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The Wage Penalty for State and Local Government Employees in New England

Jeffrey Thompson & John Schmitt

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Political Economy Research Institute
University of Massachusetts
Gordon Hall
418 North Pleasant St.
Amherst, MA 01002
www.peri.umass.edu

Center for Economic and Policy Research
1611 Connecticut Avenue, NW, Suite 400
Washington, D.C. 20009
202-293-5380
www.cepr.net

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About the Authors

Jeffrey Thompson is an Assistant Research Professor at the Political Economy Research Institute at the University of Massachusetts Amherst.

John Schmitt is a Senior Economist at the Center for Economic and Policy Research in Washington, DC.

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Executive Summary

Recent reports in the national and the regional media have described state and local government employees as earning more than workers in the private sector.

The average state and local government worker does earn higher wages – but this is because they are, on average, older and substantially better educated than private-sector workers. More than half (55.4 percent) of state and local government employees in New England have a four-year college degree or more, and almost one-third (29.8 percent) have an advanced degree. By contrast, only 37.9 percent of private-sector workers have a four-year college degree or more; and only 13.3 percent have an advanced degree. In New England, the typical state and local worker is also about four years older (45) than the typical private-sector worker (41).

When state and local government employees are compared to private-sector workers with similar characteristics – particularly when workers are matched by age and education – state and local workers actually earn less, on average, than their private-sector counterparts. On this basis, the wage penalty for state and local government workers in New England is close to 3 percent.

The wage penalty for working in the state and local sector is particularly large for higher-wage and better-educated workers. While low-wage workers in New England receive a small wage premium in state and local jobs (about 5 percent for a typical low-wage worker), the typical middle-wage worker earns about 3 percent less in state and local work, and the typical high-wage worker makes about 13 percent less than a similar private-sector worker.

These wage differences are also found across workers with different levels of formal education. High school graduates in the state and local sector in New England, for example, have a small wage premium (1.6 percent) relative to the private sector, while those with bachelor's degrees experience a sizeable wage penalty (7.0 percent).

State and local workers on average do receive higher non-wage benefits than workers in the private sector. The average difference in total benefits (including retirement income, health and other forms of insurance, holidays, sick leave, and other forms of non-wage compensation), though, is modest. Benefits offered by state and local governments are roughly as generous as those offered by large firms in the private sector. Even after taking benefits into account, state and local government workers in New England continue to face a penalty in total compensation.

Introduction

State and local government budgets are under severe strain.[1] Rather than blame the recession, which has simultaneously slashed tax revenues and increased the demand for social services,[2] some conservatives have argued that excessive pay for public employees is the real cause of the financial woes.[3] Several recent reports in the media have reinforced this view by emphasizing that, on average, government employees earn more than workers in the private sector.[4]

As emphasized by earlier research focused on the national-level data and on a handful of large states (Bender and Heywood (2010), Schmitt (2010), and Keene (2010)), the depiction of public sector workers as "overpaid" ignores that state and local government workers have much higher levels of formal education and are older (and therefore generally more experienced) than workers in the private sector. When state and local government workers are matched with private-sector workers of the same age and the same level of education, the public employees actually earn less than their private-sector counterparts. The pay penalty for public-sector workers is particularly large for the most educated and most experienced workers.

This analysis demonstrates that the same is true in New England. After controlling for age, education and other relevant demographic factors, the average state and local government worker in New England faces a wage penalty compared to the average private sector worker. There is a small wage premium for the lowest-paid public-sector workers, but the highest-paid public sector workers, face a sizeable wage penalty. Despite a modest advantage over the average private sector worker work-related benefits, the average state and local government worker experiences a total compensation penalty.

The State & Local Government Workforce

According to nationally representative data from the Census Bureau's Current Population Survey (CPS), in 2009, the 51 U.S. state governments (including the District of Columbia) together employed about 6.0 million workers.[5] Local governments employed an additional 10.7 million workers. Combined state and local government employment of 16.7 million workers account for 13.6 percent of all employees nationally (see Table 1; also see Appendix Figure 1 for state-level data on the state and local government share of employment).[6] In New England, total state and local

1 See Lav and McNichol (2010) for a review of the squeeze on state budgets.
2 See Baker and Deutsch (2009).
3 See, for example, Jacoby (2009), Unshackle Upstate (2009), and Greenhut (2010).
4 See, for example, Dennis Cauchon, "Federal Pay Ahead of Private Industry," *USA Today*, March 8, 2010 (which has generated almost 2,000 comments) at http://www.usatoday.com/news/nation/2010-03-04-federal-pay_N.htm; and the front page story by David Sherfinski, "Growth in government-worker pay outpaces private sector, data show," *The Washington Examiner*, March 30, 2010.
5 Data refer to workers age 18 to 64. All analysis, unless otherwise stated, uses the CEPR extract (version 1.5) of the Current Population Survey. The data and full details on the extract are available at http://www.ceprDATA.org/.
6 We exclude the self-employed and limit our analysis to workers ages 18 through 64.

government employment is 788,000 and accounts for a slightly smaller share of total employment (12.8 percent).[7]

The state and local government workforce differs from the private-sector workforce in three important ways. First, as a group, state and local public employees are substantially better educated than workers in the private sector. As Figure 1 demonstrates, over half (55.4 percent) of all state and local workers in New England had a four-year college degree or more; nearly one-third (29.8 percent) had an advanced degree. By contrast, only 37.9 percent of private-sector workers had a four-year college degree or more, and just 13.3 percent had an advanced degree. One reason for the high level of education in the public sector is the strong concentration of educational occupations in state and local government employment (see Appendix Table 1 for a list of the ten largest occupations in state and local governments in New England).

Second, state and local employees are also consistently older than private-sector workers. The typical (median) private-sector worker in New England is 41 years old, compared to 45 for the typical state and local government employee nationally (see Table 1). Finally, in almost six in ten (58.3 percent) of state and local government workers in New England are women, compared to less than half (47.9 percent) of private-sector workers.

Since better-educated and older workers generally earn more than less-educated and younger workers, comparisons of pay for workers in state and local government with pay for workers in the private sector should take these systematic differences into consideration. Similarly, given the large differences in the share of women in the two sectors, evaluations of pay across the two sectors should either explicitly control for gender or else analyze men and women's pay separately.

7 Analysis of the CPS ORG for New England, and for the individual New England states combines five years worth of data to provide sufficient sample sizes for valid inference, and includes 2005 to 2009.

TABLE 1

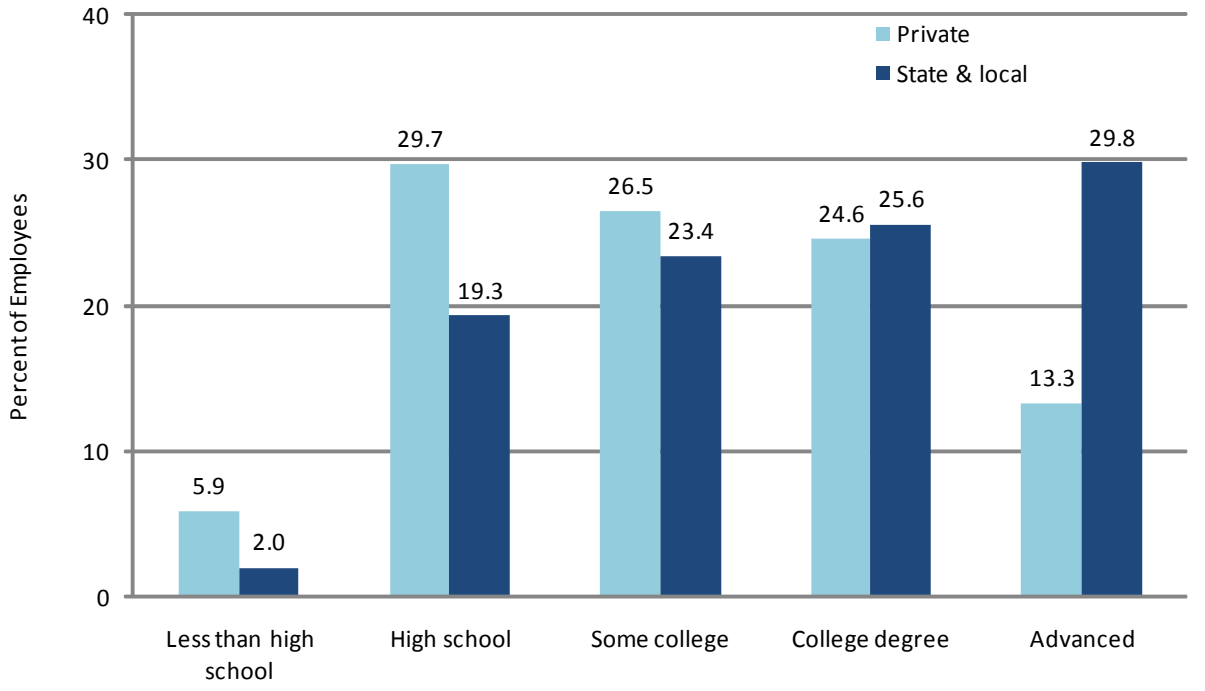
Characteristics of state and local employees, age 18-64, 2005-09*

	U.S. average		New England		Massachusetts		Connecticut	
	private	state & local	private	state & local	private	state & local	private	state & local
Number (millions)	103.2	16.7	5.4	0.8	2.4	0.3	1.3	0.2
% of total employment		13.6%		12.8%		12.7%		13.3%
Education (%)								
Less than high school	8.5	2.5	5.9	2.0	5.8	2.0	6.5	2.0
High school	31.1	19.9	29.7	19.3	27.4	18.4	29.4	20.1
Some college	30.6	26.7	26.5	23.4	23.8	22.4	27.0	23.6
College degree	20.9	27.4	24.6	25.6	27.0	26.0	23.8	21.3
Advanced	8.9	23.5	13.3	29.8	16.0	31.2	13.4	32.9
Age (%)								
18-24	13.8	7.1	13.5	6.7	13.4	6.9	12.6	6.2
25-34	23.9	20.4	21.2	16.6	22.6	16.0	20.3	18.8
35-44	23.8	24.2	25.6	25.0	26.1	24.6	25.9	26.3
45-54	24.2	28.1	25.1	30.4	24.1	30.7	26.2	29.0
55-64	14.3	20.3	14.6	21.3	13.7	21.8	15.1	19.7
Median age	40	44	41	45	40	45	41	44
Women (%)	46.2	60.2	47.9	58.3	48.2	57.0	47.3	58.2

Notes: Analysis of CEPR extract (version 1.5) of CPS ORG.
* The first two rows of Table 1 are based on data from 2009. The remaining rows for New England use data from 2005 to 2009.

FIGURE 1

Education Level, New England Private Sector versus State & Local Public Employees, 2005-09



Pay Differences for State & Local Workers

Figure 2 summarizes the results from an analysis of state and local public employee pay that takes education, age, gender, and other factors into consideration. State and local government workers initially appear to have a large earnings premium relative to private-sector workers, but the wage premium turns into a wage penalty for government work once we control for workers' age and education.

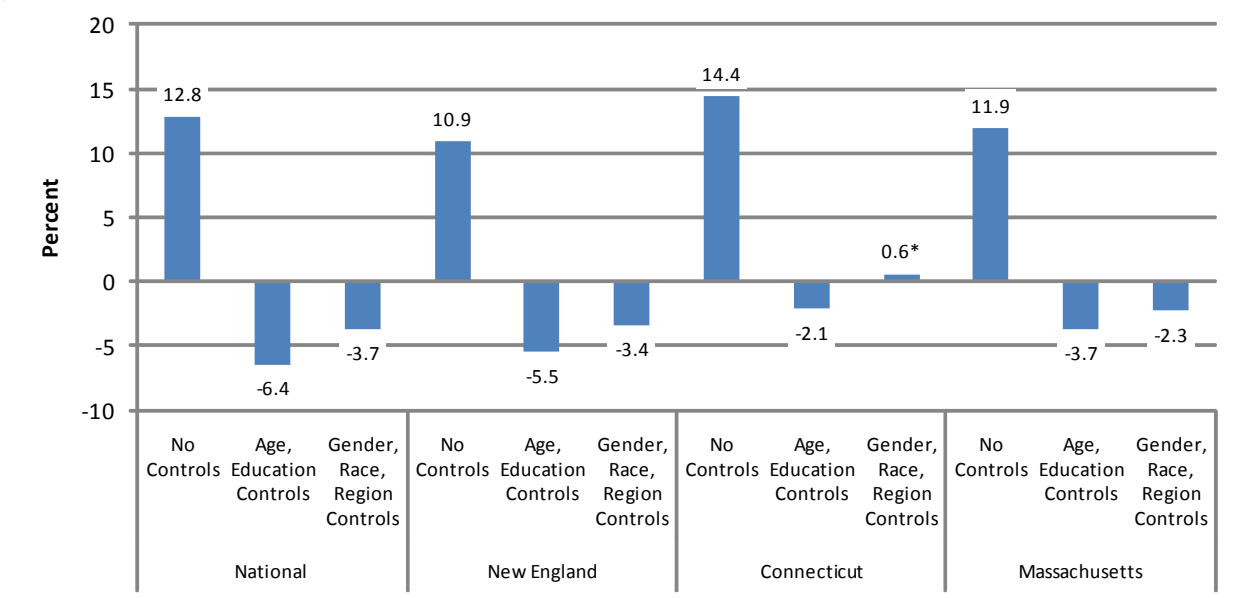
Before taking any of the systematic differences between public- and private-sector workers into account, the data suggest that state and local workers in New England earned almost 11 percent more on average than workers in the private sector, , which is consistent with both the national-level data and media reports that find higher public-sector wages. (See Appendix Table 2 for additional details for these estimates.)[8] Once we control for workers' education and age, however, the state and local public employee wage premium becomes almost a 6 percent wage penalty in New England.[9] In Connecticut and Massachusetts the wage penalties were somewhat smaller, at 2 percent and 4 percent, respectively. After adding a further set of controls for gender, race, and region of residence, state and local workers in New England received about 3 percent less than workers with the same education and age levels in the private sector. In Massachusetts, the public-sector wage penalty is about 2 percent and in Connecticut the public-sector pay premium is small and not statistically different from zero.

8 The public-sector wage premium is about the same for state employees as for local government employees (Appendix Table 2, Column 2), except in Connecticut, where the premium is considerably larger for state workers.

9 The education and age controls are dummy variables based on the categories in Table 1.

FIGURE 2

State & Local Public Employees, Average Wage Differential, 2005-09



*Not statistically different from zero.

The analysis so far, both here and in earlier media reports, has focused largely on the "average" worker in the state and local and private sectors. The effects of public-sector employment on earnings, however, may be different for workers at the bottom, middle, and top of the wage distribution, or for workers with different levels of educational attainment.

Using quantile regression techniques, we can analyze the effect of being a state and local government employee on the earnings of a worker across the wage distribution.[10] Figure 3 presents results of an analysis of the effects of state and local government employment on wages for workers at different points of the wage distribution, from low-wage workers at the 10th percentile (who make more than 10 percent of all workers, but less than 90 percent of all workers) through the median worker (50th percentile) to high-wage workers in the 90th percentile. (Appendix Table 3 includes the full set of results for 9 deciles across the wage distribution.)

For low-wage workers, working in the state and local sector provides a small wage boost relative to working in the private sector. For the lowest-wage workers in Figure 3, those at the 10th percentile of the wage distribution, working in a state and local government job in New England raises wages almost 5 percent relative to a comparable worker in the private sector.[11] The premium is smaller in Connecticut (3.8 percent) and larger in Massachusetts (8.3 percent). In New England the public-

10 A standard ordinary least squares regression, such as those in Table 2, estimates the effects of independent variables at the mean of the dependent variable. Quantile regressions use analogous techniques to estimate the effects of independent variables at specified quantiles of the dependent variable, such as the 10th, 20th, 50th, or 90th percentile of the dependent variable. For a discussion of quantile regression, see, among many others, Johnston and DiNardo (1997). For a recent analysis of the effects of unionization on workers at different points in the wage distribution, see Schmitt (2008).

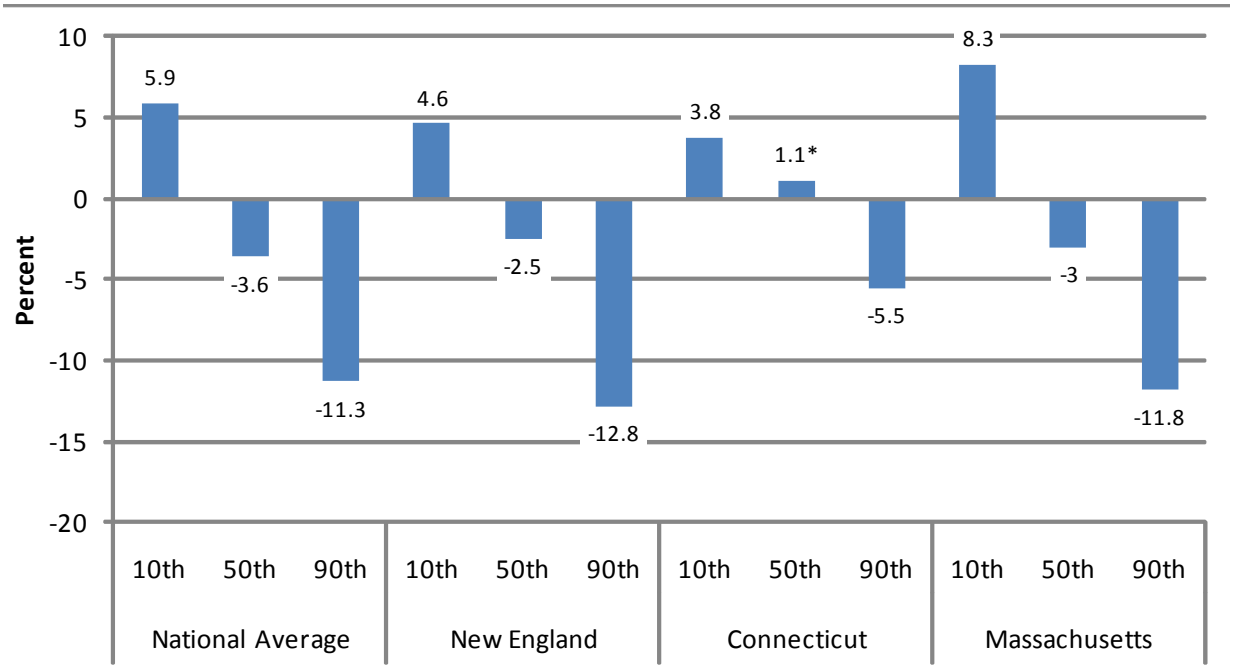
11 All quantile regressions fit using Stata's sqreg command.

sector premium falls to 3 percent for workers at the 20th percentile and to just below 2 percent for workers at the 30th percentile. Above the 40th percentile of the wage distribution, state and local government workers in New England face a wage penalty, although the premium in Connecticut and Massachusetts does not disappear until the 50th percentile. For workers at the 60th percentile, a state or local job in New England means about a 5 percent pay cut relative to a comparable private-sector worker; and the penalty increases steadily for higher wage workers: -7 percent at the 70th percentile, -10 percent at the 80th percentile, and -13 percent at the 90th percentile.[12]

A similar pattern holds for state and local workers in Connecticut (though the magnitude of both the premiums and the penalties are smaller than for New England as a whole) and in Massachusetts (where the pay premium for lower-wage workers is higher than for New England as a whole). The gradual shift from wage premium for low-paid workers to substantial wage penalty among higher-paid workers is similar for the nation as a whole and in Massachusetts. In Connecticut, the wage premium at the bottom of the wage distribution and the wage penalty at the top of the wage distribution are both smaller than the rest of New England and the national average.

FIGURE 3

State & Local Public Employees, Average Wage Differential by Selected Wage Percentile, 2005-09



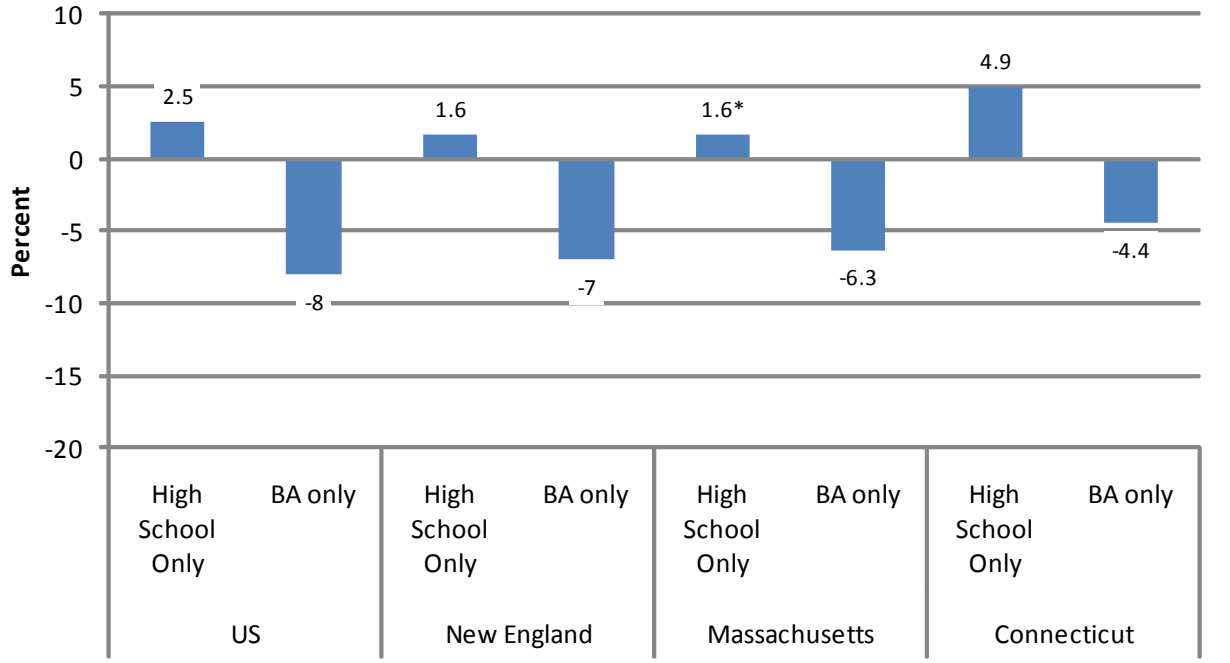
*Not statistically different from zero.

12 These results – small state-and-local premiums for lower paying jobs and larger state-and-local penalties for middle and better paying jobs – are similar to Miller (1996), who compared jobs, rather than workers, and used different data (from the BLS's now-discontinued Occupational Compensation Survey Program). Miller concluded: "The OCSP job-level data show that, contrary to comparisons based on overall averages or broad occupational groups, private industry paid better for virtually all professional and administrative occupational job levels and for the majority of technical and clerical job levels. For blue-collar workers, the situation was mixed" (p. 22); and "...at the lowest paying jobs, State and local governments often paid the same as or better than private industry. But, as pay rose, the private sector paid increasingly better" (pp. 24-5).

This pattern — a public-sector wage premium for low-paid workers and a penalty for high-paid workers — is bolstered by analysis of wage differentials by educational attainment levels. Figure 4 shows the regression-adjusted wage differential for state and local government workers by education level for the New England region as well as for Massachusetts and Connecticut.[13] Controlling for age, gender, race, and region, state and local government workers in New England with lower levels of education receive a small wage premium relative to those in the private sector, while highly educated workers face a sizeable wage penalty. For example, high school graduates working in state and local governments in New England had 1.6 percent higher wages than their similarly educated counterparts in the private-sector. Meanwhile, college-educated workers in New England earned 7.0 percent lower wages if they worked for state and local governments. (Results for all education levels available in Appendix Table 4).

FIGURE 4

State & Local Public Employees, Average Wage Differential by Educational Attainment Level, 2005-09



*Not statistically different from zero.

Total Compensation Differences for State & Local Workers

State and local government workers face a wage penalty relative to their counterparts in the private sector, but workers also value the compensation delivered through on-the-job benefits, including health insurance, retirement, and other "fringe" benefits. Non-wage compensation is higher, on

13 These wage differentials are based on similar OLS regressions, and use the same data, as those reported in Appendix Table 2; the underlying regressions include controls for age, gender, race, and region, but are run separately by education level. The national results in Figure 4 are based only on 2009 data, while the New England results use data from 2005 to 2009.

average, for state and local government workers than it is in the average firm in the private sectors, but limitations in the benefits data make a direct comparison between equivalently skilled workers in the private and public sector impossible. There are no large, nationally representative data sets that contain wage and benefits data as well as information on workers' education and demographic characteristics. The CPS contains a wealth of data on wages and demographics, but little on benefits. The best source of information on benefits, the National Compensation Survey (NCS) does not include individual-level data on education and demographic factors.

While we cannot directly control for educational attainment and experience, we can compare average non-wage benefits in state and local governments with those in larger firms in the private sector. Benefits account for one-third (32.9 percent) of total compensation for the average state and local government worker, and nearly one-third (31.5 percent) for private sector workers at firms with 100 or more employees.[14] At private sector firms with 500 or more workers, the benefit share rises to 33.0 percent, essentially identical to the share for state and local governments. The actual difference in non-wage compensation reflected in the NCS data is smaller than what is sometimes imagined because the NCS includes a broad range of non-wage compensation. One important difference is that many state and local government workers (including those in Massachusetts, Connecticut, and Rhode Island) are not eligible for Social Security; public sector workers in those states rely exclusively on their pensions, while those in the private sector combine pensions, 401(k) benefits, and Social Security.

Bender and Heywood (2010) have used one approach to incorporate the effect of benefits on the conclusions reached in our earlier analysis. They take data from the National Compensation Survey on the share of benefits in total compensation in the state and local and in the private sectors to adjust the state and local sector wage differential. Their calculations show that the higher non-wage benefits in the state and local sector are not enough to erase the wage penalty for state and local workers.[15]

Table 2 applies Bender and Heywood's approach to our earlier calculations for New England.[16] Since the NCS does not report data on state and local benefits at the New England or state level, Table 2 uses the national figures for the benefit share of total compensation from "large" firms in the private sector to adjust the wage penalty results in Figure 2.[17] As Table 2 demonstrates, even after inflating state and local wages by a factor designed to capture the higher benefits in the public sector, state and local government workers continue to face a penalty in total compensation after we control for workers' formal education and their age. Using private sector firms with 100 or more workers as the benchmark for the benefits differential, we estimate that the average state and local

14 The benefit share is based on quarterly data from 2004 to 2009. Author's analysis of BLS Employer Cost for Employee Compensation data accessed September 2010.

15 This conclusion is confirmed by Keene's (2010) analysis of public sector compensation in New Jersey.

16 Bender and Heywood (2010) use benefit data from 2004 to 2008 in their analysis. We use data up through 2009 to reflect data availability as well as to better match the time frame from our wage regression.

17 This calculation assumes that the benefit share of compensation is the same in New England as in the rest of the country. Analysis of the National Compensation Survey data confirms that this is the case for the total private sector. The published NCS data do not allow us to compare the benefit share of compensation in New England for the state and local sector, or for large firms in the private sector.

government worker in New England still receives four percent less in total compensation than an equivalently well-educated and experienced worker in the private sector (Table 3, Column 1). Taking additional demographic factors into account (gender, race, and state controls), the total compensation penalty for state and local workers in New England remains 1.4 percent (Column 2).[18]

If we use even larger private sector firms (those with 500 or more workers) as a benchmark, then the total compensation penalty is even larger. Taking all of the demographic controls into account, the total compensation penalty for state and local workers in New England is nearly four percent when the wage penalty is deflated by benefits differences in larger firms.

Our findings for New England are consistent with the national-level results in Bender and Heywood (2010); and consistent with Keene's (2010) results for state and local government workers in New Jersey, using a different methodology.

TABLE 2

Implied total compensation penalty for state and local government workers

	(1) With age & education controls	(2) With gender, race, & regional controls	(3) With age & education controls	(4) With gender, race, & regional controls
	firms with 100+ employees		firms with 500+ employees	
National	-4.4%	-1.7%	-6.5%	-3.8%
New England	-3.5%	-1.4%	-5.6%	-3.5%

Notes: Wage penalty results from Appendix Table 2 - from regression analysis using CPS ORG - modified by benefit share of compensation following Bender and Heywood (2010).

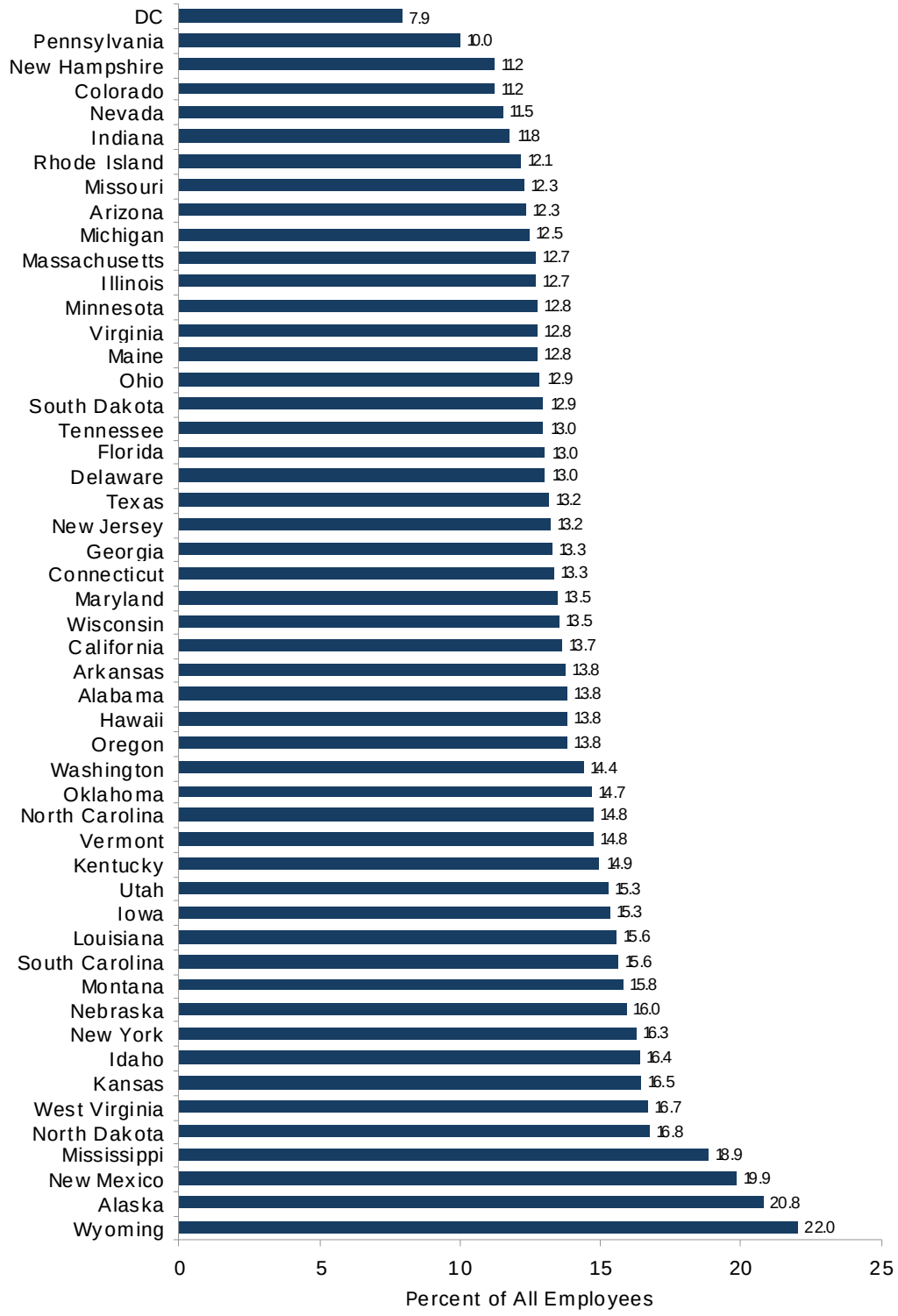
Conclusion

On average, state and local government employees in New England earn more than private-sector workers. But, state and local workers are also, on average, older and substantially better educated than private-sector workers. When state and local government employees are compared to private-sector workers with similar characteristics — particularly when workers are matched by age and education – state and local workers actually earn less, on average, than their private-sector counterparts. The wage penalty for working in the state and local sector is particularly large for higher-wage workers. Taking benefits into account reduces — but does not eliminate — the wage penalty for state and local workers.

18 The most relevant comparison is between state and local governments and large private firms, because all state, and most local, governments employ well above 100 workers and compete most directly with large private firms for workers. If we adjust the estimated wage differential instead using the benefits differential between the state-and-local sector and private firms of all sizes, then the total compensation differential falls to 1.2 percent nationally and 0.2 percent in New England when controlling for age and education. When also controlling for race, gender and region, the total compensation differential turns positive, 1.7 percent nationally and 2.0 percent in New England.

Appendix

APPENDIX FIGURE 1
State and Local Public Employees as Percent of All Employees, Age 18-64, 2009



APPENDIX TABLE 1

Ten Largest Occupations, New England State and Local Public Employees, 2005-09

Rank	Occupation	Share of total (%)
State public employees		
1	Postsecondary teachers	8.6
2	Bayliffs, correctional officers, jailers	4.8
3	Social workers	3.7
4	Managers, all other	3.7
5	Secretaries and administrative assistants	3.7
6	Elementary and middle school teachers	2.6
7	Nursing, psychiatric, and home health aides	2.5
8	Police and sheriff's patrol officers	2.5
9	Counselors	2.4
10	Lawyers, judges, magistrates	2.4
Total		**36.7**
Local public employees		
1	Elementary and middle school teachers	20.5
2	Secondary school teachers	9.3
3	Teachers assistants	7.4
4	Fire fighters	4.4
5	Police and sheriff's patrol officers	4.3
6	Special education teachers	4.1
7	Secretaries and administrative assistants	3.2
8	Janitors and building cleaners	2.9
9	Education administrators	2.8
10	Counselors	1.7
Total		**60.5**

Notes: Analysis of CEPR extract (version 1.5) of CPS ORG.

APPENDIX TABLE 2

State and Local Employee Wage Differentials, 2005-09
(percent differences; standard errors in parentheses)

	(1) No controls: regression with combined state & local data	(2) No controls: regression with separate state & local data	(3) With age & educations controls	(4) With age, education, race, gender & region controls
(a) National				
State & local	12.8**	--	-6.4**	-3.7**
	(0.4)		(0.4)	(0.3)
State	--	13.2**	--	--
		(0.6)		
Local	--	12.6**	—	—
		(0.5)		
(b) New England				
State & local	10.9**	—	-5.5**	-3.4**
	(0.5)		(0.5)	(0.4)
State	—	13.1**	—	—
		(0.8)		
Local	—	9.7**	—	—
		(0.6)		
(c) Connecticut				
State & local	14.4**	—	-2.1#	0.6
	(1.2)		(1.1)	(1.0)
State	—	23.4**	—	—
		(1.9)		
Local	—	9.3**	—	—
		(1.5)		
(d) Massachusetts				
State & local	11.9**	—	-3.7**	-2.3#
	(1.5)		(1.3)	(1.3)
State	—	11.4**	—	—
		(2.5)		
Local	—	12.2**	—	—
		(1.7)		
Age & education controls	*No*	*No*	*Yes*	*Yes*
Gender, race & region controls	*No*	*No*	*No*	*Yes*

Notes: Analysis of CEPR extract of CPS ORG. The dependent variable is the log of hourly wages; ordinary least squares regressions. Robust standard errors in parentheses; ** indicates statistically significantly different from zero at the one percent level; * 5 percent level, and; # 10 percent level.

APPENDIX TABLE 3

State and Local Employee Wage Differentials, by Wage Quintile, 2005-09
(percent differences; standard errors in parentheses)

Percentile	National Average		New England		Connecticut		Massachusetts	
	hourly earnings, private and public	wage differential, public employees	hourly earnings, private and public	wage differential, public employees	hourly earnings, private and public	wage differential, public employees	hourly earnings, private and public	wage differential, public employees
10th	$8.25	5.9**	$9.04	4.6**	$9.29	3.8*	$9.25	8.3**
		(0.3)		(0.7)		(1.9)		(2.3)
20th	10	3.4**	11.14	3.2**	11.67	2.7	11.43	7.8**
		-0.4		(0.6)		(1.7)		(2.2)
30th	12	1.2**	13.47	1.8**	14.22`	3.9**	13.92	4.7**
		(0.4)		(0.4)		(1.3)		(1.7)
40th	14.05	-1.4**	15.91	-0.4	16.98	2.6*	16.44	1.4
		(0.4)		(0.5)		(1.1)		(1.7)
50th	16.52	-3.6**	18.7	-2.5**	20.16	1.1	19.66	-3.0*
		(0.4)		(0.5)		(0.9)		(1.4)
60th	19.23	-5.6**	22	-4.7**	23.88	-0.1	23.16	-5.5**
		(0.5)		(0.5)		(1.1)		(1.2)
70th	23.08	-6.9**	26.27	-7.4**	28.37	-1.6	27.54	-8.1**
		(0.3)		(0.5)		(1.1)		(1.5)
80th	28.83	-9.1**	31.92	-10.0**	34.24	-3.0**	34	-10.8**
		(0.5)		(0.7)		(1.1)		(1.9)
90th	38.45	-11.3**	42.12	-12.8**	43.9	-5.5**	44.95	-11.8**
		(0.6)		(0.7)		(1.6)		(1.7)

Notes: Analysis of CEPR extract (version 1.5) of CPS ORG. The dependent variable is the log of hourly wages; quantile regressions with bootstrapped standard errors. All regressions include controls for age, education, race, region; regression for all also includes a control for gender. Robust standard errors in parentheses; ** indicates statistically significantly different from zero at the one percent level; *, at the 5 percent level; #, at the 10 percent level.

APPENDIX TABLE 4

New England State and Local Employee Wage Differentials by Education, 2005-09
(percent differences; standard errors in parentheses)

	National	New England	Massachusetts	Connecticut
Less than high school	.011	0.005	-.05	.088
	(.02)	(.03)	(.08)	(.07)
High school degree only	.025**	0.016#	.016	.049*
	(.007)	(.009)	(.028)	(.021)
Some college, no degree	.006	-0.017*	.061*	.016
	(.006)	(.009)	(.025)	(.02)
BA degree only	-.08**	-.07**	-.063*	-.044#
	(.007)	(.009)	(.025)	(.023)
Advanced degree	-.114**	-.06**	-.07**	-.012
	(.008)	(.01)	(.025)	(.02)

Notes: Analysis of CEPR extract (version 1.5) of CPS ORG. The dependent variable is the log of hourly wages; ordinary least squares regressions. Robust standard errors in parentheses; ** indicates statistically significantly different from zero at the one percent level; *, at the 5 percent level; #, at the 10 percent level.

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