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and Labor Policy

"Are Federal Workers Underpaid"

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Chairman Ross, Ranking Member Lynch and Members of the Committee. Thank you for offering me the opportunity to testify with regard to federal employee compensation.

My name is Andrew Biggs and I am a resident scholar at the American Enterprise Institute. However, the views I express today are my own and do not represent those of AEI or any other institution.

My testimony today is based upon joint research with Jason Richwine of the Heritage Foundation. A copy of our working paper has been enclosed with my testimony.[1]

We limit our analysis to one question: Do federal employees on average receive greater compensation than these individuals could receive in the private sector? Our answer, which is consistent with several decades of economic research, is yes. We will briefly outline federal pay with regard to salaries, benefits, and job security.

Before beginning, however, it is important to note what this analysis does *not* say: it does comment on the productivity of federal employees or whether the jobs they perform are worthwhile, nor does it comment on whether the number of federal employees is larger or smaller than is needed to perform the assigned tasks. It does not comment on the work or dedication of federal government employees.

It merely asks an empirical question: whether federal employees receive higher or lower pay than those employees could themselves garner in alternate employment in the private sector.

Salaries

Some have argued that federal employees receive total compensation that is twice the level of the average private worker. This is true but misleading, as it ignores crucial differences between the federal and private workforces. Federal employees on average are more educated and experienced than private sector workers and so in a competitive market *should* receive higher pay. The question is, how *much* higher?

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[1] Biggs, A. and Richwine J. "Comparing Federal and Private Sector Compensation." AEI Economic Policy Working Paper 2011-02. March 4, 2011. http://www.aei.org/paper/100203

Labor economists' standard method for making apples-to-apples wage comparisons is regression analysis, which allows economists to control for the "human capital" – that is, the earnings-related skills and personal characteristics – of workers in each sector. The Congressional Budget Office has termed the human capital approach "the dominant theory of wage determination in the field of economics,"[2] and for good reason. Similar methods have been utilized for studies of the union pay premium and pay discrimination by race or gender. This basic approach is familiar to and accepted by nearly every trained economist.

By controlling for experience, education, geographic location and other factors, economists can isolate the effects of federal employment on salaries. In the past, many studies have been conducted on federal pay. These studies, which are summarized in the 1999 Handbook of Labor Economics, generally find a federal salary premium of 10 to 20 percent over otherwise similar private sector employees.

We updated this work using data from the 2006 through 2010 editions of the Census Bureau's Current Population Survey. We compare federal employees only to workers at large private sector firms, which offer the best salaries and benefits. We find a federal pay premium of 14 percent over similar private sector employees.

The federal pay premium is largest for workers with less education and those with long job tenure. For instance, federal employees with only a high school degree receive a salary premium of over 22 percent while those with graduate degrees receive a salary premium of only 3 percent.

However, it is possible that this standard human capital method ignores certain relevant differences between workers. For instance, CPS educational data tell us only if an individual has a certain degree, not the quality of the college he or she attended. Similarly, perhaps federal workers are more highly motivated than private employees, an attribute that survey data cannot capture.

As an alternative, we used data from the Survey of Income and Program Participation (SIPP) which allowed us to follow individual workers' salaries over time, tracking how their own pay changed as they changed jobs. This method does not require us to control for individual

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[2] Congressional Budget Office. "Comparing the Pay of Federal and Nonfederal Law Enforcement Officers." August, 2005.

differences between workers; rather it compares pay for the *same* worker when that worker held federal and private sector jobs. Workers who found a new job in the federal government received salaries 8 percent higher in their first year than those who found new jobs in the private sector. This finding confirms our prior results, which show a small pay premium for new federal employees, rising as job tenure increases.

Estimates from the President's Pay Agent

You may be aware of reports from the President's Pay Agent – not an actual person, but a function headed by the Secretary of Labor and directors of the Office of Management and Budget and Office of Personnel Management – which indicate that federal jobs pay roughly 25 percent *less* than similar private jobs. The Pay Agent's method assigns a General Schedule level to a variety of private sector jobs within a broad set of occupational categories. The salaries of these private sector positions are then compared to similar federal jobs. The Pay Agent's method tends to find that private sector jobs pay more than federal jobs with the same assigned GS level.

How do these results match up with the economic approach that finds federal workers to receive higher pay? The Pay Agent approach differs from the economic method in that the Pay Agent compares pay for jobs while economists compare pay for people. As the Congressional Budget Office has pointed out,[3] the jobs-based approach suffers from three significant weaknesses:

First, the inherently subjective nature of determining the precise GS level that should be assigned to a given private sector job. How do we truly know, for instance, that a given private position is equivalent to a GS-8 and not a GS-9?

Second, the omission of fringe benefits and other relevant employment characteristics such as job security and flexibility, which can significantly affect the market wage demanded for a given job; and

Third, the failure to account for differences in the experience and education of federal and private sector employees occupying the same job positions. A number of studies dating back to

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[3] Congressional Budget Office. "Comparing the Pay of Federal and Nonfederal Law Enforcement Officers." August, 2005.

1984 have found that the federal government places workers in positions higher than these workers could hold in the private sector. A 2002 study of BLS occupational data found that "Federal workers have significantly fewer years of education and experience than private sector workers in the same level of responsibility in an occupation."[4] For instance, a senior accountant in the federal government might qualify only as a junior accountant in the private sector. As a result, lower salaries for federal jobs do *not* necessarily imply lower salaries for federal workers. This is why most economists reject the government's method in favor of person-to-person analysis.

Benefits

Fringe benefits are an important aspect of total compensation. We cannot make accurate public-private pay comparisons without accurately measuring the benefits that employees receive today and can expect to receive in the future.
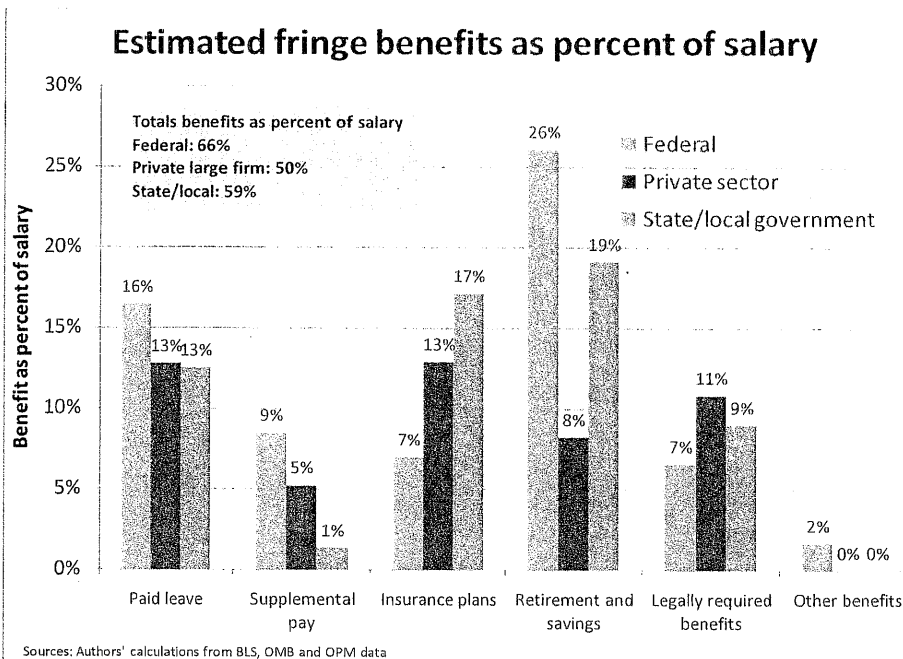
The Office of Personnel Management reports that federal employees receive benefits equal to 36 percent of salaries, while the Bureau of Labor Statistics finds that benefits to private employees in large firms equal 49 percent of pay. This would seem to make federal benefits appear less generous.

But two issues stand out. First, OPM's benefit figures exclude the value of paid time off, overtime, and several other benefits. Paid time off alone is a large factor. According OPM data, federal employees on average use around 41 days of paid leave per year, 9 days more than in the private sector. Correcting for these omissions, federal benefits equal about 61 percent of salaries.

And second, OPM's pension figures are based on what employers contribute today, not what employees will receive in retirement. Due to different accounting conventions, employers with defined benefit pension contribute significantly less per dollar of future retirement benefits than do employers with defined contribution 401(k) plans. Without controlling for these different funding conventions we will understate defined benefit pension compensation, which is particularly important in the public sector.

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[4] Famulari, M. "What's in a Name? Title Inflation in the US Federal Government." Working paper. 2002. Revision requested by *Industrial and Labor Relations Review*.

Estimated fringe benefits as percent of salary

Totals benefits as percent of salary
Federal: 66%
Private large firm: 50%
State/local: 59%

Legend:
- Federal
- Private sector
- State/local government

Y-axis: Benefits as percent of salary (0% to 30%)

Data by category:
- Paid leave: 16%, 13%, 13%
- Supplemental pay: 9%, 5%, 1%
- Insurance plans: 7%, 13%, 17%
- Retirement and savings: 26%, 8%, 19%
- Legally required benefits: 7%, 11%, 9%
- Other benefits: 2%, 0%, 0%

Sources: Authors' calculations from BLS, OMB and OPM data

Adjusting for these factors, federal employees receive total benefits equal to 66 percent of salaries while private sector benefits equal 50 percent of salaries. (For context, state and local government employees receive benefits equal to an average of 59 percent of salaries, though BLS figures do not include often-generous retiree health benefits paid at the state/local level.) When a federal salary premium of 14 percent is combined with a benefit premium of 33 percent, total federal salaries and benefits are roughly 25 percent above those similar private sector employees would receive.

Job security

Economists since Adam Smith have noted that positions with greater job security *should* pay lower salaries, just as safe investments like bonds pay lower returns than stocks. The BLS Job Openings and Labor Turnover Survey (JOLTS) reports that in any given year, federal workers are less than one-third as likely as private sector employees to be fired or laid off.

We estimate the value of job security, using the tools of financial economics to calculate the pay reduction a private sector worker would willingly accept to have the low discharge rates of federal employees. These calculations involve assumptions regarding the duration of unemployment, the level of unemployment benefits collected while unemployed, and the compensation of the new job the individual may find. We find that federal workers' job security is equivalent to an extra 29 percent of pay if we assume that federal employees, were they to work in the private sector, would be similar to other private sector workers in the probability and duration

of unemployment. Assuming, more conservatively, that federal employees, perhaps due to their greater education, would be half as likely as other private workers to be discharged from private employment, the job security pay premium equals 11 percent of compensation.

When salaries, benefits, and job security are properly valued, the total federal compensation package is worth upwards of 39 percent more than is paid to similar private sector workers. The total federal pay premium approaches $60 billion per year.

What to do?

Identifying the pay premium is far easier than fixing it. Simple pay freezes or furloughs are blunt instruments that will not get to the heart of the issue, as they do not address the often significant differences in the generosity of pay among different federal employees. Increased flexibility to raise salaries when demand for a given job is low and reduce salaries when demand for a position is high is one way to allow market information to flow into federal salary decisions. Likewise, it makes sense for certain federal benefits – in particular, retirement contributions and paid time off – to be brought more in line with private sector standards. But more broadly, federal pay must be made to reflect market conditions, not with a one-time adjustment but with fundamental reforms that work consistently into the future.

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Comparing Federal and Private Sector Compensation

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Abstract

Public sector compensation has come under increased scrutiny from politicians and the media, but comprehensive technical comparisons of federal and private pay have been largely absent from the discussion. Drawing from the academic literature and using the most recent government data, this report measures the generosity of federal pay and benefits, including the implicit compensation that federal employees derive through greater job security. Compared to the pay of similar private sector workers, we estimate a federal salary premium of 14 percent, a benefits premium of 32 percent, and a job security premium for federal workers of at least 11 percent of pay. Together, these generate an overall federal compensation premium of approximately 39 percent. Reducing federal pay to market levels could save taxpayers roughly $60 billion per year.

Introduction

The seemingly excessive compensation of public sector employees was a major political issue during the 2010 election campaign, and the new Congress is now considering reforming the federal pay system. It is essential that lawmakers, political commentators, and voters know whether and to what extent federal workers are paid more than what they could earn in the private sector. Partisans on both sides of this issue have been given to extreme and unsupported claims. Politicians and journalists have exaggerated the federal-private pay disparity by comparing raw salary figures without taking into account the above-average skills of federal workers. Defenders of federal pay, particularly public sector unions, have claimed in turn that federal workers are *underpaid* and described evidence to the contrary as "lies" and "scapegoating."[1]

In response to both sides, we offer this careful analysis of federal compensation. Drawing on three decades of academic research, the latest Census Bureau micro data, official government reports, and standard economic tools, we document the extent to which federal workers are "overpaid" by private sector standards. We conclude that the total federal pay premium— combining cash wages, fringe benefits, and job security—is approximately 39 percent, or nearly $60 billion annually.

Cash Wages

Federal salaries are significantly higher on average than private sector salaries, but this kind of comparison is simplistic and misleading. Since federal workers have more skills and experience on average than private workers, we would expect federal salaries to be higher. The relevant question is whether federal workers earn more than *comparable* private sector workers.

The standard method in the academic literature for making apples-to-apples wage comparisons is regression analysis, which allows economists to control for the "human capital" – that is, the earnings-related skills and personal characteristics – of workers in each sector. The Congressional Budget Office has termed the human capital approach "the dominant theory of wage determination in the field of economics,"[2] and for good reason. Similar methods have been utilized for studies of the union pay premium and discrimination by race or gender. This basic approach is familiar to and accepted by nearly every trained economist. If federal salaries are still higher after controlling for a large set of earnings-related differences, then federal workers earn a wage premium—that is, they are overpaid relative to what they could earn in the private sector.

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[1] See comments from union leaders in Davidson, Joe. "Dissatisfaction in federal employee pay sign of disconnect." *Washington Post*, October 18, 2010, at *http://www.washingtonpost.com/wp-dyn/content/article/2010/10/18/AR2010101805719.html* (January 19, 2011).

[2] Congressional Budget Office. "Comparing the Pay of Federal and Nonfederal Law Enforcement Officers." August, 2005.

For over three decades, academic economists have run regressions with various specifications to estimate the federal premium. Though they have used different datasets with different control variables covering different time periods, their results have been largely consistent. The typical finding is a federal salary premium in the range of 10 to 20 percent, meaning a federal worker receives $1.10 to $1.20 for every $1.00 earned by a comparably-skilled private worker.[3]

Last year we employed the standard regression methodology using 2009 wage data from the Current Population Survey (CPS), a monthly survey run by the Census Bureau. As reported in the *Wall Street Journal*, we found a 12 percent federal premium for 2009, right in line with other economists' estimates.[4]

Data and Methods. For this larger study of federal compensation, we decided to average wage estimates over the past five years, meaning the 2006 through 2010 editions of the CPS. The five-year average is more representative of recent trends in federal pay, and the larger sample size allows us to use a more detailed set of control variables.

We used the Annual Demographic Supplement of the CPS, which contains information on annual earnings. The analysis is limited to adult civilians working full-time for a wage or a salary during the whole previous year. Workers with imputed earnings were dropped, since the imputation process does not take government status into account. People with annual earnings less than $9,000 were dropped as well. We also excluded postal workers, since they are part of a quasi-independent agency with a different salary structure than other federal workers.

In addition to dummy variables for federal, state, and local government employment, we used the following controls: usual hours worked per week, experience[5], experience-squared, years of education, firm size (6 categories), broad occupation (10 categories), immigration status, state of residence, race, gender, marital status, and year dummies to account for inflation. We also included interaction terms: experience x education, experience-squared x education, marital status x gender, and gender x race.

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 federal workers are compared only to workers at large firms (1000+ employees), which tend to pay higher salaries and more generous benefits than smaller firms.[6] Since firm size is a characteristic of employers rather than employees, this is controversial. Some argue that larger firms tend to

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[3] Handbook of Labor Economics, 1999.
[4] http://online.wsj.com/article/SB10001424052702303828304575180421298413374.html
[5] Experience is generally measured as age minus years of education minus six.
[6] Firm size is 1000 an up for salaries, but due to limitations of BLS data is 500 or more employees for benefits.

pay higher wages because they are more successful, that the federal government cannot be "successful" in any market sense, and therefore a firm size control is inappropriate. However, working at a large firm reflects to some extent an employee's preferences for whatever characteristics large firms tend to exhibit. If federal workers quit in favor of private sector jobs, they would likely choose a private firm that is above-average in size. For that reason, we believe controlling for firm size is the better choice for both wages and benefits. Excluding the firm size control would make the observed federal premium substantially *higher* than what we are reporting here.[7]

Some economists also control for union status, but we do not feel that is appropriate. Since union representation tends to increase pay but government's have direction regarding whether to allow unions or collective bargaining, Congress's decision to allow federal workers to unionize is in effect a policy decision that leads to increased compensation. One could argue that union membership, like firm size, is also a federal worker's revealed preference that he would continue to seek in the private sector. Unlike firm size, however, this preference could be driven mainly by the higher wages and benefits of unionized labor, which should be included in the federal premium. Controlling for union status would slightly lower our premium estimates but would not change any of our conclusions.

Table 1: Wage Regression Results, 2006-2010.	
Independent Variable	**Coefficient (%)**
hours worked (per week)	1.4
experience (in years)	1.8
education (in years)	8.8
foreign-born	-7.4
married	20.1
Black	-14.1
Hispanic	-10.6
woman	-14.7
federal worker	**14.1**
state worker	-13.7
local worker	-6.4
Observations	285,874
Adjusted r-squared	0.471
Source: Authors' calculations from Current Population Survey.	

Results and Conclusion. We regressed the log of annual earnings on the control variables listed above. The first column of Table 1 lists key independent variables, while the second column shows the percentage increase in wages associated with a one unit increase relative to the population average in each variable.[8] For example, an additional year of education for the average worker leads to an 8.8 percent increase in wages, all else equal.

The most important variable in the list for our purposes is federal government status. Even after controlling for observable skills and a detailed list of personal characteristics, federal workers earn about 14 percent more in wages than private sector workers. This conclusion is consistent with thirty years of academic research on the subject.

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[7] Without a firm size control, the federal premium would be 21.9 percent. This is one of the few individual control variables that makes a substantial difference in our estimate. Removing controls for state of residence, for example, would change the premium by less than one percentage point.
[8] The displayed percentages are calculated by exponentiating the regression coefficient and subtracting one: EXP(coefficient) -1.

Distribution of the Premium. The federal salary premium is generally smaller for more educated workers and larger for more experienced workers. As Table 2 shows, federal employees with only a high school education receive salaries over 22 percent higher than comparable private workers, while holders of graduate degrees make just 3 percent more. Greater experience tends to increase the federal premium, but the effect is not large until employees have worked for about 30 years.

Table 2: Wage Premium by Experience-Education Group					
	Experience (years) →				
Education ↓	all	under 10	10-19	20-29	30+
All	14.1	10.3	12.0	12.2	18.0
High school	22.3	17.0	18.8	20.2	23.6
Two-year college	10.5	10.1	10.0	6.0	14.1
Four-year college	7.7	9.6	7.3	3.7	11.2
Graduate school	3.0	-5.8	0.1	7.3	9.2
Source: Authors' calculations from Current Population Survey.					

State and Local Government Employees. Unlike federal workers, state and local workers endure a wage *penalty* compared to private workers. However, whether state and local employees are undercompensated in total demands analysis of the value of benefits and job security.[9]

The Pay Agent's Method. In the analysis above, we matched workers in each sector using their skills and personal characteristics. This follows the "human capital model" of wages, the overwhelming preference of labor economists, which holds that workers are paid according to their abilities.

When the federal government conducts its annual federal-private pay comparison, it compares job levels rather than workers. The analysis is overseen by the President's Pay Agent—not an actual person, but a function headed by the Secretary of Labor and the directors of the Office of Management and Budget and Office of Personnel Management. The 2010 report concludes that federal workers are underpaid in wages by 24 percent relative to the private sector.[10]

The process is complex, but the Pay Agent essentially assigns a general schedule (GS) level to a variety of private sector jobs within a broad set of occupational categories. Salaries for these jobs are then compared to pay for federal positions at the same GS level. Private sector jobs assigned to a given GS level are typically more highly paid than their federal counterparts, leading to the conclusion that federal jobs pay less.

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[9] Existing studies undercount and omit certain fringe benefits, leading to the erroneous conclusion that state and local workers earn the same or lower compensation than comparable private workers. We elaborate in a Heritage Foundation working paper, "Are California Public Employees Overpaid?" available at: http://www.heritage.org/About/Staff/Departments/Center-for-Data-Analysis/Models-and-Data
[10] http://www.govexec.com/story_page.cfm?articleid=46420&dcn=e_gvet

There are several reasons that this method has been, in the words of one study, "severely criticized" by economists.[11] The Congressional Budget Office has pointed to three main ones: First, the process involves "subjective choices regarding which grades and steps and which experience profiles to use for the comparisons." That is, different analysts may come to different conclusions regarding where to place a given private sector job on the federal GS scale. Second, the job-matching procedure measures only salaries, omitting any measurement of benefits, job security, and work conditions that determine the overall desirability of federal or private employment.

Third, and most importantly, the Pay Agent's approach fails to account for different skill levels that private and public workers may possess in seemingly similar jobs. More specifically, there is evidence that the federal government hires workers at higher positions than they could hold in the private sector and then promotes them more quickly as well. This means, for example, that a senior accountant in government might qualify only as a junior accountant in the private sector. This senior accountant would be "underpaid" compared to private sector employees only because he is under-qualified by private sector standards.

A study of BLS occupational data by Famulari (2002) finds that, "Federal workers have significantly fewer years of education and experience than private sector workers in the same level of responsibility in an occupation."[12] Famulari finds that these differences play out through federal hiring and promotion practices:

- The Federal government, particularly in Washington, DC, hires workers at initially higher levels of work. These
- differentials are so large that, even after a number of years on the job, private sector workers are employed at substantially lower levels of responsibility than the starting levels of responsibility for DC Federal government workers. In addition, the Federal government, particularly in DC, promotes workers more quickly than in the private sector, conditional on observed worker characteristics.

Famulari concludes that, "The large private sector premium paid to workers in an occupation and level is largely explained by the more valuable skills of private sector workers within an occupation and level."

A 1984 Congressional Budget Office study concluded that the average federal worker resides two-thirds of one pay grade above a similar private sector employee.[13] A 1997 academic study by Famulari found a larger gap of three-quarters of a grade.[14] The

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[11] Krueger, Alan. "The Determinants of Queues for Federal Jobs." National Bureau of Economic Research. Working Paper 2499. January 1988.
[12] Famulari, M. "What's in a Name? Title Inflation in the US Federal Government." Working paper. 2002. Revision requested by *Industrial and Labor Relations Review*.
[13] Congressional Budget Office. "Reducing Grades of the General Schedule Workforce." September, 1984.

Pay Agent's statistics are skewed as a result. As the CBO noted, "unless the job matches are identical, differences that an analysis reveals may be caused by differences in the jobs and the people who hold them rather than by the pay structures of the employing governments."

While the Pay Agent's approach may show that federal jobs pay lower salaries, it cannot tell us whether federal *employees* are overpaid or underpaid. For that, a person-to-person, human capital-based approach remains the clear preference among economists.

Summary. The standard methodology used by economists to compare federal and private pay is regression analysis that controls for worker characteristics. Using the same technique, we estimate that the federal wage premium between 2006 and 2010 was about 14 percent, a number in line with the past literature. The government's official pay comparison, which suggests federal workers are significantly underpaid, is flawed and rejected by most labor economists.

Benefits

Non-wage compensation—"benefits," for short—is an important part of overall pay and must be evaluated if meaningful public-private pay comparisons are to be made. The Bureau of Labor Statistics compiles data on non-wage benefits for private sector employers and for state and local governments. These data are collected through the National Compensation Survey and published through the Employer Costs for Employee Compensation series.[15] These benefits can include pensions, health coverage, paid time off, and other forms of non-wage compensation. Using these data, analysts have compared the relative pay and compensation for state and local government employees to private sector workers with similar earnings-related characteristics, such as age, education, and other factors.

Unfortunately, the BLS does not compile similar data for federal employees, making comparisons of total compensation more difficult. It would be preferable for the BLS to compile federal benefits in a consistent way with those for private sector and state and local government employees. Lacking that, analysts attempt to approximate federal benefits using other data.

One substitute approach relies on the National Income and Product Accounts (NIPA), which tracks wages and other forms of compensation by industry. NIPA data may overstate or understate federal employee compensation depending on the category. For instance, NIPA pension contributions include both the cost of currently accruing *benefits and contributions to amortize the*

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[14] See Famulari, Melissa. "Maintaining a Labor Force Under Wage Controls: The Case of the Federal Government." Working paper. University of Texas at Austin, 1997.

[15] See http://www.bls.gov/news.release/ecec.toc.htm

*value of past unfunded liabilities, the latter of which should n*ot be counted as employee compensation. On the other hand, NIPA data do not include the value of fringe benefits such as paid time off

We can do better. Our principal sources are data from the Office of Management and Budget (OMB) and the Office of Personnel Management (OPM), which we combine to provide a measure of total average federal fringe benefits that nearly matches the level provided in BLS data. For simplicity, benefits are expressed as a fraction of workers' wages. This makes total compensation equal to *salaries x (1 + benefits)*.

We begin with the principal benefit categories reported by BLS for private sector and state/local government workers in 2008. These include a number of principal benefit categories:

- Paid Leave;
- Supplemental Pay;
- Insurance Plans;
- Retirement and Savings;
- Legally Required Benefits; and
- Other Benefits

Each principal category then has several more detailed sub-categories. For instance, Paid Leave includes vacation, holiday, sick leave, and other paid leave.

Benefits for private sector employees in larger firms, state and local government employees, and all private sector workers are shown in Table 3. In total, private sector employees in large firms receive benefits equal to an average of 49 percent of wages, while state/local government employees receive benefits equal to 52 percent of pay. For context, private employees overall receive benefits equal to 42 percent of salaries, reflecting the less generous benefits from smaller private employers.

Calculating Federal Benefits. We now attempt to populate the BLS benefit categories with benefits for federal employees. Our first source of information is cost factors published by OMB in 2008

Table 3. Non-wage benefits as a percentage of salaries, for private sector employees (all firms and large firms only) and state/local government employees, 2008.			
	Percent of salaries		
	Private 500+	*State/ Local*	*Private (all)*
Total benefits	*49.3%*	*51.9%*	*41.8%*
Paid leave	*12.8%*	*12.5%*	*9.5%*
Vacation	*6.7%*	*4.4%*	*4.9%*
Holiday	*3.9%*	*4.1%*	*3.1%*
Sick leave	*1.6%*	*3.1%*	*1.2%*
Other paid leave	*0.4%*	*0.9%*	*0.3%*
Supplemental pay	*5.3%*	*1.4%*	*4.3%*
Overtime and premium	*1.6%*	*0.7%*	*1.5%*
Shift differentials	*0.7%*	*0.2%*	*0.4%*
Nonproduction bonuses	*3.0%*	*0.5%*	*2.5%*
Insurance plans	*12.9%*	*17.2%*	*10.8%*
Life insurance	*0.3%*	*0.4%*	*0.2%*
Health insurance	*12%*	*16%*	*10.1%*
Short-term disability insurance	*0.4%*	*0.1%*	*0.3%*
Long-term disability insurance	*0.3%*	*0.2%*	*0.2%*
Retirement and savings	*8.3%*	*19.1%*	*6.1%*
Defined benefit	*3.7%*	*10.5%*	*2.7%*
Defined contribution	*3.7%*	*1.3%*	*2.8%*
Legally required benefits	*10.9%*	*9.0%*	*11.8%*
Social Security and Medicare	*8.5%*	*7.1%*	*8.4%*
Social Security	*6.9%*	*5.5%*	*6.7%*
Medicare	*1.8%*	*1.6%*	*1.7%*
Federal unemployment	*0.1%*	*0.0%*	*0.2%*
State unemployment	*0.6%*	*0.2%*	*0.8%*
Workers' compensation	*1.6%*	*1.7%*	*2.4%*
Source: BLS, Employer Costs for Employee Compensation survey.			

for use in decisions regarding the outsourcing of federal activities to the private sector.[16] These cost factors express the value of certain federal benefits as a percentage of salaries and are used to compare the compensation of federal employees relative to those of private workers who might perform the same duties. While the OMB cost factors are extremely helpful for the categories where they apply, they leave out a number of benefits that BLS data include.

Table 4 reproduces cost factors from the 2008 OMB memorandum. The "Insurance and Health Benefit" category includes the cost of life insurance (0.2 percent of salary) and health insurance (6.8 percent). "Standard Civilian Retirement Benefit" includes the annual accruing cost for pension benefits, including Social Security, the defined contribution (DC) Thrift Savings Plan, the defined benefit (DB) Federal Employees or Civil Service Retirement Systems, and retiree health benefits. The true value of retiree health benefits to federal retirees is understated as these cost factors represent the employer's cost without reflecting the approximately 25 percent higher cost that retirees would pay for health coverage in the individual market. [17] Because employer contributions for retiree health care are not disaggregated we do not adjust for market value here.

Table 4. Elements of the Civilian Position Full Fringe Benefit Cost Factor, 2008.	
Element	Cost factor
Insurance and Health Benefit	7.00%
Standard Civilian Retirement Benefit	26.10%
Medicare Benefit	1.45%
Miscellaneous Fringe Benefit	1.70%
Total Civilian Position Full Fringe Benefit	36.25%
Source: Office of Management and Budget	

Importantly, these cost factors do *not* include the cost of amortizing unfunded benefit liabilities from prior years; thus, they represent what actuaries would refer to as the "normal cost" of each program, that is, the value of pension compensation earned in a given year. (Note that adjustments to the value of DB pensions will follow in a later section.)

The "Medicare Benefit" category includes the 1.45 percent employer's share of the Medicare payroll tax. The components of the "Miscellaneous Fringe Benefit" category include payments for workman's compensation, unemployment premiums, bonuses and certain types of employee awards.

The OMB cost factors allow for the full or partial population of the "Insurance plans," "Retirement and Savings," and "Legally Required Benefits" categories as outlined by BLS. However, they do not provide full information regarding the value of "Paid Leave," "Supplemental Pay," and several small subcategories. For these, we turn to the OPM publication "Federal Civilian Work

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[16] Memorandum for the Heads of Executive Departments and Agencies. From Jim Nussle, Director, Office of Management and Budget. March 11, 2008. Subject: "Update to Civilian Position Full Fringe Benefit Cost Factor, Federal Pay Raise Assumptions, and Inflation Factors used in OMB Circular No. A-76, 'Performance of Commercial Activities.'"
[17] Melinda Beeuwkes Buntin, José S. Escarce, Kanika Kapur, Jill M. Yegian and M. Susan. "Trends and Variability In Individual Insurance Products." *Health Affairs.* September 24, 2003.

Force Statistics: Work Years and Personnel Costs, Fiscal Year 2005."[18] It provides useful data regarding paid time off, supplemental pay, and other areas. It does not appear to have been published subsequent to 2005, but it is unlikely that federal benefit costs have shifted significantly over the course of a few years. The figures reported below are for non-postal federal employees, although data for postal employees is also available.

Vacation: OPM reports that non-postal federal employees used an average of 20.1 days of annual leave in 2005, equal to 7.7 percent of base pay assuming a 260 day work year. However, this figure excludes lump sum payments for unused annual leave, which totaled 0.7 percent of direct pay in 2005. Total compensation via annual leave in 2005 therefore equaled 8.5 percent of direct pay. For private sector and state and local government employees the corresponding figures are 4.9 percent and 4.4 percent, respectively.[19] Thus, federal employees receive approximately three-quarters more vacation time than private workers with large firms.

Holidays: OPM reports that non-postal federal employees used an average of 8.9 holidays per year, which equals approximately 3.4 percent of federal salaries.[20] For private sector and state and local government employees the corresponding figures are 3.1 percent and 4.1 percent, respectively. Federal employees receive almost three times as many paid holidays as the typical private sector employee in a large firm.

Sick leave: OPM reports that federal employees used an average of 9.4 sick days per year. Assuming a standard work year of 52 five-day weeks, sick time would account for 3.6 percent of federal salaries.[21] This figure may understate effective compensation through sick days to the degree that unused sick days may be converted to pay at retirement.[22] For private sector and state and local government employees the corresponding figures are 1.2 percent and 3.1 percent, respectively. Sick leave used by federal workers is only slightly higher than state and local government employees, but three times higher than comparable private sector workers.

Overall, federal employees receive paid leave equal to approximately 16.5 percent of pay, versus 9.5 percent for the private sector and 12.5 percent for state/local government employees.

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[18] Available at http://www.opm.gov/feddata/html/wypc/2005/2005wypc.pdf; 2005 is the most recent year for which this publication is available online.
[19] OPM (2005), p. 66.
[20] OPM (2005), p. 66.
[21] OPM (2005), p. 66.
[22] Older federal employees under the CSRS retirement system have a greater ability to cash out unused sick days than younger employees covered by FERS, although recent steps have been taken to grant allow FERS employees

Overtime: OPM reports that overtime for non-postal federal employees in 2005 equaled 4.7 percent of base pay.[23] For private sector and state and local government employees the corresponding figures are 1.5 percent and 0.7 percent, respectively.

Shift differentials: Here we include holiday pay (0.3 percent), Sunday pay (0.3 percent), night differentials (0.4 percent) and hazardous duty pay (0.1 percent), for a total of 1.1 percent of pay.[24] For private sector and state and local government employees the corresponding figures are 0.4 percent and 0.2 percent, respectively.

Non-production bonuses: OPM reports that in 2005 non-postal federal employees received cash awards equal to 1.4 percent of pay.[25] For private sector and state and local government employees the corresponding figures are 2.5 percent and 0.5 percent, respectively.

Other: Here we include pay for post differentials (0.1 percent); physician's comparability allowance (0.6 percent); and other (0.6 percent), for a total of 1.3 percent of pay.[26]

Overall, supplemental pay for federal employees equals 8.5 percent of salaries, versus 4.3 percent for private sector employees and 1.4 percent for state and local government workers.

This information allows us to populate most of the benefit categories the BLS uses for private sector and state and local government employees. To facilitate comparability, the estimated value of federal Social Security payroll taxes is deducted from OMB's retirement cost factor and added to BLS's Legally Required Benefits category. The employer's share of the 12.4 percent total Social Security tax is 6.2 percent, but as only around 83.1 percent of total federal payrolls are subject to Social Security taxation the 6.2 percent employer share is adjusted downward to 5.15 percent.[27] While an approximation, total non-wage benefits will not be affected if the true value of federal payroll tax payments is higher or lower than estimated as these would be netted against other retirement-related contributions.

To aid in further analysis of pension benefits, the total federal pension cost of 21.0 percent of direct pay is disaggregated into defined benefit and defined contribution portions. The defined benefit share is calculated as the weighted average of the normal

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[23] OPM (2005), p. 25.
[24] OPM (2005), p. 25.
[25] OPM (2005), p. 25.
[26] OPM (2005), p. 25.
[27] As of 2010, 83.1 percent of total federal payroll was in the FERS pension plan, which includes Social Security coverage, while 16.9 percent was under CSRS, where most workers do not participate in Social Security.

costs of the FERS and CSRS programs, equaling 14.6 percent of pay.[28] This disaggregation becomes important when the relative values of defined benefit and defined contribution pensions are adjusted for below. The defined contribution pension category includes the remaining 6.4 percent. This figure overstates true federal contributions to the Thrift Savings Plan, as it also includes the costs of accruing retiree health benefits. Again, however, these estimated disaggregations do not alter overall levels of non-wage compensation.

Given the differences in benefit categorizations between BLS and OMB/OPM, it is likely that small errors have entered these calculations, but it is unlikely that they alter the final benefits figure by more than a percent or two in either direction.

In sum, federal employees appear to receive non-wage benefits equal to approximately 61.2 percent of salaries, making benefits a significantly greater component of total compensation than for state and local government employees (51.9 percent) or average private sector employees (41.4 percent). However, these figures are not properly adjusted for the relative generosities of defined benefit and defined contribution pension plans. Failure to account for important differences in pension funding practices will lead to errors in comparing total pension compensation.

Making DB and DC pensions comparable. An important difference between public and private sector compensation is the predominance of traditional defined benefit (DB) pensions in the public sector versus 401(k)-type defined contribution (DC) plans in the private sector. All pay comparisons to date have failed to accurately capture certain distinctions between the two.

We cannot directly measure individuals' fringe benefits. Rather, we infer benefit levels by analyzing what employers pay to fund these benefits. For benefits consumed in the here and now – say, paid time off – this distinction is unimportant. But for pensions, which are funded today but received years or decades in the future, differences in employer funding practices can have large effects on the benefit levels we infer from those contributions.

Put simply, DB pensions use more aggressive assumptions for funding future benefits than do DC plans. This means that for any given dollar value of future retirement income, an employer with a DB plan will contribute less money today. If we fail to account for that fact, we will underestimate true benefits from DB plans. This is important, given that DB plans are predominant in the public sector but dying out in the private sector.

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[28] See "Annual Report of the Board of Actuaries, Civil Service Retirement and Disability Fund Fiscal Year Ended September 30, 2009. September 30, 2009. The normal cost of the FERS program is measured at 12.3 percent of payroll while the normal cost of CSRS is 25.8 percent of payroll. As FERS constitutes 83.1 percent of total payroll, the weighted average is 14.6 percent of pay.

Funding decisions are generated using a discount rate, which is an interest rate that a plan assumes its investments will earn in the future. The federal FERS pension plan assumes a 6.25 percent interest rate, meaning that it discounts its future benefit obligations by a 6.25 percent rate and plans its current contributions accordingly. Private sector defined benefit plans discount their obligations using the yield on a portfolio of high quality corporate bonds, currently yielding around 5.5 percent.[29] A lower discount rate requires the employer to make larger contributions to fund any given level of retirement benefits. State and local pensions, by contrast, generally assume a higher 8 percent return, implying that these plans would contribute less for any given dollar of future benefits than would the federal FERS plan.

For DC pensions there are no such accounting rules for funding, because the benefit at retirement is a function of the individual's own investment choices. However, to make DC pension compensation comparable to that from DB plans, we must choose an investment that mirrors the level of safety offered by DB pensions. Since DB plans offer guaranteed benefits, we assume that DC plans invest in similarly guaranteed investments, US Treasury Securities. These currently yield around 4 percent over 20 years, a typical holding period for a full career employee. A low 4 percent return implies a higher contribution today to fund any given level of guaranteed income at retirement.

Another way to view this issue is that individuals with DB plans receive a higher guaranteed rate of return on their employers' (and in the case of state and local employees, their own) pension contributions than individuals with DC plans.[30] If we measure only the employer's contribution and not the implicit rate of return paid on that contribution, we will incorrectly measure true pension compensation.

To account for these differences, we calculate adjustment factors that make employer DB contributions comparable to employer contributions to DC plans. The adjustment factor equals:

$$\frac{\left[(1 + discount\ rate)\right]^{14}}{(1 + riskless\ rate)^{14}}$$

where the expected return equals 5.5 percent (private), 6.25 percent (federal) or 8.0 percent (state and local) and the riskless return is 4 percent. The average number of years of service for federal employees at retirement is 28 years, so the factors are calculated over half that period to approximate the average holding period for employee pension investments.

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[29] Here we use the Citigroup Pension Discount Curve as of December 21, 2010.
[30] Public employees also receive this above-market return on their own pension contributions, an implicit subsidy that is not considered here. This fact would have little impact on federal compensation since the federal pension contribution is so small (0.8 percent of pay), but at the state and local level where employee contributions average around 6 percent of pay the effect of this subsidy is worth considering.

The adjustment factor, which is greater than 1 so long as the expected return exceeds the riskless return, is multiplied by each sector's employer contribution to DB pensions (Table 5). The resulting value equals the equivalent employer contribution were all workers to hold DC pensions.

The effect on overall benefits depends not only on the adjustment factor, but also on the size of the employer's contribution to DB pensions. State and local government employees have the largest adjustment factor at 1.70, which multiplied by the employer contribution of 10.5 percent of wages toward DB pensions generates an increase in implicit benefits equal to 7.3 percent of wages. Private sector employees have both the lowest adjustment factor (1.22) and the lowest contribution going to DB pensions (2.2 percent of salary), producing an implicit increase in compensation of only 0.4 percent of salary. Federal workers have an adjustment factor of 1.35 multiplied by the largest contribution toward DB pensions (14.6 percent of salary), producing an implicit increase in benefits of 5.1 percent of salary.

Table 5. Adjustment factors for defined benefit pensions		
Pension adjustment	Implicit return	Factor
Private sector	5.50%	1.22
State and local	8.00%	1.70
Federal	6.25%	1.35
Author's calculations		

Total benefits relative to salaries. Incomplete and at times inconsistent data make it difficult to compare the relative generosity of non-wage compensation for federal employees to those of private sector and state and local government workers. By combining data from the Office of Management and Budget and the Office of Personnel Management, we are able to fill most of the gaps to make for better comparisons. While not a substitute for official calculations, our measures do show that benefits play a larger role for federal workers than for private sector workers and state and local government employees. Adjusting pension compensation to account for the higher implicit rates of return paid by defined benefit pensions increases the role of benefits for both federal government and state and local government employees, where DB plans remain the predominant providers of retirement income.

Detailed results are shown in Table 6. Federal employees on average receive non-wage benefits equal to approximately 66 percent of salaries. Private sector employees of large firms (500 or more employees) receive benefits equal to about 50 percent of salaries, while state and local government employees receive average benefits equal to about 59 percent of salaries. Private sector workers overall receive total benefits equal to around 42 percent of salaries. Federal workers receive around 33 percent

Table 6. Non-wage benefits as percentage of salaries for private sector (all firms and large firms only), federal government, and state/local government employees.				
	Percent of wages			
	Federal	Private (large)	State/ Local	Private (all)
Total benefits	**66.4%**	**50.1%**	**59.2%**	**42.4%**
Paid leave	**16.5%**	**12.8%**	**12.5%**	**9.5%**
Vacation	8.5%	6.7%	4.4%	4.9%
Holiday	3.4%	3.9%	4.1%	3.1%
Sick leave	3.6%	1.6%	3.1%	1.2%
Other paid leave	1.0%	0.4%	0.9%	0.3%
Supplemental pay	**8.5%**	**5.3%**	**1.4%**	**4.3%**
Overtime and premium	4.7%	1.6%	0.7%	1.5%
Shift differentials	1.1%	0.7%	0.2%	0.4%
Nonproduction bonuses	1.4%	3.0%	0.5%	2.5%
Other (federal premium pay)	1.3%			
Insurance plans	**7.0%**	**12.9%**	**17.2%**	**10.8%**
Life insurance	0.2%	0.3%	0.4%	0.2%
Health insurance	6.8%	12%	16%	10.1%
Short-term disability insurance		0.4%	0.1%	0.3%
Long-term disability insurance		0.3%	0.2%	0.2%
Retirement and savings	**26.1%**	**8.3%**	**19.1%**	**6.1%**
Defined benefit	19.7%	4.5%	17.8%	3.3%
Defined contribution	6.4%	3.7%	1.3%	2.8%
Legally required benefits	**6.6%**	**10.9%**	**9.0%**	**11.8%**
Social Security and Medicare	6.6%	8.5%	7.1%	8.4%
Social Security	5.15%	6.9%	5.5%	6.7%
Medicare	1.5%	1.8%	1.6%	1.7%
Federal unemployment		0.1%	0.0%	0.2%
State unemployment		0.6%	0.2%	0.8%
Workers compensation		1.6%	1.7%	2.4%
Other benefits	**1.7%**	NA	NA	NA
Source: Authors' calculations based on BLS, OMB and OPM data.				

higher total benefits per dollar of salaries than employees of large private firms, and 56 percent more on average than private sector employees of any size firm.

Estimating the overall wage and benefit premium. The cross sectional regressions indicate a federal salary premium of 14 percent over otherwise similar private sector workers employed by large firms. We estimate a federal benefits premium of approximately 33 percent relative to benefits paid by large private employers. Combined, these generate a total wage and benefit premium of around 25 percent.

Job Security

The third major factor we consider is job security. According to the BLS Job Openings and Labor Turnover Survey (JOLTS), from 2002 through 2009 a private sector worker had an approximately 20 percent chance of being fired or laid off in a given year, while for both federal and state and local employees the probability is only 6 percent. This effectively gives public sector employees a valuable insurance policy against being discharged. This insurance does not come without a cost to the government, however, which is significantly restricted in its ability to terminate poor performing employees and to recast the skill set of the federal workforce according to changing needs. Here we attempt to assign a dollar value to federal job security.

Adam Smith in *The Wealth of Nations* originated the idea of what economists today call "compensating wage differentials"— that is, differences to wages to 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.*[31]

Just as positions with a high incidence and duration of unemployment should pay a compensation premium, positions with greater job security – such as public sector employment – should pay *less* than otherwise similar jobs.

Theory. To estimate the value of job security on effective compensation, we calculate what in financial economics is termed a "certainty equivalent." This represents 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.

In this case, we effectively ask how much lower salary a private sector worker would accept to have the greater job security of a public sector employee. The difference represents the job security-related pay premium received by federal employees. To calculate this value, we begin with an isoelastic/CRRA 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). The CRRA value represents the degree to which an individual desires security and dislikes uncertainty. Utility generated by income will rise as income rises, but at a decreasing rate as income rises. Moreover, the rate at which the marginal utility of consumption declines increases with the risk aversion of the individual. A more risk-averse individual will be willing to accept a lower guaranteed income, because the increase in expected utility by accepting employment risk is lower.

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[31] Smith, Adam. *The Wealth of Nations*. 1776.

Figure 1. Illustrating the value of job security.
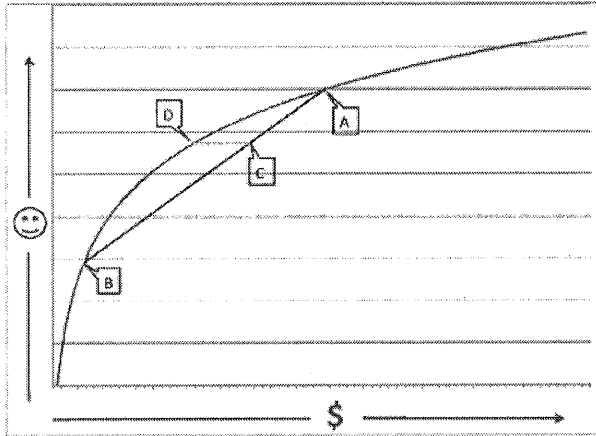
Graphical Illustration. The underlying intuition may be made more understandable using a simple chart. Figure 1 shows a stylized utility function, where the curved line shows the relationship between income (on the horizontal axis) and utility (on the vertical axis). Higher income generates more happiness, 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 – that is, the probability-weighted average of the utilities at Points A and B.

Point D lies to the left of Point C and represents the certainty equivalent income, that is, the compensation with zero probability of discharge that that would generate the same utility as the non-guaranteed compensation the individual currently receives. The dollar difference between Points C and D represents the job security pay premium.

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 $123,000, the approximate average total compensation for a federal employee. We then calculate utility in the case the worker becomes unemployed, which involves assumptions regarding the duration of unemployment, the level of unemployment benefits collected while unemployed, and the compensation of the new job the individual may find. For the baseline case, we assume a duration of unemployment of 19 weeks, unemployment benefits of $380 per week (the maximum available in Virginia or Maryland) and a current position wage and benefit premium of 25 percent as calculated above. Using these assumptions, annual compensation in the event of unemployment is $65,760, for which we also calculate a utility value. Expected annual compensation – that is, annual compensation factoring in reduced income from the chance of being discharged--is $114,990.

The expected utility is the weighted average of utility of income if the individual remains employed throughout the year and the utility of income if he 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 we require a value for the risk aversion of public sector employees. Based on data from the Panel Study of Income Dynamics, we assumed a CRRA for public employees is 5.4, which is significantly higher than the estimate for private sector workers of 2.8.[32] Other studies have also found that public employees are more risk averse than private sector workers.[33]

We derive the certainty equivalent compensation by calculating the riskless compensation whose utility would equal the expected utility of compensation under the risk of unemployment. This value is $95,390. The base compensation of $123,000 exceeds this value by approximately 29 percent, thereby generating a baseline estimate of the job security compensation premium. Using a more conservative assumption that federal workers, were they to work in the private sector, would have half the probability of becoming unemployed (perhaps due to their higher average education) the job security pay premium is around 11 percent.[34]

Summary. In previous sections we calculated a federal salary premium of 14 percent, a benefits premium of 32 percent, and now a job security premium worth another 11 percent of pay, conservatively estimated. Together, these generate an overall federal compensation premium of approximately 39 percent.

Federal civilian, non-postal payroll as of 2011 is approximately $115 billion[35]; including benefits and the implicit value of job security it would equal approximately $210 billion. Assuming a total overpayment of 39 percent relative to market compensation, total federal overcompensation in 2011 would equal around $60 billion.

Quit Rates

Although not central to our estimate of the federal pay premium, federal employee quit rates are often discussed in the context of the generosity of overall federal pay and work conditions. Federal employees quit their jobs at around one-third the rate of employees in large private firms, directly implying to some people that federal employees are overpaid relative to what they

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[32] Munnell, Alicia H., Kelly Haverstick, and Mauricio Soto. "Why Have Defined Benefit Plans Survived in the Public Sector?" State and Local Pension Plans Brief 2.Chestnut Hill, MA: Center for Retirement Research at Boston College, 2007.

[33] Bellante, Don and Albert N. Link, "Are Public Sector Workers More Risk Averse Than Private Sector Workers?" *Industrial and Labor Relations Review.* Vol. 34, No. 3 (Apr., 1981), pp. 408-412.

[34] It is difficult to estimate probabilities and durations of unemployment for public sector workers were these individuals to work in the private sector, though we are investigating potential methods of doing so.

[35] Source: United States Census Bureau, as of 12/15/2010. http://www.census.gov/compendia/statab/2011/tables/11s0495.xls

could receive in alternate employment. Low quit rates are certainly indicative of general job satisfaction. Both common sense and economic research have indicated that low quit rates are correlated with employee reports of general job satisfaction.[36]

However, two alternate explanations for low federal quit rates are available. First, it is possible that risk-averse individuals will be less likely to quit a current job in favor of a new one even if they are not overcompensated in their current position. It is not possible to say at the moment how large a role individual risk preferences play. Note, though, that there is a see-saw effect with regard to the job security bonus: if we wish to explain low federal quit rates via the risk aversion of federal employees, we also must acknowledge that the federal job security pay premium is large. Put another way, were risk averse federal employees working in the private sector, they would willingly accept lower wages in order to gain employment with private firms that offer strong job security.

A second explanation of low federal quit rates that has been offered is the incentive effects of DB pensions. Due to the structure of DB benefit formulas, the implicit annual compensation from DB pensions is larger as job tenure increases. This gives employees with DB pensions a greater incentive to remain with a job. Ippolito (1987) posits that the incentive effects of DB pensions generally explain low federal quit rates,[37] and this finding has been cited to that effect.

However, Ippolito notes that this argument may be testable: were federal employees to shift from a defined benefit to a defined contribution pension structure, he says, quit rates should increase. As it happens, in the 1980s the federal government made a partial switch when the FERS pension plan was introduced. Unlike the prior CSRS pension, which was entirely DB, federal employees hired after 1984 participate in a reduced DB plan (FERS) and a DC program, the Thrift Savings Plan (TSP). With younger federal employees having about half as much compensation devoted to DB pensions as older employees under the CSRS program, one would expect that quit rates among younger federal workers would rise.

To analyze this question, we first tabulate quit rates for current federal workers covered under the FERS/TSP pension combination. These workers will tend to be younger, as they would have been hired subsequent to the CSRS/FERS transition in 1984. We then compare these quit rates to those for individuals with similar years of service in 1984; these individuals would have been covered under the prior CSRS pension plan and thus have had smaller incentives to quit. To the degree that current quit rates exceed those in 1984, we can infer that changes in pension structures may have played a role. Given the limitations of the data certain small approximations are unavoidable, but the overall trends should be clear.

Table 7 details quit rates in 1984 and 2008. In 1984 the economy-wide unemployment rate was 7.5 percent while in 2008 average unemployment was 5.8 percent. Thus, given the wider availability of alternate private sector jobs, federal quit rates in

[36] Freeman, R. B. "Job Satisfaction as an Economic Variable." *The American Economic Review*. Vol. 68, No. 2, Papers and Proceedings of the Ninetieth Annual Meeting of the American Economic Association (May, 1978).
[37] Ippolito, Richard A. "Why Federal Workers Don't Quit." *The Journal of Human Resources*, Vol. 22, No. 2. Spring, 1987.

2008 should be higher than in 1984 even without the change in pension structures. However, federal quit rates in all relevant age categories were *lower* in 2008 than in 1984, despite lower unemployment and changes to federal pension structures.

Table 7. Federal quit rates by years of service, 1984 and 2008.			
Years of service	1984	Years of service	2008
Under 5	15.1%	Under 5	12.6%
6 to 15	6.6%	6 to 14	3.2%
16 to 20	2.7%	15 to 19	1.2%
21 to 25	1.6%	20 to 24	0.7%
Sources: Congressional Budget Office and Office of Personnel Management			

Thus, while it is likely that even the reduced FERS DB pension tends to lower federal quit rates relative to private sector levels, it does not seem that pensions alone can fully explain why federal employees are so much less likely to quit their jobs than workers employed by large private sector firms. The parsimonious explanation is that few federal employees believe there are better options in the private sector.

Conclusions

Given rising federal budget deficits and persistently high unemployment in the private sector, it is perhaps understandable that federal employee compensation would come under increased scrutiny. Many claims made regarding federal compensation – either that it is obscenely generous or that it leaves federal workers substantially underpaid – do not stand up well to scrutiny. Using standard econometric methods, we find that federal workers receive salaries about 14 percent above those paid to similar private sector employees, and benefits around 32 percent more generous than those paid in large private sector firms. The greater job security enjoyed by federal government employees is equivalent to a significant improvement in pay of at least 11 percent. Together, these generate an overall federal compensation premium of approximately 39 percent. If federal employees were paid at market rates, taxpayer savings could total $60 billion per year.

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Recent Publications

Biggs, Andrew G. "An Options Pricing Method for Calculating the Market Price of Public Sector Pension Liabilities." *Public Budgeting & Finance*. Forthcoming.

Biggs, Andrew G. "Proposed GASB Rules Show Why Only Market Valuation Fully Captures Public Pension Liabilities." *Financial Analysts Journal*, March/April 2010.

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Committee on Oversight and Government Reform
Witness Disclosure Requirement – "Truth in Testimony"
Required by House Rule XI, Clause 2(g)(5)

Name: Andrew G. Biggs

1. Please list any federal grants or contracts (including subgrants or subcontracts) you have received since October 1, 2008. Include the source and amount of each grant or contract.

    1. "The Treatment of Married Women by the Social Security Program.
    Center for Retirement Research at Boston College. 2009-2010.Grant from Social Security Administration, $41,451.
    2. "Improving the Social Security Statement."   RAND/Wharton/Dartmouth Financial Literacy Research Center. 2009-2010.
    Grant from Social Security Administration, $39,862
    3. "Exploring Alternate Ways to Express Estimated Future Retirement Benefits in the Social Security Statement."
    RAND/Wharton/Dartmouth Financial Literacy Research Center. 2010. Grant from Social Security Administration, $18,035

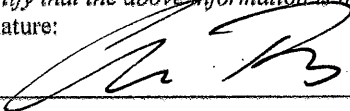2. Please list any entity you are testifying on behalf of and briefly describe your relationship with these entities.

3. Please list any federal grants or contracts (including subgrants or subcontracts) received since October 1, 2008, by the entity(ies) you listed above. Include the source and amount of each grant or contract.

I certify that the above information is true and correct.
Signature:

Date: 3/4/2011