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Are California Public Employees Overpaid?

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Abstract: *While it is clear that federal workers' wages and benefits are above market levels, it is less clear whether state and local employees are similarly overpaid. In the past year, several organizations have published studies arguing that state and local workers are underpaid. But these studies undercount or omit important benefits that public workers enjoy, leading to a substantial understatement of state and local compensation. Using the example of California, this paper provides a full accounting of state and local compensation, correcting the omissions of past studies. The conclusion is that California public employees earn up to 30 percent more in total compensation than comparable private-sector workers.*

Public–private pay comparability has become a major political issue in the past year, with some observers claiming that public workers are overpaid, and others claiming they are paid too little. An important aspect of this debate is the difference between federal workers on the one hand and state and local workers on the other. Although federal workers earn higher wages and benefits than comparable private workers,[1] the state and local situation is more complicated. Compared to private workers, state and local workers tend to earn *less* in wages, but more in benefits. The net impact on overall pay is controversial.

The Center for State and Local Government Excellence,[2] the Center for Economic and Policy Research,[3] the Economic Policy Institute,[4] and the Center on Wage and Employment Dynamics (CWED)[5] have all released similar studies arguing that the compensation that state and local workers receive is less than or equal to that of comparable private workers.

While these studies measure wage differences more or less properly, none of them considers the full benefit premium enjoyed by public workers. A full accounting of benefits needs to include retiree health care, job security, and pension funding

1. James Sherk and Jason Richwine, "Federal Pay Still Inflated After Accounting for Skills," Heritage Foundation *WebMemo* No. 3012, September 14, 2010, at *http://www.heritage.org/research/reports/2010/09/federal-pay-still-inflated-after-accounting-for-skills*.
2. Keith A. Bender and John S. Heywood, "Out of Balance," Center for State and Local Government Excellence, April 2010, at *http://www.slge.org/vertical/Sites/%7BA260E1DF-5AEE-459D-84C4-876EFE1E4032%7D/uploads/%7B03E820E8-F0F9-472F-98E2-F0AE1166D116%7D.PDF* (March 14, 2011).
3. John Schmitt, "The Wage Penalty for State and Local Government Employees," Center for Economic and Policy Research, May 2010, at *http://www.cepr.net/documents/publications/wage-penalty-2010-05.pdf* (March 14, 2011).
4. Jeffrey Keefe, "Debunking the Myth of the Overcompensated Public Employee," Economic Policy Institute *Briefing Paper* No. 276, September 15, 2010, at *http://epi.3cdn.net/8808ae41b085032c0b_8um6bh5ty.pdf* (March 14, 2011).
5. Sylvia A. Allegretto and Jeffrey Keefe, "The Truth About Public Employees in California: They Are Neither Overpaid Nor Overcompensated," Center on Wage and Employment Dynamics *Policy Brief*, October 2010, at *http://www.irle.berkeley.edu/cwed/wp/2010-03.pdf* (March 14, 2011).

using the proper private-sector discount rate. After including these missing pieces of the benefits picture, state and local compensation is substantially higher than the estimates in the existing studies—and well above market levels.

Because state-level benefit data vary widely in quality and availability, it is not possible to provide precise numerical pay comparisons for each state at this time. This paper focuses exclusively on public workers in California, a large state with reasonably good benefit data. Although the numbers discussed here are specific to California, the basic approach could theoretically be replicated for any state, provided the data are available. Because the CWED report also focuses on California, we frequently contrast our methods and results with theirs.

WAGES

Our public–private wage comparison is very similar to that of the CWED. Both studies use the same dataset and the same basic regression analysis, which allows us to isolate the wage effect of public employment after controlling for a variety of worker characteristics.

Data and Methods. We combined the years 2006 through 2010 of the Current Population Survey's Annual Demographic Supplement, which contains information on annual earnings. 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.

The analysis is limited to adult civilians working full time during the whole previous year. Workers with imputed earnings were dropped, since the imputation process does not take government status into account. Those with annual earnings that seem too low for full-time work (less than $9,000) were also dropped.

In addition to dummy variables for federal, state, and local government employment, the following controls are used: usual hours worked per week, experience (age minus education minus six), experience^2, years of education, firm size (six categories), broad occupation (10 categories), immigration status, race, gender, marital status, and year dummies to account for inflation. Also included are interaction terms: (experience x education), (experience^2 x education), (marital status x gender), and (gender x race).

Choice of Controls. 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 California state workers are effectively 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, including firm size 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 partially reflects an employee's preferences for the characteristics that large firms tend to exhibit. If state and local workers quit in favor of private-sector jobs, they would likely choose a private firm that is above average in size. For that reason, controlling for firm size is our preference for both wages and benefits.[6] Excluding the firm size control would make the observed state and local wage penalties substantially smaller than what is reported here.

Some economists also control for union status, but that does not seem appropriate: Collective bargaining drives up wages, and California'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 state and local compensation. Controlling for union status would likely raise this paper's estimate of the wage penalty but would not change any of the conclusions.

The CWED report includes firm size but excludes union status, just as we do.

Results and Conclusion. We regressed the log of annual earnings on the control variables listed above. Results are displayed in Table 1. The first column lists key independent variables, and the second col-

6. An interesting compromise on firm size is used in "The Economic Policy Institute Is Wrong: Public Workers *Are* Overpaid," Center for Union Facts, February 22, 2011, at *http://www.unionfacts.com/downloads/Public_Sector_UnionsBrief.pdf* (March 14, 2011).

Wage Regression Results, 2006–2010

Control Variable	Coefficient (%)
Hours worked per week	1.7
Experience (in years)	3.9
Education (in years)	9.9
Foreign-born	–11.4
Married	18.0
Black	–16.6
Hispanic	–10.7
Female	–14.0
Federal worker	4.8
State worker	–10.2
Local worker	–0.6
Observations	25,576
Adjusted r–squared	0.506

Note: All coefficients significant at 95 percent level or higher, except local worker. Additional controls not shown. See text for details.

Source: Authors' calculations using data from the U.S. Census Bureau, Current Population Survey.

Table 1 • CDA 11-01 heritage.org

umn shows the percentage increase in wages associated with a one-unit increase in each variable. For example, an additional year of education leads to a 9.9 percent increase in wages, all else equal.

The most important variables in the list are state and local government status. After controlling for observable skills and a detailed list of personal characteristics, state workers in California earn about 10.2 percent less in wages than private-sector workers. Local workers see a much smaller, statistically insignificant penalty of 0.6 percent. Combining state and local workers together yields a significant penalty of 3.7 percent (not shown in the table).

BENEFITS

This paper's wage results are similar to those of the CWED, but we begin to diverge with benefits. We first review the "standard" benefit calculations used by CWED and other groups, and then describe the omitted or undercounted portions.

"Standard" Benefit Calculation. The U.S. Bureau of Labor Statistics (BLS) publishes benefit–wage ratios for private and state and local workers collected through the federal government's Employer Costs for Employee Compensation (ECEC) survey. These figures include: paid leave (vacation, holiday, or sick pay), supplemental pay (overtime and bonuses), insurance (life and health coverage), retirement and savings (which includes employer contributions to defined-benefit and defined-contribution pension plans), and legally required benefits, such as Social Security and Medicare payroll taxes.

In the Pacific region of the U.S. Census, which includes California, benefits for state and local employees were 55.5 percent of wages (37.5 percent of total compensation). For private-sector workers in large firms, benefits equaled 50.3 percent of wages (33.5 percent of compensation). The BLS does not release state-specific data due to small sample sizes.[7]

Omitted or Undercounted Benefits. Available benefits data are not nearly as detailed as wage data. CWED and other organizations do a reasonable job of approximating total employee compensation given the limited BLS data they use. However, the BLS data are incomplete, leading CWED and others to omit or understate two important benefits for public-sector employees: retiree health care and defined-benefit pensions.

Retiree Health Benefits. Because there are no payments to active employees, retiree health benefits are not included in BLS compensation data. For private-sector workers, this omission is generally unimportant—private workers retire later, relatively few private workers receive retiree health coverage, and eligibility has been tightened and premiums increased for those who do. By contrast, almost 90 percent of state and local governments offer retiree health benefits to employees who retire in their 50s, with the government paying much of their costs, often including Medicare premiums and deductibles.[8] State actuarial reports show that the annual accruing costs of California retiree health benefits

7. If California has more generous public-sector benefits than other states in the region (which is likely, given our review of the pension and retiree health data), then the BLS Pacific Region figures may slightly understate total California compensation. The effect would be small because of the size of California's population relative to that of other states.
8. The Pew Center on the States, "Promises with a Price: Public Sector Retirement Benefits," December 2007, at *http://www.pewtrusts.org/uploadedFiles/wwwpewtrustsorg/Reports/State_policy/pension_report.pdf* (March 16, 2011).

equal approximately 10.2 percent of wages or 6.5 percent of total compensation.[9]

Moreover, even these actuarial figures will understate the true value of retiree health coverage. The reason is that the costs of coverage are calculated as the amount by which retiree coverage increases costs for the employer plan by increasing the average age of the covered population. The retiree otherwise would have to purchase coverage in the individual health market, which is approximately 25 percent more expensive for a given policy than group coverage.[10] Thus, the true subsidy to the individual is the employer cost plus the cost difference between individual and group health coverage. In this case, the total subsidy would equal about 12.8 percent of wages or slightly more than 8 percent of total compensation.

Proper Pension Discount Rate. An important difference between public-sector and private-sector employment is the predominance of traditional defined-benefit pensions in the public sector versus 401(k)-type defined-contribution plans in the private sector. All pay comparisons to date have failed to capture certain important distinctions between the two.

In a defined-benefit pension plan, employer contributions are only a proxy by which one *infers* the value of the future pension benefit, which is the actual compensation paid to workers. To infer that value accurately, one must consider both the size of the employer contribution and the implicit rate of return paid on it from the time of payment through the time the benefit is received.

For defined-contribution pension plans, the return on contributions is straightforward. Individuals may invest employer contributions as they choose, in assets with a mix of risk and return they find optimal. For comparability with defined-benefit pension plans, which are generally riskless to the employee, individuals would need to invest defined-contribution assets in guaranteed U.S. Treasury securities, currently yielding around 4 percent annually over 20 years.

For defined-benefit plans, however, the implicit rate of return on contributions is a function of the plan's benefit formula. This return can differ from person to person, but on average it will equal the discount rate or assumed investment return for the program as a whole.

In private-sector defined-benefit plans, by law the discount rate equals the interest rate on a portfolio of high quality corporate bonds. Currently, such a portfolio yields approximately 5.5 percent. State and local pensions generally assume a more aggressive discount rate of 8 percent, based on the expected return on assets held by the fund. This means that the employer contribution today is equal to the eventual benefit discounted back to the present at a 5.5 percent (private) or 8 percent (public) interest rate. Put another way, it means that public-sector employees receive a guaranteed return of 8 percent on their employers' pension contributions.[11]

If one compares only the size of employer contributions while excluding the implicit return, one would understate true compensation delivered through defined-benefit pensions. To account for this, we multiply defined-benefit pension contributions by an adjustment factor designed to compensate for the different implicit rates of return on various pension plans.

We use a stylized age-earnings profile to calculate these factors using age-specific earnings information developed by the Social Security Administration.[12] As most state and local employees have roughly 25 years of service at retirement and retire in their mid-50s, we generate earnings from age 20 to age 55, with retirement at age 56. For each pension type, we use an iterative process to calculate the contribution rate that, compounded at the pension type's

9. "State of California Retiree Health Benefits Program," Gabriel Roeder Smith & Company, October 23, 2009, at *http://www.sco.ca.gov/Press-Releases/2010/OPEB_February_2010.pdf* (March 14, 2011).
10. Melinda 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 14, 2011).
11. It makes no difference to the employee whether the actual return on assets equals 8 percent; investment risk is borne by the plan sponsor.
12. Michael Clingman and Kyle Burkhalter, "Scaled Factors for Hypothetical Earnings Examples under the 2010 Trustees Report Assumptions," Social Security Administration *Actuarial Note* No. 2010.3, February 2011, at *http://www.retirement.gov/OACT/NOTES/ran3/an2010-3.html* (March 16, 2011).

specific implicit rate of return, will generate the same benefit in retirement. The base pension is a defined-contribution plan; the adjustment factor for the other plans equals the defined-contribution plan's required contribution rate divided by the plan's own contribution rate.

This adjustment factor, which is greater than 1 as long as the expected return exceeds the risk-less return, is multiplied by each sector's employer contribution to defined-benefit pension plans. The resulting value equals the equivalent employer contribution, were all workers to hold defined-contribution pensions. The adjustment factors are 1.20 for private-sector defined-benefit plans, and 1.67 for state and local defined-benefit plans.[13]

These values are then multiplied by the normal cost of California pension plans, which is the cost of benefits (as a percent of wages) accruing in a given year. Based on a weighted average of normal costs for California's major pension funds—CalPERS; CalSTRS; the University of California pension; and the pensions of city employees in Los Angeles, San Francisco, and San Diego—the higher implicit return on public defined-benefit pensions increases the compensation of California's government workers by approximately 4 percent.[14]

JOB SECURITY

The final factor considered in this paper is job security. According to the BLS Job Openings and Labor Turnover Survey (JOLTS), a private-sector worker has an approximately 20 percent chance of being fired or laid off in a given year, while for state and local employees the probability is only 6 percent. This effectively gives state and local employees an insurance policy against being discharged. What follows is an attempt to put a dollar value on that insurance.

In *The Wealth of Nations*, Adam Smith originated the idea of what today are called "compensating wage differentials," that is, changes to wages that balance the positive or negative characteristics of jobs. Smith explains how this applies to the risk of unemployment:

> Employment is much more constant in some trades than in others. In the greater part of manufactures, a journeyman may be pretty sure of employment almost every day in the year that he is able to work. A mason or a bricklayer, on the contrary, can work neither in hard frost nor in foul weather, and his employment at all other times depends on the occasional calls of his customers. He is liable, in consequence, to be frequently without any. What he earns, therefore, while he is employed must not only maintain him while he is idle, but make him some compensation for those anxious and desponding moments which the thought of so precarious a situation must sometimes occasion.... *The high wages of those workmen, therefore, are not so much the recompense of their skill as the compensation for the inconsistency of their employment.* (Emphasis added.)

Just as positions with a high incidence and duration of unemployment should pay a compensation premium, positions with greater job security—such as in the public sector—should pay less than similar jobs in the private sector.

Theory. To estimate the value of job security on effective compensation, 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. The more risk-averse individuals are, the lower the certainty equivalent is relative to the probability-weighed expected value of the risky payment.

How much salary reduction would a private-sector worker accept to have the job security of a public-sector employee? To calculate this value, we begin with an isoelastic utility function of the form

$$u(c) = \frac{c^{1-\rho}}{1-\rho}$$

where u is the utility derived from consumption c, and ρ is the coefficient of constant relative risk aversion (CRRA). Utility generated by income will rise as income rises, but at a decreasing rate. Moreover, the rate at which the marginal utility of consump-

13. While not applicable in this study, the adjustment factor for federal-employee defined-benefit pensions is 1.33.

14. These estimates account for employees who lose their contributions either by leaving government employment before vesting, or who die before claiming benefits. The difference in pension benefits for full-career employees would be larger than shown here.

tion declines increases with the risk aversion of the individual. A more risk-averse individual will be willing to accept a lower-certainty-equivalent income because the increase in expected utility by accepting employment risk is lower.

Graphical Illustration. The theory may be more understandable using a simple chart. Figure 1 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 generates more happiness, but at an ever-declining rate. Point A represents the income/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—the probability-weighted average of the utilities at Points A and B.

Illustrating the Concept

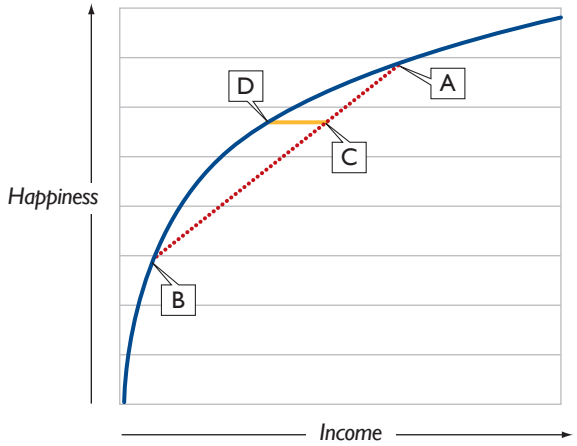

Figure 1 • CDA 11-01 ☎ heritage.org

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.

Data. Using this utility function, we first calculate the utility of total compensation for a worker assuming he retains his job full time, assuming total compensation of $85,000. The utility in the case the worker becomes unemployed is then calculated, which involves assumptions about the duration of unemployment, the level of unemployment benefits, and the compensation of the new job the individual may find. For the baseline case, the following is assumed: 19 weeks of unemployment, unemployment benefits of $450 per week (the California maximum), and a current position pay premium of 15 percent (based on our previous wage and benefit calculations). Using these assumptions, annual compensation in the event of unemployment is $54,400, for which the authors also calculate a utility value.

The expected utility is the weighted average of utility if the individual remains employed throughout the year and his utility if the individual is discharged. In this exercise, we do not wish to calculate the salary reduction an individual would accept to have a zero probability of being discharged, but merely the difference between the private-sector rate (20 percent) and the public-sector probability (6 percent). Thus, we approximate by assigning a probability of discharge equal to the difference between the two (14 percent). Expected utility is equal to the weighted utilities of consumption assuming the individual is discharged (14 percent probability) or remains employed throughout the year (86 percent probability).

To calculate the utility of consumption, a value for the risk-aversion of public-sector employees is required. Based on data from the Panel Study of Income Dynamics, one study calculated a CRRA for public employees of 5.4, significantly higher than the estimate for private-sector workers of 2.8.[15] Other studies have also concluded that public employees are more risk-averse than private-sector workers.[16]

The certainty-equivalent compensation is derived by calculating the riskless compensation whose utility would equal the expected utility of compensation under the risk of unemployment. This value is $73,840. The base compensation of $85,000 exceeds this value by approximately 15 percent,

15. Alicia H. Munnell, Kelly Haverstick, and Mauricio Soto, "Why Have Defined Benefit Plans Survived in the Public Sector?" Center for Retirement Research *State and Local Pension Plans Issue in Brief* No. 2, December 2007.
16. Don Bellante and Albert N. Link, "Are Public Sector Workers More Risk Averse than Private Sector Workers?" *Industrial and Labor Relations Review*, Vol. 34, No. 3 (April 1981), pp. 408–412.

thereby generating this paper's estimate of the job security compensation premium. Using a more conservative assumption that California public-sector workers, were they to work in the private sector, would have half the probability of becoming unemployed (perhaps due to their higher average education) and the job security pay premium would be around 5 percent.[17]

CONCLUSION

Whether public-sector employees receive above-market compensation is an empirical question that demands a thorough accounting of wages, benefits, and job security. In the case of California public employees, wages are slightly lower in the public sector. Initially, benefits appear only slightly higher, implying rough parity in compensation between the public and private sectors. However, properly accounting for retiree health benefits and defined-benefit pension plans generates a public compensation premium of around 15 percent. The additional job security granted to public-sector employees is equivalent to an approximately 15 percent increase in public compensation, meaning that the total public-sector pay premium in California may be as high as 30 percent.

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17. At this point it is difficult to estimate probabilities and durations of unemployment for public-sector workers, though we are investigating possible methods to do so.