22	36	44	37	33	21
<i>Some college</i>	41	21	21	19	22	14
<i>Associate's degree</i>	54	10	7	10	10	9
<i>Bachelor's degree</i>	78	19	14	20	21	27
<i>Professional degree</i>	143	1	1	2	1	2
<i>Master's degree</i>	89	6	4	4	7	21
<i>Doctorate</i>	123	1	0	2	1	4
<b>Total **</b>		100	100	100	100	100
<b>College and more</b>		27%	19%	27%	30%	53%

\* For all Missouri 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.

**TABLE 2**

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

Full-time*	Annual wage earnings		Difference (public over private)**	
	Private	Public	Dollars	Percent
<i>Less than high school</i>	\$25,416	\$30,327	\$4,910	19%
<i>High school</i>	35,822	30,578	-5,243	-15
<i>Some college</i>	41,830	33,721	-8,109	-19
<i>Associate's degree</i>	47,776	36,876	-10,900	-23
<i>Bachelor's degree</i>	67,353	40,761	-26,593	-39
<i>Professional degree</i>	154,173	57,035	-97,138	-63
<i>Master's degree</i>	78,437	51,971	-26,465	-34
<i>Doctorate</i>	97,631	82,924	-14,707	-15
<i>All</i>	\$48,265	\$41,175	-\$7,089	-15%

Full-time*	Total compensation		Difference (public over private)**	
	Private	Public	Dollars	Percent
<i>Less than high school</i>	\$35,281	\$44,220	\$8,939	25%
<i>High school</i>	49,097	43,234	-5,864	-12
<i>Some college</i>	56,651	47,721	-8,930	-16
<i>Associate's degree</i>	63,855	51,852	-12,003	-19
<i>Bachelor's degree</i>	89,028	56,450	-32,578	-37
<i>Professional degree</i>	203,782	78,362	-125,420	-62
<i>Master's degree</i>	102,128	70,890	-31,238	-31
<i>Doctorate</i>	125,454	113,163	-12,292	-10
<i>All</i>	\$64,748	\$57,196	-\$7,553	-12%

\* 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.

premium. Obtaining a master's degree yields an average 89% pay premium and a doctorate produces a 123% return, while earning a professional degree such as law or medicine increases average earnings by 143% over failing to complete high school.

The public sector employs more highly educated workers. While private sector organizations rely substantially more on educated labor as they become larger, smaller private sector organizations employ more workers who lack more than a high school education than larger

private employers or state and local government. Approximately 3% of state and local government workers lack a high school education, compared with 6% of employees of private firms and 8% of employees of private firms with 1 to 99 employees.

The returns to education, however, are not equally distributed between the public and private sectors in Missouri. **Table 2** provides computations of the annual earnings of full-time workers in Missouri by educational attainment, comparing private sector and state/local sector

employee wages and compensation. 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.). These comparisons do reflect the floor on earnings established in the public sector, which allows individuals without a high school education (3% of state/local workers) to earn more than their private sector counterparts (Asher and DeFina 1999).

Notwithstanding the comparative benefits of public sector employment for those without a high school diploma, college educated public sector employees earn considerably less than similarly educated private sector employees. On average, annual wages of the full-time worker without a high school education are 19% higher in state and local government (\$30,327) than in the private sector (\$25,416). Furthermore, average annual total compensation for a full-time worker without a high school education is 25% greater in state and local government (\$44,220) than in the private sector (\$35,281). But with high school graduates, the earnings and compensation premium in the public versus private sector reverses. Average annual wages for high school graduates working for state and local government are 15% lower (\$30,578) than for those working for private employers (\$35,822), while total compensation for employees with a high school degree is 12% lower in state and local government (\$43,234) than in the private sector (\$49,097). Average wages for workers with some college or an associate's degree are 19% lower and 23% lower, respectively, in state and local government than in the private sector, while total compensation for those workers is 16% lower and 19% lower, respectively, in state and local government than in the private sector.

This earnings gap between public and private sector employees becomes more significant as workers gain more education. On average, the private sector pays workers with four-year college degrees and advanced degrees substantially more in the form of higher wages and compensation than does the public sector. State and local workers with a bachelor's degree make 39% less in salary and 37% less in total compensation, while those with a professional degree make 63% less in salary and 62% less in total compensation. In state and local government, workers with a master's degree earn on average 34% less in salary

and 31% less in total compensation, while those with a doctorate earn 15% less in salary and 10% less in total compensation. (As noted later, fewer average work hours in the public sector than the private sector reduce these large private sector wage premiums for college-educated labor.)

## **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. 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 nonwage benefit participation and compensation. For example, employee participation in retirement plans varies considerably by organization size. 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 in medical insurance of 43%, while organizations with 100 to 499 employees have participation rates of 61%. In organizations with 500 or more employees, 71% of employees 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 sector workers. **Table 3** provides the distribution of employer

**TABLE 3**

**Percent of employer costs per hour worked for employee compensation:  
West North Central Census Division**

Compensation component	Private industry							State and local government
	All private	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%	100.0%
<b>W-2 wages and salaries</b>	78.6%	80.5%	80.8%	79.4%	79.3%	80.4%	77.9%	75.5%
<b>Base wages and salaries</b>	68.7%	73.5%	73.9%	71.9%	69.2%	71.5%	66.3%	67.9%
<b>Paid leave</b>	7.2%	5.1%	5.0%	5.6%	7.3%	6.2%	8.7%	6.9%
<i>Vacation</i>		2.7	2.7	2.9	4.1	3.6	4.8	2.6
<i>Holiday</i>		1.7	1.6	1.8	2.1	1.8	2.6	2.2
<i>Sick</i>		0.6	0.6	0.7	0.8	0.7	1.0	1.8
<i>Personal</i>		0.1	0.1	0.2	0.2	0.1	0.3	0.3
<b>Supplemental pay</b>	2.7%	1.9%	1.9%	1.9%	2.8%	2.7%	2.9%	0.7%
<i>Overtime and premium</i>		0.9	0.9	1.1	1.0	1.0	0.9	0.4
<i>Shift differentials</i>		0.1	0.0	0.1	0.4	0.3	0.4	0.1
<i>Nonproduction bonus</i>		0.9	0.9	0.6	1.4	1.4	1.5	0.2
<b>Nonwage benefits*</b>	21.4%	19.5%	19.2%	20.6%	20.7%	19.6%	22.1%	24.5%
<b>Insurance</b>	9.2%	7.2%	6.9%	8.0%	9.1%	8.4%	10.0%	11.6%
<i>Life</i>		0.1	0.1	0.1	0.2	0.2	0.2	0.2
<i>Health</i>		6.8	6.5	7.6	8.5	7.8	9.4	11.1
<i>Short-term disability</i>		0.1	0.1	0.2	0.2	0.1	0.3	0.0
<i>Long-term disability</i>		0.1	0.1	0.1	0.3	0.3	0.2	0.3
<b>Retirement and savings</b>	4.3%	3.3%	3.2%	3.5%	4.2%	3.6%	5.0%	6.4%
<i>Defined benefit</i>		1.4	1.5	1.3	1.7	1.2	2.3	5.0
<i>Defined contribution</i>		1.9	1.8	2.2	2.5	2.4	2.6	1.4
<b>Legally required benefits</b>	7.9%	9.1%	9.1%	9.2%	7.4%	7.6%	7.1%	6.5%
<i>Social Security</i>		4.9	4.9	4.9	4.5	4.4	4.5	4.1
<i>Medicare</i>		1.2	1.2	1.2	1.1	1.2	1.1	1.1
Social Security and Medicare		6.1	6.1	6.1	5.6	5.6	5.7	5.2
<i>Federal unemployment insurance</i>		0.2	0.2	0.2	0.1	0.1	0.1	0.0
<i>State unemployment insurance</i>		0.9	0.9	0.9	0.6	0.6	0.5	0.1
<i>Workers' compensation</i>		1.9	1.9	2.0	1.2	1.3	0.9	1.1
<b>Benefits**</b>		26.5%	26.1%	28.1%	30.8%	28.5%	33.7%	32.1%

\* 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 nonwage 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 (Census) and Employer Costs for Employee Compensation Survey (BLS). See data appendix for more information.

costs of compensation in June 2010. The Employer Costs for Employee Compensation survey provides the only valid and reliable estimate in the United States of nonwage 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 Missouri. (A more detailed description is provided in the data appendix.) Nonwage benefit costs range from 19.2% of total compensation for employees of small private companies (fewer than 50 employees) to 22.1% for employees of the largest private companies (500 or more employees), compared with 24.5% 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 benefits.

Compared with private sector employees, public employees not only receive somewhat more of their compensation in benefits, but also a different proportion of benefits spread among paid leave, supplemental pay, insurances, retirement security, and legally mandated benefits. Employees in private organizations with 100 or more employees receive more paid leave than similar state and local government employees, particularly more vacation pay. Public employees also receive less supplemental pay—(less than 1% of compensation), than private sector employees in large organizations (500 or more employees), who gain 2.9% 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 11.1% of state and local government employee compensation costs but only 8.5% of private-sector compensation costs in organizations with 100 or more employees. Retirement benefits also account for a substantially greater share of public employee compensation costs: 6.4% compared with 4.2% in private sector organizations with more than 100 employees. This difference is partially offset by

savings in the public sector because not all public employees are in the Social Security system (therefore employer payroll taxes are lower), as discussed next.

As with all benefits, the differences between private and public employees' compensation costs shrink as the private organization in comparison increases in size. Legally required benefits account for a greater share of small employers' compensation costs; 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 benefit costs for several reasons. First, some public employees do not participate in Social Security, which partially explains their higher pension costs.<sup>2</sup> These employees are not eligible for Social Security benefit payments at retirement unless they chose to work in another job that is covered by Social Security. Second, state and local governments do not participate in the federal unemployment system. Third, since state and local governments offer more stable employment than the private sector, they contribute proportionally less to the state unemployment insurance trust fund (an employer's unemployment insurance contribution rate is partially based on the extent to which the employer taps the fund).

In summary, state and local government workers receive more of their compensation in employer-provided benefits. Specifically, public employers provide a greater share of employee compensation in the form of health insurance and retirement benefits. Public employees receive a lesser share of their wages in the form of supplemental pay and consume less in costs for legally required benefits (financed through payroll taxes, such as worker compensation, unemployment insurance) than private sector employees. Thus, to determine whether public employees are overpaid, this analysis asks whether higher benefit costs more than offset the lower wages paid to employees in Missouri. That is the question we turn to next.

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

To assess relative public and private employment costs, we will use the microdata from the IPUMS-CPS, which provides a sample of Missouri employees broken down by demographic characteristics such as full-time status,



TABLE 4

Wage and compensation differentials in Missouri

2010 CPS	Employees' annual wages	Employees' hourly wages	Employees' annual total compensation	Employees' hourly total compensation
<i>Missouri public employee</i>	-20.1% ***	-20.0% ***	-15.7% ***	-15.6% ***
<i>State government employee</i>	-28.1 ***	-27.6 ***	-24.3 ***	-23.9 ***
<i>Local government employee</i>	-14.8 ***	-14.9 ***	-10.0 ***	-10.2 ***
prob 0<.0001 *** <.01 ** <.05 *				

Observations = 5414.

**Note:** Differential between all state or local public 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..

education level, years of experience, age, gender, race, disability, citizenship, employer organizational size, and industry. Compared with Missouri private sector employees, Missouri state and local government employees on average are slightly more experienced (21.5 years compared with 21.2 years), more likely to be female (58% versus 45%), and work slightly more weekly hours (43.6 versus 43.1). State and local government employees are also less likely to be black (10.4% versus 11.1%), Hispanic (1.6% versus 2.2%), or Asian (1.2% versus 1.7%); are more likely to be citizens (99% versus 97.6%); and are slightly more likely to be disabled (1.7% versus 1.4%) than private sector employees (King et al. 2009).

The Employer Cost of Employee Compensation data allow us to use the statistics on the 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 12 equations estimating Missouri state and local government employee earnings compared with similar Missouri private sector employees. Columns one and two provide estimates for employee wages. Column one shows that annual wage earnings of Missouri public employees (state and local government employees) are a statistically significant 20.1% lower than those of comparable private sector employees. Another estimate, separating state and local employees, reveals

that annual wage earnings for *state* government employees are 28.1% lower and for *local* government employees are 14.8% lower than for private sector employees. Column two shows that hourly wages of Missouri public employees are 20% lower than those of comparable private sector employees (reflecting wages that are 27.6% lower for state government employees and 14.9% lower for local government employees).

When we compare total compensation of Missouri public and private employees, the earnings gap narrows but does not disappear. Columns three and four report the estimates for total compensation costs. Reported in column three, Missouri public employees' annual total compensation costs are 15.7% lower than those of comparable private sector employees (reflecting total compensation costs that are 24.3% lower for state employees and 10% lower for local government employees). When we compare hourly estimates, the total compensation gap narrows only slightly but remains both economically and statistically significant. Missouri public employees' hourly compensation costs are 15.6% lower than those of comparable private sector workers (reflecting total hourly compensation costs that are 23.9% lower for state government employees and 10.2% lower for local government employees).

In summary, these estimates show that Missouri state and local government employees earn significantly less in

total hourly compensation than comparable Missouri private sector workers. Given the relatively large sample size and the statistical power it permits, this analysis concludes that Missouri public employees are undercompensated in relation to comparable private sector employees.

## **Conclusion: Missouri public employees are not overpaid**

The earnings equation estimates indicate that state and local government employees in Missouri are not overpaid. Rather, local and state public employees are undercompensated. When we make comparisons controlling for education, experience, hours of work, organizational size, gender, race, ethnicity, citizenship, and disability, both state and local public employees earn lower wages and receive less in compensation (including all benefits) than comparable private sector employees.

The data analysis also reveals substantially different approaches to staffing and compensation between the private and public sectors, reflecting the different occupational categories within each sector. On average, Missouri public sector workers are more highly educated than private sector workers; 53% of full-time Missouri public sector workers hold at least four-year college degrees compared with 27% of full-time private sector workers. For college-educated labor, Missouri state and local governments pay significantly less than private employers. The earnings differential is greatest for professional employees such as lawyers and doctors. These earnings differences may create opportunities for cutting costs by reviewing professional outsourcing contracts to examine what work might be performed by lower-cost public employees. On the other hand, the public sector appears to pay more for less educated workers by setting a floor on compensation, which particularly improves the earnings of workers without high school educations when compared with similarly educated workers in the private sector, where the earnings floor has collapsed (Lee 1999).

Benefits are allocated differently in the public and private sectors in Missouri. State and local government employees receive a higher portion of their compensation in the form of employer-provided benefits, and the mix of benefits differ from those in the private sector. Public

employers allot 24.5 % of employee compensation costs to benefits, whereas private employers devote 19.2% to 22.1% of compensation to benefits. Public employers provide more of their compensation in health insurance and pension benefits. Health insurance accounts for 11.1% of state and local government compensation costs but only 6.5% to 9.4% of private sector compensation. Retirement benefits also account for a substantially greater share of public employee compensation costs—6.4% compared with 3.2% to 5% in the private sector, although public sector employers save on Social Security payroll taxes because some of their employees are not covered. Public employees also continue to participate in defined-benefit plans managed by the state, while private sector employers have switched to defined-contribution plans, particularly 401(k) plans.

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.

A standard earnings equation produces what some may consider a surprising result: full-time state and local employees in Missouri are underpaid by 20.1%. We observed, however, that public employees work fewer hours, particularly employees with bachelor's, master's, and professional degrees. An earnings equation controlling for work hours of full-time employees and looking at total compensation demonstrates that Missouri public employees earn 15.6% less than comparable private sector workers working comparable annual hours.

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 Missouri public employees pay for their better 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 statistically 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 benefits, of course, so our standard of comparison is very conservative. It is alleged that public employee unions and collective bargaining have produced an overcompensated workforce. Eligible public employees are not highly unionized in Missouri (approximately 21% of public employees are covered by a labor agreement). Could Missouri public employee unions be responsible for an overcompensated workforce? 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 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 pressures 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 government pay below market. Unionization represents a viable legal response to employer labor market power.

Additionally, the pattern of Missouri public employee unionization is consistent with broader global patterns of unionization, as shown, for example, by a study of 27 developed countries (Blanchflower 2006). The study

reports that union density is found to be negatively correlated with level of education in the private sector and positively correlated in the public sector, as we observe in Missouri. Possibly, a more important question for policymakers, rather than why highly educated public employees are unionized, is why relatively less educated and low-paid private sector employees are inadequately represented by unions.

Public sector employees' compensation is neither the cause, 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 Missouri 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 performed services no longer needed, or earned more than they are worth. 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 anger or 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. We are using the CPS database created by the Minnesota Population Center (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 full-time 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 Cost of Employee Compensation (ECEC) data, part of the National Compensation Survey, was used to calculate total compensation costs as a markup on wages. While we would have preferred to analyze

compensation costs by each state, because the survey's method of data collection is expensive, the sample is not sufficiently large enough to provide reliable estimates of state-level benefit costs. The Bureau of Labor Statistics did share its unpublished sample estimates for 10 major occupations by organizational sizes for private employers and state and local government in the West North Central Census division. This study uses these ECEC sample estimates to calculate relative 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 2005 to 2010 was used for the estimates, covering pay for 2004 through 2009. The sample size was 5,414 total observations and 905 public employee observations.

**TABLE A 1**

### Wage-to-compensation ratio in Missouri

	<b>1 to 99</b>	<b>100-499</b>	<b>500+</b>	<b>Public</b>
<i>All workers</i>	1.2698	1.2638	1.2877	1.3324
<i>Management, business, and financial</i>	1.2511	1.2170	1.2485	1.2806
<i>Professional and related</i>	1.2295	1.2172	1.2429	1.3123
<i>Sales and related</i>	1.2420	1.2728	1.3820	1.3911
<i>Office and administrative support</i>	1.2084	1.2305	1.2520	1.3439
<i>Service</i>	1.2827	1.3007	1.3194	1.3791
<i>Construction</i>	1.3418	1.4520	1.3830	1.4108
<i>Installation, maintenance, and repair</i>	1.2732	1.3544	1.3304	1.3466
<i>Production</i>	1.3064	1.3521	1.3868	1.3657
<i>Transportation and material moving</i>	1.3540	1.3308	1.3310	1.3324

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

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## Endnotes

1. A standard earnings equation using CPS data for full-time workers in Missouri was estimated to produce the estimates of the returns to education.
2. The Social Security Act of 1935 excluded state and local workers from mandatory coverage. Legislation in the 1950s allowed states to elect voluntary coverage for their employees (Munnell and Soto 2007).

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