



Nutmeg Research Initiative
2 Huntley Road
Old Lyme, CT 06371

Dear Sirs/Madams,

Andrew Biggs, Ph.D., has concluded his study of state employee compensation in the fifty states according to the parameters agreed, as overseen by The Townsend Group Intl, LLC. Biggs focused special attention on Connecticut due to its worst-in-the-nation combination of high state employee compensation and underfunding of same. His principal findings show that Connecticut provides higher compensation to its state employees than all but a few other states and significantly higher than earned by comparable private sector workers in the state – and has done so for more than a decade.

Study Finds Very High Compensation for Connecticut State Employees

- **Extremely High State Employee Compensation (Wages and Benefits)**
 - **4th Highest Pay and Benefits of State Employees in 50 States**
 - (1) California (CA) – \$129,402
 - (2) Alaska (AK) – \$121,575
 - (3) New York (NY) – \$114,244
 - (4) *Connecticut (CT) – \$107,850**
 - **5th Highest Premium over Private Sector**
 - (1) CA – 53.1% premium (\$129,402 vs. \$84,542)
 - (2) AK – 49.5% premium (\$121,575 vs. \$81,338)
 - (3) NY – 45.3% premium (\$114,244 vs. \$78,603)
 - (4) NV – 43.6% premium (\$106,844 vs. \$74,390)
 - (5) *CT – 33.2% premium (\$107,850 vs. \$80,956) **
 - **High Premium over Private Sector as in Prior Studies**
 - This Study: 33% premium *
 - 2020 Study: 28% premium **
 - 2019 Study: 51% premium
 - 2015 Study: 46% premium
 - 2014 Study: 42% premium
 - 2010 Study: 42% premium
- **Highest Retirement Health Care Benefit Among the 50 States**
 - (1) *CT* – \$16,637 or 25.9% of salary
 - (2) CA – \$12,552 or 17.4% of salary
 - (3) NY – \$11,452 or 17.5% of salary
 - (4) IL – \$11,081 or 17.7% of salary
 - (5) NJ – \$ 9,197 or 13.9% of salary

* Reflects CT compensation before 5.5% wage increase in 2020

** Reflects CT compensation before 5.5% wage increases in 2019 and in 2020.

Worst Combination of Overcompensation and Underfunding of the 50 States

Connecticut's *worst-in-the-nation* combination of overgenerous and underfunded state employee compensation is evident in Table 7 in the study which shows the ten states with the highest compensation.

Funding of pension funds in eight of the ten states is above 60%, while funding of pensions in Connecticut and Illinois is below 40%.

Generally little attention is paid to the funding of retirement health care benefits, or OPEBs (Other Post-Employment Benefits), for which few states maintain meaningful funding. Accordingly, the meaningful comparative measure is the percentage of salary which OPEBs comprise. Connecticut's OPEBs are by far the highest percentage of salary of the 50 states.

Compensation Equal to the Private Sector Would Be Fair and Sufficient Reform

In aggregate, Connecticut pays its state employees about \$2 billion more than comparable private sector workers (see Table 8 in the study). It has paid this approximate premium for a decade. Had the state paid its employees compensation equivalent to comparable private sector workers over the last decade, it would have saved about \$20 billion. Had it contributed the savings to the state employee pension fund, that fund would be fully funded today.

Ramifications of Overgenerous and Underfunded State Employee Compensation

The overcompensation of Connecticut state employees is unfair, unnecessary and unsustainable. It is unfair to the great majority of the state's citizens who work in the private sector for significantly lower pay and benefits, while paying the ever-increasing taxes required to fund state employee compensation. It is unnecessary in that the compensation premium exceeds any premium which might be necessary to attract a workforce of competent state employees in competition with private employers seeking to attract comparable labor. It is unsustainable as state employee compensation is growing as a proportion of the state budget, which, in turn, both squeezes funding for state services and requires ever higher taxation to make the budget balance. These factors are contributing to significant outmigration of business and population. Hereafter, The Townsend Group outlines the relevant fiscal, financial, economic and demographic factors and metrics that put the findings of this study in context.

Respectfully,

Red Jahncke
President

STATE EMPLOYEE COMPENSATION IN THE FIFTY STATES, WITH A SPECIAL FOCUS ON CONNECTICUT

Andrew Biggs, PhD

Preface Discussing Connecticut

by



The Townsend Group

The Townsend Group, Intl, LLC





Introduction

State employee compensation is an important and highly controversial public policy issue, including controversy as to the most appropriate method by which to measure it. This study analyzes state employee compensation in the fifty states. The 50-state approach establishes a level playing field, eliminating bias with respect to any individual state. All states are analyzed and compared on the same basis.

The study takes a special focus upon Connecticut in light of its perilous combination of very high compensation and severe underfunding of the retirement benefits which account for a large proportion of total compensation in all states.

The study takes a manpower or a staffing perspective by comparing state employee compensation to private sector compensation in each state to assess whether or not states are paying compensation that is competitive with private employers in the same labor market sufficient to attract and maintain a capable and competent workforce. In all states, compensation is sufficient; in many states, it is overgenerous.

The study examines the various components of compensation to assess whether particular elements deviate from norms and impact overall compensation disproportionately.

In particular, the study examines accruing retirement health care benefits, often termed Other Post Retirement Benefits (OPEBs), demonstrating their importance relative to wages, pension benefits and current benefits.

The component-by-component approach yields significant findings. In Connecticut, for example, a state employee's annual accrued OPEBs are the highest by far among the 50 states, both in dollar amount and as a percent of salary, surpassing those in California, the second highest, by \$4,085. While all components of compensation are high in Connecticut, it is OPEBs which push the state into the top five in overall compensation. This is significant because states, including Connecticut, have not set aside meaningful funding for future OPEB benefits.

Finally, while many public employee compensation studies, particularly those focusing upon pensions, propose reforms designed to address significant underfunding or other issues, the proposed reforms may or may not have a realistic chance of implementation and their projected impact is dependent upon the accuracy of assumed future conditions.

In contrast, this study provides an historical pro forma analysis of an actual pension reform adopted in Connecticut in 2017, examining its impact had it been implemented six years earlier in 2011. This is a novel approach, providing analysis of an actual reform and measuring its actual impact in actual circumstances. The study finds that this reform has had immaterial impact.

This study analyzes the most recent pre-pandemic data, namely the most recent data drawn from normal time periods immediately before the dislocations and distortions occasioned by the pandemic and the economic shutdown. The focus on normal times makes the analysis most germane to the future after the crisis period has passed.

However, the normal-times focus should not ignore that the pandemic great exacerbated the public-private divide, public employees generally keeping their jobs, while millions of private sector employees lost theirs. In Connecticut, for example, no state employees were laid off, and, on top of that, they were given a 5.5% general wage increase.

Compensation is the focus of this study, not the funding of the retirement benefits. Nevertheless, the study focuses special attention on Connecticut due to its unique combination of very high compensation and severely underfunded retirement benefits, both pensions and retiree health care.

Connecticut is a Dire Case

Connecticut’s high and severely underfunded state employee compensation leaves the state particularly vulnerable to adverse financial and/or economic conditions. It is in the interest of the state, its citizens and active and retired state employees to reduce this risk.

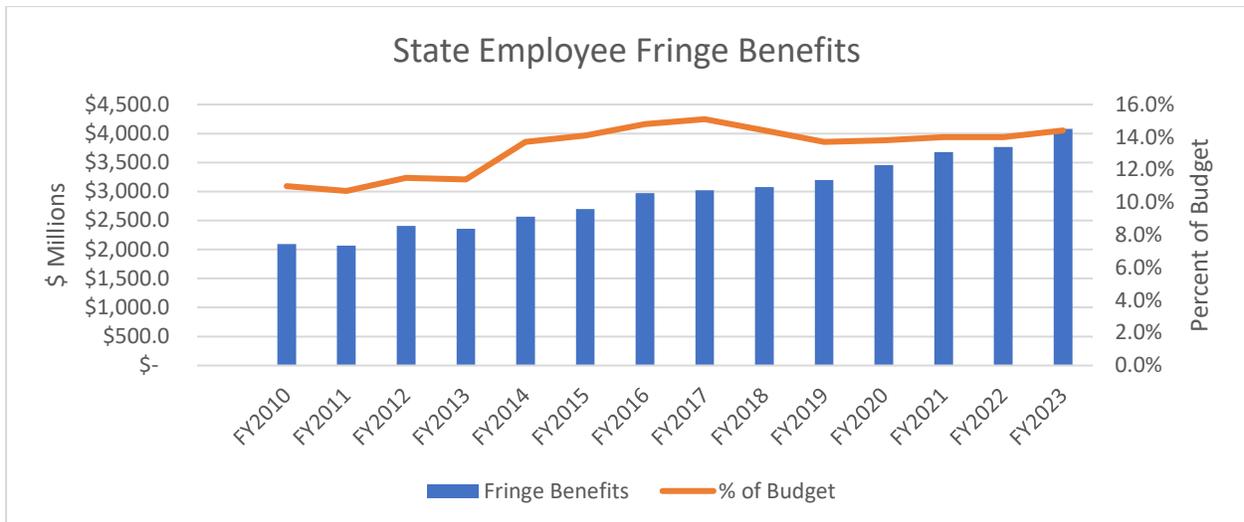
This study found that Connecticut state employees enjoy a 33% compensation premium over the state’s comparable private sector workers, the 5th highest premium of the 50 states. In dollar terms, Connecticut state employees received the 4th highest compensation among state employees in the fifty states.

This compensation is far in excess of the level needed to attract and maintain a competent workforce. The 33% premium translates into an annual aggregate of \$2.1 billion. The reform of compensation practices offers tremendous potential savings in a state in which the annual budget is about \$23 billion.

The very high level of Connecticut state employee compensation raises issues of fundamental fairness and sustainability.

State Employee Compensation Consumes an Increasing Portion of the Budget:

From fiscal year 2010 to fiscal year 2023, fringe benefits alone will have almost doubled in dollar amount and grown from 11% to 14% of the budget from fiscal year 2010.

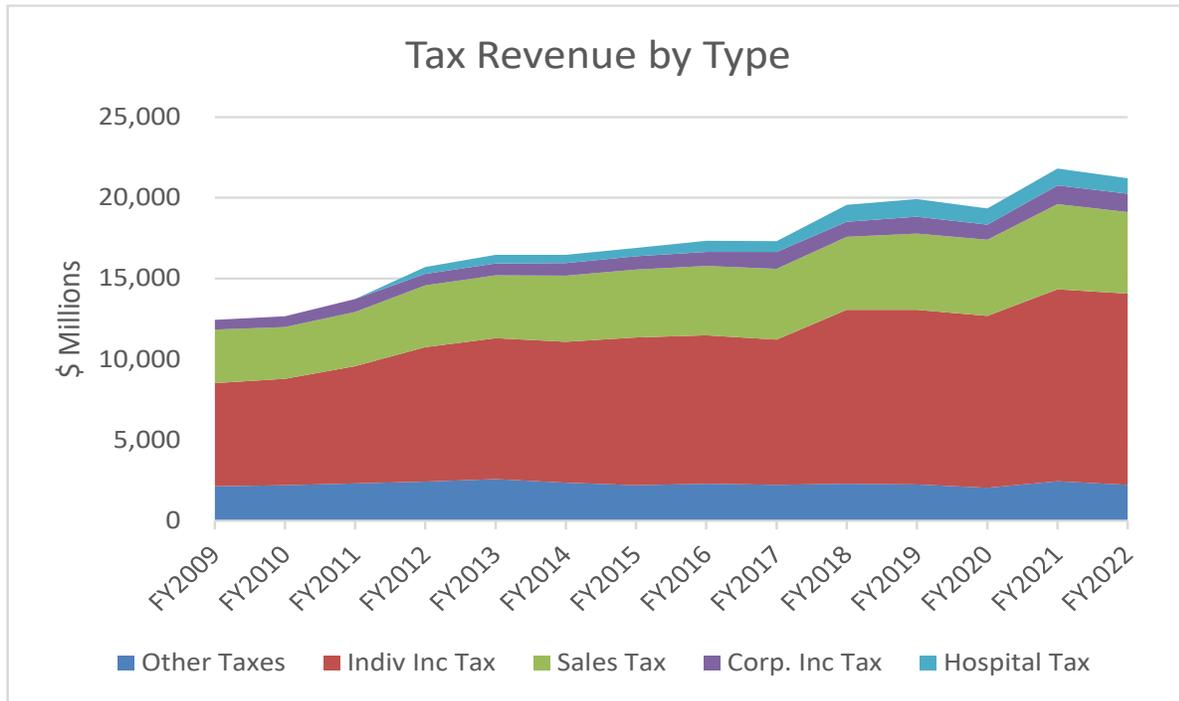


Source: Connecticut State Budget – FY 2010 to 2023 – Office of Fiscal Analysis, Connecticut General Assembly

Connecticut Has Imposed Ever-Increasing Taxation:

Connecticut has instituted a series of new taxes and tax rate increases. It is difficult not to relate the two trends: increasing state resources devoted to state employee compensation and increasing taxation.

Total net tax revenue realized has grown at a compound annual rate of 4.2% from fiscal year 2009 to 2022.



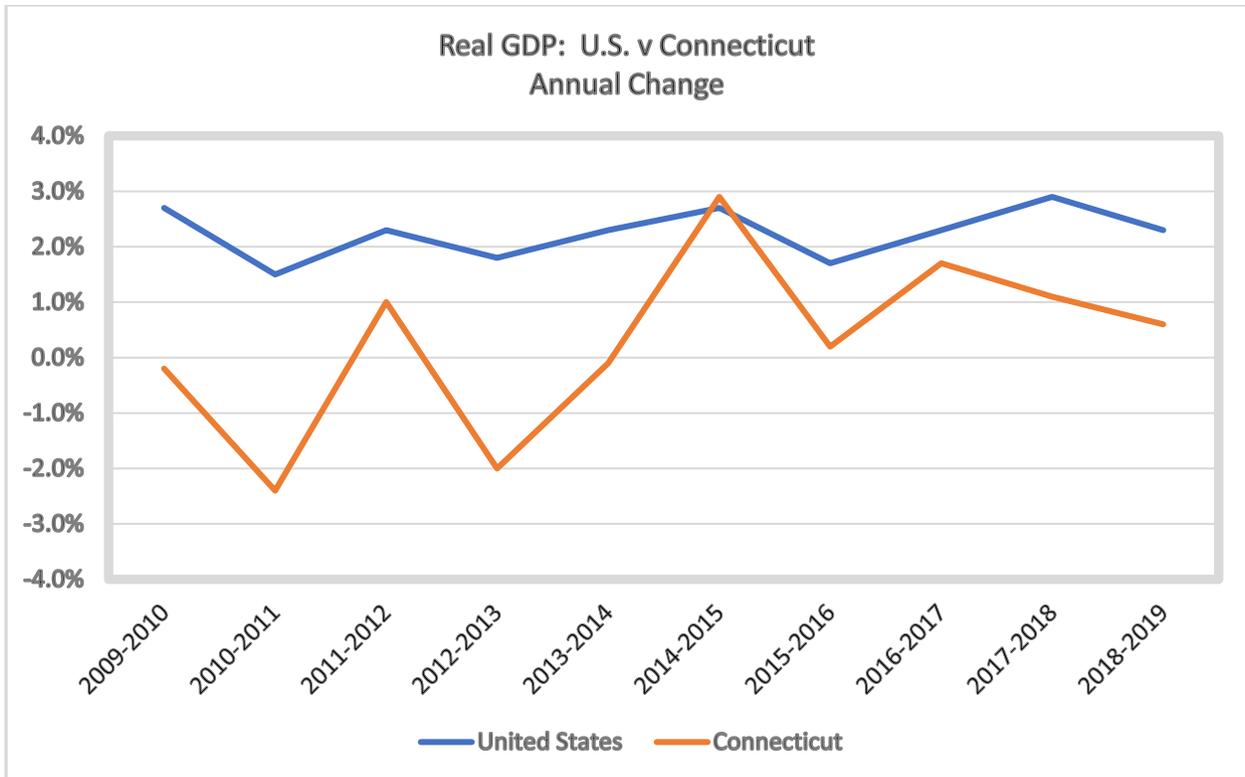
Source: Connecticut State Budget – FY 2009 to 2022 – Office of Fiscal Analysis, Connecticut General Assembly

Individual income tax rates have increased from two brackets of 3.0% and 5.0% to six brackets ranging from 3.0% to 6.99% with lower bracket rates not applicable as taxpayer income enters higher brackets. In fiscal year 2021, the sales tax was applied to a greatly expanded numbers of items. In fiscal year 2010, a 10% surcharge was slapped on the corporate income tax, and, in fiscal year 2012, the surcharge was increased to 20%, bringing the rate to 9.5% where it has remained, despite repeated budget commitments to sunset the surcharge. In fiscal year 2012, a new tax on hospital net revenue was instituted; it has grown to roughly equal the corporate income tax.

Connecticut's Economy Has Stagnated:

While taxation has grown significantly, the Connecticut economy stagnated, registering the slowest in real terms of the 50 states, based upon data from the U.S. Bureau of Economic Analysis.

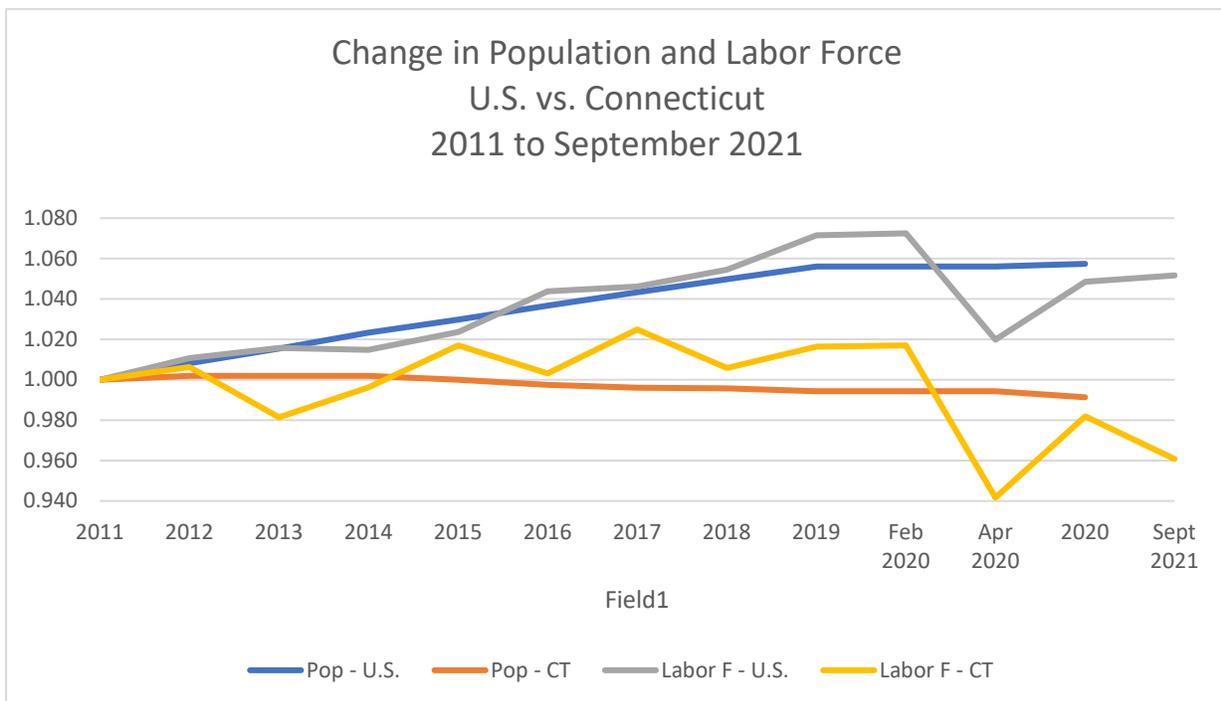
In four of the ten years, Connecticut real GDP declined from the prior year. In only one year did it match the national growth rate. While the U.S. economy grew at a 2.3% compound rate from 2011 to 2019, Connecticut's economy grew at an anemic 0.7% compound rate.



Source: U.S. Bureau of Economic Analysis

Connecticut Population and Labor Force Have Been Shrinking:

It is no surprise that people are voting with their feet. Even before the pandemic, Connecticut’s population was shrinking and its labor force was stagnant.



Sources: Annual Report, Connecticut State Comptroller; U.S. Census Bureau; U.S. Bureau of Labor Statistics

In response to the pandemic and the economic shutdown, Connecticut's labor force plunged deeper and, to date, has recovered at only half the national pace.

Since February 2020, the state's workforce has contracted by about 105,000, or about 5.5%, and about 115,000 were officially unemployed as of September 2021, according to the U.S. Bureau of Labor Statistics. The combined 220,000 represent about 11.5% of Connecticut's pre-pandemic workforce; in the next-worst state, this percentage is only 10.1%. Fifteen states have grown their workforces during this period; 44 states have lower current unemployment rates.

On balance, if the labor force contracts, the economy contracts, reducing tax revenue that funds government services and pays government employees.

Where is Connecticut Headed?

Once the torrent of federal assistance has been spent, where is the state headed? The simplest answer is the deep budget deficits in the so-called "out years" -- fiscal years 2024 to 2026. Governor Lamont is projecting yearly deficits exceeding \$750 million annually, or more than \$2.25 over the three years. As noted above, in recent years, projected budget deficits have been closed with new taxes and good fortune. The favorable national economic and investment environment has generated robust income tax revenue from the state's professional investors.

What are the Options for Connecticut?

The State has three options: (1) tax increases, (2) service cuts, and/or (3) compensation cuts.

Taxes: Taxes in Connecticut are already amongst the highest in the nation, according to The Tax Foundation, which ranks the state second highest in terms of combined income and sales taxes paid. Truth in Accounting finds that Connecticut has the highest burden of public debt per person in the nation (\$62,500). It is difficult to see additional taxes, or additional borrowing, as a realistic option.

Service Cuts: Services have already been reduced, squeezed between (1) budget restraints adopted in 2017 which limit budget growth below the lower of (a) the rate of inflation and (b) the personal income growth in the state and (2) state employee compensation.

For example, the federal aid which the state received under the American Rescue Plan illustrates this point. The state is receiving \$2.9 billion under ARP; recently, the state announced that it has/will make a supplemental deposit of \$2.9 billion into the state Teacher Retirement Fund (TRF) and the State Employee Retirement Fund (SERF). Indirectly, ARP funds are being used to fund these supplemental contributions, not to aid citizens and businesses in the state. These special deposits are over and above the regularly scheduled \$7.2 billion in contributions to these pension funds over the current and next fiscal year.

While these deposits improve SERF and TRF funding, the improvement comes at the expense of the state's citizens and of other priorities.

Some look to greater government efficiency as the answer. While government is notoriously inefficient, nevertheless, it is difficult to see efficiencies providing long term relief from the squeeze.

Reduction of Active and Retired Employee Benefits: Process of elimination suggests that the best option is to reduce active and retired state employee compensation and benefits. Further recommending this option is the fact that compensation is amongst the highest in the nation, implying that reductions moving toward national average levels and closer to in-state private sector levels are both fair and possible without jeopardizing the state's ability to recruit a competent workforce.

While Connecticut's overgenerous compensation is not unique, its combination of overgenerousness and severe underfunding is the worst in the nation. Most proposed reforms focus on increasing funding, i.e. numerator of the problem, while ignoring the denominator, benefits. However, there are no realistic options to improve the numerator (funding) if taxes and debt are already very high and services are already being squeezed.

Compensation reforms need not be onerous. There are over one hundred thousand active and retired workers implying that significant aggregate reductions can be accomplished with relatively minor adjustments per person.

The Stakes Are High.

In 2019, legendary investor Warren Buffet said effectively that he would not invest in Connecticut: "If I were relocating into some state that had a huge unfunded pension plan, I am walking into liabilities. Because I mean, who knows whether they're gonna get it from the corporate income tax or my employees — you know, with personal income taxes or what... And those are big numbers, really big numbers." Buffet was quoted widely.

Buffet's observations apply as much to retention of existing businesses as to attraction of new ones. In 2016, General Electric left the state in a high-profile departure. Many other businesses have left as well.

What happens if the environment turns unfavorable? Tax increases may not be possible. The succession of tax increases may have reached a "red line," above which they cannot be raised without shrinking the tax base as even more taxpayers flee to other states to avoid the higher taxes.

If investment markets stagnate or deteriorate, tax revenue from state's professional investors may decline significantly, especially if more than just a few depart to avoid potential or actual tax increases.

Already, the major stock indices have fallen, with the S&P 500 down about 8% in the first month and a half of 2022. Interest rates have increased, with the 10-year U.S. Treasury rate up from 1.3% early last December to 2% in mid-February 2022. The Federal Reserve Bank has announced that it will increase interest rates, with the first increase in March.

Even more worrisome that the retreat of stocks and the increase in interest rates is the sudden increase in inflation to a 7.5% annual rate over the last twelve months.

Delaying reforms until an unfavorable environment forces action, would mean unavoidably more painful cuts. It would be prudent to address the issue and implement reforms sooner than later.

State Employee Compensation in the Fifty States, With a Special Focus on Connecticut

Andrew G. Biggs, Ph.D.

December 2021

Summary

This study analyzes the wages and benefits paid to active state government employees in the fifty states, benchmarking state employee compensation relative to the pay of similar private sector employees within their state. The study relies upon Census Bureau household survey data for wages and demographic characteristics, while using data from the National Income and Product Accounts to calculate employee benefits. The study adjusts for two issues in the NIPA data, pertaining to the value of pension and retiree health benefits accruing to active employees. The results show a wide range of compensation among state government employees. In nearly all states, wages paid to state government employees fall short of those paid to similar private sector employees, but pay significantly more generous fringe benefits, bringing total compensation at least up to private sector levels. In the lowest-paid states, total salaries and benefits are roughly comparable to those paid in private sector jobs. In the five highest-paid states, however, state government employees receive salaries and benefits that are one-third or more greater than those paid to similar private sector employees. These significant differences in pay between different state governments may present the opportunity for budgetary savings, in particular through reforms of public employee pension and retiree health plans. The results of the study include a focus on the compensation of state government employees in Connecticut, which has a combination of the fifth highest premium of state government compensation over private sector compensation in this study and, of the five states with the highest such premiums, by far the lowest funded pension fund.

Biography

Andrew G. Biggs is a senior fellow at the American Enterprise Institute (AEI), where he studies Social Security reform, state and local government pensions, and public sector pay and benefits.



Before joining AEI, Biggs was the principal deputy commissioner of the Social Security Administration (SSA), where he oversaw SSA's policy research efforts. In 2005, as an associate director of the White House National Economic Council, he worked on Social Security reform. In 2001, he joined the staff of the President's Commission to Strengthen Social Security. Biggs has been interviewed on radio and television as an expert on retirement issues and on public vs. private sector compensation. He has published widely in academic publications as well as in daily newspapers such as The New York Times, The Wall Street Journal, and The Washington Post. He has also testified before Congress on numerous occasions. In 2013, the Society of Actuaries appointed Biggs co-vice chair of a blue-ribbon panel tasked with analyzing the causes of underfunding in public pension plans and how governments can securely fund plans in the future. In 2014, Institutional Investor Magazine named him one of the 40 most influential people in the retirement world. In 2016, he was appointed by President Obama to be a member of the financial control board overseeing reforms to Puerto Rico's budget and the restructuring of the island's debts.

Biggs holds a bachelor's degree from Queen's University Belfast in Northern Ireland, master's degrees from Cambridge University and the University of London, and a PhD from the London School of Economics.

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Introduction

Over the past two decades salaries and benefits for state and local government employees have increased faster than in the private sector¹, and pension and retiree health plans for public sector workers face trillions of dollars in unfunded liabilities. According to Federal Reserve data, state and local government pensions are underfunded by over four trillion dollars², while retiree health programs are underfunded by over \$1.2 trillion.³

A key question facing policymakers seeking to bring such programs back into balance is the level of salaries and benefits that a state government must pay in order to attract employees from the larger labor market. The most intuitive answer to that question is that state governments should compensate employees commensurately with similar private sector workers. If pay and benefits are too low, governments will be unable to attract and retain the employees it needs. But if public sector compensation is higher than necessary, those funds are not available for other government priorities or for leaving additional funds in the private sector.

This study analyzes several of the component parts of state government employee compensation, including salaries, pensions, retiree health coverage and other fringe benefits. The study then produces estimates of how combined salaries and benefits for state government employees compare to what is paid to private sector workers with similar education, experience and other characteristics that commonly are associated with earnings.

It is important to emphasize that the study does not merely compare the average salaries for state government employees to average salaries paid in the private sector. Salaries may reasonably differ due to differences in education, experience and other factors. Accordingly, the study compares salaries of state employees to those of private sector workers with similar characteristics in an effort to estimate what state employees would be likely to receive were they employed outside of state government.

The benefits measured in this analysis include both current benefits that employers provide active employees today, such a health insurance and Social Security taxes paid by the employer, and the present value of the future pension, retiree health and other benefits earned by employees today, but to be paid when employees retire.

¹ Biggs, Andrew. "The growth of salaries and benefits in the federal government, state and local governments and public education, 1998 to 2017." American Enterprise Institute, 2019.

² Federal Reserve Board. Financial Accounts of the United States, L.120.b (A) State and Local Government Employee Retirement Funds: Defined Benefit Plans.

³ Marc Joffe. "Survey of State & Local Government OPEB Liabilities." The Reason Foundation. February, 2021.

Objective: The objective of this study is to compare the compensation of comparable full-time active state government employees in the fifty states to their counterparts in the private sectors in order to measure the compensation differential between them in each state. The additional objective of the study is to examine the different components of compensation to discover the primary drivers of the compensation differentials in and among the states.

Data: The study uses two main data sets. For wages, it uses the American Community Survey, which provides data by state for both state government employees and private sector workers, including demographic data such as education and experience levels with which the study is able to compare comparable employees, rather than simply the average employee in each state.

For benefits, the study uses data from the National Income and Products Accounts, which are the official accounts of the United States. State-by-state NIPA data are available for the benefits of both active state government employees and private sector workers. However, the NIPA data suffers from two shortcomings in its measurement of the accrual values of traditional pension benefits and retiree health coverage, both of which principally affect public sector employees.

Accordingly, this study uses two additional sources, first, a special study of NIPA data for the pension benefits of state and local government employees in the fifty states conducted by the U.S. Bureau of Economic Analysis. Second, the study uses hand-gathered data from the financial reports of each of the fifty states for retirement health care benefits.

For the precise methods by which the study integrates the ACS wage data and the benefit data, and by which it integrates the BEA pension data and the hand-gathered retirement health care data into the overall NIPA benefit data, please see Appendix A.

The study then compares total benefits paid or accruing to state employees to those paid or accruing to private sector workers in each state. Then, the study compares total compensation of state employees to private sector workers across the fifty states.

In a concluding section, the study examines more closely the 10 states with the largest compensation differentials between state government and private sector employees: California, Alaska, New York, Nevada, Connecticut, Illinois, Washington, Wyoming, Wisconsin and Arizona. In this section, the study includes data about the funding of pension benefits in these 10 states.

Appendix A provides a step-by-step explanation of how the study's wage and benefit comparisons are calculated. Appendix B discusses an adjustment made to BEA calculations of the value of newly-accruing pension benefits to more closely match figures released by

certain state plans. Appendix C discusses an adjustment made to BEA data on the value of retiree health benefits.

The study looks more closely at Connecticut in Appendices D and E.

Appendix D compares the results of this study with other recent analyses of public sector pay in Connecticut, and provides more up-to-date information about state employee compensation and benefits funding. Appendix E looks at the relative costs of Tiers III and IV of the Connecticut State Employees Retirement System.

Wages and salaries

Wages and salaries are the largest and most visible part of any employee's compensation. Salaries paid to state government employees are compared to those paid to private sector employees, while controlling for differences in a range of characteristics that are frequently found to be correlated with employee pay. This approach has long been used in analyses of public sector pay⁴ and is similar to analytical techniques used by the Congressional Budget Office to analyze the compensation of federal government employees.⁵

The wage analysis in this study is based on data from the U.S. Bureau of the Census's American Community Survey, which has a large sample size and is collected annually. Data are used for the years 2017 through 2019, providing a sufficiently large sample to estimate the state employee wage premium or penalty with reasonable statistical accuracy. The data sample is limited to individuals who report being employed full time. The control variables used are educational attainment; field of undergraduate degree, for employees who have a Bachelor's degree or greater⁶; potential work experience, which is equal to age minus years of education minus six, which represents the age at which most children begin school; potential work experience squared; usual hours of weekly work; county of residence, to control for local wage levels; gender, race, immigrant and marital status; and whether the individual is a state government employee.

⁴ Sharon P. Smith, "Pay differential between federal government and private sector workers," *Industrial and Labor Relations Review*, 29, issue 2 (1976): 179-197. More recently, see: William Even and David Macpherson, "Methodology for Estimating Compensation Differentials for State and Local versus Private Sector Workers," (WI: MacIver Institute, November, 2012); Jeffrey Keefe, "Are New Jersey public employees overpaid?" Economic Policy Institute (July 30, 2010) and other studies by the same author; and Alicia H. Munnell, Jean-Pierre Aubry, Josh Hurwitz, and Laura Quinby. "Comparing Compensation: State-Local Versus Private Sector Workers," Center for Retirement Research at Boston College, State and Local Pension Plans No. 20 (Chestnut Hill, MA: September 2011).

⁵ See Falk, Justin, "Comparing Wages in the Federal Government and the Private Sector," Working Paper 2012-3 (Washington, DC: Congressional Budget Office, 2012).

⁶ See, for instance, Altonji, Joseph G., Lisa B. Kahn, and Jamin D. Speer. "Trends in Earnings Differentials across College Majors and the Changing Task Composition of Jobs." *The American Economic Review* 104.5 (2014): 387-393.

The results of the analysis are shown in Figure 1, with greater detail in Table 1. Figure 1 and Table 1 compare the average state employee to comparable private sector employees in the same state, with comparable implying having similar levels of education experience and other earnings-related characteristics to the average state employees. Average annual salaries for state government employees differ significantly from state to state, ranging from a high of \$72,084 in California to a low of \$37,973 in West Virginia. Table 1 also displays average annual salaries for private sector employees with similar characteristics to state government employees within the same state.

While much of the difference in state government salaries between states is due to differences in the overall wage levels in their labor markets, state governments pay different wages even relative to their own labor markets. The median or typical state pays state government employees a salary that is about eight percent lower than is paid to private sector employees with similar levels of education, experience and other factors related to earnings. The highest-paid states pay state government salaries that are comparable to or slightly above private sector levels, while the lowest-paid state, Georgia, pays state employee salaries that are 18.2 percent lower than those paid to similar private sector workers. Thus, the common view that state governments pay lower salaries than the private sector is borne out in these data, although there are considerable variations in relative pay from state to state.

Figure 1.

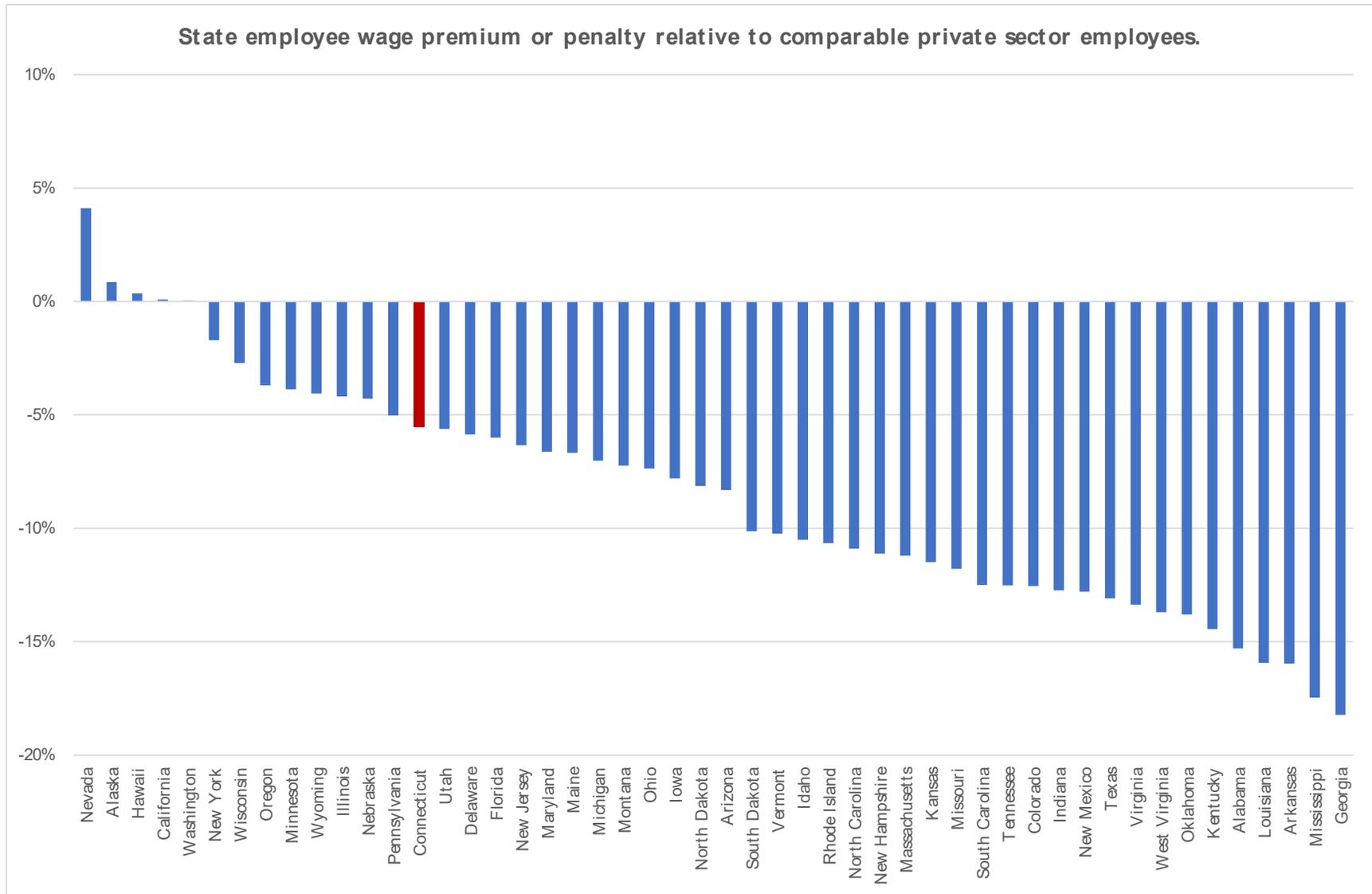


Table 1. Average state government employee salaries and percent premium or penalty relative to similar private sector employees, 2017-2019.

<u>State</u>	<u>Average state employee salary</u>	<u>Comparable private sector salary</u>	<u>Premium or penalty</u>	<u>Rank</u>	<u>State</u>	<u>Average state employee salary</u>	<u>Comparable private sector salary</u>	<u>Premium or penalty</u>	<u>Rank</u>
Nevada	\$64,976	\$62,407	4.1%	1	Arizona	\$52,973	\$57,776	-8.3%	26
Alaska	\$66,736	\$66,169	0.9%	2	S Dakota	\$42,841	\$47,669	-10.1%	27
Hawaii	\$59,464	\$59,254	0.4%	3	Vermont	\$51,073	\$56,900	-10.2%	28
California	\$72,084	\$72,019	0.1%	4	Idaho	\$44,900	\$50,168	-10.5%	29
Washington	\$67,512	\$67,490	0.0%	5	Rhode Island	\$55,154	\$61,726	-10.6%	30
New York	\$65,610	\$66,752	-1.7%	6	N Carolina	\$46,063	\$51,695	-10.9%	31
Wisconsin	\$53,631	\$55,124	-2.7%	7	N Hampshire	\$54,245	\$61,027	-11.1%	32
Oregon	\$59,774	\$62,064	-3.7%	8	Massachusetts	\$63,968	\$72,041	-11.2%	33
Minnesota	\$59,178	\$61,563	-3.9%	9	Kansas	\$45,740	\$51,678	-11.5%	34
Wyoming	\$54,194	\$56,484	-4.1%	10	Missouri	\$46,981	\$53,258	-11.8%	35
Illinois	\$62,472	\$65,198	-4.2%	11	Colorado	\$57,195	\$65,399	-12.5%	38
Nebraska	\$53,113	\$55,491	-4.3%	12	S Carolina	\$43,681	\$49,918	-12.5%	36
Pennsylvania	\$54,261	\$57,134	-5.0%	13	Tennessee	\$45,294	\$51,774	-12.5%	37
Connecticut	\$64,235	\$68,013	-5.6%	14	Indiana	\$45,782	\$52,461	-12.7%	39
Utah	\$54,521	\$57,765	-5.6%	15	New Mexico	\$42,309	\$48,514	-12.8%	40
Delaware	\$57,442	\$61,022	-5.9%	16	Texas	\$48,546	\$55,858	-13.1%	41
Florida	\$50,168	\$53,374	-6.0%	17	Virginia	\$53,943	\$62,264	-13.4%	42
New Jersey	\$66,282	\$70,771	-6.3%	18	West Virginia	\$37,983	\$44,016	-13.7%	43
Maryland	\$62,071	\$66,473	-6.6%	19	Oklahoma	\$43,050	\$49,945	-13.8%	44
Maine	\$49,955	\$53,529	-6.7%	20	Kentucky	\$46,257	\$54,066	-14.4%	45
Michigan	\$54,586	\$58,707	-7.0%	21	Alabama	\$43,745	\$51,640	-15.3%	46
Montana	\$43,619	\$47,020	-7.2%	22	Louisiana	\$41,520	\$49,391	-15.9%	47
Ohio	\$50,975	\$55,025	-7.4%	23	Arkansas	\$42,193	\$50,209	-16.0%	48
Iowa	\$51,564	\$55,925	-7.8%	24	Mississippi	\$41,180	\$49,893	-17.5%	49
North Dakota	\$48,256	\$52,529	-8.1%	25	Georgia	\$46,244	\$56,547	-18.2%	50

Author's calculations from American Community Survey data.

Pension benefits

One of the biggest differences between the compensation packages of public and private sector employees is pension benefits. Traditional “defined benefit” (DB) pensions, which promise a fixed, guaranteed monthly payment in retirement, have always been far more common in the public than the private sector and those differences are even greater today. By contrast, most private sector workers save for retirement through retirement accounts, most notably the 401(k), to which they and their employer make periodic contributions, but where the employee chooses how to invest the account balance and bears the risk and return of those investment choices.

The compensation value of a 401(k) can be measured fairly easily: it is the dollar value of the employer’s contribution to the employee’s account. Since the employee’s own contribution is made out of his salary, which is counted elsewhere, we do not include it.

For an employee with a traditional pension, pension compensation is equal to the present discounted value of the future pension benefits accrued in a given year, net of any employee contributions.⁷ Even if the pension benefit is not paid until years later, it is the right to receive that future benefit that is counted as employee compensation. The NIPA start with estimates of the future dollar amounts that employees will receive based upon their work this year. It then discounts these amounts back to the present, using a uniform discount rate rather than the discount rates which state themselves set, which vary significantly. NIPA uses the yield on corporate bonds because pension benefits are considered to be relatively safe. For the most recent figures, this assumed corporate bond yield is four percent.⁸ The present value of the future benefits earned by workers this year is credited to them as income in the NIPA.⁹

⁷ The System of National Accounts (2008) (United Nations, et al., 2009) by which the federal government tracks employee pay and benefits states that “compensation income is ... the present value of the claims to benefits earned by active participants through service to the employer.

⁸ For background, see Marshall B. Reinsdorf and David G. Lenze, “Defined Benefit Pensions and Household Income and Wealth,” Bureau of Economic Analysis, *Research Spotlight* (August 2009): 51, https://www.bea.gov/scb/pdf/2009/08%20August/0806_benefits.pdf

⁹ The NIPA are only secondarily concerned with how much pension plan sponsors contribute each year to fund the benefits they have promised. This may at first appear puzzling, but on closer examination makes sense. A pension benefit is a promise made by the plan sponsor – in this case, a governmental entity – to pay a given employee a given amount on a given date. In this way, a pension benefit has many similarities to a government bond. How the employer chooses to fund that pension benefit – it could prefund the benefit or finance it on a pay-as-you-go basis; it could prefund via larger contributions in safer assets or lower contributions in risky assets; it could skip contributions in a given year, or it could contribute extra in order to pay down unfunded liabilities from prior years – is a matter of concern to the pension sponsor and many other stakeholders, but does not affect the value of the benefits that have been promised to employees in the current year.

This value of new benefits accruing in a given year is often referred to as the “normal cost” or “service cost” of the pension.¹⁰ The normal cost of newly-accruing benefits is distinct from payments governments or employers must make to pay off unfunded pension liabilities generated during prior years. Such payments are not a part of current employee compensation and are not counted as such in this study.

However, the NIPA estimates for the value of traditional pension accruals for state government employees are at odds with figures published by a small number of states that make available a sensitivity analysis of how the normal cost of employees’ newly-accruing retirement benefits changes as the discount rate is adjusted. The details of this issue, and the method used to adjust for it, are included in Appendix B. The adjusted NIPA data are relied upon in this section and for the larger compensation comparisons later in the study.

For public sector employees, this section of the study relies upon a 2020 BEA publication that, based upon NIPA data not ordinarily available to the public, published state-by-state figures on pension benefits for state and local government employees combined.¹¹ Thus, while the use of the BEA study data enables state to state comparison of pension benefits, which the NIPA do not generally provide, these data do not allow a direct focus on state government employees, and makes this study’s focus on state employees somewhat less precise. However, in many cases local government employees participate in the same retirement plans as state government employees, or they participate in separate plans but with similar benefit provisions. Thus, the figures in this section should provide a useful comparison to retirement plan benefits in the private sector.

For private sector employees, employer contributions toward retirement plans, most of which would be 401(k)-type retirement accounts, are incorporated in the basic NIPA benefits data discussed above. The NIPA methodology for calculating the value of employer-funded retirement benefits does not contain the same methodological issues that apply to NIPA pension data for state government employees, and thus no adjustment to the NIPA data for private sector employees is made.

As noted above, the NIPA benefits data at the state level are presented as a single dollar amount for total benefits and it is not generally possible to disaggregate total benefits to find

¹⁰ It is important to note that the annual compensation received via a traditional pension can differ, often significantly, from the amount that the employer contributes to the plan in a given year. In the public sector, employers often reduce their annual contributions by assuming high returns on pension investments. On the other hand, public sector employers’ pension contributions also include amounts to pay off unfunded liabilities from prior years. These contributions do not form part of the compensation earned by employees in the current year.

¹¹ David G. Lenze. “Transactions of State and Local Government Defined Benefit Pension Plans. Experimental Estimates by State.” Bureau of Economic Analysis. July, 2020. <https://apps.bea.gov/scb/2020/07-july/0720-state-pension-estimates.htm>

the values of individual components of benefits. However, to give a sense of the general scale of pension benefits in the private sector, it is possible to calculate the average employer contribution to private sector retirement plans on a nationwide basis. According to national-level NIPA data, in 2020 private sector employees received total employer contributions to their 401(k)-style retirement accounts of \$204 billion. In addition, private sector employees with traditional defined benefit pensions accrued new benefits with a value of \$74 billion, net of employees' own contributions to these plans. Thus, total employer-funded retirement benefits for private sector employees in 2020 were equal to \$276 billion, which is 3.5 percent of total private sector employee wages in that year. This figure provides a benchmark against which accruals in state and local government pensions can be measured.

It is important to reiterate that, while the value of private sector benefits cannot be disaggregated and shown separately at the state level, these benefits are incorporated in the NIPA's state-level data and are included on a state-specific basis in this study's comparisons of total benefits and of total compensation of state government employees and private sector employees in each state. The national average above is shown purely for illustrative purposes.

Figure 2 shows the value of pension benefits accruing to state and local government employees in each of the 50 states, showing the benefits in dollars. Table 2 provides pension accruals both as in dollar terms and as a percent of wages and salaries. In the average state, state and local government employees accrued new pension benefits each year equal to 21.3 percent of their annual salaries, or about \$11,492 in dollar terms. The most generous benefits, either in dollar terms or as measured by accruals as a percentage of salaries, were in Nevada. State and local government employees in Nevada accrued annual pension benefits equal to 47.8 percent of their annual wages, or \$31,089 in dollar terms. Nevada has several unusual pension provisions in terms of how benefits are funded that help produce this result.¹² The least generous pensions for state and local government employees were in Indiana, where new benefits funded by the employer were worth only an additional 8.8 percent of employee wages, or \$4,010 in dollar terms. Though even this value from Indiana is over twice the amount that the typical private sector employee receives in employer-funded retirement plan benefits. Public pension benefits may differ significantly even in adjoining states. For example, Table 2

¹² In some cases, the total pension contribution including amortization costs for unfunded liabilities is split equally between employers and employees; in other cases, the employer makes the entire pension contribution, including the full contribution for employee normal costs of newly-accruing benefits; in these latter cases, employees accept a lower salary, but their salary is grossed up by the size of the employer contribution at the time of retirement, which effectively increases the retiring employee's benefits. The BEA data for Nevada report low levels of employee contributions relative to normal costs, which is consistent with a high level of relative generosity of the state's pension benefits. A hand replication of the BEA data using the 2020 actuarial valuation for the Nevada PERS plan produced similar results to those found using the BEA figures.

shows huge differences in the value of newly-earned pension benefits in the neighboring states of Illinois, Indiana and Ohio, where employees accrue annual pension benefits worth \$23,034, \$4,010 and \$12,440, respectively.

Figure 2.

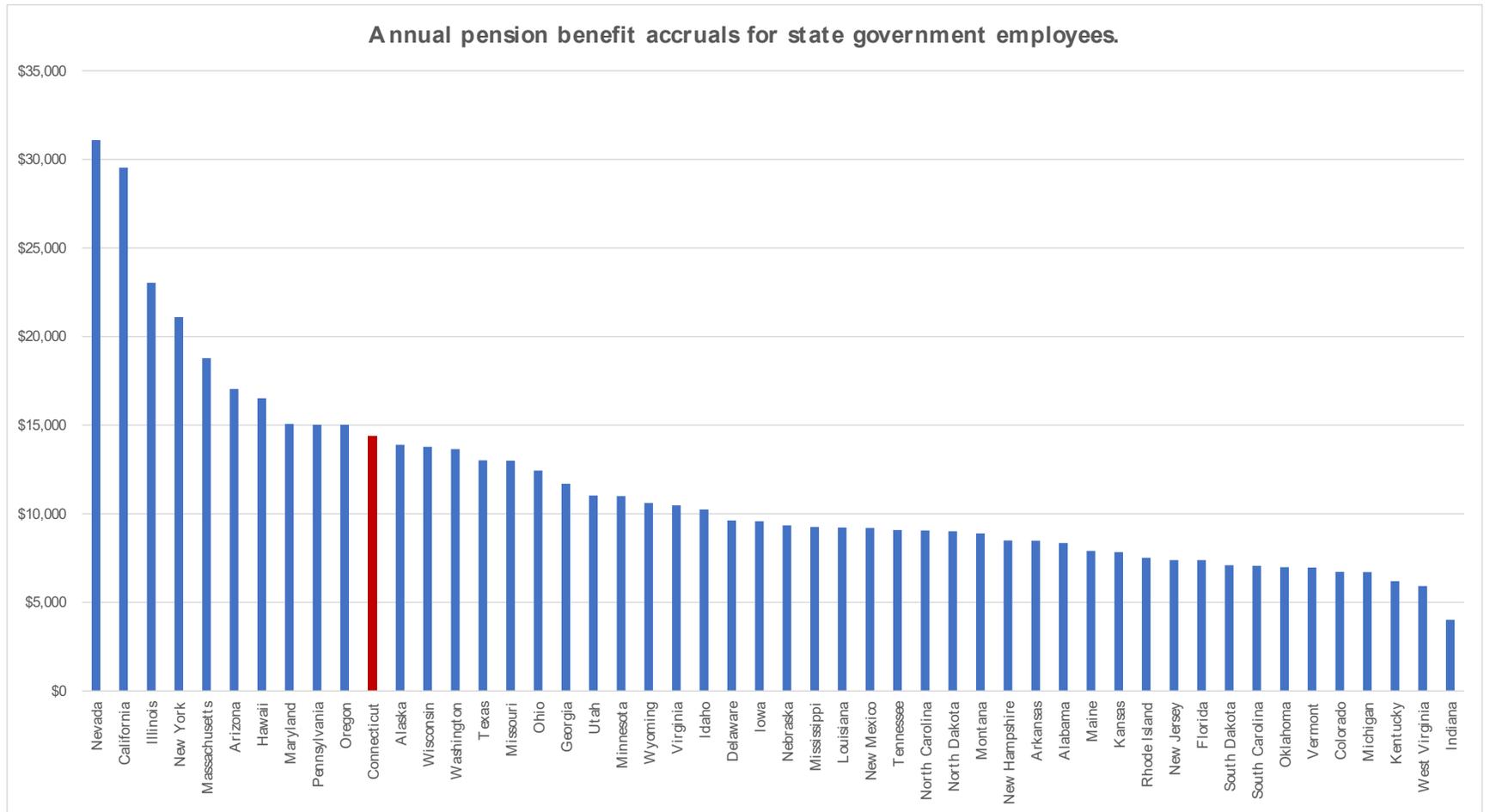


Table 2. Average state government employee pension benefit accruals in dollar terms and percent of payroll, 2017-2019.

<u>State</u>	<u>Annual benefit accruals</u>	<u>Percent of salary</u>	<u>Rank, dollars</u>	<u>Rank, percent of salary</u>	<u>State</u>	<u>Annual benefit accruals</u>	<u>Percent of salary</u>	<u>Rank, dollars</u>	<u>Rank, percent of salary</u>
Nevada	\$31,089	47.8%	1	1	Nebraska	\$9,350	17.6%	26	34
California	\$29,536	41.0%	2	2	Mississippi	\$9,250	22.5%	27	17
Illinois	\$23,034	36.9%	3	3	Louisiana	\$9,218	22.2%	28	19
New York	\$21,096	32.2%	4	5	New Mexico	\$9,197	21.7%	29	20
Massachusetts	\$18,778	29.4%	5	6	Tennessee	\$9,074	20.0%	30	26
Arizona	\$17,041	32.2%	6	4	North Carolina	\$9,051	19.6%	31	27
Hawaii	\$16,517	27.8%	7	7	North Dakota	\$9,007	18.7%	32	31
Maryland	\$15,065	24.3%	8	15	Montana	\$8,898	20.4%	33	22
Pennsylvania	\$15,022	27.7%	9	8	New Hampshire	\$8,489	15.6%	34	41
Oregon	\$15,019	25.1%	10	13	Arkansas	\$8,475	20.1%	35	25
Connecticut	\$14,357	22.4%	11	18	Alabama	\$8,348	19.1%	36	30
Alaska	\$13,889	20.8%	12	21	Maine	\$7,908	15.8%	37	40
Wisconsin	\$13,781	25.7%	13	11	Kansas	\$7,831	17.1%	38	35
Washington	\$13,652	20.2%	14	24	Rhode Island	\$7,517	13.6%	39	45
Texas	\$13,015	26.8%	15	10	New Jersey	\$7,382	11.1%	40	49
Missouri	\$12,992	27.7%	16	9	Florida	\$7,378	14.7%	41	43
Ohio	\$12,440	24.4%	17	14	South Dakota	\$7,099	16.6%	42	37
Georgia	\$11,696	25.3%	18	12	South Carolina	\$7,059	16.2%	43	39
Utah	\$11,033	20.2%	19	23	Oklahoma	\$6,987	16.2%	44	38
Minnesota	\$11,002	18.6%	20	32	Vermont	\$6,962	13.6%	45	44
Wyoming	\$10,609	19.6%	21	28	Colorado	\$6,711	11.7%	46	48
Virginia	\$10,470	19.4%	22	29	Michigan	\$6,707	12.3%	47	47
Idaho	\$10,238	22.8%	23	16	Kentucky	\$6,200	13.4%	48	46
Delaware	\$9,623	16.8%	24	36	West Virginia	\$5,918	15.6%	49	42
Iowa	\$9,573	18.6%	25	33	Indiana	\$4,010	8.8%	50	50

Author's calculations from BEA and NIPA data.

Retiree health benefits

The second main component of the public sector retirement benefits package is retiree health coverage, often referred to as OPEBs (Other Post-Employment Benefits). The Government Accounting Standards Board (GASB) states that retiree health benefits “are a part of the compensation that employees earn each year, even though these benefits are not received until after employment has ended.”¹³ Similar to traditional pensions, an employee who is eligible for retiree health benefits accrues the right to *future* health insurance or premium payments to be made by his employer. And, similarly to the treatment of pensions discussed above, the accrual of future retiree health benefits should be counted as part of the employee’s current compensation.

Retiree health coverage varies dramatically in generosity from state to state. In some states, retirees are offered nothing more than the opportunity to buy into the health insurance pool for active employees. Making the active employee health program available to retirees constitutes an implicit subsidy, in that retirees are allowed to purchase benefits at a lower price than would be available to them in private markets, at the cost to the government of raising health insurance prices for active employees. In other states, however, retiree health benefits are far more generous, up to providing full health coverage through the age of Medicare eligibility and supplemental coverage after the retiree enrolls in Medicare.

State and local governments must publish accounting disclosures with regard to OPEBs in their financial statements, often referred to as Comprehensive Annual Financial Reports (CAFRs) or Annual Comprehensive Financial Reports (ACFRs). Among other figures, these disclosures publish the “normal” or “service cost” of retiree health coverage, which represents the present value of the future benefits that employees become entitled to with each year of employment. The California Department of Education describes the normal cost as “the cost for OPEB being earned by employees in exchange for [their] services now.”¹⁴

Figure 3 below shows the value of retiree health benefits accruing to active state government employees in dollar terms, while Table 3 shows OPEB accruals both in dollar amounts and as a percentage of employee wages for each state. The data were hand-gathered from state financial statements or from the actuarial valuations for OPEB plans, depending upon availability. Data are for the most recent year available; generally, this is 2020 financial

¹³Governmental Accounting Standards Board, “Other Postemployment Benefits: A Plain-Language Summary of GASB Statements No. 43 and No. 45,” (September 29, 2011), http://www.gasb.org/project_pages/opeb_summary.pdf

¹⁴California Department of Education, “Definitions of Key Terms,” (March 12, 2011), <http://www.cde.ca.gov/fg/ac/co/documents/gasb45attha.doc>.

statements, but in some cases the figures are from 2019 or even 2018.¹⁵ For each state, the value of accruing OPEB benefits is calculated as a percentage of employee wages based upon data included in the state financial disclosures or the OPEB plan actuarial report. This percentage is then applied to average state government employee wages drawn from the ACS. This approach is designed to minimize errors when OPEB data drawn from one year must be applied to wages from a slightly different year.

¹⁵ Unlike pensions, where the value of accruing benefits is standardized to a single four percent discount rate, the figures for retiree health benefits drawn from state financial disclosures often use different discount rates from state to state. These rates tend to be around three percent, but are not identical across states.

Figure 3.

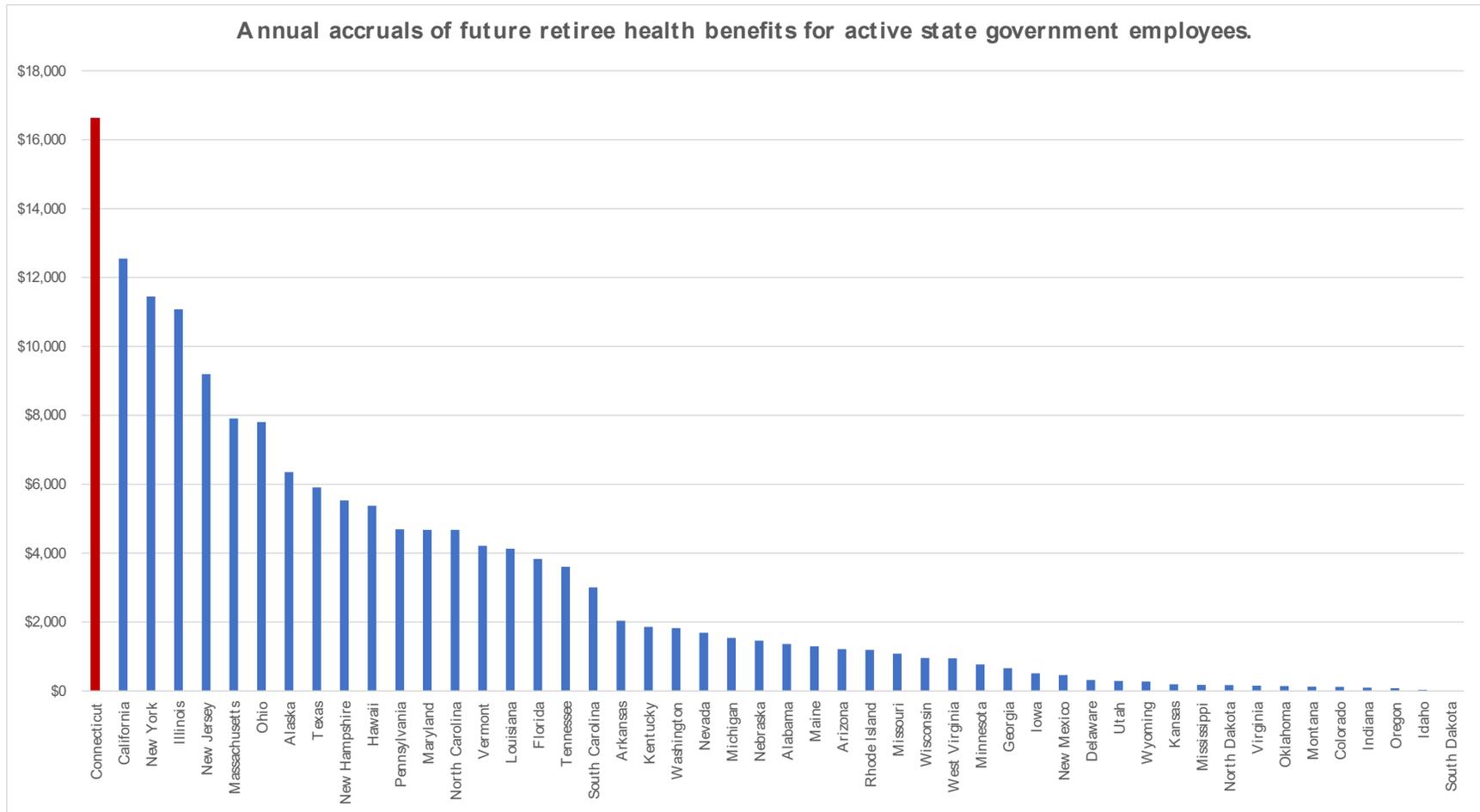


Table 3. Average state government employee retiree health benefits in dollar terms and percent of wages.

<u>State</u>	<u>Annual benefit accruals</u>	<u>Percent of salary</u>	<u>Rank, dollars</u>	<u>Rank, percent of salary</u>	<u>State</u>	<u>Annual benefit accruals</u>	<u>Percent of salary</u>	<u>Rank, dollars</u>	<u>Rank, percent of salary</u>
Connecticut	\$16,637	25.9%	1	1	Alabama	\$1,363	3.1%	26	22
California	\$12,552	17.4%	2	4	Maine	\$1,292	2.6%	27	27
New York	\$11,452	17.5%	3	3	Arizona	\$1,211	2.3%	28	30
Illinois	\$11,081	17.7%	4	2	Rhode Island	\$1,187	2.2%	29	31
New Jersey	\$9,197	13.9%	5	6	Missouri	\$1,083	2.3%	30	29
Massachusetts	\$7,909	12.4%	6	7	Wisconsin	\$956	1.8%	31	32
Ohio	\$7,805	15.3%	7	5	West Virginia	\$945	2.5%	32	28
Alaska	\$6,353	9.5%	8	12	Minnesota	\$767	1.3%	33	34
Texas	\$5,907	12.2%	9	8	Georgia	\$658	1.4%	34	33
New Hampshire	\$5,529	10.2%	10	9	Iowa	\$511	1.0%	35	36
Hawaii	\$5,374	9.0%	11	13	New Mexico	\$461	1.1%	36	35
Pennsylvania	\$4,693	8.6%	12	14	Delaware	\$320	0.6%	37	37
North Carolina	\$4,675	10.1%	14	10	Utah	\$290	0.5%	38	38
Maryland	\$4,675	7.5%	13	18	Wyoming	\$271	0.5%	39	39
Vermont	\$4,210	8.2%	15	15	Kansas	\$190	0.4%	40	41
Louisiana	\$4,126	9.9%	16	11	Mississippi	\$172	0.4%	41	40
Florida	\$3,830	7.6%	17	17	North Dakota	\$171	0.4%	42	42
Tennessee	\$3,600	7.9%	18	16	Virginia	\$153	0.3%	43	44
South Carolina	\$3,001	6.9%	19	19	Oklahoma	\$141	0.3%	44	43
Arkansas	\$2,032	4.8%	20	20	Montana	\$123	0.3%	45	45
Kentucky	\$1,860	4.0%	21	21	Colorado	\$120	0.2%	46	47
Washington	\$1,821	2.7%	22	25	Indiana	\$97	0.2%	47	46
Nevada	\$1,684	2.6%	23	26	Oregon	\$80	0.1%	48	48
Michigan	\$1,538	2.8%	24	23	Idaho	\$30	0.1%	49	49
Nebraska	\$1,459	2.7%	25	24	South Dakota	\$0	0.0%	50	50

Author's calculations from state financial reports and OPEB actuarial valuations. Data are from the most recent years available.

South Dakota reports zero OPEB liability, which implies that retired employees are not even offered the opportunity to purchase health coverage through the health program for active employees. For states that do allow retirees to buy into the insurance pool for active employees, the implicit subsidy from shifting some of their risk to active workers is worth only a modest amount. For instance, Idaho reports a normal cost of accruing OPEB liabilities that is equal to only 0.3 percent of employee wages, or about \$30 per year for active employees.

In the middle of the distribution retiree health care is somewhat more valuable. The median state provides retiree health benefits that have an accruing value of three percent of employee wages, or about \$1,400 per year.

However, there is a small number of states where retiree health coverage is a major component of employee compensation. In ten states, the accruing value of future retiree health benefits is worth more than 10 percent of employee wages. Yet, even in these states, retirement health care benefits are almost entirely unfunded. While public attention is mostly focused upon unfunded public sector pension obligations, which amount to 21.6 percent wages in the median state, more attention should be focused upon unfunded retirement health care benefits, particularly in these ten states where they comprise a significant portion of employee compensation.

The most generous state for retiree health care is Connecticut, where annual benefits accruing to active employees are worth \$16,637, or 25.9 percent of employee wages. Connecticut's 2021 actuarial valuation of retirement health care benefits showed these benefits to be only 6 percent funded.¹⁶

These figures illustrate why any analysis of public sector pay, whether comparing public and private sector compensation within a state or comparing public employees in different states, must account for the value of retiree health coverage. Ignoring retiree health benefits, as some public-private pay studies do, can lead to a skewed view of compensation in the public sector. (See Appendix C.)

No separate calculation of retiree health benefits for private sector employees is undertaken. Instead, this study relies upon the standard state-specific NIPA benefits data for private sector workers, which would include the value of any retiree health benefits paid out to retired private sector employees. These figures are subject to the same methodological criticism applied to public sector retiree health benefits above. However, the unadjusted NIPA data are used for two reasons. First, unlike with state government financial disclosures, there is not a ready private sector data source by which the value of retiree health benefits can be

¹⁶ State of Connecticut State Employee OPEB Plan. Actuarial valuation measured as of June 30, 2020. Published June 30, 2021.

calculated. But second, retiree health benefits have always been less common and less generous in the private sector. This means that the effects of the NIPA counting retiree health benefits on a cash rather than an accrual basis are smaller in absolute terms for private sector employees. The NIPA's treatment of retiree health benefits on a cash basis will tend to slightly overstate the compensation of private sector employees, because the accrual of new retiree health benefits for current employees has often been reduced or eliminated even as certain retired private sector employees continue to receive benefits. However, relative to other forms of fringe benefits private sector retiree health coverage is relatively small and so this error is left uncorrected.

Other Benefits

Employees receive a range of benefits outside of the pensions and retiree health benefits discussed above. These other benefits include health care coverage for active employees, life insurances, and taxes that employers pay on employees' behalf, such as Social Security and Medicare payroll taxes and premiums for workers compensation and Unemployment Insurance benefits.¹⁷

Since NIPA data do not break down the component values of different types of benefits on a state-by-state basis, this study does not attempt to do so either but does include other benefits in total benefits and in total employee compensation.

Note, however, that the NIPA data for benefits do not include the value of paid leave, including paid vacation, sick leave and maternity leave. These benefits are not included in this analysis. Data from the Bureau of Labor Statistics National Compensation Survey show that paid leave tends to be somewhat more generous in state and local government than in the private sector. On average, state and local government employees in 2020 received paid leave of all types equal to 12.1 percent of their annual salaries, which is the equivalent to six weeks out of a 52-week work year. In the private sector, paid leave was equal to 10.5 percent of annual salaries, or about five and one-half weeks. Unfortunately, the BLS data are not broken down by

¹⁷ For details see Bureau of Economic Analysis. NIPA Handbook. Chapter 10: Compensation Of Employees. Updated: November 2019. Available at <https://www.bea.gov/system/files/2019-12/Chapter-10.pdf>. In addition to pensions and retiree health coverage, the employer-funded benefits captured by the NIPA data include: private insurance funds, such as group health and life insurance; workers' compensation insurance; supplemental unemployment insurance; and publicly administered government employee insurance plans. Additionally, the benefits data includes employer contributions for government social insurance programs, including: Social Security; Medicare; unemployment insurance; Pension Benefit Guaranty Corporation premiums; veterans life insurance; workers' compensation; military medical insurance; and temporary disability insurance.

state, which makes it difficult to be more specific with regard to any specific state's public or private sector.

Totaling benefits

Figure 4 shows total fringe benefits for state government employees expressed in dollar terms, while Table 4 includes total benefits for both state and private sector employees expressed in dollars and as a percentage of employee wages. The longstanding view that the public sector provides more generous employee benefits than the private sector is shown to be true, with state government employees in many states receiving fringe benefits over twice as generous relative to their salaries as do private sector workers.

In the median state, state government employees receive annual fringe benefits of \$27,605, which covers both benefits received in that year and the present value of future pension and retiree health benefits earned in that year. Together, these benefits are equal to 55 percent of state government employees' salaries. In the private sector, workers in the median state receive annual fringe benefits of \$11,561, equal to 20 percent of their annual salaries. Thus, fringe benefits in government are typically about 2.75 times as generous as in private sector jobs.

There is considerable variability in the generosity of fringe benefits in state government jobs, but far less variability in the private sector. The state government paying its employees the lowest benefits as a percentage of earnings is Colorado, where benefits are equal to 35.8 percent of annual salaries. The most generous state in terms of benefits relative to salaries is Alaska, where annual benefits are equal to 82.2 percent of annual salaries. In dollar terms the most generous state employee benefits are paid in California, where an average wage employee (with an annual salary of \$72,084) also receive annual benefits worth \$57,318. The lowest-paying state government in terms of the dollar value of employee fringe benefits is West Virginia, where annual benefit accruals for state government employees are equal to \$18,326.

There is less state-to-state variability in the private sector because benefits are larger set by market forces, which cross state lines, rather than by public policies set by state legislatures. Relative to salaries, the highest benefits are paid in West Virginia where annual benefits are equal to 23.4 percent annual salaries. The least generous benefits relative to salaries are in Virginia, where private sector benefits average 17.2 percent of salaries. In dollar terms the most generous private sector benefits are in Alaska (\$15,169) while the least generous are in New Mexico (\$9,551).

Figure 4.

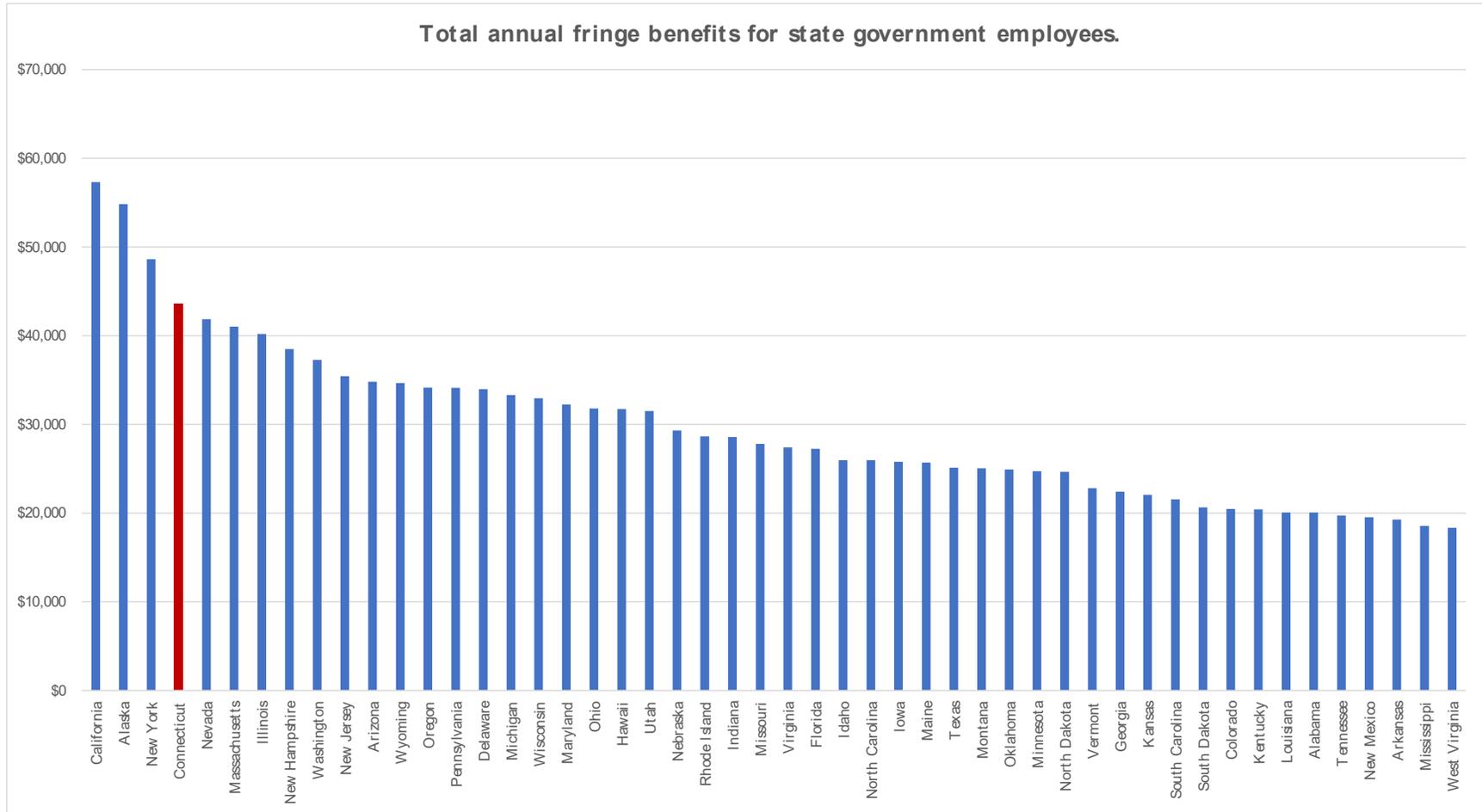


Table 4. Average employee benefits in dollar terms and percent of wages, 2019-2019.

State	State government		Private sector		State government rank		State	State government		Private sector		State government	
	Annual benefit accruals	Percent of salary	Annual benefit accruals	Percent of salary	Rank, dollars	Rank, percent of salary		Annual benefit accruals	Percent of salary	Annual benefit accruals	Percent of salary	Rank, dollars	Rank, percent of salary
California	\$57,318	79.5%	\$12,524	17.4%	1	2	Virginia	\$27,406	50.8%	\$10,792	17.3%	26	34
Alaska	\$54,839	82.2%	\$15,169	22.9%	2	1	Florida	\$27,245	54.3%	\$9,970	18.7%	27	26
New York	\$48,634	74.1%	\$11,851	17.8%	3	3	Idaho	\$25,968	57.8%	\$10,760	21.4%	28	19
Connecticut	\$43,615	67.9%	\$12,944	19.0%	4	5	No. Carolina	\$25,952	56.3%	\$9,611	18.6%	29	23
Nevada	\$41,868	64.4%	\$11,983	19.2%	5	7	Iowa	\$25,792	50.0%	\$12,233	21.9%	30	35
Massachusetts	\$41,019	64.1%	\$13,101	18.2%	6	9	Maine	\$25,697	51.4%	\$11,184	20.9%	31	32
Illinois	\$40,208	64.4%	\$12,923	19.8%	7	8	Texas	\$25,118	51.7%	\$10,100	18.1%	32	31
New Hampshire	\$38,485	70.9%	\$11,555	18.9%	8	4	Montana	\$25,061	57.5%	\$10,281	21.9%	33	21
Washington	\$37,267	55.2%	\$12,388	18.4%	9	24	Oklahoma	\$24,912	57.9%	\$10,131	20.3%	34	18
New Jersey	\$35,434	53.5%	\$13,718	19.4%	10	27	Minnesota	\$24,727	41.8%	\$12,176	19.8%	35	49
Arizona	\$34,816	65.7%	\$10,863	18.8%	11	6	North Dakota	\$24,652	51.1%	\$10,629	20.2%	36	33
Wyoming	\$34,664	64.0%	\$12,332	21.8%	12	10	Vermont	\$22,810	44.7%	\$12,266	21.6%	37	46
Oregon	\$34,151	57.1%	\$12,289	19.8%	13	22	Georgia	\$22,420	48.5%	\$10,336	18.3%	38	37
Pennsylvania	\$34,119	62.9%	\$12,206	21.4%	14	11	Kansas	\$22,061	48.2%	\$10,777	20.9%	39	40
Delaware	\$33,969	59.1%	\$12,372	20.3%	15	17	So. Carolina	\$21,555	49.3%	\$10,773	21.6%	40	36
Michigan	\$33,293	61.0%	\$12,284	20.9%	16	15	South Dakota	\$20,641	48.2%	\$10,447	21.9%	41	41
Wisconsin	\$32,953	61.4%	\$12,291	22.3%	17	14	Colorado	\$20,456	35.8%	\$11,648	17.8%	42	50
Maryland	\$32,233	51.9%	\$12,067	18.2%	18	30	Kentucky	\$20,411	44.1%	\$11,701	21.6%	43	47
Ohio	\$31,787	62.4%	\$11,510	20.9%	19	13	Louisiana	\$20,069	48.3%	\$9,875	20.0%	44	38
Hawaii	\$31,735	53.4%	\$13,244	22.4%	20	28	Alabama	\$20,053	45.8%	\$10,595	20.5%	45	43
Utah	\$31,503	57.8%	\$11,566	20.0%	21	20	Tennessee	\$19,727	43.6%	\$9,574	18.5%	46	48
Nebraska	\$29,316	55.2%	\$12,374	22.3%	22	25	New Mexico	\$19,537	46.2%	\$9,551	19.7%	47	42
Rhode Island	\$28,643	51.9%	\$12,766	20.7%	23	29	Arkansas	\$19,270	45.7%	\$9,962	19.8%	48	44
Indiana	\$28,589	62.4%	\$11,206	21.4%	24	12	Mississippi	\$18,560	45.1%	\$10,385	20.8%	49	45
Missouri	\$27,803	59.2%	\$11,089	20.8%	25	16	West Virginia	\$18,326	48.2%	\$10,319	23.4%	50	39

Author's calculations from NIPA data, government financial statements and actuarial valuations.

Total compensation

It is now possible to compare total compensation for state government employees to private sector workers in each state. Total compensation provides the fullest measure of the financial reward that employees are provided for by their employers in exchange for their work.

To be sure, other aspects of work matter and affect the financial rewards that employees demand in order to do their jobs. For instance, employees demand a compensation premium to do jobs that are financially or physically risky, while employees might accept lower pay for jobs that are seen as intellectually or personally rewarding or that provide job security or the possibility of advancements. These factors, while real, are not analyzed here.

Total compensation is detailed in Figure 5 and Table 5. For each state, Table 5 lists total average salaries and benefits for state government employees and for private sector employees with similar earnings-related characteristics. The state employee compensation premium or penalty is calculated and states are ranked by the size of that compensation differential. Figure 5 shows only the percentage compensation premium or penalty paid to state government employees.

Figure 5.

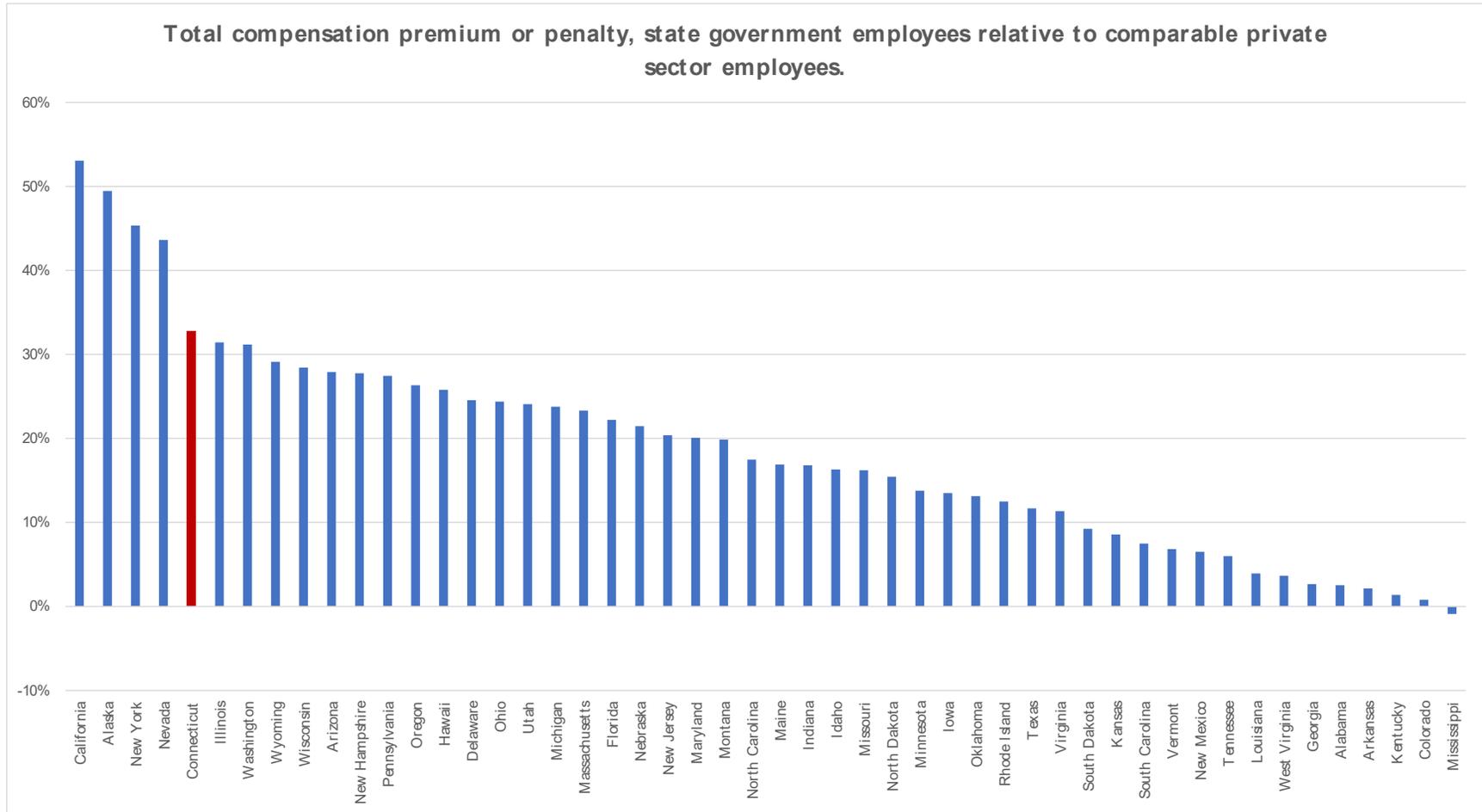


Table 5. Average annual compensation for state government employees and comparable private sector workers, 2017-2019.

<u>State</u>	<u>State government</u>	<u>Comparable private sector</u>	<u>Premium or penalty</u>	<u>Rank</u>	<u>State</u>	<u>State government</u>	<u>Comparable private sector</u>	<u>Premium or penalty</u>	<u>Rank</u>
California	\$129,402	\$84,542	53.1%	1	Maine	\$75,652	\$64,713	16.9%	26
Alaska	\$121,575	\$81,338	49.5%	2	Indiana	\$74,371	\$63,666	16.8%	27
New York	\$114,244	\$78,603	45.3%	3	Idaho	\$70,868	\$60,928	16.3%	28
Nevada	\$106,844	\$74,390	43.6%	4	Missouri	\$74,784	\$64,347	16.2%	29
Connecticut	\$107,850	\$80,956	33.2%	5	North Dakota	\$72,909	\$63,158	15.4%	30
Illinois	\$102,679	\$78,121	31.4%	6	Minnesota	\$83,905	\$73,739	13.8%	31
Washington	\$104,779	\$79,878	31.2%	7	Iowa	\$77,357	\$68,158	13.5%	32
Wyoming	\$88,858	\$68,815	29.1%	8	Oklahoma	\$67,962	\$60,076	13.1%	33
Wisconsin	\$86,583	\$67,415	28.4%	9	Rhode Island	\$83,797	\$74,492	12.5%	34
Arizona	\$87,789	\$68,639	27.9%	10	Texas	\$73,665	\$65,958	11.7%	35
New Hampshire	\$92,731	\$72,581	27.8%	11	Virginia	\$81,349	\$73,057	11.4%	36
Pennsylvania	\$88,381	\$69,340	27.5%	12	South Dakota	\$63,483	\$58,117	9.2%	37
Oregon	\$93,925	\$74,353	26.3%	13	Kansas	\$67,802	\$62,454	8.6%	38
Hawaii	\$91,199	\$72,499	25.8%	14	South Carolina	\$65,236	\$60,691	7.5%	39
Delaware	\$91,411	\$73,393	24.5%	15	Vermont	\$73,882	\$69,166	6.8%	40
Ohio	\$82,761	\$66,534	24.4%	16	New Mexico	\$61,846	\$58,065	6.5%	41
Utah	\$86,024	\$69,331	24.1%	17	Tennessee	\$65,021	\$61,348	6.0%	42
Michigan	\$87,879	\$70,990	23.8%	18	Louisiana	\$61,589	\$59,266	3.9%	43
Massachusetts	\$104,987	\$85,142	23.3%	19	West Virginia	\$56,309	\$54,334	3.6%	44
Florida	\$77,413	\$63,344	22.2%	20	Georgia	\$68,664	\$66,883	2.7%	45
Nebraska	\$82,429	\$67,865	21.5%	21	Alabama	\$63,798	\$62,235	2.5%	46
New Jersey	\$101,716	\$84,489	20.4%	22	Arkansas	\$61,463	\$60,171	2.1%	47
Maryland	\$94,304	\$78,541	20.1%	23	Kentucky	\$66,669	\$65,767	1.4%	48
Montana	\$68,680	\$57,301	19.9%	24	Colorado	\$77,651	\$77,047	0.8%	49
North Carolina	\$72,015	\$61,306	17.5%	25	Mississippi	\$59,739	\$60,278	-0.9%	50

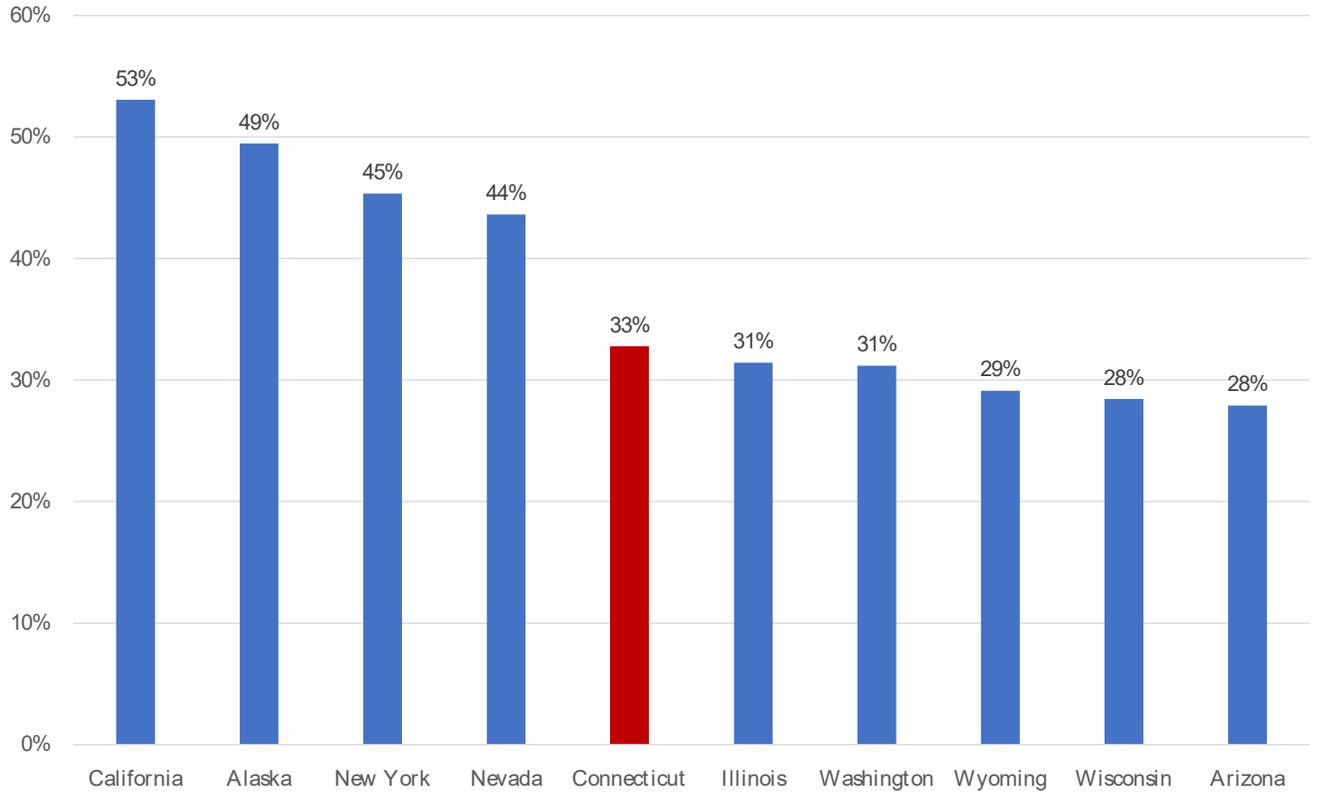
Author's calculations from Census Bureau, BEA and state data.

In the median state, total salaries and benefits for state government employees are about 17 percent higher than is paid to similar private sector employees. As the median state pays government employees lower salaries than private sector workers, the state employee compensation premium is entirely a function of more generous fringe benefits, in particular pensions and retiree health coverage.

But there is again considerable variation in the compensation premium or penalty provided to state government employees relative to similar private sector workers in their state. The largest compensation premium is paid in California, where state government employees receive total annual salaries and benefits that are 53.1 percent higher than is paid to comparable private sector workers. The remaining states in the top five include Alaska, New York, Nevada and Connecticut, all of which compensate state government employees at one-third or more above private sector levels. The sixth through tenth ranked states include Illinois, Washington, Wyoming, Wisconsin and Arizona, all of which pay total salaries and benefits that are 28 percent or more above those received by similar private sector employees.

Figure 6

State government employee compensation premium, ten highest states.



For these top 10 states, Table 6 shows the different components of compensation, with their dollar values drawn from previous tables. Salaries range between 55 and 64 percent of total compensation, but benefits are more variable. Pensions range from 11 percent to 29 percent of total employee compensation, in Alaska and Nevada, respectively. Retiree health coverage ranges from a low of zero percent of compensation in Wyoming to 15 percent in Connecticut. And other benefits range from only six percent of total employee compensation in Illinois to 28 percent in Alaska. While the NIPA data do not allow for the disaggregation of other benefits, Biggs (2014), which had access to state-by-state values of health coverage for active employees, found that active employee health coverage in Alaska was 66 percent more generous in dollar terms than in the median state. The figures in Table 6 again highlight the importance of looking at all components of total employee compensation rather than any single component of pay.

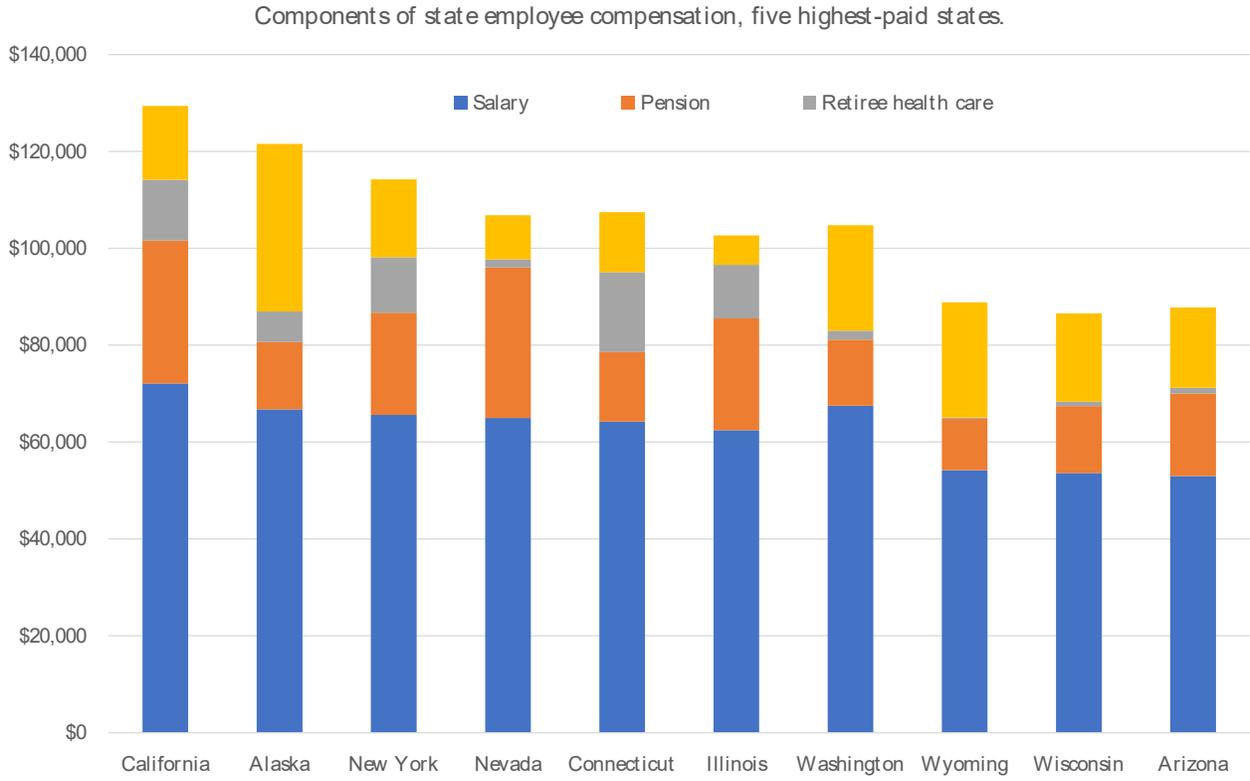
Table 6. Components of compensation for ten states with the highest compensation premia relative to private sector employees in that state.

<u>State</u>	<u>Salary</u>	<u>Pension</u>	<u>Retiree</u> <u>health</u> <u>care</u>	<u>Other</u> <u>benefits</u>	<u>Total</u> <u>compensation</u>
California	\$72,084	\$29,536	\$12,552	\$15,230	\$129,402
Alaska	\$66,736	\$13,889	\$6,353	\$34,597	\$121,575
New York	\$65,610	\$21,096	\$11,452	\$16,086	\$114,244
Nevada	\$64,976	\$31,089	\$1,684	\$9,095	\$106,844
Connecticut	\$64,235	\$14,357	\$16,637	\$12,372	\$107,850
Illinois	\$62,472	\$23,034	\$11,081	\$6,092	\$102,679
Washington	\$67,512	\$13,652	\$1,821	\$21,793	\$104,779
Wyoming	\$54,194	\$10,609	\$271	\$23,784	\$88,858
Wisconsin	\$53,631	\$13,781	\$956	\$18,216	\$86,583
Arizona	\$52,973	\$17,041	\$1,211	\$16,564	\$87,789

Author's calculations from Census Bureau, BEA and state data.

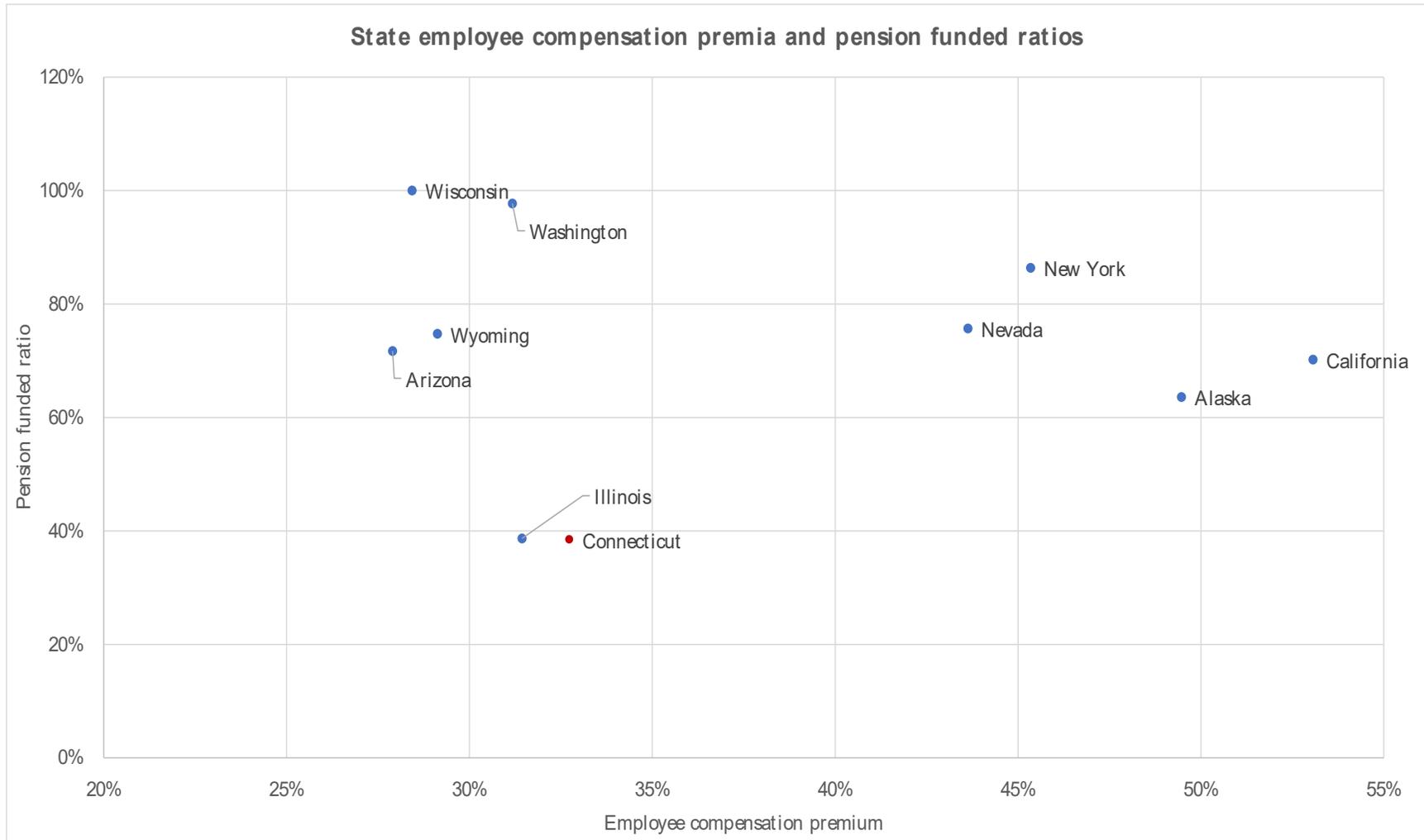
The composition of employee salaries and benefits in the 10 states with the highest pay premia relative to similar private sector employees can be seen visually in Figure 7.

Figure 7.



Among the 10 highest-compensating states, Connecticut and Illinois are unusual in paying a high compensation premium to state government employees while having poorly-funded retirement programs for those workers. The other eight highest-compensating state governments have employee pension plans that are on average 80 percent funded, while Connecticut SERS and Illinois SERS are only 39 percent funded, just half the level of the other states. (See Figure 8 and Table 7.) Among the top 10 highest-paying states, Connecticut and Illinois are unusual in promising high pension benefits but failing to adequately fund them.

Figure 8.



A similar point can be made with regard to retiree health benefits. OPEB benefits are largely unfunded in most states, but Connecticut is unique in promising such a high level of benefits without providing material funding. The other nine highest-compensating states offer retiree health benefits with a normal cost of newly-accruing benefits equal to an average of 8.0 percent of employee wages, less than one-third the 25.7 percent cost of Connecticut’s retiree health program. The cost of accruing retiree health benefits for Connecticut state government employees is 45 percent higher than in the second most generous state of Illinois.

Table 7. Compensation premia, retirement system funded status, and OPEB normal cost for five highest-compensated states.

<u>State</u>	<u>Employee compensation premium</u>	<u>Pension funded ratio</u>	<u>OPEB normal cost</u> (% of Salary)
California	53.1%	70%	17.40%
Alaska	49.5%	64%	9.50%
New York	45.3%	86%	17.50%
Nevada	43.6%	76%	2.60%
Connecticut	33.2%	39%	25.70%
Illinois	31.4%	39%	17.7%
Washington	31.2%	98%	2.7%
Wyoming	29.1%	75%	0.5%
Wisconsin	28.4%	100%	1.8%
Arizona	27.9%	72%	2.3%

Source: Author’s calculations from various data sources.

Moreover, Connecticut’s retirement health care benefits are almost entirely unfunded. The June 2021 valuation report from the state’s health care actuaries, Segal Consulting, showed total OPEB (health care) liabilities of \$25.1 billion as of June 30, 2020 and assets in the State Employee OPEB plan of only \$1.6 billion in market value as of that date, yielding a funded ratio of only 6.1 percent. Connecticut’s unfunded OPEB liability of \$23.5 billion matches the unfunded pension liability of the State Employees Retirement Fund of \$23.7 billion as of that

date. For comparison, Illinois's OPEB plan is zero percent funded.¹⁸ While seemingly worse than in Connecticut, Illinois will likely face a smaller cash burden of funding OPEBs in future years because the state's benefits are less generous than those in Connecticut.

¹⁸ Eileen Norcross. "How Does Illinois Compare to Other States?" Mercatus Institute. July, 2015.

A focus on Connecticut

Given the high compensation afforded Connecticut state government employee relative to the state's private sector employees and relative to state government employees in most other states, combined with the uniquely underfunded condition of the retirement benefits (pension and retiree health care) promised to its state government employees, this study focuses some additional attention on the state of Connecticut, and its future prospects.

The rate at which Connecticut state government employees accrue pension benefits is above the average nationwide and among other states in the New England Census Region. In New England Massachusetts had the highest pension accruals 29.0 percent of wages, followed by Connecticut at 22.4 percent of pay. However, Maine (15.8 percent), New Hampshire (15.6 percent) and Vermont (13.6 percent) provided public employees with substantially less generous pensions than Connecticut. In dollar terms, Massachusetts state and local government employees accrued the most generous pension benefits, at \$18,778 per year. Connecticut employees accrued \$14,357 annually, followed by New Hampshire (\$8,489), Maine (\$7,908) and Vermont (\$6,962).

However, Connecticut provides the most generous retiree health coverage of any state in the country. Among active Connecticut employees, annual accrued retiree health benefits are worth \$16,637, equal to 25.9 percent of employee wages. This is more than three times higher than the 7.1 percent average accrual rate in New England states other than Connecticut, and 48 percent higher than neighboring New York State's 17.5 percent accrual rate for its state government employees. While other states have scaled down accruing retiree health benefits for active government employees over the last two decades, the value of OPEBs for Connecticut state government workers remains largely the same relative to wages as reported in Biggs (2014), which covered the years 2009 to 2012. In dollar terms the accruing value of retiree health benefits has increased for Connecticut public employees.

Table 8 calculates the total dollar value of the state employee compensation premium for 2020. It begins with the total wage bill for state government employees, drawn from Bureau of Economic Analysis data, which approached \$5 billion in 2020. Table 8 then adds the value of employee fringe benefits, calculated using the 67.9 percent benefits-to-wages ratio calculated above, producing total state employee compensation in 2020 of \$8.3 billion. Then, using the state government employee compensation premium of 33.2 percent calculated above, Table 8 estimates the value of state employee compensation if employees were paid equivalently to comparable private sector workers. This produces comparable private sector compensation of \$6.3 billion. The difference between this figure and actual state employee compensation equals

\$2.1 billion. This is the annual amount of savings to the Connecticut state government budget were state government employees compensated on par with comparable private sector workers.

Table 8. Calculating the total dollar value of the Connecticut state employee compensation premium, 2020.	
Total wages and salaries (BEA)	\$4,967,139
Benefit accrual rate as percent of wages	67.9%
Total compensation	\$8,339,826
Compensation premium, percent	33.2%
Comparable private sector compensation	\$6,261,131
Compensation premium, dollars	\$2,078,695
Source: Author's calculations from BEA wage data, 2020. Figures in (\$000).	

The high level of compensation offered by Connecticut to its public employees stands in contrast to the fiscal challenges the state has faced. While Connecticut has enacted multiple pension revisions for state employees, the State Employee Retirement System continues to be one of the most poorly-funded major retirement plans in the United States. In 2020, SERS was only 38.5 percent funded, almost precisely half the 77.1 percent national average funded ratio in that year. Moreover, these funded ratios are as disclosed under plan actuarial reports that utilize high assumed discount rates. Using the four percent standard discount rate used in the NIPA data, Connecticut SERS funded ratio would be only about 28 percent. Moreover, the state's OPEB liability is funded at only 6 percent; its unfunded OPEB liability of \$23.5 billion match that of SERS \$23.7 billion funding shortfall as of 2020.

In a questionable policy approach, SERS also has taken on greater investment risk even as the aging of its participant population makes it less able to handle such risks. Since 2001, SERS's investment portfolio has increased its holdings risky assets, such as stocks, private equity, hedge funds, real estate and commodities, according to figures from the Public Plans Database. Over the same period, however, the SERS ratio of active workers to beneficiaries declined from 1.7-to-1 to only 0.9-to-1, meaning that SERS today has more retirees and other beneficiaries than it does active participants. It is standard actuarial practice to note that a declining worker-to-beneficiary ratio makes it more difficult for a pension system to shoulder investment risk, yet Connecticut has done the opposite.

In 2016, Alicia Munnell and Jean Pierre Aubrey of the Center for Retirement Research at Boston College conducted an investigation of the financial health of Connecticut SERS.¹⁹ The analysts blamed the plan's weak finances on a number of factors, including a legacy debt generated by decades in which no effort was made to prefund benefits, and a more recent history of insufficient contributions and excessively optimistic investment return assumptions. The Boston College study was instrumental in the Connecticut government establishing Tier IV of SERS, which reduces employer costs relative to the previous Tier III by providing less generous benefits and requiring employees to contribute more to the plan. The cost implications of the introduction of Tier IV are discussed in greater detail in Appendix E. As discussed, even the earlier introduction of Tier IV would have reduced the state's cost of pensions over the entire retired lives of the employees hired during those years by only an estimated \$200 million, an insignificant amount relative to the SERS's overall obligations, much less the state's combined pension and retirement health care obligations.

In 2018 the Pew Charitable Trusts conducted stress tests of SERS financial health, which model the effects of investment returns that differ from those assumed by the plan.²⁰ PEW found that the state of Connecticut could face significantly higher required government contributions to SERS if returns proved to be lower than the 6.9 percent rate that SERS assumes. More recently, Mark Warshawsky of the American Enterprise Institute tested all of Connecticut's major public employee retirement systems' resiliency against adverse investment returns.²¹ Warshawsky finds that, while SERS's funded ratio should improve if future investment returns match past results, there remain significant and plausible risks that the funded ratio could decline and required contributions increase relative to projections.

Based upon this study's findings and these additional metrics, Connecticut is in potentially precarious condition. There have been three recent developments not addressed by the study. First, state employees received a 3.5 percent general wage increase on July 1, 2020 plus an annual non-merit-based 2.0 percent average wage increase in 2020 (and in 2021) These salary increases were not included in the study's wage comparisons, which are based on 2017-2019 data. Second, Connecticut may be facing a surge of state employee retirements. A recent study found that 27 percent of active Connecticut state government employees are eligible to

¹⁹ Aubry, Jean-Pierre, and Alicia Munnell. "Final report on Connecticut's state employees retirement system and teachers' retirement system." Center for Retirement Research at Boston College. 2015).

²⁰ Pew Charitable Trusts. Stress Test of Connecticut Public Retirement Plans. December 13, 2018. <https://portal.ct.gov/-/media/Malloy-Archive/Press-Room/20181214-Pew-Stress-Test-Analysis-Tailored-to-Connecticuts-Retirement-System.pdf>

²¹ Mark J. Warshawsky. "The trouble with state and local government employee pension plans: The case of Connecticut." American Enterprise Institute. AEI Economics Working Paper 2021-14. September 2021.

retire. Moreover, a survey of retirement-eligible state employees found 72 percent stating an intention to retire before July 1, 2022, after which date Cost of Living Adjustments to retirement benefits will be reduced for all employees retiring thereafter.²² This potential retirement wave will have uncertain impacts and policy implications. Third, because of fiscal restraint mechanisms adopted in 2017, the state has announced a \$720 million supplemental contribution to SERS in the current fiscal year above scheduled amounts, with an additional probable supplemental contribution in the next fiscal year. Together these supplemental contributions will improve SERS's funded status.²³

Based upon the findings of this study, including and despite these recent developments, Connecticut faces significant challenges and risks derived from its compensation of its state government employees and the funding of employee pension and retiree health plans.

Conclusions

The analysis in this study finds that state government employee salaries are in most cases lower than those paid to similar private sector workers and that state government benefits are in all cases more generous, with combined salaries and benefits for state government employees exceeding those paid to comparable private sector employees in 49 of the 50 states.

Within those generalizations, however, wide variations in pay occur. Fourteen states provide state employees with salaries and benefits that are no more than 10 percent above private sector levels. Given that this study's survey data on salaries involves sampling error and that several adjustments must be made to pension and retiree health data, a public sector pay premium of this size may not be considered to be material.

However, twenty-five states provide state government employees with total compensation that is 20 percent or more above private sector levels; of these, ten state pay a premium between 20 percent and 25 percent, ten between 25 percent and 33 percent, and five pay 33 percent or more. Even given sampling errors and plausible differences of interpretation regarding methodologies used in this study, it is difficult not to conclude that these state governments are compensating state employees well above the levels that private sector employers deem necessary to attract and retain quality employees.

It also is difficult not to conclude that some state government simply pay employees far more than others. California, the highest-paid state in this study, compensates employees at

²² Boston Consulting Group. "Connecticut CREATES report." 2022.

²³ Press release. "Treasurer Wooden, For Only the Second Time in History, Transfers Estimated \$1.623 Billion Budget Reserve Fund Excess to Pay Down Long-Term Pension Liabilities." September 27, 2021.

levels 53 percent above those of comparable private sector workers while Mississippi provides pay and benefits that are 0.9 percent below the private sector. These figures suggest that in higher-paying states, savings on state government employee compensation may be obtainable without sacrificing these governments' ability to attract and retain the employees it requires.

Appendix A. A step-by-step explanation of methodology

This study utilizes a variety of datasets and calculations, which can cause the process of comparing public and private sector compensation to become confusing. To help provide clarity, this section outlines on a step-by-step basis the methodological strategy for comparing the compensation of state government employees to that of comparable private sector workers.

First, wages and benefits are compiled for state government employees. Wages for state government employees are drawn from the Census Bureau's American Community Survey, which contains a wealth of demographic detail about employees such as their education and experience, what state they live in, and whether they work for state government, in the private sector, or elsewhere. However, the ACS does not contain information on the value of employee fringe benefits.

To obtain benefits, this study draws data from the National Income and Product Accounts (NIPA), which are compiled by the federal government's Bureau of Economic Analysis (BEA). The NIPA contain data on the wages and total compensation paid to state government employees in each state. By subtracting wages from total compensation, this study derives the value of employee fringe benefits. Fringe benefits in the NIPA include all major benefit categories except for paid leave. However, the NIPA benefit data for public employees at the state level are available only as a single dollar value for all benefits, without any detail on the dollar values of individual components of fringe benefits, such as health care, pensions, and so on.

Moreover, the NIPA data have two methodological shortcomings that must be addressed to provide an accurate picture of the total pay and benefits of state government employees.

First, the NIPA methodology for measuring the value of pension benefits earned by state government employees each year produces figures that are smaller than those published by the small number of state plans that conduct sensitivity analyses of the value of newly-accruing pension benefits for changes in the assumed discount rate. (See Appendix B for details.) Using data on state and local government pensions provided in a special study released by the BEA in 2020, this study adjusts the BEA figures to come closer to those calculated by pension systems themselves.

Second, while the NIPA benefits data include the value of retiree health benefits earned by state government employees, the NIPA measures the dollar value of the benefits paid to current retirees, whereas this study is interested in the value of the future retiree health benefits that accrue to current employees. (See Appendix C for details.) Using hand-gathered

data on state employee retiree health plans drawn from state government financial disclosures, this study deletes from the NIPA total benefits data the value of retiree health benefits paid to current retirees but then adds the value of the future retiree benefits earned by current state government employees.

Total state employee benefits as a percentage of wages are then multiplied by the average wage drawn from ACS data to produce the total dollar value of benefits. This value is then added to average wages drawn from the ACS to produce total employee compensation.

The next step is to compare the total pay and benefits of state government employees to those of comparable private sector workers. To start, statistical analysis is applied to ACS data to estimate the salaries of private sector employees in each state with similar levels of education, experience and other characteristics to state government employees. Next, NIPA data on private sector employees in each state is used, where by subtracting wages from total compensation the benefits paid to private sector employees is found. Then, benefits are divided by wages to calculate a percentage and this percentage is multiplied by the adjusted private sector wages calculated using ACS data. The resulting amount is the benefits paid to private sector workers who are similar to state government employees. By adding NIPA benefits to ACS salaries, the total compensation of comparable private sector workers is found. The adjustments to pension benefits and retiree health benefits that were applied to state government employees are not needed for private sector employees, due to differences in how the NIPA calculates private sector pension benefits and because both traditional pensions and retiree health coverage are today so unusual in private sector jobs.

Finally, the total salaries and benefits of state government employees are compared to the total salaries and benefits of comparable private sector employees. The difference between the two constitutes the compensation premium or penalty paid to state government employees.

Following is an illustration using the state of Connecticut. Average salaries for state government employees reported in the ACS for the years 2017 to 2019 were \$64,235. For those same years, the NIPA reports total average aggregate Connecticut state government employee compensation of \$6.76 billion annually and total average aggregate wages and salaries of \$4.70 billion. The difference between total compensation and wages of \$2.05 billion is equal to 43.6 percent of employee wages. Applying 43.6 percent to the \$64,235 average state employee salary drawn from the ACS, this produces total NIPA benefits of \$28,006.

However, the NIPA's calculations appear to understate the value of newly-accruing pension benefits, due to the technical issues discussed in Appendix B. The reported value of newly-accruing pension benefits for Connecticut state and local government employees for the

years 2017 through 2019 in the BEA's 2020 pensions study was 13.6 percent of employee wages, net of employee contributions. Adjusting for the issues discussed in Appendix B, this value rises to 22.4 percent of wages. The difference of 8.7 percent is added to the 43.6 percent benefits-to-salary percentage calculated above using the unadjusted NIPA data, increasing total benefits for Connecticut state government employees to 52.3 percent of wages.

Next, benefits must be adjusted to correct for the error in the way that the NIPA calculate the value of retiree health coverage. See Appendix C. First, this study develops the data that is incorrect for the purpose of this study which must be removed from the NIPA data the incorrect data, i.e., data for the amount *paid to retirees*. This data is available in the most recent actuarial valuation of the State of Connecticut Employee OPEB Plan which found that, in 2020, the plan paid out benefits to retirees that were equal to 16.6 percent of employee payroll in that year. Then, the study uses the correct data for benefits *accruing to active employees*, which is also available in the same actuarial valuation which shows that active Connecticut employees accrued retiree health benefits in 2020 that were worth 25.7 percent of employee wages in that year. To correct the NIP data, this study takes the difference between the 16.6 percent of pay value of current retiree health benefits and the 25.7 percent of pay accrual of new benefits, i.e., 9.2 percent of employee wages, and adds it to the NIPA benefits value of 52.3 percent of wages, which reflects the adjustment for pensions explained above, to arrive at a 67.9 percent values for total benefits for Connecticut state government employees as a percent of employee wages.

Applying this 67.9 percent to the \$64,235 average state employee salary drawn from the ACS, produces total fringe benefits of \$43,217 and total employee compensation of \$107,850.

We now turn to compensation for comparable private sector workers. Using ACS data and controlling for education, experience and other factors, Connecticut state government employees receive annual salaries that are 5.6 percent lower than those of comparable private sector workers. This produces a comparable private sector salary of \$68,013. Next, the NIPA data report that for the years 2017 through 2019, private sector employees in Connecticut received total compensation of \$121.2 billion and total wages and salaries of \$101.9 billion, with the difference between the two producing total benefits of \$19.4 billion, or 19.0 percent employee wages. Applying this percentage to the \$68,013 average salary for comparable private sector employees in Connecticut produces total benefits of \$12,944 and total employee compensation of \$80,956. Because traditional pensions and retiree health coverage are so unusual for active private sector employees in Connecticut, and because the NIPA appear to measure private sector pension accruals correctly where they do still exist, no adjustments are made to the NIPA benefits data to account for the measurement issues outlined above.

Comparing total employee compensation of \$80,956 for comparable private sector workers to the \$107,850 total compensation figure for Connecticut state government employees produces a state employee compensation premium of 33.2 percent.

This process is followed for employees in other states to produce the figures found in this study.

Appendix B. Adjusting the BEA methodology for pension accruals

In calculating income received by employees through the accrual of future pension benefits, the Bureau of Economic Analysis converts figures calculated by state and local pension plans using a variety of different discount rates to a common discount rate of four percent, based on yields from corporate bonds. This is reasonable and has been advocated by a number of analysts including Rauh and Novy-Marx²⁴ and Biggs.²⁵ The Federal Reserve Board and the Congressional Budget Office also have used a bond yield as a discount rate in valuing public sector pension liabilities. The BEA uses a corporate bond discount rate to calculate both total accrued pension liabilities and the annual value of newly-accruing liabilities, referred to as the “normal cost” of the pensions. The normal cost of pensions represents the compensation that employees receive each year via accruing retirement benefits and is a component of total compensation used in this study.

However, the specific method used by the BEA to adjust the normal costs of state pensions to a lower discount rate appears to understate the value of accruing pensions benefits when compared to figures published by pension plans themselves, for the small number of plans that make such figures available. If each public plan in the U.S. produced normal cost figures for a variety of discount rates, this study could simply use those figures. However, only a small number of plans publish a sensitivity analysis for their normal costs at different discount rates. To work around that shortcoming, this study uses a method to calibrate the BEA’s normal cost figures when calculated using a corporate bond discount rate to when those figures are calculated by state plans themselves. It then applies this calibration process to other states that do not publish such figures.

When the BEA converts total pension liabilities as published by state pension plans using high discount rates to values that would be obtained using a corporate bond yield, it makes this conversion based on a sensitivity analysis that each public sector retirement plan is required to

²⁴ Novy-Marx, Robert, and Joshua Rauh. “Public pension promises: how big are they and what are they worth?” *The Journal of Finance* 66, no. 4 (2011): 1211-1249.

²⁵ Biggs, Andrew G. “An options pricing method for calculating the market price of public sector pension liabilities.” *Public Budgeting & Finance* 31, no. 3 (2011): 94-118.

publish by the Government Accounting Standards Board (GASB). This sensitivity analysis shows how a one percentage point increase or decrease in the plan's assumed discount rate would affect the present value of benefits that have *already been accrued* under the plan.

However, state plans are not required by GASB to publish a sensitivity analysis for their normal costs based on different discount rates. As a result, the BEA uses its own methodology for calculating pension normal costs when the discount rate is set at the corporate bond yield. The BEA's methodology for making these normal costs adjustments is not explicitly documented, making it difficult or impossible to reproduce.

More importantly, the BEA normal cost method appears to produce figures that are lower than those produced by state plans themselves, for the small number of plans that do publish a sensitivity analysis of normal costs to change in the discount rate.

The effects of the BEA's approach can be seen using the example of New Jersey, which is unusual in that it publishes a sensitivity analysis of the normal cost of newly-accruing pension benefits to changes in the discount rate. The BEA estimates that, for the year 2018, the average total normal cost of New Jersey's public employee pension systems was 15.3 percent of employee wages, assuming a four percent discount rate.

However, it is possible to directly estimate the normal cost of New Jersey pensions from the plans' own actuarial disclosures.²⁶ For the state's Public Employees Retirement System, the total normal cost of newly-accruing benefits in 2018 assuming a four percent discount rate was 30.2 percent of employee wages. For the Teachers Retirement System, the total normal cost was 30.3 percent of wages. For the New Jersey Police and Fire System, which is smaller than the PERS or TRS plans, the total normal cost was 81.9 percent of wages. The employer's share of the normal cost of these plans was lower, as employees funded a part of the cost of their new benefit accruals. Focusing on the two largest New Jersey pensions, the employer normal cost for these plans was roughly twice as high when using the New Jersey plans' own published sensitivity analysis compared to the BEA normal cost figures for that state.

Unfortunately, only a small number of pension systems release a sensitivity analysis of the normal cost to changes in the discount rate. The workaround is to use normal costs as reported by the BEA, but convert them using a method that, for the states where a sensitivity analysis is available, causes the converted BEA figures to more closely match those from the plans themselves. The approach that converts the BEA figures for New Jersey to an amount

²⁶ See Cheiron. "The Teachers Pension and Annuity Fund of New Jersey. GASB 67 Report as of June 30, 2019." March, 2020; Cheiron. "The Public Employees Retirement System of New Jersey. GASB 67 Report as of June 30, 2019." March, 2020; and Cheiron. "The Police and Firemen's Retirement System of New Jersey. GASB 67 Report as of June 30, 2019." March, 2020.

approximating those produced using the New Jersey plans sensitivity analysis is to recalculate the normal costs as reported by the BEA while doubling the assumed average duration of benefits. The duration of benefits is the number of years that represents the mid-point of when benefits are paid out. For a typical plan the average duration of accrued benefit liabilities is about 10 years, though the BEA reports state-specific figures in its own reports on pension liabilities. The average duration of newly-accruing benefits is generally about twice the duration of accrued liabilities. This study recalculates BEA's reported normal costs using an assumed duration of benefits that is twice the duration of accrued liabilities reported by the BEA. While the BEA's own methodology for computing pension normal costs appears to be significantly more complex, this ad hoc approach causes the BEA's figures to more closely match those reported for New Jersey plans.

It would be preferable to adjust normal costs for a more appropriate discount rate using sensitivity analyses produced by the retirement systems themselves. However, in the absence of such figures from the vast majority of plans, this adjustment methods designed to produce results that more closely approximate the figures that do exist.

[Appendix C. Adjusting NIPA data to account for the cost of newly-accruing OPEB benefits.](#)

As discussed in the main text, NIPA compensation data incorporate retirement health care benefits on a cash basis, meaning that the data measure the value of the health benefits paid to current retirees rather than the accrual of benefits to current employees. This treatment differs from how the NIPA measure pensions, where compensation data capture the value of new benefits accruing to current employees rather than benefits being paid to current retirees. Since the topic of this study is the compensation of current state government employees, the NIPA data are adjusted to delete the value of OPEB benefit payments to current retirees and then to incorporate the value of new benefits accruing to current employees. Data for OPEB benefit payments and accruals are drawn from each state's financial statements, often referred to as a Comprehensive Financial Report (or CAFR).

This adjustment process is imperfect because the source data for OPEB payments to current retirees differs between the two datasets. The NIPA data rely upon an analysis of the Medical Expenditure Panel Survey (MEPS) conducted by state at the federal government's Department of Health and Human Services. The HHS staff provide the Bureau of Economic Analysis with data representing the total healthcare premiums that state governments pay on behalf of their employees, with this total including both health premiums for active employees and OPEB benefits for retirees. These data are not made public, nor are they disaggregated

between active and retired workers. Moreover, the MEPS is a survey of a sample of public employers and does not draw directly on state government data.

By contrast, the OPEB data drawn from government financial statements provide a direct figure from the state's retiree health program on expenditures in the prior year. The financial statement figures are almost surely more accurate, since they derive from administrative sources rather than survey data. The more important point is that differences between the MEPS figures embedded in the NIPA data and figures drawn from state financial disclosures could introduce errors in the adjustment process for OPEB benefits. However, due to the non-public nature of the MEPS data these errors are difficult to identify and correct. Nevertheless, the methodological approach taken is a reasonable one under the assumption that the underlying data on retiree health expenditures are correct.

Appendix D. Comparisons to other studies

It is worth comparing the results presented above to those of other studies.

The author of this paper has also looked at Connecticut in various past studies, including a 50-state comparison covering the years 2009 through 2012.²⁷ That study, published in 2014, was qualitatively similar to the current study in estimating the full value of employee benefits, including the accrual value of future pension and OPEB benefits, it differs in the data that are used. The value of accruing pension benefits was calculated directly from state actuarial valuations, rather than using NIPA figures. While the two approaches were similar in focusing on the value of the benefits earned rather than focusing on the size of employer pension contributions, the data cover slightly different employee sets (the current study includes all state employees, while the 2014 study focused on non-public safety employees), the discount rates applied to pension benefits were slightly different, and a different method was used to convert figures found in plan actuarial reports, which value benefits using a higher discount rate, to a lower and common discount rate. The valuation of OPEBS was more similar, in that both studies relied upon state actuarial disclosures. However, the current study must deduct from employee benefits the value of OPEBs paid to current retirees while the 2014 study began with BLS benefits data, which do not include OPEBs. While in theory the two approaches would produce identical results, this study calculates the value of OPEB payments to current retirees using state financial statements, while the value of such payments included in the NIPA data is based on an analysis of the Medical Expenditure Panel Survey (MEPS) by the federal department of Health and Human Services, which provides those data to the BEA. The NIPA

²⁷ Biggs, Andrew G., and Jason Richwine. "Overpaid or underpaid? A state-by-state ranking of public employee compensation." American Enterprise Institute Working Paper. (2014).

data on employee benefits is not disaggregated sufficiently to check that the NIPA data based on the MEPS matches the figures published in state financial statements. Third, the 2014 study estimated the value of state government employer health coverage for active employees using data on state employer health premiums gathered by the National Conference of State Legislatures. Figures on private sector employee health coverage came from the BLS National Compensation Survey. The NIPA figures in the current study relies upon MEPS data on public and private sector employer contributions to employee health plans broken down by state. Finally, there are simply changes to wages and benefits that occur over the passage of time.

This study's analysis of wages, the result of which are found in Table 1, are broadly comparable with those in Biggs and Richwine (2014), which analyzed wage data for state government employees from the years 2009 through 2012. Overall, the figures in Table 1 show a somewhat larger state employee salary penalty than is shown in Biggs and Richwine's 2009-2012 data. There are only small variations in methodology between the two sets of results, but the differences could be accounted for by the time periods for which they were measured. Wages in the public sector are less responsive to economic fluctuations than private sector pay. The period 2009 through 2012 encompassed the aftermath of the Great Recession, from which the recovery in private sector jobs and pay was slow. The 2017-2019 period, by contrast, had faster economic growth. For instance, Social Security Administration data show that real wages nationwide grew by an annual average of just 0.1 percent during 2009-2012, versus 1.4 percent real annual growth during the 2017-2019 period.²⁸ A more careful analysis that better controlled for trends in the business cycle would be needed to more fully track changes in relative state employee pay in recent years.

In the 2014 study, Connecticut non-public safety state employees were found to receive total salaries and benefits in the years 2009 to 2012 that were 42 percent higher than those received by similar private sector employees, versus 33 percent in the current study. The 42 percent Connecticut compensation premium found in the 2014 was the largest total compensation premium of any of the 50 states. The rest of the top five states in the 2014 study were Pennsylvania, New York, Illinois, Rhode Island and California. Three states were in the top five in both studies: Connecticut, New York and California.

It is difficult to determine precisely the reasons for the differences in the two reports, given the differences in the benefits data used. That is, some of the differences between states in the two reports is almost certainly due to different datasets measuring benefits in different

²⁸ See The 2021 Annual Report of the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds, August 31, 2021. Table V.B1.—Principal Economic Assumptions, Calendar Years 1960-2100. <https://www.ssa.gov/OACT/TR/2021/lr5b1.html>

ways. But things have changed substantively as well. A number of states have reformed their retiree health programs over the last decade to reduce costs, although Connecticut's costs have not fallen significantly. Pension changes have also reduced the cost of newly-accruing benefits, though sometimes in ways that are not obvious. The reported normal costs of newly-accruing benefits have not fallen significantly, but pensions today are using discount rates that are sometimes over one percentage point lower than were used in the 2009-2012 period. The use of lower discount rates today produces a smaller upward adjustment to normal costs when they are standardized to a four percent corporate bond yield. This impacts Connecticut: the normal cost of pension benefits as reported in plan actuarial reports hasn't changed very much over the past decade, but Connecticut has reduced the discount rate on its main pension from eight percent in the 2014 study to 6.9 percent in the current analysis. The mathematical process of normalizing pensions costs to a corporate bond yield has greater impact when the plan uses a higher discount rate than a lower one. There also was a general trend toward a larger public sector salary penalty in the 2017-2019 period, which was an economic expansion, to 2009-2012, which covered the period of the Great Recession. Public sector salaries are affected far less by the business cycle than private sector pay, but these differences may not be uniform from state to state.

Biggs (2015)²⁹ and Biggs (2020)³⁰ look specifically at Connecticut, but without comparisons to other states. Biggs (2015) concludes that Connecticut state government employees receive total pay and benefits that are between 25 and 46 percent higher than comparable private sector employees, with the range of values deriving from the use of different discount rates to calculate the value of newly-accruing public employee pension benefits. Biggs (2020) updates Biggs (2015), while adding additional detail on state-vs-private relative salaries at different points of the salary distribution and beginning to incorporate new benefits data from the National Income and Product Accounts. However, unlike the current study Biggs (2020) did not adjust the NIPA measures for pensions and retiree health benefits to account for shortcomings outlined in this study. Biggs (2020) finds that the median state and local government employee in Connecticut received total pay and benefits that were 28 percent higher than those paid to private sector employees. While examining different time periods and using certain different data sources and methods, the results from Biggs (2015) and Biggs (2020) are qualitatively similar to those found in this study.

²⁹ Biggs, Andrew. "Unequal Pay: Public Vs. Private Sector Compensation in Connecticut." The Yankee Institute. (2015).

³⁰ Biggs, Andrew. "Unequal Pay: Public Vs. Private Sector Compensation in Connecticut. An Update." The Yankee Institute. (2020).

Biggs (2019) compares the growth of salaries and benefits in government and the private sector from 1998 through 2017, including data on individual states.³¹ This study finds that public sector compensation – whether it be in federal government, state and local governments in aggregate, state and local education, or individuals state and local governments – increased faster than in the private sector. In Connecticut, average per employee compensation grew from 1998 through 2017 by 77 percent in state and local government versus only 20 percent in private sector jobs. Biggs (2019) does not attempt to compare compensation for state and local government employees to that of similar private sector workers, as this study does, meaning there is not adjustment for education, experience or other factors. However, Biggs (2019) does show that state and local government employees became better compensated relative to the overall workforce during the two-decade period that is analyzed.

A series of studies published by the Economic Policy Institute, a labor union-affiliated Washington, D.C. think tank, conclude that state and local government employees tend to receive lower combined salaries and benefits than similar workers in the private sector. These studies, mostly authored by labor economist Jeffrey Keefe, use broadly similar methods to this study in analyzing public employee wages. That is, both types of studies use household data to compare the salaries of public employees to those of private sector workers with similar levels of education, experience and other earnings-related characteristics. However, the studies differ in how they address employee benefits.

First, the EPI studies do not have state-specific data on the value of health benefits for active employees; instead, the EPI uses BLS data that merge states by region. This study uses NIPA data by state that include employer costs for employee health insurance. This would produce differences in employee compensation when measured at the state level, as done here. Second, the EPI studies calculate the value of newly-accruing pension benefits based upon the amounts that state or local governments contribute toward those benefits in a given year. However, as noted above, employer pension contributions are mathematically distinct from employee pension accruals. They simply do not measure the same things. For example, in NIPA data for the year 2015, state and local government employees accrued \$218 billion in new pension benefits. Adjusting for the BEA's error regarding the duration of newly-accrued benefits, this value would rise to about \$390 billion. Employees contributed \$49 billion toward pensions in 2015, bringing the net accrual of benefits to about \$331 billion. However,

³¹ Biggs, Andrew G. "The growth of salaries and benefits in the federal government, state and local governments and public education, 1998-2017." AEI Economics Working Paper No. 1014405. American Enterprise Institute, 2019.

government employers contributed only \$134 billion toward pensions in 2015. Thus, looking at employer pension contributions is not an adequate way of measuring the benefits accruing to employees in a given year.

Third, the EPI public pay studies omit entirely the value of retiree health benefits (or OPEBs). The BLS data the EPI studies rely upon do not include the value of OPEBs, either in terms of new benefits accruing to employees or of benefits being paid to retirees. This study draws upon state government financial statements or actuarial valuations to include the value of newly-accruing retiree health benefits. All three of the shortcomings to EPI's public sector pay studies mean that comparisons to the current study's results are not straightforward.

Appendix E. Potential savings from earlier implementation of Tier IV of the Connecticut State Employees Retirement System

Cost-saving reforms to public sector retirement systems often face opposition from government employees, which can cause such reforms to be delayed or abandoned. At the same time, the fact that it is legally and politically difficult alter pension benefits for public employees, including the right to accrue future benefits using the formula in place when the employee was hired, means that even a seemingly small delay in enacting reforms can have farther-reaching cost implications. This section explores that question by looking at the implementation of Tiers III and IV of the Connecticut State Employees Retirement System (SERS).

In 2011, Connecticut established a new "tier" of the State Employees Retirement System. Tier III includes all state employees, elected officials and appointees who were hired on or after July 1, 2011. Relative to the benefit formula in place for current employees in 2011 (called Tier IIa), Tier III included the same benefit formula and employee contribution but with a higher retirement age. As a result, Tier III reduced the employer's "normal cost" of newly-accruing benefits.

However, just seven years later, beginning with employees hired on July 1, 2017, SERS introduced Tier IV, which reduced employer costs further. Relative to Tier III, Tier IV offers non-public safety employees a less generous retirement benefit. Under Tier III, the benefit is based upon a complex formula, where the benefit equals: 1.4 percent final average earnings (based on the final five years prior to retirement) per year of service; plus 0.433 percent of final earnings above the so-called "break point," which is \$10,000 in 1982 dollars compounded forward at 6 percent per year, approximately \$97,000 in 2021, also per year of service; and 1.625 percent of final salary for any years of service in excess of 35 years. For Tier IV, the benefit is simply equal to 1.3 percent of final average earnings multiplied by the number of

years of service. Thus, Tier IV provides a less generous benefit, particularly for higher-paid state employees.

Employees covered by Tier IV also must contribute more for their benefits than Tier III employees. The Tier IV contribution for non-public safety employees is five percent of earnings, versus four percent of earnings for Tier III employees. For public safety employees, the contribution rises from seven to eight percent of wages.

The combination of higher contributions and lower future benefits results in a lower required governmental contribution for Tier IV employees. In the most recent SERS actuarial valuation, the reported employer normal cost of Tier IV non-public safety employees was 2.32 percent of employee wages, calculated by discounting future benefit payments at a 6.9 percent interest rate. For Tier III employees the employer normal cost was 3.32 percent of employee payroll.³² This difference of one percent of employee payroll would appear to understate the cost differences between the two tiers, given that Tier IV should cost one percentage point of payroll less than Tier III solely based upon the higher employee contribution before accounting for Tier IV's less generous retirement benefits.

Employer costs were also reduced for other pension groups. For employees in hazardous positions, such as public safety officers, the employer normal cost was reduced from 9.09 percent of employee wages to 6.09 percent. For the hybrid plan, the employer normal cost was reduced from 2.84 percent of wages to 1.67 percent.

When savings for the three pension categories are weighted by the size of employee payroll in each category, the employer normal cost for Tier III employees in 2020 was 4.7 percent of payroll while for Tier IV employees it was only 3.0 percent of payroll.

How much could the state have saved by shifting directly to Tier IV's provisions in 2011 rather than waiting until 2017 to act? If Tier III employees had the same contribution and benefit provisions in 2020 as Tier IV employees, total employer contributions to cover newly-accruing benefits for Tier III employees would have been reduced by 23 percent, at an annual savings of \$10.1 million. Over the period from 2011 through 2016 total savings would have been approximately \$50 million, which is less than six times the 2020 figure because employee payroll was lower during those years.

However, the total savings from beginning Tier IV in 2011 would have been substantially higher than those shown above, because the state's Tier III costs will continue to be higher than Tier IV in future years until all Tier III participants pass out of the system. Tier III includes six

³² The figures presented here focus on Tier III and Tier IV employees who participate in the traditional pension benefit. A small share of employees participates in a hybrid defined contribution-defined benefit plan, and the cost differences between Tiers III and IV are similar to those shown for the traditional plan.

cohorts of public employees – that is, employees hired in each year from 2011 through 2016 – who will pay lower contributions and accrue higher benefits over their full working career than subsequent Tier IV participants.

While SERS actuarial reports do not publish direct estimate of such costs differences, it is possible to estimate these costs due to the way that pension contributions are calculated. Connecticut SERS calculates the normal cost of newly-accruing pension benefits using an actuarial method called “entry age normal,” which first calculates the present value of the future benefits that employees will collect and then sets annual contributions to a steady percentage of employees’ earnings over their careers. As a result, the employer normal cost for Tier III and Tier IV employees should remain relatively steady as a percent of employees’ wages throughout the remainder of their working lives.

Employer and employee contributions to a pension are designed to fund the employee’s benefits over the employee’s working career. However, the average number of years of service a public employee has accrued prior to retirement is generally well less than a full career, due to employees who work only a partial career in government but nevertheless are eligible to receive benefits in retirement. In many cases, state retirement systems publish the average years of service of retired public employees in actuarial valuations or the retirement system’s Comprehensive Annual Financial Report. Connecticut SERS does not publish such information. However, based on an informal survey of other public employee retirement plans it seem reasonable to assume that the average SERS participant retires after about 20 years of job tenure.

Thus, the total lifetime cost difference between SERS Tier III and Tier IV is approximately 20 times larger than the single-year difference, expressed in present value terms. With a single-year difference in employer costs of approximately \$10 million, the total cost additional cost of the six cohorts of Tier III participants relative to Tier IV is approximately \$200 million in present value. That is to say, if Connecticut had implemented the provisions of Tier IV beginning in 2011 rather than 2017 the total savings to the state would have been about \$200 million.

The figures presented here highlight the importance of acting early when it comes to public employee pension reform. Because most states make it difficult or impossible to change the benefit formula for current employees, even a one-year delay in enacting reform requires the government to fund higher pension benefits over those employees’ full working careers.