The Wage Penalty for State and Local Government Employees

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Contents

About the Author

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Executive Summary

As recent reports in the media have emphasized, on average, state and local government employees appear to earn more than private-sector workers.

But, on average, state and local workers are also older and substantially better educated than private-sector workers. Half of state and local employees have a four-year college degree or more, and almost one-fourth have an advanced degree. Less than 30 percent of private-sector workers have a four-year college degree, and less than 10 percent have an advanced degree. The typical state and local worker is also about four years older than the typical private-sector worker.

Sixty percent of state and local government employees are women, compared to 46 percent of employees in the private sector.

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 4 percent less, on average, than their private-sector counterparts. For women workers, the public-sector penalty is about 2 percent of earnings; for men, it is about 6 percent of earnings.

The wage penalty for working in the state-and-local sector is particularly large for higher-wage workers. While low-wage workers receive a small wage premium in state-and-local jobs (about 6 percent for a typical low-wage worker), the typical middle-wage worker earns about 4 percent less in state-and-local work, and the typical high-wage worker makes about 11 percent less than a similar private-sector worker.

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]

The problem with these analyses is 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.

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] Within those states, local governments employed an additional 10.7 million workers (see **Table 1**; also see the appendix for state-level data on characteristics of state and local government employees).[6]

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, in 2009, over half (50.9 percent) of all state-and-local workers had a four-year college degree or more; almost one-fourth (23.5 percent) had an advanced degree. By contrast, only 29.8 percent of private-sector workers had a four-year college degree or more, and just 8.9 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 **Table 2** for a list of the ten largest occupations in state and local governments).

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, 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 All analysis 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 By comparison, the total number of employees in the private sector (excluding the self-employed) in 2009 was about 103.2 million.

Second, state and local employees are also consistently older than private-sector workers. In 2009, the typical (median) private-sector worker was 40 years old, compared to 43 for the typical state employee and 44 for the typical local government employee (see Table 1).

Finally, 60 percent of state and local government workers are women, compared to less than half (46 percent) of private-sector workers (see Table 1).

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.

TABLE 1
Characteristics of State and Local Employees, Age 18-64, 2009

	Private	State	Local	State & local
Number (millions)	103.2	6.0	10.7	16.7
Education (%)				
Less than high school	8.5	1.9	2.8	2.5
High school	31.1	17.9	21.1	19.9
Some college	30.6	27.1	26.5	26.7
College degree	20.9	27.5	27.4	27.4
Advanced	8.9	25.6	22.3	23.5
Age (%)				
18-24	13.8	9.5	5.7	7.1
25-34	23.9	21.1	19.9	20.4
35-44	23.8	22.2	25.3	24.2
45-54	24.2	27.8	28.3	28.1
55-64	14.3	19.3	20.8	20.3
Median age (years)	40	43	44	44
Women (%)	46.2	59.1	60.8	60.2

Notes: Analysis of CEPR extract (version 1.5) of CPS ORG. Federal employees not included.

FIGURE 1
Education Level, Private Sector versus State & Local Public Employees, 2009

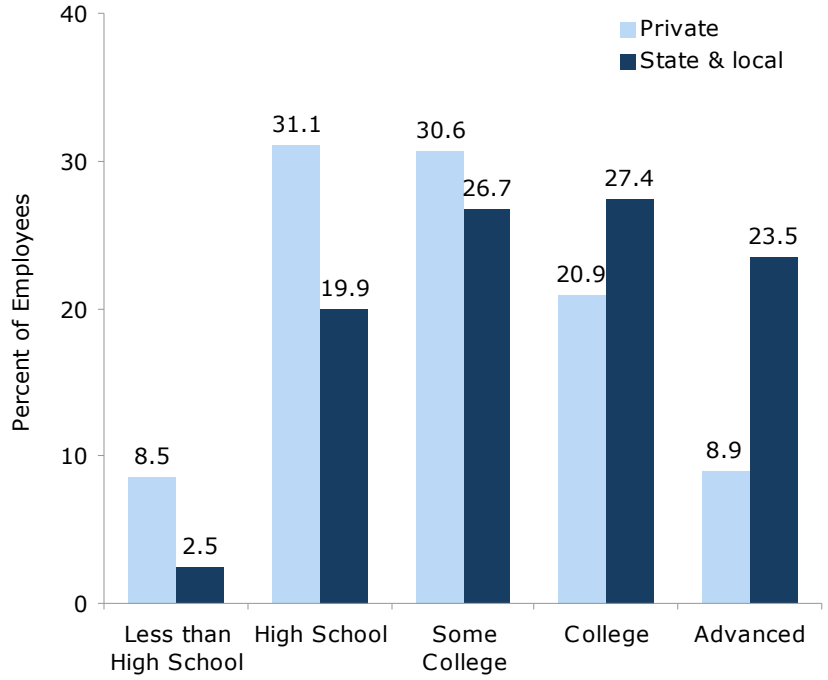


TABLE 2
Ten Largest Occupations, State and Local Public Employees, 2009

Rank	Occupation	Share of total (%)
State public employees		
1	Postsecondary teachers	9.3
2	Elementary, secondary teachers	7.3
3	Bailiffs, correctional officers, jailers	4.1
4	Secretaries, administrative assistants	3.9
5	Secondary school teachers	2.9
6	Education administrators	2.7
7	Social workers	2.5
8	Teacher assistants	2.4
9	Janitors, building cleaners	2.2
10	Counselors	2.1
Total		**39.3**
Local public employees		
1	Elementary, secondary teachers	16.5
2	Secondary school teachers	7.3
3	Teacher assistants	5.2
4	Police & sheriff's patrol officers	5.1
5	Janitors, building cleaners	3.2
6	Secretaries, administrative assistants	3.2
7	Bus drivers	2.4
8	Fire fighters	2.4
9	Special education teachers	2.3
10	Education administrators	2.1
Total		**49.6**

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

Pay Differences for State & Local Workers

Table 3 summarizes the results from an analysis of state and local public employee pay that takes education, age, gender, and other factors into consideration. For all workers and for women and men separately, state and local government workers initially appear to have a large earnings premium relative to private-sector workers, but in all cases the wage premium turns into a wage penalty for government work once we control for workers' age and education.

TABLE 3
State and Local Employee Wage Differentials, 2009
(percent differences; standard errors in parentheses)

	(1)	(2)	(3)	(4)
(a) All				
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) Women				
State & local	19.2**	--	-2.1**	-1.9**
	(0.5)		(0.4)	(0.4)
State	--	19.3**	--	--
		(0.7)		
Local	--	19.1**	--	--
		(0.6)		
(c) Men				
State & local	11.2**	--	-6.1**	-6.0**
	(0.6)		(0.5)	(0.5)
State	--	11.4**	--	--
		(1.0)		
Local	--	11.1**	--	--
		(0.7)		
Controls				
Age	No	No	Yes	Yes
Education	No	No	Yes	Yes
Gender	No	No	No	Yes
Race	No	No	No	Yes
Region	No	No	No	Yes

Notes: Analysis of CEPR extract (version 1.5) of CPS ORG. The dependent variable is the log of hourly wages; ordinary least squares regressions fit separately for all, women, and men. 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.

Before taking any of the systematic differences between public- and private-sector workers into account, the data suggest that in 2009 state and local workers on average earned almost 13 percent more than workers in the private sector (see the first column of panel (a)), which is consistent with media reports that find higher public-sector wages. This public-sector wage premium was about the same for state (13.2 percent) and local (12.6 percent) public employees (see the second column of

panel (a)). Once we control for workers' education and age, however, the state and local public employee wage premium becomes a 6 percent wage penalty (the third column of panel (a)).[7] Even after adding a further set of controls for gender, race, and region of residence, state and local workers received almost 4 percent less than workers with the same education and age levels in the private sector (the final column of panel (a)).[8]

Similar results hold when we look separately at women and men. The initial public-sector wage advantage for women (panel (b)) is about 19 percent (column (1)). After controlling for education and age, however, the average wage in the public sector is about 2 percent less than in the private sector (columns (3) and (4)). For men (panel (c)), the uncontrolled public-sector wage difference falls from 11 percent initially, to minus 6 percent after controlling for workers' characteristics.[9]

The analysis so far, both here and in earlier media reports, has focused entirely on the "average" worker in the state-and-local and private sectors. (**Figures 2A, 2B,** and **2C** summarize these findings.) The effects of public-sector employment on earnings, however, may be different for workers at the bottom, middle, and top of the wage distribution. 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] **Table 4** presents results of an analysis of the effects of state and local government employment on wages for workers at nine equally spaced 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.

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

8 Excluding firefighters, police, and prison guards from the analysis in column (4) increases the public-sector penalty to -4.6 percent (standard error, 0.4) for all workers, -2.2 percent (standard error, 0.4) for women, and -8.0 percent (standard error, 0.6) for men.

9 These results are consistent with earlier, academic and policy research on public-sector pay. See, for example, Krueger (1988), Belman and Heywood (1993), Miller (1996), and Borjas (2002).

10 A standard ordinary least squares regression, such as those in Table 3, 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).

FIGURE 2A
State & Local Public Employees, Average Wage Differential, 2009

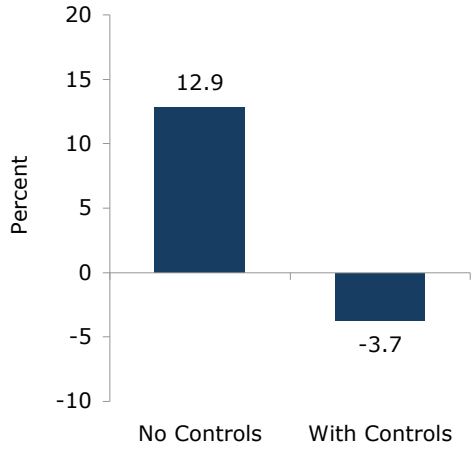


FIGURE 2B
State & Local Public Employees, Average Wage Differential, Women, 2009

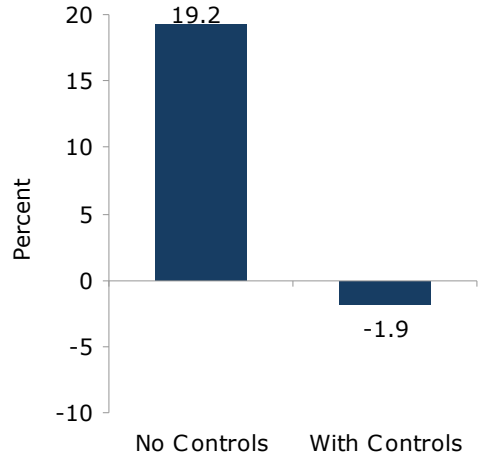
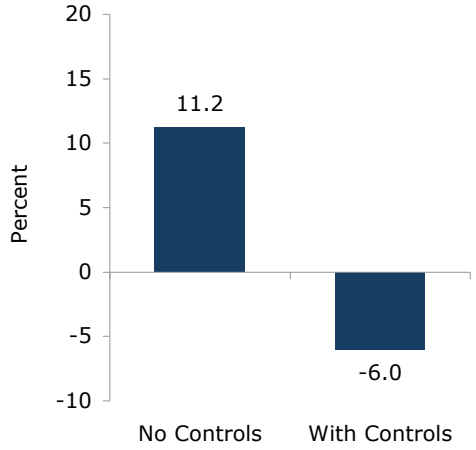


FIGURE 2C
State & Local Public Employees, Average Wage Differential, Men, 2009



For relatively 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 Table 4, those at the 10th percentile of the wage distribution, working in a state and local government job raises wages almost 6 percent relative to a comparable worker in the private sector.[11] The public-sector premium falls to 3 percent for workers at the 20th percentile and to only 1 percent for workers at the 30th percentile. From that point on, the premium associated with state-and-local employment becomes a penalty. For workers at the 40th percentile, a state and local job means about a one percent pay cut relative to a comparable private-sector worker; and the penalty increases steadily for higher and higher wage workers: -4 percent at the median (50th percentile), -6 percent at the 60th percentile, -7 percent at the 70th percentile, -9 percent at the 80th percentile, to -11 percent for a high-wage worker in the 90th percentile. A similar pattern holds separately for women (middle two columns of Table 4) and men (last two columns of Table 4).[12] (See also **Figures 3A, 3B, and 3C**.)

TABLE 4
State and Local Employee Wage Differentials, by Wage Quintile, 2009
(percent differences; standard errors in parentheses)

	All		Women		Men	
Percentile	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**	$8.00	7.4**	$8.75	3.4**
		(0.3)		(0.5)		(1.0)
20th	10.00	3.4**	9.50	5.8**	10.91	0.4
		(0.4)		(0.5)		(0.8)
30th	12.00	1.2**	11.00	4.0**	13.00	-2.4**
		(0.4)		(0.5)		(0.8)
40th	14.05	-1.4**	12.85	1.0*	15.45	-4.0**
		(0.4)		(0.4)		(0.8)
50th	16.52	-3.6**	15.00	-1.3*	18.46	-6.3**
		(0.4)		(0.6)		(0.6)
60th	19.23	-5.6**	17.31	-4.1**	21.63	-8.0**
		(0.5)		(0.5)		(0.6)
70th	23.08	-6.9**	20.25	-5.9**	25.64	-9.0**
		(0.3)		(0.7)		(0.7)
80th	28.83	-9.1**	25.00	-8.4**	31.57	-10.5**
		(0.5)		(0.8)		(0.9)
90th	38.45	-11.3**	33.33	-10.8**	42.31	-12.0**
		(0.6)		(0.8)		(1.1)

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.

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

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).

FIGURE 3A
State & Local Public Employees, Average Wage Differential, 2009

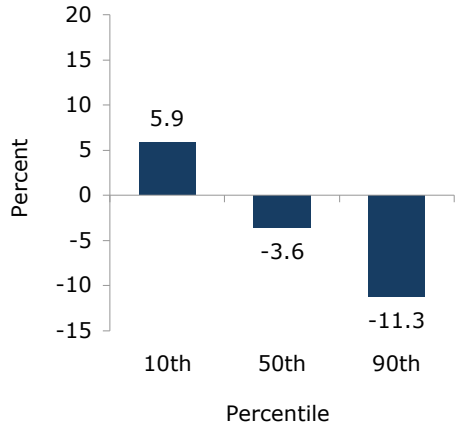


FIGURE 3B
State & Local Public Employees, Average Wage Differential, Women, 2009

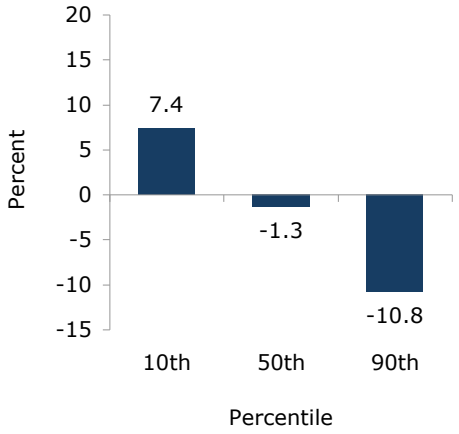
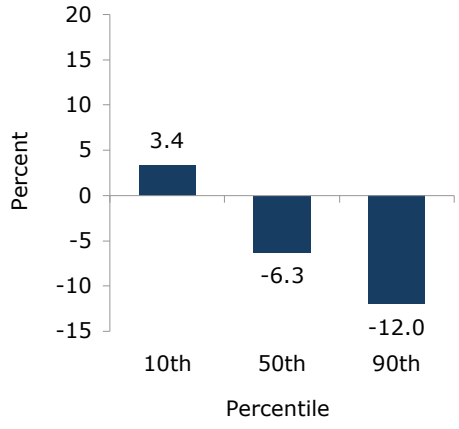


FIGURE 3C
State & Local Public Employees, Average Wage Differential, Men, 2009

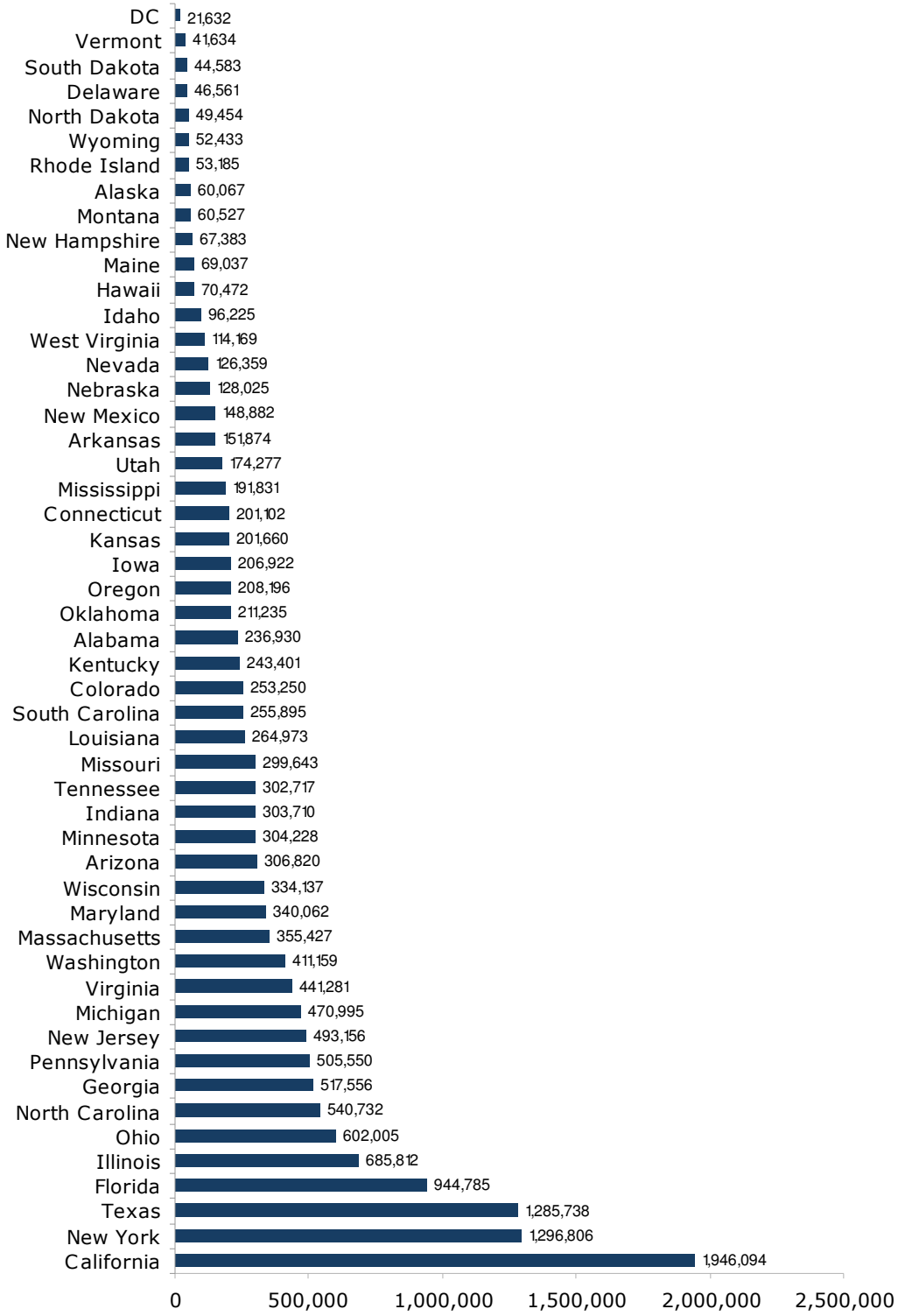


Conclusion

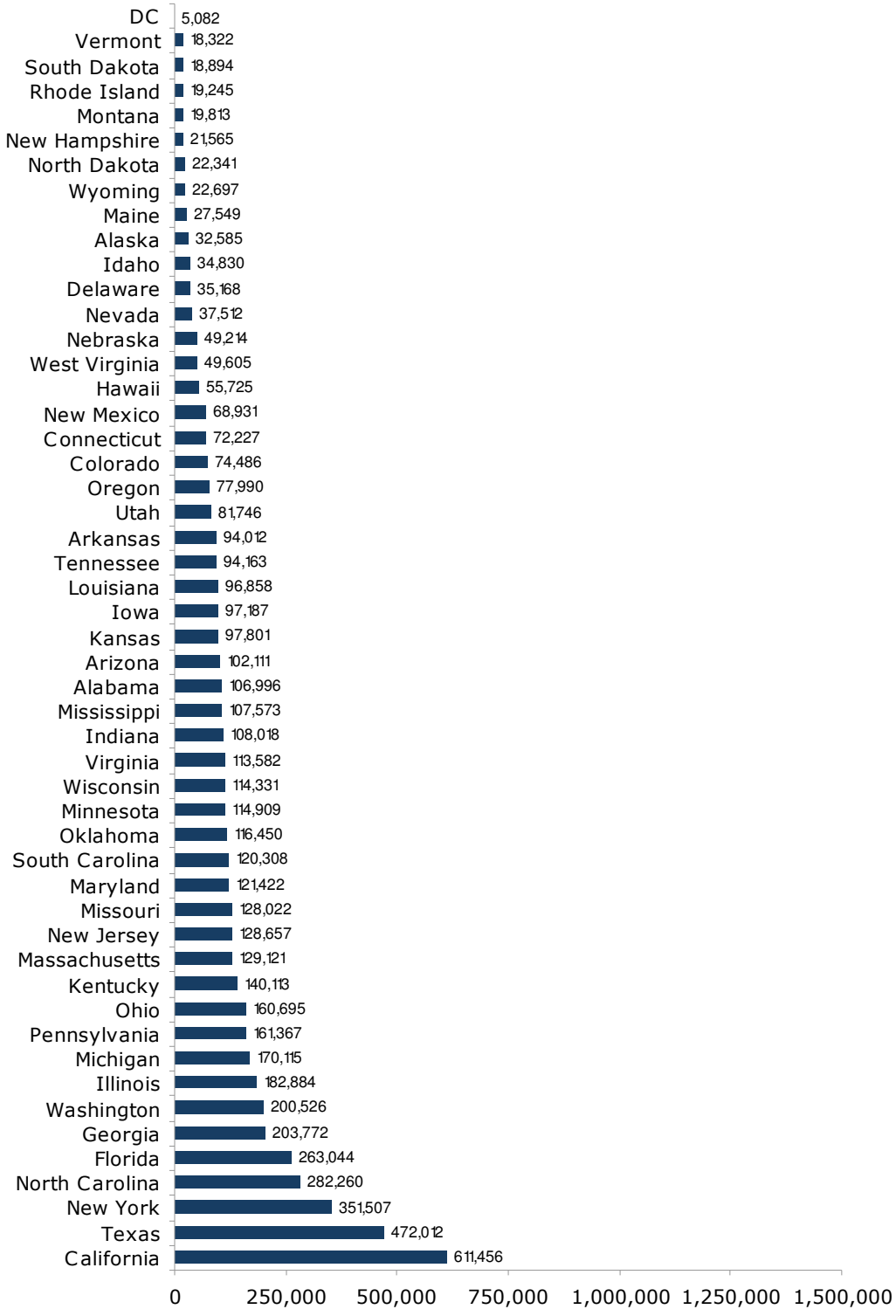
On average, state and local government employees earn more than private-sector workers. But, state and local workers are also, on average, older and substantially better educated than private-sector workers. When state and local government employees are compared to private-sector workers with similar 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.

Appendix

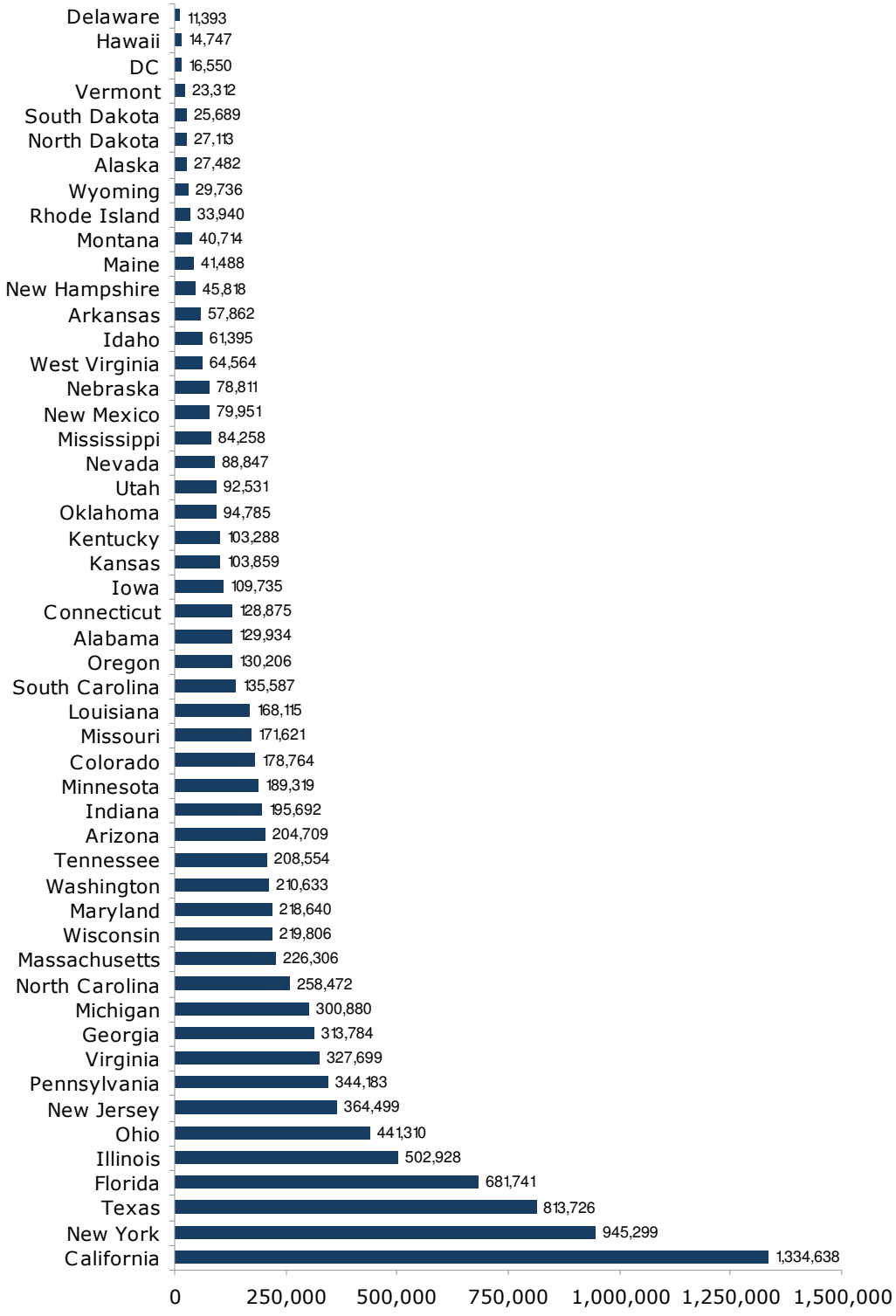
APPENDIX FIGURE 1
State and Local Public Employees, Age 18-64, 2009



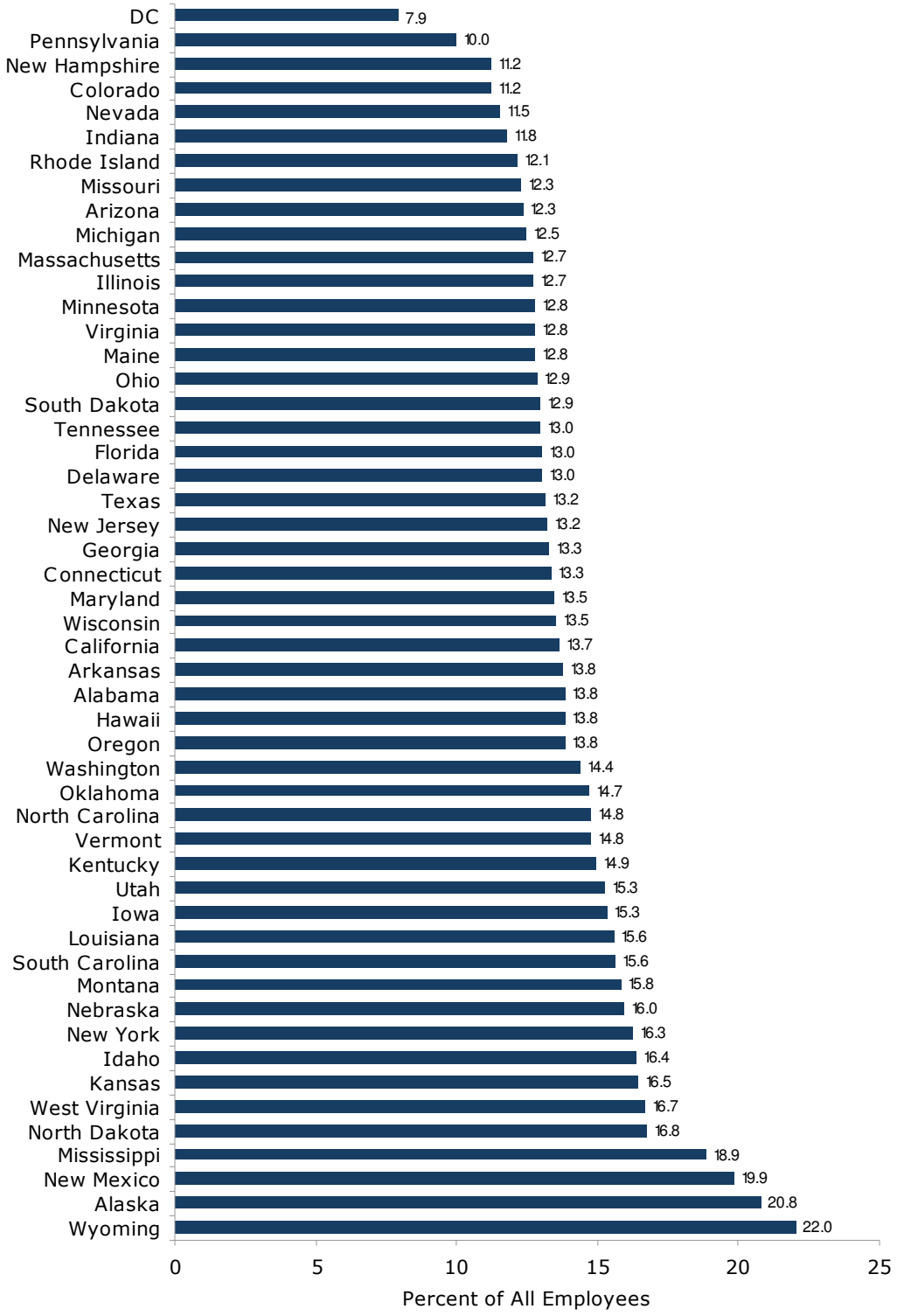
APPENDIX FIGURE 2
State Public Employees, Age 18-64, 2009



APPENDIX FIGURE 3
Local Public Employees Age 18-64, 2009



APPENDIX FIGURE 4
State and Local Public Employees as Percent of All Employees, Age 18-64, 2009



APPENDIX TABLE 1
State and Local Public Employees, 18-64, 2009

	State	Local	State & Local
Alabama	106,996	129,934	236,930
Alaska	32,585	27,482	60,067
Arizona	102,111	204,709	306,820
Arkansas	94,012	57,862	151,874
California	611,456	1,334,638	1,946,094
Colorado	74,486	178,764	253,250
Connecticut	72,227	128,875	201,102
DC	5,082	16,550	21,632
Delaware	35,168	11,393	46,561
Florida	263,044	681,741	944,785
Georgia	203,772	313,784	517,556
Hawaii	55,725	14,747	70,472
Idaho	34,830	61,395	96,225
Illinois	182,884	502,928	685,812
Indiana	108,018	195,692	303,710
Iowa	97,187	109,735	206,922
Kansas	97,801	103,859	201,660
Kentucky	140,113	103,288	243,401
Louisiana	96,858	168,115	264,973
Maine	27,549	41,488	69,037
Maryland	121,422	218,640	340,062
Massachusetts	129,121	226,306	355,427
Michigan	170,115	300,880	470,995
Minnesota	114,909	189,319	304,228
Mississippi	107,573	84,258	191,831
Missouri	128,022	171,621	299,643
Montana	19,813	40,714	60,527
Nebraska	49,214	78,811	128,025
Nevada	37,512	88,847	126,359
New Hampshire	21,565	45,818	67,383
New Jersey	128,657	364,499	493,156
New Mexico	68,931	79,951	148,882
New York	351,507	945,299	1,296,806
North Carolina	282,260	258,472	540,732
North Dakota	22,341	27,113	49,454
Ohio	160,695	441,310	602,005
Oklahoma	116,450	94,785	211,235
Oregon	77,990	130,206	208,196
Pennsylvania	161,367	344,183	505,550
Rhode Island	19,245	33,940	53,185
South Carolina	120,308	135,587	255,895
South Dakota	18,894	25,689	44,583
Tennessee	94,163	208,554	302,717
Texas	472,012	813,726	1,285,738
Utah	81,746	92,531	174,277
Vermont	18,322	23,312	41,634
Virginia	113,582	327,699	441,281
Washington	200,526	210,633	411,159
West Virginia	49,605	64,564	114,169
Wisconsin	114,331	219,806	334,137
Wyoming	22,697	29,736	52,433
USA	6,036,799	10,703,788	16,740,587

Notes: CEPR analysis of Current Population Survey data.

APPENDIX TABLE 2
State and Local Public Employees, as Percent of All Employees, Age 18-64, 2009

	State	Local	State & Local
Alabama	6.2	7.6	13.8
Alaska	11.3	9.5	20.8
Arizona	4.1	8.2	12.3
Arkansas	8.5	5.2	13.8
California	4.3	9.4	13.7
Colorado	3.3	7.9	11.2
Connecticut	4.8	8.5	13.3
DC	1.9	6.1	7.9
Delaware	9.8	3.2	13.0
Florida	3.6	9.4	13.0
Georgia	5.2	8.1	13.3
Hawaii	10.9	2.9	13.8
Idaho	5.9	10.4	16.4
Illinois	3.4	9.3	12.7
Indiana	4.2	7.6	11.8
Iowa	7.2	8.1	15.3
Kansas	8.0	8.5	16.5
Kentucky	8.6	6.3	14.9
Louisiana	5.7	9.9	15.6
Maine	5.1	7.7	12.8
Maryland	4.8	8.7	13.5
Massachusetts	4.6	8.1	12.7
Michigan	4.5	8.0	12.5
Minnesota	4.8	8.0	12.8
Mississippi	10.6	8.3	18.9
Missouri	5.2	7.0	12.3
Montana	5.2	10.6	15.8
Nebraska	6.1	9.8	16.0
Nevada	3.4	8.1	11.5
New Hampshire	3.6	7.6	11.2
New Jersey	3.5	9.8	13.2
New Mexico	9.2	10.7	19.9
New York	4.4	11.9	16.3
North Carolina	7.7	7.1	14.8
North Dakota	7.6	9.2	16.8
Ohio	3.4	9.4	12.9
Oklahoma	8.1	6.6	14.7
Oregon	5.2	8.7	13.8
Pennsylvania	3.2	6.8	10.0
Rhode Island	4.4	7.7	12.1
South Carolina	7.3	8.3	15.6
South Dakota	5.5	7.5	12.9
Tennessee	4.0	8.9	13.0
Texas	4.8	8.3	13.2
Utah	7.2	8.1	15.3
Vermont	6.5	8.3	14.8
Virginia	3.3	9.5	12.8
Washington	7.0	7.4	14.4
West Virginia	7.2	9.4	16.7
Wisconsin	4.6	8.9	13.5
Wyoming	9.5	12.5	22.0
USA	4.9	8.7	13.6

Notes: CEPR analysis of Current Population Survey data.

APPENDIX TABLE 3
Age and Education Levels, State and Local Public Employees, Age 18-64, 2003-2009

	Median age (years)		College degree or more (%)	
	Private	State and Local	Private	State and Local
Alabama	40	44	23.3	49.1
Alaska	39	44	23.6	45.6
Arizona	40	44	28.2	52.4
Arkansas	37	45	18.7	47.8
California	39	44	31.4	48.5
Colorado	39	43	39.2	61.4
Connecticut	42	45	39.6	56.4
DC	35	41	56.4	56.2
Delaware	39	44	29.3	51.0
Florida	41	44	29.0	48.4
Georgia	40	43	31.7	51.4
Hawaii	39	42	26.9	54.3
Idaho	38	42	23.1	43.0
Illinois	40	43	32.9	54.4
Indiana	41	45	24.0	41.9
Iowa	41	43	24.3	53.4
Kansas	39	44	29.9	53.7
Kentucky	39	41	20.0	50.5
Louisiana	40	41	24.4	47.3
Maine	42	48	29.0	54.7
Maryland	40	43	36.1	55.5
Massachusetts	40	46	45.4	59.5
Michigan	41	44	30.1	51.5
Minnesota	39	45	33.7	58.0
Mississippi	39	42	17.5	50.7
Missouri	40	41	25.7	51.2
Montana	40	44	28.4	48.9
Nebraska	39	45	27.4	50.8
Nevada	39	44	21.2	50.9
New Hampshire	42	47	35.1	52.8
New Jersey	41	45	37.6	59.0
New Mexico	40	43	24.1	46.5
New York	40	45	34.4	49.6
North Carolina	40	44	28.4	54.1
North Dakota	38	46	27.3	53.4
Ohio	41	45	24.6	46.0
Oklahoma	39	43	23.1	50.8
Oregon	39	44	28.7	54.2
Pennsylvania	41	43	31.2	47.4
Rhode Island	40	45	29.6	59.3
South Carolina	40	43	23.9	53.3
South Dakota	40	45	24.4	51.9
Tennessee	39	43	26.6	48.4
Texas	38	43	25.3	47.8
Utah	35	42	25.2	45.6
Vermont	42	47	33.0	52.7
Virginia	39	45	33.8	56.9
Washington	39	47	31.4	48.3
West Virginia	39	45	20.2	50.0
Wisconsin	40	45	27.4	54.9
Wyoming	40	43	16.6	41.9
USA	40	44	29.8	50.9

Notes: CEPR analysis of Current Population Survey data.

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