

Comparing Public-Versus-Private Sector Pay and Benefits: Examining Lifetime Compensation

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Abstract

The large unfunded liabilities surrounding public pensions in the United States will ensure the issue of comparable pay between the public and private sectors remains in the forefront of public policy debates. Disagreements on pay and total compensation comparison studies vary due to different approaches, methods and data. In an effort to add to the literature on comparative compensation, a public-versus-private sector compensation model was constructed to gauge the cost of lifetime compensation. This analysis considers three types of workers within two different occupations classifications: a private sector employee with a traditional 401(k) retirement package offering, a public sector employee who has a defined benefit plan with social security income, and a public sector worker with no social security income. The two sample occupations reviewed as part of this analysis focus on administrative assistants (blue-collar workers) and engineers (white-collar employees) to provide alternatives for evaluation purposes. For the two occupation scenarios analyzed, total compensation of public employees is higher than that of an average private sector employee. When the total compensation is based on years worked, the divide between the public and private sectors increases significantly. In light of this analysis, several important public policy issues are advanced.

Keywords

public-versus-private sector compensation, public pay, lifetime compensation, pensions

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Introduction

As states and local governments still struggle to recover and balance their budgets more than five years after the great recession began, much attention has focused nationally on how public workers are compensated, particularly with regard to personnel benefits and the ability of state and local governments to fund them. The soundness of many state and local pension and retiree health care plans is of particular concern. State and local governments are facing considerable pension and retiree health care obligations that have significantly contributed to their financial problems. Nationwide unfunded liabilities for pension and retiree health care range anywhere from \$1.4 to over \$4 trillion, depending upon what assumptions one uses (see, for example, Eucalitto, 2012; Novy-Marx & Rauh, 2011; The PEW Center on the States, 2011). The Governmental Accounting Standards Board (GASB), which sets the accounting standards for the public sector, has adopted new rules that could increase the gaps further. These rules adopted in June 2012 by GASB will likely show that public pension funds are in a weaker financial position than previously thought. Most go into effect in June 2013, others in 2014. State and local governments will now have to post their net pension liabilities—the difference between the projected benefits payments and the assets set aside to cover those payments—up front on financial statements (Lambert & Byrnes, 2012).

As the scrutiny of public sector pay has increased, renewed attention has focused on the longstanding debate on whether private sector workers earn more than their public sector counterparts. Conclusions from past comparison studies of pay and total compensation vary due to different approaches, methods, and data leading to disagreements over their applicability. In an effort to add to the literature on comparative compensation analysis and assess the impact of different compensation tools beyond simple wage differences, a comparative analysis involving a public-versus-private sector compensation model was constructed to gauge the cost of lifetime compensation. This analysis considers three types of workers within two different occupations classifications: a private sector employee with a traditional 401(k) retirement package offering; a public sector employee who has a defined benefit (DB) plan with social security income and a public sector worker with no social security income. The two sample occupations reviewed as part of this analysis focus on administrative assistants (blue-collar workers) and engineers (white-collar employees) to provide alternatives for evaluation purposes. Examining both active employment and postretirement years will provide deeper insight into an ongoing debate that has intensified in recent years.

Theory

Competitive compensation is a key factor in ensuring that the public sector can recruit and retain a high-quality workforce. A key component for this is the ability of the public sector to compensate their employees in a manner comparable with their private sector counterparts (Llorens, 2008). The public sector has traditionally relied on job tenure, cost-of-living increases, and average general increases for its compensation practices. In addition, postretirement benefits typically include a defined-benefit

pension plan and subsidized retiree health care. Eighty-four percent (84%) of state and local governmental employees have access to a DB plan versus 21% of private sector employees (Bureau of Labor Statistics [BLS], 2007, 2008). Eighteen percent of private sector employers offered health care coverage to early retirees compared with 71% of public sector employers (BLS, 2012a; Fronstin & Adams, 2012). By contrast, the private sector has relied more heavily on merit pay, pay-for performance, bonuses, profit sharing, and other forms of competitive pay (Coggburn & Kearney, 2010). Instead of pensions, most private employees have defined contribution (DC) plans and have little access to retiree health care.

Historically, there has been a trade-off for working in the public sector—the promise of job security and solid health and retirement plans in compensation for forgoing higher wages in the private sector. Over the years, benefits have increasingly become a significant and growing portion of the total compensation for public employees. Public employees have benefits that are more expensive and valuable than their counterparts in the private sector (Anzia & Moe, 2012; Brady, 2007; Fleet, 2007). More generous benefits have assisted in offsetting the compensation limitations for many public workers (Coggburn & Kearney, 2010). Elected officials have often favored more enhanced benefits packages in lieu of salary increases because it has been politically easier for governments to increase benefits instead of wages. Increasing benefit packages are less visible to the public, and the cost can be spread out over time (Kearney and Carnevale, 2001; Reilly, Schoener, & Bolin, 2007). However, deferring public sector compensation to the future generations of elected officials and taxpayers ends up being more expensive as the costs are transferred with interest (Reilly, 2012).

Hunter and Rankin's (1988) compensation model supports this premise. The authors suggest that public employees are compensated for providing two sets of services: public services and political services. Public services are those that the public expects employees to provide, and political services include activities such as endorsing candidates, raising money for them, giving them campaign donations, and/or providing staffing for particular elections. The authors contend that this helps explain why fringe benefits have grown substantially in the public sector and are larger as a percentage of wages and salaries than in the private sector. Fringe benefits provide the perfect avenue for political payment because they are usually invisible or unknown to the public. The political power of public sector unions will have a greater impact on fringe benefits than on wages if compensation in that form is less likely to be subjected to public scrutiny. Kearney and Carnevale (2001) also contend that public sector unions support increasing benefits over wages because the costs are less transparent to the community and can be spread out over time. Other scholars have also found that public sector unions have a larger impact on benefits than wages (Ichniowski, 1980; Zax, 1988).

As the value of postretirement benefits has increased and assumed a more prominent role in the total compensation for public employees, examining both active employment and postretirement years is essential in comparing public-versus-private compensation. This study's model assessing the cost of lifetime earnings for the two sectors provides a useful perspective in the ongoing debate.

Research

Although there has been a good deal of research on the level of pay differences between public and private workers, there has been little consensus on what pay differentials actually exist. Differences have emerged depending on the type of data used and methodology employed including comparisons in occupational composition of the two sectors and compensation differences that exist between federal, state, and local governments (Borjas, 2002; Llorens, 2008; M. A. Miller, 1996). Public-private comparisons can also prove challenging because of confounding factors, such as other workers' characteristics and wage dispersions. In addition, certain methodological shortcomings by researchers further complicate this debate including the values and political ideology of the researcher and either neglecting to include benefits as a dependent variable or difficulty in determining a dollar value of benefits in the analysis (Kearney, 2009). Ultimately, much of the public-private debate centers on elusive accounting and areas that are difficult to value, especially retirement benefits, retiree health care and job security. Most public employees are guaranteed a pension via a DB package and have access to retiree health care. These benefits have been disappearing rapidly in the private sector. Determining the worth of these benefits is the subject of much debate (Reilly, 2012).

Researchers have used various approaches and data to compare benefit packages and compensation rates of private and public sectors. Three common approaches used are the human capital approach, job-to-job approach, and a trend analysis approach. The human capital approach compares pay for individuals with various personal attributes such as education, and other job attributes such as occupation. A job-to-job approach compares pay for similar jobs of various types based on job-related attributes such as occupation, but it does not take into account the personal attributes of the workers. A trend analysis approach shows broad trends in compensation over time without controlling for attributes of the workers or jobs. However, even when common approaches have been used, results have varied significantly. For example, recent studies using the human capital approach to study federal pay by Biggs and Richwine (2011), the Congressional Budget Office (CBO, 2012), and Shrek (2010) reported that average federal workers' pay was higher than private sector workers' pay by 14%, 2%, and 22%, respectively. The differences in pay grades in all of these studies were "unexplained."

Most analysis, similar to the aforementioned studies, show that the average federal pay is distinctly higher when compared with similar positions in the private industry (Bureau of Economic Analysis, 2004; Linneman & Wachter, 1990; Moore & Raisin, 1991; Picard, 2003; The Project on Government Oversight, 2011; The President's Pay Agent, 2011; Wetterich, 2012). However, this has not always been the case at the state and local level where differences in wage and salary payouts are less when compared with the private sector. Researchers generally have found either a smaller premium for state and local worker salaries or wage penalties when education, experience, and other factors are taken into consideration (Bender, 2003; Borjas, 2002; Branden & Hyland, 1993; M. A. Miller, 1996; Picard, 2003; Thompson & Schmitt, 2010). Using

panel data from the U.S. BLS Current Population Survey, Llorens (2008) found that, on average, state government employees enjoy a positive wage premium when compared with their private sector counterparts, and Barro (2011) found that state and local workers enjoyed a higher overall compensation (salary plus retirement and health benefits) than their private sector counterparts. Munnell, Aubry, Hurwitz, and Quinby (2011a) found total compensation comparable between the two sectors with similar characteristics, education and experience.

Others have found that public sector workers earn less than the private sector, especially when they controlled for education. Data compiled by the *New York Times* (Luo & Cooper, 2011) from an analysis of recent census data by demographers at Queens College of the City University of New York looked at wages and salaries of *public sector* workers and found that the clearest pattern to emerge was an educational divide: Without college degrees, workers do better working for the public sector while public sector workers with degrees do worse. They also found that this divide has widened in recent decades. Since 1990, the median wage of state workers without college degrees has surpassed private workers, while college-educated state workers' median pay lagged further behind their peers in the private sector.

Keefe (2012) used national data and within a range of states found that public employees (state and local governments) receive total compensation that is equal to or less than that of the private sector. Controlling for education and various human capital variables (such as age), he found that public employees earn 11.5% less in terms of base pay than their private sector counterparts. When he added health and retirement benefits, the difference between public and private sector compensation is reduced to 3.7%, with private employees receiving the higher compensation.

Likewise, Bender and Heywood (2010) compared worker earnings across and between private, state, and local sectors over a 20-year period and found wages and salaries of state and local employees to be lower than those for private sector workers with comparable earning determinants (e.g., education). They found that state employees typically earned 11% less and that local workers earned 12% less. When benefits such as pensions for state and local employees were factored in, on average, the total compensation was 6.8% lower for state employees and 7.4% lower for local workers when compared with comparable private sector employees. However, the study has been criticized for skewing the findings by excluding the cost of public employee retirement benefits such as retiree health care and for ignoring the cost of unfunded pension costs; for controlling for unionization and then removing it as a factor even though unionization has been found to be a driver of compensation costs; and for using the compensation practices of the school district for comparisons in college education. Almost one half of the public workers in the study were educators, and teachers are paid less than other college graduates in the private sector (G. Miller, 2010). While there is still a lack of consensus on what pay differentials exist and whether these differences are justified between public sector and private sector workers, there seems to be little dispute with regard to benefits. The disagreement among researchers centers on how best to assign a value to them. Public sector workers have traditionally received relatively generous benefit packages (Brady, 2007; Fleet, 2007). The average benefit

cost to employers as a percentage of wages and salaries is 34% for state and local government employees and 29% in the private industry (BLS, 2009). Eighty-four percent (84%) of state and local governmental employees have access to a DB plan versus 21% of private sector employees (BLS, 2007, 2008).

Using household data, Munnell, Aubry, Hurwitz, and Quinby (2011b) looked at the wealth of couples at age 65 to determine whether state/local employees ended up with more wealth at retirement than their private sector counterparts. They found that those with state/local employment who spent more than half of their career as public employees had 11% to 18% more wealth at age 65 than similar private sector couples. Public employees who spent less than half of their career as public employees ended up with less wealth than private sector employees.

Biggs and Richwine (2011) have been vocal critics of many public-versus-private pay studies citing their failure to properly account for the deferred benefits available to public employees. The authors claim that most of these studies omit or understate retiree health care and pensions when calculating the overall compensation figures. For health care, they contend that the increases in individual policy costs versus purchasing an individual health plan (25% more in general) are not considered in most calculations. The authors argue they should since most private sector retirees are required to purchase their own policy, especially if they retire early. With regard to pensions, they argue that public sector workers will receive a guaranteed level of pension benefits after retirement based upon the plan's formula. DB plans are almost always indexed for inflation, and longevity of the retiree is not an issue because the pension is guaranteed for as long as the individual retiree lives. For the private sector retiree with a DC plan, the amount of their retirement is subject to economic conditions and the investment strategies of the individual account. It can be a challenge to gauge the amount of financial resources needed and the retiree runs the risk of outliving their pension assets. The authors contend that this can increase the total compensation for the public sector worker by as much as 4%. Finally, on the topic of job security, they suggest that a model should be used to determine its cost advantage. Using the theory of "certainty equivalent," they estimate the additional compensation for job security to be 15%.

Assumptions

In an effort to assess the impact of different compensation tools beyond simple wage differences, a comparative analysis of the public-versus-private sector compensation model was constructed to gauge the cost of lifetime compensation. It is important to note that the model only addresses compensation during active employment and post-retirement years. Other compensation tools such as disability and insurance are excluded from the model. It would be difficult to calculate the value of a health insurance plan and its benefits from one sector or another, as employees often have the option to opt-in to these programs. Understandably, a health insurance benefit has the potential to indirectly put more dollars into an employee's disposable income. Nevertheless, a separate more complex benefit model would need to be constructed and it would still be difficult to compare apples-to-apples on a macro-scale since many

health care plans are unique to an individual. That said, the model does account for health care subsidies often received by public sector employees in retirement.

Compensation in real dollars goes beyond the bi-weekly paycheck. The model was designed to measure the total value of one's employment throughout his or her entire life, including retirement. Over a lifetime, compensation variables incorporated into the model include cost of living adjustments (COLAs), step increases, social security participation, individual retirement accounts with employer matches, public employee retirement systems, retirement age, and a postretirement health care subsidy. The model was constructed knowing that each job, jurisdiction and bargaining agreement is different; therefore, becoming its own working model. However, on a national scale, an average could be inserted into the different variables to understand how one payment tool impacts the employee's compensation over a lifetime. Only the input values would need to be modified to compare two employees in a single jurisdiction. The following provides an overview of the methodology implemented and key components of the modeling inputs and assumptions.

This analysis considers three types of workers within two different occupations classifications: (a) a private sector employee with a traditional 401(k) retirement package offering; (b) a public sector employee who has a DB plan with social security income (e.g., Florida model); and (c) a public sector worker with no social security income (e.g., Nevada model). The two sample occupations reviewed as part of this analysis focus on administrative assistants (BLS, 2012b: SOC code 436014) and engineers (BLS, 2012b: SOC code 170000) to provide alternatives for evaluation purposes. The Florida model was chosen because it is reflective of some of the recent changes being made nationally to public DB plans (Snell, 2012). In 2011, the Florida legislature increased employee contributions, increased age and service requirements and limited cost-of-living increases (Florida Retirement System [FRS], 2013). The Nevada model was selected as a representative of states where public employees do not participate in social security and who have DB plans.

Starting Salary, Date, and Age

The research into the lifetime compensation of three different types of workers was prepared using current salaries, as provided by the BLS (2012b) Occupational Employment Statistics (OES) 2011 data. It is important to note that these data do not include nonproduction bonuses, which could be more common in the private sector. It is assumed that the workers are all age 23 when hired, and have not worked previously in any position affecting retirement benefits.

For the purposes of the evaluation of the public sector DB plan with social security, similar to the FRS (the "Florida Model"; 2013), which had major changes for new employees starting after FY 2012 (i.e., July 2011, the middle of the calendar year), it is assumed that these employees start after this point in 2011. The evaluation of public sector compensation under a model that does not provide social security income focused on the Public Employees Retirement System (PERS) in Nevada (the "Nevada Model"; Nevada Public Employees' Retirement System [NVPERS], 2013).

The private worker's starting salary is determined by the weighted average of all private sector positions within the 10th percentile annual salary (based on the North American Industry Classification System, NAICS, sector). NAICS is the standard used by Federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy.

Public sector wages are the 10th percentile of the OES designated public sector employee. Finally, the nonsocial security employee's salary is multiplied by 0.89385 to reflect the reduction in compensation for "payments in lieu" to the retirement fund. This multiplier comes from Nevada PERS for those who chose an employer-paid retirement plan. These "payments in lieu" represent a contribution to the state retirement fund on behalf of the employee (BLS, 2012b).

Inflation and COLAs

To model inflation factors, the analysis utilized the last 20 years of Consumer Price Index (CPI) data aggregated annually to find a geometric mean inflation rate of 2.49%. For the years where there is historical inflation data (2011 and 2012), the historical inflation figure was used for the inflation estimate (Economic Research Federal Reserve Bank of St. Louis, 2013).

For public employees receiving in lieu payments, the analysis also assumes that the COLAs increase at a rate faster than inflation. In some situations, rather than split the cost-of-living increase with a lesser increase for more in lieu benefits, the employees negotiate to receive the entire COLA, leaving the state with a burden above inflation. As an example, a public employee who receives a \$45,000 salary and \$5,000 in wage payments is eligible for a 2% COLA increase, or an extra \$900. However, they observe that they in fact earn \$50,000, and the union negotiates the increase in COLA to a full \$1,000, leaving the employee with an extra \$100 above the necessary inflation adjustment, and the state with the full burden of contributing extra to the retirement fund. This additional burden is estimated to be one half of the inflation rate times the in lieu contribution rate each year (one half because the model assumes that the union successfully negotiates this extra COLA payment only half of the time); (Economic Research Federal Reserve Bank of St. Louis, 2013).

Step Increases and Longevity Pay

For all employee types, it is assumed a 5% annual increase in salary that is additive to inflation adjustments for the first 8 years to reflect increases in experience and tenure of employees (BLS Employee Benefit Survey, 2010). It is a common practice for newly hired employees in the public sector to receive step increases as they gain experience. This may not be nearly as universal for the private sector employee; however, this assumption is made to keep pay raises the same across all types. After this point, the models assume that employees only receive increases in pay for inflation adjustments and extra COLA increases. The analysis does not assume any longevity pay for

public employees. According to the BLS (2012b), only 7% of public sector employees still have access to longevity pay.

Social Security

The estimates of social security contributions assume the current 6.2% matching contribution from employers and employees continues in the future. The analysis also assumes employees become eligible to receive benefits at age 67, per the current policy.

To calculate the expected starting benefit at age 67, the models use a social security formula. First, the rate of increase for the Primary Insurance Amount (PIA) bend points (the brackets used to determine benefit rates) and the Average Wage Index (AWI; used to adjust earning for inflation) are assumed to grow at 3.0% annually (Social Security, 2012). In the past 20 years, the PIA and AWI have grown at 3.45% and 3.87%, respectively (Social Security, 2012). Based on the worker's expected annual salary, as calculated above, monthly earnings are calculated and then indexed using the AWI from 2 years before eligibility (age 65, or 2052). Then, the average of the 35 largest adjusted monthly incomes is utilized to find the average indexed monthly earnings (AIME). The PIA bend points and the calculated AIME are then used to calculate the expected social security benefit at retirement based on the current policy. This benefit is then adjusted upwards by the expected rate of inflation every year (Social Security, 2012).

401(k)

For the private sector employee model, the analysis assumes a 6% employee contribution with a 3% match from the employer, for a total of 9% annual contribution to their 401(k). In general, the employee's portfolio is assumed to get more conservative as retirement nears. Specifically, in the first 10 years, the model assumes that employees earn a 7% annual return. The next 10 years, this assumes a 6% annual return. The third 10 years, this assumes a 5% annual return. After the 30 years total, but before retirement, a 4% return is assumed. Finally, during retirement the employee is estimated to earn 3.5% annually on the remaining principal balance (Internal Revenue Service [IRS], 2013; Simpson, 2010).

Public Retirement Health Care Benefits

The analysis assumes that the public workers also receive a substantial health care subsidy during retirement, with the following assumptions:

- i. **No Social Security Public Employees:** For the base year, the model assumes a \$6,773 annual benefit (based on benefits currently received by Nevada public employees). A 3.0% annual increase in this benefit is also assumed (Las Vegas Chamber of Commerce, 2008).

- ii. Social Security Public Employees: For the base year, a \$1,800 annual benefit is assumed (based on benefits currently received by Florida public employees). A 3.0% annual increase in this benefit is also assumed (FRS, 2013).

Retirement Assumptions

The model for all three employee categories assumes that they retire when their non-social security benefits first allow. The private sector worker will retire at age 59 when the 401(k) allows for withdrawals without penalty. The public sector employee covered with social security will retire at age 56, when retirement in Florida's retirement system is without penalty after 33 years of service (FRS, 2013). Finally, the nonsocial security employee based on Nevada PERS will retire after 30 years of service at age 53 (NVPERS, 2013).

For modeling purposes, the private sector employee is assumed to roughly match the PERS employee in terms of timing by withdrawing from the 401(k), until they match 71% of their final three salaries. Once the 401(k) is depleted, the private sector employee will live solely on social security. If the 401(k) does not deplete, this will be considered compensation at the end of life. The public employee with social security will have one year of retirement without benefits. Both public employees, since they do not have an account to draw on, will be dependent on the DBs from their retirement plan, and it is assumed that they cannot withdraw from elsewhere to make up a gap (IRS, 2013; Simpson, 2010).

It is assumed that all employees live through age 78. Living longer will likely benefit the DB plans provided by the public sector, while shorter would likely favor the DC plans of the private sector. The benefits provided under the Florida Model are based on the average of the last 5 years of the employee's salary. This average is then multiplied by 1.68% times the number of years the employee has worked in the Florida system (in this case, 38 years). This benefit is not adjusted for inflation, so in real terms the employee will earn less each additional year he or she lives.

Nevada's retirement system is based on the average of the last 3 years of the employee's salary. They make 71% of the last 3 years, and this is adjusted for inflation after a ramp-up period where COLAs are limited. For modeling purposes, the assumed ramp-up ends 7 years into retirement, when the COLA limit is above the long-run inflation assumption (Las Vegas Chamber of Commerce, 2008; NVPERS, 2013).

Combined Compensation Calculations

Retirement payments, unless otherwise noted, are presented as the dollars paid during retirement rather than the dollars paid toward retirement funds while working. To reconcile this, a calculation of the total retirement compensation for a worker multiplied by the percent contributed by the employee is used to determine the adjusted employee contribution amount. Subtracting these from the preretirement wages and salaries and postretirement benefits paid is necessary to determine the total compensation provided by the company to the employee during their lifetime.

Nominal Dollars Versus Inflation-Adjusted Dollars (2011)

The analysis looks at both inflation-adjusted and nominal dollar figures. As inflation occurs, the same nominal dollar does not have as much spending power. The figures are calculated in nominal dollars, but doing the same job in the future anyone will earn far more in nominal terms than they would today. So, to combat the later years' large nominal figures, these dollar figures were discounted to account for inflation.

For example, in this model, the private administrative assistant earns \$35,866 in 2019 after their last non-COLA raise in nominal dollars. However, in 2046, the same administrative assistant adjusting only for COLA earns \$69,737. Just adding these figures would be misleading, as the \$69,737 in 2046 would be just as valuable as the \$35,866 in 2019. So, to compensate, both of these figures were adjusted to \$29,452 in 2011 inflation-adjusted dollars.

Findings

Administrative Assistant

Based on this analysis, a typical administrative assistant had slight differences in wage and salary payments between public and private sector employee classifications. However, they reported a more significant difference when assessing the level of benefits for public employees.¹

The private sector employee earned \$1,015,989 in wages, salaries, and in lieu contributions over their lifetime, while the public sector employee under the Florida Model earned \$1,014,647 and the public employee under the Nevada Model (without social security) earned \$926,686. However, because the public employee without social security can retire after 30 years without penalty, he or she may only work until age 53 and earn in salaries and in lieu payments on average \$30,890, slightly more than the regular public sector employee (\$30,747) or the private sector employee (\$28,222). See Table 1 for a wage and salary comparison.

Preretirement compensation measures wages plus funds as they are put into retirement accounts; this may or may not include money put into retirement health benefits for the public employees. The regular public sector administrative assistant made the most in preretirement compensation with \$1,118,547 over their lifetime. The private sector employee made \$1,109,460, and the public employee without social security made \$1,016,635. The length of work explains most of these differences, as the regular public sector employee works until age 56, the private sector employee works until age 59, and the public sector employee works until age 53. However, these figures should be considered not reflective of the actual benefits paid, the state pension plans assume a higher rate of return than the individual likely will. In terms of average annual preretirement compensation, the private sector employee only makes \$30,818, while the public sector employee without social security makes \$33,888 and the regular public sector employee makes \$33,895. See Table 1 for total compensation comparisons.

Table 1. Secretaries and Administrative Assistants, Inflation Indexed to 2011.

Total compensation comparison	Private sector employee	Regular public sector employee	No social security public sector employee
Wages and salaries			
General wages and salaries	\$1,015,989	\$1,014,647	\$836,737
Longevity pay	\$0	\$0	\$0
In lieu of wage and salary payments	\$0	\$0	\$89,949
Total wages and salaries paid	\$1,015,989	\$1,014,647	\$926,686
Average annual salary	\$28,222	\$30,747	\$30,890
Average annual salary increase	1.12%	3.46%	3.70%
Retirement benefits			
Employer-paid social security	\$62,991	\$62,908	\$0
Employer contributions to 401(k) program	\$30,480	\$0	\$0
Employer PERS contributions	\$0	\$40,992	\$89,949
Total employer-paid retirement benefits	\$93,471	\$103,900	\$89,949
Combined compensation levels	\$1,109,460	\$1,118,547	\$1,016,635
Average annual compensation level	\$30,818	\$33,895	\$33,888
Age eligible for retirement	59	56	53

Note. PERS = Public Employees Retirement System.

In terms of retirement benefits, however, because the public sector employee without social security had an expected 25 years of retirement, he or she received \$684,418 in benefits paid out. This was more than the regular public sector employee (\$565,776 over 22 years) and considerably more than the private sector employee (\$334,914 over 19 years) could expect to receive during retirement. In spite of the pension and social security benefits received, the average retirement benefit of the regular public sector employee was \$25,717. In comparison, the public employee without social security made \$27,377, and the regular private sector employee had \$17,627 in retirement benefits per year of retirement. Overall, the private sector employee paid directly for 57.0% of his or her retirement benefits, compared with a 56.0% contribution from the regular public sector employee and no contribution from a public employee without social security although that contribution comes from a reduction in salary. Nevada Revised Statutes allow for employees enrolled in the employer plan to contribute \$0 from the actual paycheck because they must take “lower salaries” in lieu of paying into their retirement plans (Reilly, 2012). See Table 2 for total retirement benefits.

In terms of total compensation, when postretirement payments and employee contributions are considered, the public sector employee without social security (Nevada model) made \$1,521,155 during 30 years of work, meaning an average compensation of \$50,705 per year. The public sector employee with social security (Florida model) made \$1,263,809 for 33 years of work with an average compensation of \$38,297 per

Table 2. Secretaries and Administrative Assistants, Inflation Indexed to 2011.

	Private sector employee	Regular public sector employee	No social security public sector employee
Total retirement benefits ^a			
Retirement payments			
Social security	\$184,759	\$188,032	\$0
401(k) distributions	\$150,155	\$0	\$0
PERS payments		\$328,647	\$476,001
Postretirement health care benefits	\$0	\$49,098	\$208,418
Total retirement benefits	\$334,914	\$565,776	\$684,418
Average annual retirement benefit	\$17,627	\$25,717	\$27,377
Unpaid remaining in 401(k)	\$0	\$0	\$0
Age eligible for retirement	59	56	53
Number of years receiving benefits	19	22	25

Note. PERS = Public Employees Retirement System.

^aAssumes both employees seek a retirement benefit equal to 71% of their last 3 years income.

year. Finally, the private sector employee earned \$1,159,971 for 36 years of work, with an average of \$32,221 each year in compensation. See Table 3 for a comparative analysis of compensation levels in both inflation-adjusted and nominal dollars.

Engineer

Similar to the executive assistant scenario described above, a typical engineer or architect reported slight differences in wages, but a large variance in benefits between classifications. The private sector employee earned \$2,015,946 in wages, salaries, and in lieu contributions over his or her lifetime, while the regular public sector employee (Florida Model) earned \$1,866,193 and the public employee without social security (Nevada Model) earned \$1,704,410. Retirement ages are modeled to remain the same for both engineers and administrative assistants. The public employee without social security can retire after 30 years without penalty, only working until age 53 and earning on average \$56,814, comparable with the regular public sector employee (\$56,551) or the private sector employee (\$55,999). See Table 4 for these wage and salary comparisons.

In terms of preretirement compensation, the private sector employee made the most with \$2,201,414 in lifetime compensation. The regular public sector employee made \$2,057,291, and the public employee without social security made \$1,869,849. The length of work explains some of these differences, as the regular public sector employee works until age 56, the private sector employee works until age 59, and the public sector employee works until age 53. However, these figures should be considered not reflective of the actual benefits paid, the state pension plans assume a higher rate of return than the individual likely will. In terms of average annual preretirement

Table 3. Comparative Analysis of Compensation Levels: Secretaries and Administrative Assistants.

	Private sector employee	Public sector employee Florida model (with social security)	Nevada model (without social security)
Age eligible for retirement	59	56	53
Inflation-adjusted dollars (2011)			
Total compensation:			
Preretirement wages and salaries	\$1,015,989	\$1,014,647	\$836,737
Postretirement benefits paid	\$334,914	\$565,776	\$684,418
Less: employee contributions	\$190,932	\$316,614	\$0
Total compensation	\$1,159,971	\$1,263,809	\$1,521,155
Share of benefits attributable to employee contributions	57.0%	56.0%	0.0%
Variance to private sector (\$)	N/A	\$103,838	\$361,184
Variance to private sector (%)	N/A	9.0%	31.1%
Average annual compensation:			
Based on total compensation (55 Years)	\$21,090	\$22,978	\$27,657
Based on total compensation (per year worked)	\$32,221	\$38,297	\$50,705
Variance to private sector (\$)	N/A	6,076	\$18,484
Variance to private sector (%)	N/A	18.9%	57.4%
Nominal dollars			
Total compensation:			
Preretirement wages and salaries	\$1,638,376	\$568,745	\$1,243,580
Postretirement benefits paid	\$1,008,520	\$1,716,636	\$1,957,905
Less: employee contributions	(\$574,951)	(\$960,648)	\$0
Total compensation	\$2,071,946	\$2,324,733	\$3,201,485
Share of benefits attributable to employee contributions	57.0%	56.0%	0.0%
Variance to private sector (\$)	N/A	\$252,788	\$1,129,540
Variance to private sector (%)	N/A	12.2%	54.5%
Average annual compensation:			
Based on total compensation (55 years)	\$37,672	\$42,268	\$58,209
Based on total compensation (per year worked)	\$57,554	\$70,446	\$106,716
Variance to private sector (\$)	N/A	\$12,892	\$49,162
Variance to private sector (%)	N/A	22.4%	85.4%

Note. N/A = not applicable.

compensation, the private sector employee only makes \$61,150, while the public sector employee without social security makes \$62,328, and the regular public sector employee makes \$62,342. See Table 4 for total compensation comparisons.

Table 4. Architects and Engineers, Inflation Indexed to 2011.

Total compensation comparison	Private sector employee	Regular public sector employee	No social security public sector employee
Wages and salaries			
General wages and salaries	\$2,015,946	\$1,866,193	\$1,538,971
Longevity pay	\$0	\$0	\$0
In lieu of wage and salary payments	\$0	\$0	\$165,439
Total wages and salaries paid	\$2,015,946	\$1,866,193	\$1,704,410
Average annual salary	\$55,999	\$56,551	\$56,814
Average annual salary increase	1.12%	3.46%	3.70%
Retirement benefits			
Employer-paid social security	\$124,989	\$115,704	\$0
Employer contributions to 401(k) program	\$60,478	\$0	\$0
Employer PERS contributions	\$0	\$75,394	\$165,439
Total employer-paid retirement benefits	\$185,467	\$191,098	\$165,439
Combined compensation levels	\$2,201,414	\$2,057,291	\$1,869,849
Average annual compensation level	\$61,150	\$62,342.15	\$62,328.32
Age eligible for retirement	59	56	53

Note. PERS = Public Employees Retirement System.

The public sector employee without social security (Nevada model) had an expected 25 years of retirement benefits and received \$1,083,903 in benefits paid out, slightly more than the regular public sector employee (Florida model; \$941,982 over 22 years) and considerably more than the private sector employee (\$595,313 over 19 years) can expect to receive in their retirement. The public employee without social security (Nevada model) received \$43,356 annually, the regular public employee (Florida model) received \$42,817 and the regular private sector employee had \$31,332 in average annual retirement benefits. Overall, the private sector employee paid directly for 57.0% of their retirement benefits, compared to a 56.0% contribution from the regular public sector employee and no contribution from a public employee without social security (although their contribution comes from a reduction in salary). See Table 5 for total retirement benefits.

When postretirement payments and employee contributions are considered, the public sector employee without social security (Nevada model) was compensated \$2,622,874 for 30 years of work, meaning an average compensation of \$87,429 per year. The public sector employee with social security (Florida model) made \$2,281,032 for 33 years of work, with an average compensation of \$69,122 per year. Finally, the private sector employee earned \$2,271,875 for 36 years of work, with an average of \$63,108 each year in compensation. See Table 6 for a comparative analysis of compensation levels in both inflation-adjusted and nominal dollars.

Table 5. Architects and Engineers, Inflation Indexed to 2011.

Total retirement benefits ^a	Private sector employee	Regular public sector employee	No social security public sector employee
Social security	\$297,454	\$288,420	\$0
401(k) distributions	\$297,860	\$0	\$0
PERS payments	\$0	\$604,464	\$875,486
Postretirement health care benefits	\$0	\$49,098	\$208,418
Total retirement benefits	\$595,313	\$941,982	\$1,083,903
Average annual retirement benefit	\$31,332	\$42,817	\$43,356
Unpaid remaining in 401(k)	\$0	\$0	\$0
Age eligible for retirement	59	56	53
Number of years receiving benefits	19	22	25

Note. PERS = Public Employees Retirement System.

^aAssumes all employees seek retirement benefit equal to 71% of their last 3 year's income.

Discussion and Conclusion

This comparative model involving public-versus-private sector compensation that evaluates the cost of lifetime compensation contributes to the ongoing debate over public-versus-private sector pay and benefits. Examining both active employment and postretirement years provides a different insight into this ongoing debate. The model explores, at the end of the day, whether public employees end up with more wealth than their counterparts in the private sector.

For the two occupation scenarios analyzed, total compensation of public employees (when postretirement payments and employee contributions are considered) is higher than that of an average private sector employee. When total compensation is based on years worked, the divide between the public and private sectors increases significantly. While preretirement compensation levels were comparable between the two sectors for the administrative assistant and more for the private sector engineer, the retirement benefits of public sector employees for both occupations are far greater than their private sector counterparts. These postemployment benefits earned over a lifetime led to the higher total compensation for the public employee in both occupations.

Part of the reason total lifetime compensation is more for the public employees (both with and without social security benefits) when compared with their private sector counterparts is twofold: Public employees are able to retire on average 5 years earlier than their private sector counterparts (Clowes, 2004); and there were more generous retirement payouts in the public sector. It is worth noting in this model that public sector employees under the Florida Model (with social security benefits) can retire at age 56 (3 years earlier than a private sector employee), while the public sector

Table 6. Comparative Analysis of Compensation Levels: Architects and Engineers.

	Private sector employee	Public sector employee	
		Florida model	Nevada model
		With social security	Without social security
Age eligible for retirement	59	56	53
Inflation-adjusted dollars (2011)			
Total compensation			
Preretirement wages and salaries	\$2,015,946	\$1,866,193	\$1,538,971
Postretirement benefits paid	\$595,313	\$941,982	\$1,083,903
Less: Employee contributions	(\$339,384)	(\$527,143)	\$0
Total compensation	\$2,271,875	\$2,281,032	\$2,622,874
Share of benefits attributable to employee contributions	57.0%	56.0%	0.0%
Variance to private sector (\$)	N/A	\$9,156	\$350,999
Variance to private sector (%)	N/A	0.4%	15.4%
Average annual compensation			
Based on total compensation (55 years)	\$41,307	\$41,473	\$47,689
Based on total compensation (per year worked)	\$63,108	\$69,122	\$87,429
Variance to private sector (\$)	N/A	\$6,014	\$24,321
Variance to private sector (%)	N/A	9.5%	38.5%
Nominal dollars			
Total compensation			
Preretirement wages and salaries	\$3,250,900	\$2,885,320	\$2,287,258
Postretirement benefits paid	\$1,771,077	\$2,844,710	\$3,098,054
Less: Employee contributions	(\$1,009,680)	(\$1,591,930)	\$0
Total compensation	\$4,012,298	\$4,138,100	\$5,385,313
Share of benefits attributable to employee contributions	57.0%	56.0%	0.0%
Variance to private sector (\$)	N/A	\$125,802	\$1,373,015
Variance to private sector (%)	N/A	3.1%	34.2%
Average annual compensation:			
Based on total compensation (55 years)	\$72,951	\$75,238	\$97,915
Based on total compensation (per year worked)	\$111,453	\$125,246	\$179,510
Variance to private sector (\$)	N/A	\$13,944	\$68,057
Variance to private sector (%)	N/A	12.5%	61.1%

Note. N/A = not applicable.

employee under the Nevada Model (no social security benefits) can retire at age 53. In addition, the retirement benefits of public sector employees significantly outpace benefits received for their private sector counterparts. Increased benefits for the public sector employee can be explained due to a DB pension fund that can generate a consistently higher return than the individual who requires an investment strategy that is far more conservative as retirement nears. As previously mentioned, most public

pension plans guarantee retirees a set income for the rest of their lives, indexed for inflation. In addition, many public employees have access to subsidized retiree health care that requires little or no co-payment. These types of benefits have mostly disappeared in the private sector. As a result, public sector employees do not assume investment risk of their pensions similar to that of workers in the private industry (Schneider, 2005). This is in sharp contrast to the investment losses by many private sector workers with individual plans during the recession.

It is important to stress that the occupations analyzed in both the public and private sectors are unique. That being said, one must demonstrate caution before assuming that all public sector employees earn more in compensation than a private sector counterpart does. This model was built to display differences in the various compensation tools used by employers in both sectors of an economy. One cannot use the model and its inputs to assume that the outputs are concrete on a national or even regional level. Comparing compensation packages is not easy. The 401(K) is exposed to market risk; the pension to political risk (i.e., retirees may see their pension cut or COLA reduced or eliminated). In addition, there are other forms of risk-based compensation: risk of being fired (job security) and risk of variable benefits (different risks with pay raises, bonuses, stocks, stock options). Competitive markets are more likely to compensate for these risks. Furthermore, there are differentials in the cost of plan administration. DB plans in government cost more to administer than the DC plans in the private sector, with large portions of the latter being funded directly by means of fund fees. Nevertheless, the model can be used as an effective tool to more clearly understand total compensation levels at the local level where the inputs can be defined more precisely. The model can also be used to more fully understand and disclose positive or negative impacts on employee compensation, especially when tweaking variables.

The issue of public sector pay and benefits has been a topic that has received a good deal of attention from state and local elected and public officials. The majority of states have recently passed some type of pension reform in the last several years. Lawmakers have enacted changes to increase employee contributions; increase age and service requirements for retirement; limit cost-of-living increase and cap benefits for new employees (Snell, 2012). Many retirement experts and public officials have reached the conclusion that even with stronger market returns, public pension systems will not be able to cover retiree benefits in the long term without some type of combination of raising taxes, significant benefit cuts and/or changing how retirement plans are structured and designed (Barro, 2012; The PEW Center on the States, 2012). With the realization that reducing benefits for new employees will not be enough to keep pensions solvent, some state and local governments have turned to reducing benefits for current retirees and employees. According to Barro (2012), as the number of reforms has increased, so has their aggressiveness. Early reforms by state and local governments applied only to future hires (which did little to address current budget gaps); however, recent reforms have applied more to current workers and even retirees. The continued focus on public pay and benefits will intensify the reexamination on how public sector employees are compensated. In light of this analysis, several important public policy issues are worth exploring.

First, given the reality of increased life expectancy, retirement plans that encourage retirement while an individual is in his or her 50s should be viewed with a great deal of concern. From both psychological and financial perspectives, working into ones 60s and 70s is necessarily an emerging reality (Frank, Gianakis, & Neshkova, 2011; *The Economist*, 2011). In this analysis, one of the primary reasons the divide between lifetime compensation for public employees increased significantly over their private sector counterparts when years worked was considered was due to the ability of public workers to maximize their payout and collect their retirement with no penalty at an earlier time period than private workers. There seems to be no justification for public sector employees retiring sooner than private sector ones (excluding perhaps public safety workers). As mentioned earlier, in preparation for the rising rate of retirees, governments are already beginning to raise the age of retirement to offset pension costs. Not only is the United States facing a serious pension debt, but also life expectancy is continuing to rise. Since 1971, life expectancy has increased by 4 or 5 years and is projected to increase an additional 3 years by 2050 (*The Economist*, 2011). People are living longer and retiring earlier. The average age of retirement for all workers in the United States in 2011 was 63, which is almost an entire year younger than in 1970 (*The Economist*, 2011). Raising the retirement age can give the employee more years of wages while allowing governments to gain more in taxes and paying out less in benefits,

There also may be a need to reevaluate how to compensate and reward public employees. Is public pay too heavily skewed toward deferred compensation such as pensions, retiree health care, and other postretirement benefits? The practice of providing deferred compensation has been carried out in ways that often hide a full accounting of the costs from the public and pushes a significant amount of the costs onto future generations of taxpayers, elected officials, and public managers. The result has been to transfer current fiscal deficits into future debt, with interest.

In addition, are current public sector pay schemes the most effective compensation strategy needed to attract an emerging workforce of young people whose skills are needed by the public sector to address a myriad of complex and intractable problems facing communities? Very few public employees are eligible for bonuses, profit sharing, or other strategies utilized in the private sector to reward performance and innovation and to compensate for salary and wage limits in a public civil service system (Coggburn & Kearney, 2010). A challenge with the DB plan, which is the primary pension plan for public workers, is its general lack of portability (Clark & McDermed, 1990). It contributes to workers staying with one employer, no matter how unhappy or unproductive they are, or how much they desire to move because they often want to maximize their retirement payout and/or are financially penalized by leaving early. This has been commonly referred to as “golden handcuffs.” Increasingly, younger employees tend to move around from job to job, city to city, and state to state in search of new opportunities, promotions, and experiences.

Some state and local governments are experimenting with DC, hybrid *or* cash-balance plans. Hybrid plans are a mix of DB and DC plans. Hybrid plans emerging are designed to limit risk and market volatility in order to provide retirement security for

employees. These approaches give employees the upside of a 401(k) style plan such as portability and the ability to roll over retirement savings when the worker changes jobs without the downside of potential significant investment losses. Under cash-balance plans, workers get an individual retirement account that both the employee and the employer contribute to, while the employer guarantees a minimum return. Cash-balance plans have many positives in that employees are automatically enrolled, benefits are guaranteed, returns are secure, and assets are portable (Cahill & Soto, 2003). The trade-off is that these plans have lower expected returns than a DC and they pay benefits in a lump sum. Some critics have argued that midcareer changeovers discriminate against older workers who have spent many years working for the same employer (Johnson & Uccello, 2002). Based on concerns of age discrimination, the IRS placed a moratorium on these plan conversions in 1999; however, it was ended with the passage of the Pension Protection Act (PPA) of 2006 that clarified the legal status of cash-balance plans and provides safe harbor for these plans (D'Souza, Jacob, & Lougee, 2013).

In addition to the realization that many traditional DB plans with guaranteed pension income for state and local governments are not affordable or sustainable, these plans may no longer be the best choice for today's more mobile workforce. DC, hybrid, and cash-balance plans have the potential to be much more appealing to younger populations that desire more flexibility in their retirement accounts. Younger workers may prefer more portable plans to accommodate their career trajectories. Likewise, workers with a series of relatively short-term jobs and those who prefer not to work for a single employer for their entire career may also prefer these more flexible plans. It has also been argued that women may benefit more from non-DB plans given they tend to have employment histories with shorter duration and more gaps in their employment participation than men (Blau & Kahn, 2006). Moving public sector employees to these types of systems allows these benefits to follow workers if they choose to switch jobs and move to the private, nonprofit or to another public sector job and reduce the incentive to stay at one job for an entire career. They also can increase the active participation of public employees in the retirement planning, while transferring some of the risk away from the taxpayer. Further, there is evidence that the absence of age-related incentives in DC plans leads workers to retire later when compared with employees with DB plans (Friedberg & Webb, 2005). Different types of pension plans appeal to different demographics. Public managers need to factor this into their human resource decision-making.

In conclusion, this model does not end the debate on comparative compensation analysis. It is a tool that helps illustrate the impact of lifetime compensation and how a DB pension, retiree health care and early retirement can increase the divide between the two sectors. The continued debt surrounding public pensions in the United States will ensure the issue of comparable pay between the two sectors remains in the forefront of public policy debates. Designing compensation systems that are sustainable and allow for both the recruitment and retention of a competent workforce while providing some level of protection for those in the retirement years should be a concern for both the public and private sectors.

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1. All values presented below are inflation adjusted to 2011 dollars (reference not repeated).

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