Appendix for "Will Divestment from Employment-Based Health Insurance Save Employers Money? The Case of State and Local Governments"

by

Jeremy D. Goldhaber-Fiebert, Monica Farid,
David Studdert, Jay Bhattacharya

Appendix Sections:

1. **Study Population**
2. **Average Annual Healthcare Expenditures**
3. **Workforces Sizes of State and Local Governments in Relationship to ACA Employer Penalties**
4. **Medicaid Expansions**
5. **Federal Subsidy and Cost-Sharing for ACA Exchange-Purchased Health Insurance Plans**
6. **Tax Effects of Income Supplements from State and Local Governments Whose Workers Move to Purchase Insurance on ACA Exchanges**
7. **State and Local Government Income Supplements, Federal Subsidies and Cost-Sharing, and Tax Consequences: Two-Stage Fixed Point Method Technical Details**
8. **Additional Results and Supplemental Analyses**
    a. **Status Quo Estimates**
    b. **Full Divestment Strategy**
    c. **Selective Divestment Strategy**

1. Study Population

We consider two groups in our analysis, whose size we estimated using the CPS. The first group is current employees of State and Local Governments. The second group is made up of retirees from State and Local Governments. Additionally, we estimate the size of households of these individuals. The table below shows the estimated size of these groups.

Appendix Table 1. Estimates of the Number of Current Workers and Retirees from State and Local Governments under 65 Years of Age

	Current Workers		Retirees below Age 65	
State	**#**	**Average Household Size**	**#**	**Average Household Size**
Alabama	217,000	3.4	30,000	3.0
Alaska	53,000	3.6	6,000	2.9
Arizona	222,000	3.8	31,000	2.4
Arkansas	95,000	3.2	8,000	2.1
California	1,397,000	3.8	134,000	2.5
Colorado	199,000	3.4	26,000	2.3
Connecticut	148,000	3.6	17,000	2.7
Delaware	30,000	3.3	5,000	2.1
District Of Columbia	16,000	2.6	1,000	1.5
Florida	636,000	3.2	74,000	2.6
Georgia	375,000	3.5	49,000	2.4
Hawaii	53,000	4.5	10,000	4.7
Idaho	80,000	3.4	7,000	2.9
Illinois	426,000	3.3	53,000	2.3
Indiana	197,000	3.2	22,000	2.3
Iowa	150,000	3.2	15,000	2.2
Kansas	153,000	3.6	14,000	2.2
Kentucky	172,000	3.1	34,000	2.4
Louisiana	161,000	3.5	21,000	2.7
Maine	53,000	3.2	9,000	2.6
Maryland	236,000	3.6	29,000	3.1
Massachusetts	266,000	3.4	30,000	2.2
Michigan	299,000	3.6	48,000	2.6
Minnesota	190,000	3.5	24,000	2.2
Mississippi	157,000	3.4	23,000	2.2
Missouri	213,000	3.6	24,000	2.5
Montana	44,000	3.2	5,000	2.0
Nebraska	86,000	3.4	7,000	3.0
Nevada	95,000	3.8	15,000	2.5
New Hampshire	48,000	3.3	7,000	2.6
New Jersey	341,000	3.6	30,000	3.0
New Mexico	90,000	3.5	15,000	2.5
New York	921,000	3.6	108,000	2.7
North Carolina	474,000	3.3	54,000	2.3
North Dakota	34,000	3.3	3,000	2.2
Ohio	397,000	3.5	56,000	2.6

Oklahoma	161,000	3.5	10,000	2.8
Oregon	173,000	3.3	32,000	2.2
Pennsylvania	418,000	3.4	77,000	2.8
Rhode Island	37,000	3.5	8,000	2.5
South Carolina	195,000	3.3	41,000	2.4
South Dakota	33,000	3.5	3,000	2.2
Tennessee	209,000	3.2	15,000	2.2
Texas	999,000	3.6	108,000	2.6
Utah	91,000	4.1	9,000	2.6
Vermont	27,000	3.3	3,000	2.7
Virginia	266,000	3.3	28,000	2.2
Washington	316,000	3.4	29,000	2.5
West Virginia	93,000	3.1	10,000	1.9
Wisconsin	228,000	3.6	31,000	2.2
Wyoming	40,000	3.3	3,000	2.8
NATIONAL	**12,008,000**	**3.5**	**1,455,000**	**2.5**

2. Average Annual Healthcare Expenditures

An individual's healthcare expenditures and those of his or her household act as reasonably close proxy for health insurance premium payments. We used data from MEPS to estimate average annual medical expenditures for individuals conditional on their age, sex, and region of the country in which they reside (see description further below). With these estimates we predicted the average annual healthcare costs of current State and Local Government Employees, Retirees from these jobs under age 65 years, and the households of these individuals. As a face validity check, we compared these predictions to the price of Silver Plans on ACA Exchanges with the knowledge that State and Local Government benefits are typically more generous than for comparable jobs in the private sector. Appendix Table 2 shows a comparison of our predictions to the premiums for a Silver Plan confirming that predicted average healthcare spending (our proxy for premiums) in our group was higher than the Silver Plan premium amounts, closer to the Gold or Platinum Plans.

Appendix Table 2. How Much Do Estimated Average Annual Healthcare Expenditures Exceed Silver Plans on ACA Exchanges for Comparable Household Sizes

	Household Size	
	1 person	4 people
Alabama	$1,947	$1,599
Alaska	$2,284	$1,974
Arizona	$1,268	$842
Arkansas	$1,507	$3,452
California	$1,906	$2,066
Colorado	$1,776	$734
Connecticut	$1,774	$5,491
Delaware	$2,841	$2,307
District Of Columbia	$1,245	$2,446
Florida	$2,037	$2,089
Georgia	$2,055	$1,979
Hawaii	$2,233	$3,693
Idaho	$2,045	$632
Illinois	$2,698	$3,290
Indiana	$2,296	$2,952
Iowa	$2,339	$2,287
Kansas	$2,367	$2,549
Kentucky	$648	$1,668
Louisiana	$1,201	$1,952
Maine	$3,554	$4,729
Maryland	$2,082	$2,460
Massachusetts	$2,129	$4,504
Michigan	$2,118	$3,159
Minnesota	$2,646	$3,422
Mississippi	$1,758	$2,254
Missouri	$1,863	$2,533

Montana	$2,026	$1,043
Nebraska	$2,275	$2,354
Nevada	$2,243	$1,576
New Hampshire	$2,891	$4,442
New Jersey	$2,131	$5,471
New Mexico	$2,072	$802
New York	$2,446	$4,867
North Carolina	$2,087	$1,418
North Dakota	$1,835	$2,426
Ohio	$1,541	$2,656
Oklahoma	$2,554	$803
Oregon	$1,436	$608
Pennsylvania	$2,235	$4,460
Rhode Island	$2,773	$5,354
South Carolina	$2,890	$2,544
South Dakota	$2,512	$1,740
Tennessee	$2,178	$2,494
Texas	$1,957	$2,031
Utah	$1,462	$1,092
Vermont	$2,772	$4,373
Virginia	$2,339	$2,397
Washington	$1,976	$957
West Virginia	$2,108	$1,859
Wisconsin	$2,678	$2,123
Wyoming	$2,008	$1,178

We used the MEPS annual individual healthcare expenditure data including pharmaceuticals inflated to 2013 US dollars using the medical component of the Consumer Price Index along with data on the age, sex, and region (Northeast, South, Midwest, or West) to form our predictions of annual individual expenditure for our two study populations. To allow for a flexible non-linear relationship between age and medical expenditures, the regression used restricted cubic splines for age in years with knots placed at 15 year intervals from age 0 through age 75 and an additional knot at age 85. Region entered the regression as a set of dummy variables (reference category is Northeast) as did sex (reference category is Female). The dummy variables were interacted with each other, age splines, and the combination of the three. The regression model results are shown below and for greater clarity and ease of interpretation, the predicted expenditure patterns by age, sex, and region are shown in Appendix Figure 1 below.

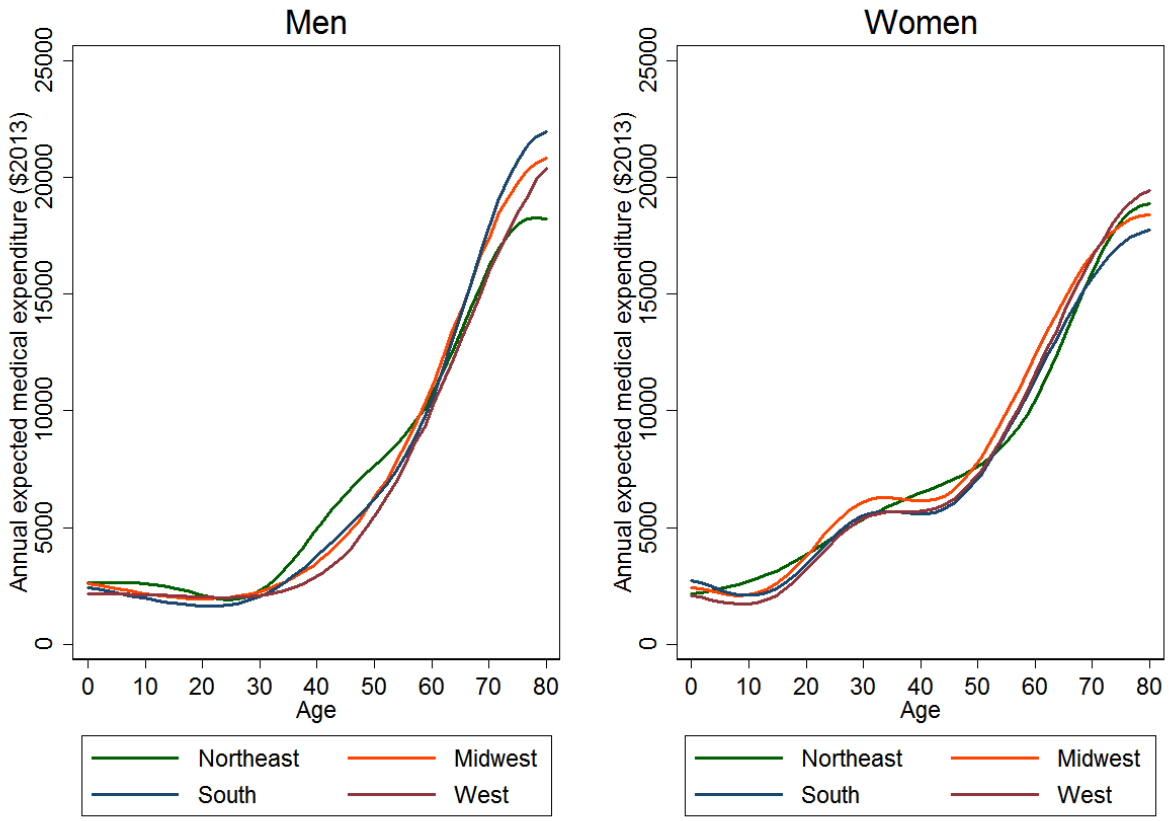
Coefficient	Beta	Robust Standard Error	p-value	95% CI	
Age Spline 0-15	46.16392	74.24043	0.534	-99.34571	191.6735
Age Spline 15-30	747.1422	821.656	0.363	-863.2856	2357.57
Age Spline 30-45	-2039.398	2538.524	0.422	-7014.85	2936.054
Age Spline 45-60	2075.241	3814.94	0.586	-5401.959	9552.44

Age Spline 60-75	2507.586	5293.612	0.636	-7867.778	12882.95
Age Spline 75-85	-12117.14	8306.755	0.145	-28398.2	4163.916
Region					
Midwest	387.8233	757.9995	0.609	-1097.839	1873.486
South	707.2436	1058.636	0.504	-1367.659	2782.146
West	37.06308	695.6172	0.958	-1326.331	1400.458
Region * Age Spline (0-15)					
Midwest	-124.7626	93.26517	0.181	-307.5603	58.03508
South	-157.4415	116.3443	0.176	-385.4737	70.59075
West	-124.8688	85.01932	0.142	-291.5048	41.76718
Region * Age Spline (15-30)					
Midwest	1958.662	1035.768	0.059	-71.4205	3988.745
South	1914.719	1151.082	0.096	-341.377	4170.816
West	1709.492	978.8776	0.081	-209.0866	3628.071
Region * Age Spline (30-45)					
Midwest	-6791.2	3249.654	0.037	-13160.45	-421.9495
South	-6318.288	3425.557	0.065	-13032.3	395.7286
West	-5643.78	3158.736	0.074	-11834.83	547.274
Region * Age Spline (45-60)					
Midwest	11469.48	5059.383	0.023	1553.198	21385.76
South	10160.73	4931.651	0.039	494.7989	19826.66
West	9013.434	5245.722	0.086	-1268.067	19294.93
Region * Age Spline (60-75)					
Midwest	-14347.83	7113.113	0.044	-28289.38	-406.2869
South	-12538.86	6569.928	0.056	-25415.78	338.0518
West	-10717.47	7838.721	0.172	-26081.19	4646.257
Region * Age Spline (75-85)					
Midwest	13836.75	10950.82	0.206	-7626.616	35300.12
South	12656.03	10005.44	0.206	-6954.408	32266.48
West	10625.74	12637.5	0.4	-14143.5	35394.97
Male	509.9058	765.2606	0.505	-989.9883	2009.8
Male * Age Spline (0-15)					
Male	-39.09946	98.33704	0.691	-231.8379	153.639
Male * Age Spline (15-30)					
Male	-1441.292	1150.058	0.21	-3695.382	812.7974
Male * Age Spline (30-45)					
Male	6334.444	3810.186	0.096	-1133.437	13802.32
Male * Age Spline (45-					

60)					
Male	-10208.86	6793.23	0.133	-23523.44	3105.723
Male * Age Spline (60-75)					
Male	7314.355	10892.11	0.502	-14033.94	28662.65
Male * Age Spline (75-85)					
Male	-3210.858	16638.77	0.847	-35822.48	29400.76
Region * Male					
Midwest, Male	-378.9305	968.414	0.696	-2277.001	1519.14
South, Male	-873.5618	1190.575	0.463	-3207.063	1459.939
West, Male	-507.1493	1028.38	0.622	-2522.752	1508.454
Region * Male * Age Spline (0-15)					
Midwest, Male	65.12622	123.7642	0.599	-177.4489	307.7013
South, Male	96.7906	138.5451	0.485	-174.7548	368.336
West, Male	114.1545	138.2099	0.409	-156.7339	385.0428
Region * Male * Age Spline (15-30)					
Midwest, Male	-952.4504	1438.329	0.508	-3771.544	1866.644
South, Male	-1026.397	1477.878	0.487	-3923.005	1870.21
West, Male	-1090.467	1546.795	0.481	-4122.152	1941.218
Region * Male * Age Spline (30-45)					
Midwest, Male	2560.406	4753.16	0.59	-6755.684	11876.5
South, Male	2977.662	4707.748	0.527	-6249.421	12204.74
West, Male	2009.953	4971.515	0.686	-7734.109	11754.01
Region * Male * Age Spline (45-60)					
Midwest, Male	-2951.193	8324.652	0.723	-19267.33	13364.94
South, Male	-4472.105	7969.002	0.575	-20091.17	11146.96
West, Male	-82.698	8576.863	0.992	-16893.16	16727.77
Region * Male * Age Spline (60-75)					
Midwest, Male	4449.379	13006.17	0.732	-21042.43	29941.19
South, Male	8078.473	12541.92	0.52	-16503.42	32660.37
West, Male	-1126.016	13641.33	0.934	-27862.72	25610.69
Region * Male * Age Spline (75-85)					
Midwest, Male	-6257.706	20108.21	0.756	-45669.36	33153.95
South, Male	-11847.3	19629.13	0.546	-50319.97	26625.37
West, Male	1877.599	21675.4	0.931	-40605.71	44360.91
Constant	2133.172	607.905	0	941.6918	3324.653

N = 167,279; F(55,167223) = 80.10; Prob > F < 0.0001; R-squared = 0.0519; Root MSE = 21,878

Appendix Figure 1. Average Annual Medical Expenditures Including Pharmaceuticals (USD 2013) By Age, Sex, and US Geographic Region



3. Workforces Sizes of State and Local Governments in Relationship to ACA Employer Penalties

We used 2011 APES data to provide an independent estimate of the size of our study population as a face validation check and more importantly to characterize the percentage of state and local government workers working for governments of different sizes. The latter was particularly relevant because employer penalties are determined by the number of full-time workers above 30. Since the CPS does not allow linking individual workers to specific State or Local Government entities, it was important to establish that the overwhelming majority of workers work for governments whose total number of employees exceeds several hundred. This would mean that the likelihood of at least one employee receiving subsidies or cost-sharing for purchasing insurance on ACA exchanges is high and that the average per-capita penalty for that government entity would be very close to $2,000 should it choose to cancel its provision of insurance entirely. Appendix Table 3 shows both of these assumptions to be highly credible.

Appendix Table 3. Distribution of Sizes of State and Local Government Workforces According to the 2011 APES and the Implied size of the Employer Penalty for Firms of Corresponding Sizes

Size of Government Workforce (Number of Full-time Employees)	Average Per-Capita Penalty ($)	Total Number of State and Local Governments	Total Number of Full-Time Employees
30 and below	0	3,290	41,914
31	65	1	31
32-33	163	6	196
34-35	264	7	242
36-37	356	6	219
38-39	451	11	426
40-42	533	23	941
43-46	658	47	2,102
47-49	749	40	1,919
50-54	846	122	6,344
55-59	944	125	7,103
60-66	1,050	162	10,229
67-74	1,148	156	10,989
75-85	1,252	243	19,489
86-99	1,352	281	26,034
100-119	1,452	315	34,508
120-149	1,552	450	60,252
150-199	1,654	642	111,263
200-299	1,757	834	206,306
300-599	1,861	1,229	532,079
600+	1,985	2,522	10,400,000
TOTAL		**10,512**	**11,472,568**

4. Medicaid Expansions

State Medicaid expansions are important given that under the ACA the federal government supports these expansions. However, such expansions are a moving target – as some states have not implemented them without any current intention of doing so and others have not implemented but are contemplating expansions more actively. We used data reported by the Kaiser Family Foundation monitoring current implementations of Medicaid expansions as of January 28, 2014 as shown in the table below.

Appendix Table 4. Medicaid Expansions for Implementation in 2014 According to the Kaiser Family Foundation

State	Implementing Expansion in 2014
Alabama	No
Alaska	No
Arizona	Yes
Arkansas	Yes
California	Yes
Colorado	Yes
Connecticut	Yes
Delaware	Yes
District of Columbia	Yes
Florida	No
Georgia	No
Hawaii	Yes
Idaho	No
Illinois	Yes
Indiana	No
Iowa	Yes
Kansas	No
Kentucky	Yes
Louisiana	No
Maine	No
Maryland	Yes
Massachusetts	Yes
Michigan	Yes
Minnesota	Yes
Mississippi	No
Missouri	No
Montana	No
Nebraska	No
Nevada	Yes
New Hampshire	No
New Jersey	Yes
New Mexico	Yes
New York	Yes
North Carolina	No
North Dakota	Yes
Ohio	Yes
Oklahoma	No
Oregon	Yes

Pennsylvania	No
Rhode Island	Yes
South Carolina	No
South Dakota	No
Tennessee	No
Texas	No
Utah	No
Vermont	Yes
Virginia	No
Washington	Yes
West Virginia	Yes
Wisconsin	No
Wyoming	No

5. Federal Subsidy and Cost-Sharing for ACA Exchange-Purchased Health Insurance Plans

For individuals purchasing health insurance on the ACA exchanges, federal subsidies and cost sharing may be available depending on their household income and their expected medical expenditures relative to the Silver Plan premium payments for households of equivalent size. Subsidies are computed based on tiers of household income as a percentage of the Federal Poverty Level: 138-149, 150-199, 200-249, 250-299, and 300-400 percent of the Federal Poverty Level respectively. To determine the subsidy amount, the subsidy percentage is multiplied by the total household income, and this amount is then subtracted from the price of a Silver Plan for a household of size 1, 2, or 3+ individuals according to the size of each household in the affected population. The price of the Silver Plan for a household of one individual is $4,914 and $13,591 for a household of 4 in in 2013 dollars. Likewise, cost-sharing percentages are based on tiers from 138-149, 150-199, 200-249, and 250-400 percent of the Federal Poverty Level. To determine the cost-sharing amount, the cost-sharing percentage is multiplied by the total expected annual household medical expenditure.

6. Tax Effects of Income Supplements from State and Local Governments Whose Workers Move to Purchase Insurance on ACA Exchanges

For federal income taxes, we classified each CPS household as being a single filer, married joint filer, or head of household filer. Then, based on their Adjusted Gross Income (AGI), we computed their total tax burden based on 2013 AGI cutoffs for marginal tax rates of 10%, 15%, 25%, 28%, 33%, 35%, and 39.6%. Assuming State and Local Governments wanted to make their current workers as well off as they currently are after divesting from health care coverage, we computed the amount of additional compensation that would need to be paid by SLGs to their employees to offset both the cost of health insurance premium payments (net federal subsidies and cost-sharing which also depend on the amount of the additional compensation) as well as to cover increases in tax liabilities, using a two-step fixed point method (detailed below).

7. State and Local Government Income Supplements, Federal Subsidies and Cost-Sharing, and Tax Consequences: Two-Stage Fixed Point Method Technical Details

To make our estimates of State and Local Government savings by divesting from the provision of health insurance, we needed to compute the amount State and Local Government income supplements net of federal subsidies and cost-sharing and compensating for their impact on an individual's federal tax bill. As federal subsidies and cost-sharing depended on total household income relative to the Federal Poverty Level and the tax bill depended on Adjusted Gross Income, simultaneously computing these quantities implied dealing with their interdependency. To do so, we used an iterative, two-step, fixed point method.

First, we define three functions of Household Income (I) and Household Size and Demographic Structure (F).

1) Subsidies (Federal Subsidy and Cost-Sharing) Function: $\theta_S: (I, F) \to S$
2) Health Insurance Premium Payment Function: $\theta_P: (I, F) \to P$
3) Federal Tax Bill Function: $\theta_\tau: (I, F) \to \tau$

We compute initial values for Premium Payments (P_0), Subsidies (S_0) and Taxes (T_0) independent of one another:

$$P_0 = \theta_P(I, F)$$

$$S_0 = \theta_S(I, F)$$

$$\tau_0 = \theta_\tau(I, F)$$

We notice that Premium Payments are determined entirely by the Household Size and Demographic Structure so P_0 will remain fixed at P which we use unsubscripted for the subsequent description below.

In our first step of our two-step approach, we update the Subsidies to account for premium support that increases income provided by the State and Local government and likewise recomputed Taxes based on this increase to income:

$$S_1 = \theta_S(I + P - S_0, F)$$

$$\tau_1 = \theta_\tau(I + P - S_0, F)$$

In our second step of our two-step approach, to ensure that the individual receives enough additional income so that increases to the tax bill are compensated for, we update the Taxes based on the following:

$$\Delta\tau = \tau_1 - \tau_0$$

$$S_2 = \theta_S(I + P - S_2 + \Delta\tau, F)$$

$$\tau_2 = \theta_\tau(I + P - S_2 + \Delta\tau, F)$$

The system of equations has a fixed point. First, the Health Insurance Premium Payments (P) for a fixed value of F and do not depend on income. Second, the Subsidies (S) are a declining function of income for a fixed value of F. Third, Taxes is an increasing function of income for a fixed value of F, but stabilizes to a function of elements that do not depend on subsidies once income exceeds 400% of the Federal Poverty Level and hence subsidies are 0.

We rely on a numerical approximation of this fixed point by iteratively repeating this two-step computation 50 times S_2 in a given iteration replaces S_0 for the start of the next iteration. After the 50 iterations, we examine the values of subsidies and taxes after each iteration to ensure that they have reached stable values by end whose changes from iteration 49 to 50 are approaching $0 on average for all U.S. states (i.e., examining patterns of changes for each sequential pair of iterations) and are very small in the last pair of iterations (i.e., <$1 on average for each state between iteration 49 and 50).

Finally, with the values of the federal subsidies and cost-sharing estimated along with the change in taxes for each household at the 50th iteration, we can compute the State and Local Government income supplement to offset the difference between health insurance premium payments as:

$$SLG_{supplement} = P - S_2 + \Delta\tau$$

8. Additional Results and Supplemental Analyses

8a. Status Quo Estimates

Appendix Table 5 shows the estimates of the total healthcare costs for households of SLGs workers and retirees below the age 65 as a proxy for their premium costs. These estimates represent the status quo costs against which potential savings and additional costs against which various divestment strategies are benchmarked. Likewise, Appendix Table 6 shows the % households of SLG current workers and retirees below the age of 65 that fall below important Federal Poverty Level thresholds (i.e., those for which ACA federal subsidies and cost-sharing would apply; those for which federal support of Medicaid expansions would apply if the state implements such an expansion). Of note, under various divestment strategies that involve transfers to workers or retirees from SLGs in the form of income supplements in lieu of providing health insurance directly, these percentages can change in ways that shift eligibility and sizes of subsidies and of cost-sharing (see Appendix Section 7 above on the dynamic calculation of these levels).

Appendix Table 5. Estimated Total Premium Costs (in $1,000,000s) for Households of State and Local Government Current Workers and Retirees under Age 65

State	Current Workers	Retirees
Alabama	3,007	532
Alaska	643	110
Arizona	2,874	476
Arkansas	1,230	148
California	18,293	2,333
Colorado	2,340	446
Connecticut	2,212	337
Delaware	428	74
District Of Columbia	158	19
Florida	7,799	1,201
Georgia	4,881	892
Hawaii	746	194
Idaho	950	132
Illinois	5,810	1,003
Indiana	2,855	357
Iowa	2,067	320
Kansas	2,065	274
Kentucky	2,141	578
Louisiana	2,085	438
Maine	790	165
Maryland	3,107	479
Massachusetts	3,961	530
Michigan	4,247	865
Minnesota	2,747	447
Mississippi	1,898	389

Missouri	2,901	435
Montana	545	87
Nebraska	1,200	154
Nevada	1,216	263
New Hampshire	764	119
New Jersey	5,428	565
New Mexico	1,076	253
New York	13,337	1,855
North Carolina	5,598	948
North Dakota	450	55
Ohio	5,401	912
Oklahoma	1,933	238
Oregon	2,062	565
Pennsylvania	5,804	1,352
Rhode Island	575	124
South Carolina	2,487	677
South Dakota	428	64
Tennessee	2,764	265
Texas	12,324	1,709
Utah	1,183	166
Vermont	406	68
Virginia	3,442	444
Washington	3,840	546
West Virginia	1,241	184
Wisconsin	3,167	639
Wyoming	490	65
NATIONAL	159,395	25,489
10 YEARS	1,593,952	254,894

Appendix Table 6. Household Incomes Relative to the 2013 Federal Poverty Line (FPL) for Current Workers and Retirees from State and Local Governments under 65 Years of Age

	Current Workers		Retirees	
State	% between 138-400% of FPL	% below 138% of FPL	% between 138-400% of FPL	% below 138% of FPL
Alabama	47%	3%	28%	4%
Alaska	47%	3%	44%	9%
Arizona	51%	5%	27%	10%
Arkansas	47%	3%	54%	2%
California	35%	4%	29%	1%
Colorado	36%	1%	31%	0%
Connecticut	31%	3%	17%	5%
Delaware	36%	2%	32%	4%
District Of Columbia	33%	3%	47%	3%
Florida	43%	7%	34%	2%
Georgia	50%	4%	31%	4%
Hawaii	50%	3%	30%	0%
Idaho	50%	1%	40%	0%
Illinois	34%	2%	23%	4%
Indiana	45%	2%	51%	3%
Iowa	38%	7%	29%	4%
Kansas	46%	6%	28%	0%
Kentucky	46%	7%	36%	14%
Louisiana	47%	1%	33%	1%
Maine	40%	3%	42%	2%
Maryland	29%	2%	36%	11%
Massachusetts	26%	2%	17%	0%
Michigan	34%	1%	34%	2%
Minnesota	34%	10%	30%	4%
Mississippi	48%	2%	45%	7%
Missouri	46%	4%	39%	11%
Montana	43%	2%	29%	2%
Nebraska	42%	1%	36%	0%
Nevada	39%	1%	27%	5%
New Hampshire	29%	1%	21%	1%
New Jersey	24%	8%	32%	5%
New Mexico	40%	4%	45%	5%
New York	36%	3%	33%	1%
North Carolina	44%	2%	31%	0%
North Dakota	35%	2%	22%	10%
Ohio	43%	5%	35%	10%
Oklahoma	48%	3%	35%	0%
Oregon	39%	1%	29%	2%
Pennsylvania	32%	1%	31%	3%
Rhode Island	25%	4%	20%	3%
South Carolina	40%	2%	48%	0%
South Dakota	49%	5%	34%	10%
Tennessee	46%	5%	35%	1%
Texas	48%	3%	33%	0%
Utah	47%	1%	17%	1%
Vermont	34%	3%	41%	11%
Virginia	38%	1%	35%	3%

Washington	38%	4%	47%	2%
West Virginia	47%	4%	34%	2%
Wisconsin	42%	2%	29%	6%
Wyoming	41%	0%	41%	0%
NATIONAL	**40%**	**3%**	**33%**	**3%**

8b. Full Divestment Strategy

We consider the Full Divestment Strategy in the context of current state Medicaid expansions which would be federally supported under the ACA. Columns in the tables generally show individual components of savings (costs) that the strategies induce. They are shown in green if they result in saving from the SLGs perspective and in red if they result in a cost. For the current Medicaid expansion scenarios in states that have not expanded Medicaid, we make two assumptions: 1) no savings from federal support for Medicaid expansions; 2) SLGs in states without Medicaid expansions increase compensation to households below 138% of the FPL so that their household falls at 138% of the FPL and hence they qualify for maximal exchange subsidies and cost-sharing. For current workers, assumption #2 induces some increases in federal taxes that the SLGs must also offset because of increased incomes. The component costs and savings are shown in Appendix Tables 7-8.

In the Full Divestment Strategy, we sum the component savings and costs for current worker and retiree subgroups. Then, for each state, we subtract employer penalties (approximately $2,000 per worker times the number of workers in Appendix Table 1) to compute the net savings (or cost) (Appendix Table 9). We repeat this step examining a set of hypotheticals in which the employer penalty per worker is lowered or even $0. The relevance of these hypotheticals is that some smaller to mid-size SLGs may face a lower per-worker employer penalty than $2,000 given that the penalty is levied for workers above the first 30. Additionally, the $0 penalty may be relevant if SLGs were to successfully challenge the applicability of the penalty to them.

We also consider the Full Divestment Strategy under a hypothetical scenario in which all states implement Medicaid expansions. These results are shown in Appendix Tables 10-12. Note that in the full Medicaid expansion scenario, SLGs do not increase the household incomes of those below 138% of FPL up to 138% since those falling below 138% of FPL qualify for federal support under Medicaid which produces larger savings for the SLGs.

Appendix Table 7. Component Savings and Costs from Divestment for Current Employees Assuming Current Medicaid Expansions Only ($1,000,000s)

	Savings from Federal Government Subsidies and Cost-Sharing	Savings from Federal Support of Medicaid Expansions*	Additional Federal Taxes Compensated by State and Local Governments	Additional Compensation to bring Household below 138% of the Federal Poverty Level up to That Level*
Alabama	547	0	457	17
Alaska	67	0	121	1
Arizona	552	88	431	0
Arkansas	239	64	163	0
California	1,961	510	3,453	0
Colorado	251	78	448	0
Connecticut	178	24	405	0
Delaware	42	10	72	0
District of Columbia	18	2	35	0
Florida	1,160	0	1,246	43
Georgia	928	0	721	76
Hawaii	93	32	121	0
Idaho	162	0	131	3
Illinois	576	67	1,047	0
Indiana	458	0	394	14
Iowa	208	37	322	0
Kansas	275	0	286	27
Kentucky	376	101	303	0
Louisiana	455	0	317	21
Maine	77	0	124	2
Maryland	278	89	609	0
Massachusetts	258	56	731	0
Michigan	409	67	753	0
Minnesota	207	15	476	0
Mississippi	418	0	245	23
Missouri	410	0	433	4
Montana	85	0	85	3
Nebraska	141	0	186	3
Nevada	113	6	213	0
New Hampshire	48	0	131	4
New Jersey	374	38	1,058	0
New Mexico	172	87	156	0
New York	1,242	463	2,260	0
North Carolina	990	0	837	34
North Dakota	35	10	74	0
Ohio	768	95	852	0
Oklahoma	326	0	268	22
Oregon	267	56	334	0
Pennsylvania	429	0	995	14
Rhode Island	32	8	108	0
South Carolina	334	0	379	4
South Dakota	58	0	63	3
Tennessee	466	0	384	34
Texas	1,978	0	1,816	130
Utah	199	0	196	4

Vermont	29	3	63	0
Virginia	386	0	579	5
Washington	430	32	678	0
West Virginia	187	47	166	0
Wisconsin	390	0	502	12
Wyoming	60	0	80	1

* For states without Medicaid expansions, savings from federal support of Medicaid is $0 but additional savings are captured by increasing the household incomes of workers falling below 138% of the federal poverty lines up to 138% such that these households qualify for federal subsidies and cost-sharing for exchange-purchased plans.

Appendix Table 8. Component Savings and Costs from Divestment for Retirees under Age 65 Assuming Current Medicaid Expansions Only ($1,000,000s)

	Savings from Federal Government Subsidies and Cost-Sharing	Savings from Federal Support of Medicaid Expansions*	Additional Compensation to bring Household below 138% of the Federal Poverty Level up to That Level*
Alabama	38	0	5
Alaska	9	0	0
Arizona	36	37	0
Arkansas	21	18	0
California	142	33	0
Colorado	26	6	0
Connecticut	11	0	0
Delaware	3	4	0
District of Columbia	2	2	0
Florida	122	0	0
Georgia	61	0	1
Hawaii	15	19	0
Idaho	10	0	0
Illinois	18	0	0
Indiana	35	0	2
Iowa	7	5	0
Kansas	12	0	0
Kentucky	23	0	0
Louisiana	55	0	7
Maine	9	0	1
Maryland	26	7	0
Massachusetts	11	18	0
Michigan	43	0	0
Minnesota	12	7	0
Mississippi	24	0	3
Missouri	27	0	10
Montana	11	0	0
Nebraska	6	0	0
Nevada	10	0	0
New Hampshire	6	0	2
New Jersey	34	9	0
New Mexico	19	15	0
New York	102	92	0
North Carolina	67	0	0
North Dakota	1	0	0
Ohio	50	48	0
Oklahoma	22	0	4
Oregon	14	0	0
Pennsylvania	90	0	9
Rhode Island	4	3	0
South Carolina	76	0	0
South Dakota	4	0	0
Tennessee	27	0	11
Texas	120	0	3
Utah	7	0	0
Vermont	4	3	0
Virginia	61	0	6

Washington	16	9	0
West Virginia	12	10	0
Wisconsin	9	0	0
Wyoming	8	0	0

* For states without Medicaid expansions, savings from federal support of Medicaid is $0 but additional savings are captured by increasing the household incomes of workers falling below 138% of the federal poverty lines up to 138% such that these households qualify for federal subsidies and cost-sharing for exchange-purchased plans.

Appendix Table 9. Savings from Divestment for Current Employees and Retirees under Age 65 Assuming Current Medicaid Expansions Only and Depending on Employer Penalty Level ($1,000,000s)*

	Savings with Employer Penalty of $2,000*	Savings with Employer Penalty of $1,750	Savings with Employer Penalty of $1,500	Savings with Employer Penalty of $1,000	Savings with Employer Penalty of $0
Alabama	**-329**	-274	-220	-112	105
Alaska	**-153**	-140	-127	-100	-47
Arizona	**-162**	-106	-51	60	282
Arkansas	**-10**	13	37	85	180
California	**-3,600**	-3,250	-2,901	-2,203	-806
Colorado	**-484**	-435	-385	-285	-86
Connecticut	**-488**	-451	-414	-340	-192
Delaware	**-73**	-66	-58	-43	-13
District of Columbia	**-44**	-40	-36	-28	-12
Florida	**-1,279**	-1,120	-961	-643	-7
Georgia	**-559**	-465	-372	-184	191
Hawaii	**-68**	-55	-42	-15	38
Idaho	**-123**	-103	-83	-43	37
Illinois	**-1,238**	-1,132	-1,025	-812	-386
Indiana	**-311**	-262	-213	-114	83
Iowa	**-365**	-328	-290	-215	-65
Kansas	**-332**	-293	-255	-179	-26
Kentucky	**-146**	-103	-60	26	198
Louisiana	**-158**	-118	-78	3	164
Maine	**-147**	-134	-121	-94	-41
Maryland	**-680**	-621	-562	-444	-208
Massachusetts	**-919**	-853	-786	-653	-387
Michigan	**-832**	-758	-683	-533	-234
Minnesota	**-616**	-568	-521	-426	-236
Mississippi	**-144**	-104	-65	13	170
Missouri	**-437**	-383	-330	-224	-11
Montana	**-80**	-69	-58	-36	8
Nebraska	**-215**	-193	-172	-129	-43
Nevada	**-274**	-250	-226	-179	-84
New Hampshire	**-179**	-167	-155	-131	-83
New Jersey	**-1,286**	-1,200	-1,115	-945	-604
New Mexico	**-43**	-21	2	47	137
New York	**-2,203**	-1,973	-1,743	-1,282	-361
North Carolina	**-762**	-643	-525	-288	186
North Dakota	**-96**	-88	-79	-62	-28
Ohio	**-685**	-585	-486	-288	109
Oklahoma	**-268**	-228	-188	-107	54
Oregon	**-343**	-300	-257	-170	3
Pennsylvania	**-1,334**	-1,230	-1,125	-916	-498
Rhode Island	**-134**	-125	-116	-97	-60
South Carolina	**-363**	-314	-265	-168	27
South Dakota	**-70**	-62	-54	-37	-4
Tennessee	**-353**	-301	-249	-144	65
Texas	**-1,849**	-1,599	-1,350	-850	149
Utah	**-177**	-154	-131	-86	5

Vermont	**-78**	-71	-64	-51	-24
Virginia	**-675**	-608	-542	-409	-143
Washington	**-823**	-744	-665	-507	-191
West Virginia	**-96**	-73	-49	-3	90
Wisconsin	**-571**	-514	-457	-343	-115
Wyoming	**-93**	-83	-73	-53	-13
NATIONAL*	**0**	**13**	**39**	**234**	**2,281**
10 YEARS*	**0**	**130**	**390**	**2,340**	**22,810**

* The first column of estimates ($2,000 employer penalty per worker) is shown in bold as it is the assumption made in the main analyses as shown in the manuscript.

Appendix Table 10. Component Savings and Costs from Divestment for Current Employees Assuming Medicaid Expansions in All States ($1,000,000s)

	Savings from Federal Government Subsidies and Cost-Sharing	Savings from Federal Support of Medicaid Expansions	Additional Federal Taxes Compensated by State and Local Governments
Alabama	502	163	453
Alaska	64	19	121
Arizona	552	88	431
Arkansas	239	64	163
California	1,961	510	3,453
Colorado	251	78	448
Connecticut	178	24	405
Delaware	42	10	72
District of Columbia	18	2	35
Florida	1,092	250	1,241
Georgia	872	301	710
Hawaii	93	32	121
Idaho	162	26	130
Illinois	576	67	1,047
Indiana	441	75	392
Iowa	208	37	322
Kansas	275	115	282
Kentucky	376	101	303
Louisiana	443	139	315
Maine	75	8	124
Maryland	278	89	609
Massachusetts	258	56	731
Michigan	409	67	753
Minnesota	207	15	476
Mississippi	371	168	240
Missouri	410	37	433
Montana	82	15	84
Nebraska	140	16	186
Nevada	113	6	213
New Hampshire	48	7	130
New Jersey	374	38	1,058
New Mexico	172	87	156
New York	1,242	463	2,260
North Carolina	961	168	831
North Dakota	35	10	74
Ohio	768	95	852
Oklahoma	312	95	265
Oregon	267	56	334
Pennsylvania	423	58	995
Rhode Island	32	8	108
South Carolina	334	102	378
South Dakota	54	12	63
Tennessee	439	150	378
Texas	1,904	602	1,794
Utah	191	41	196
Vermont	29	3	63
Virginia	374	99	578

Washington	430	32	678
West Virginia	187	47	166
Wisconsin	359	132	499
Wyoming	55	11	80

Appendix Table 11. Component Savings and Costs from Divestment for Retirees under Age 65 Assuming Medicaid Expansions in All States ($1,000,000s)

	Savings from Federal Government Subsidies and Cost-Sharing	Savings from Federal Support of Medicaid Expansions
Alabama	38	9
Alaska	7	6
Arizona	36	37
Arkansas	21	18
California	142	33
Colorado	26	6
Connecticut	11	0
Delaware	3	4
District of Columbia	2	2
Florida	109	33
Georgia	61	6
Hawaii	15	19
Idaho	10	0
Illinois	18	0
Indiana	35	8
Iowa	7	5
Kansas	10	4
Kentucky	23	0
Louisiana	34	78
Maine	7	3
Maryland	26	7
Massachusetts	11	18
Michigan	43	0
Minnesota	12	7
Mississippi	24	7
Missouri	13	22
Montana	9	6
Nebraska	6	5
Nevada	10	0
New Hampshire	4	7
New Jersey	34	9
New Mexico	19	15
New York	102	92
North Carolina	61	21
North Dakota	1	0
Ohio	50	48
Oklahoma	7	30
Oregon	14	0
Pennsylvania	81	21
Rhode Island	4	3
South Carolina	73	14
South Dakota	4	0
Tennessee	27	11
Texas	115	23
Utah	7	0
Vermont	4	3
Virginia	37	41
Washington	16	9
West Virginia	12	10

Wisconsin	4	14
Wyoming	6	4

Appendix Table 12. Savings from Divestment for Current Employees and Retirees under Age 65 Assuming Medicaid Expansions in All States and Depending on Employer Penalty Level ($1,000,000s)*

	Savings with Employer Penalty of $2,000	Savings with Employer Penalty of $1,750	Savings with Employer Penalty of $1,500	Savings with Employer Penalty of $1,000	Savings with Employer Penalty of $0
Alabama	**-177**	-122	-68	40	257
Alaska	**-131**	-118	-105	-78	-25
Arizona	**-162**	-106	-51	60	282
Arkansas	**-10**	13	37	85	180
California	**-3,600**	-3,250	-2,901	-2,203	-806
Colorado	**-484**	-435	-385	-285	-86
Connecticut	**-488**	-451	-414	-340	-192
Delaware	**-73**	-66	-58	-43	-13
District of Columbia	**-44**	-40	-36	-28	-12
Florida	**-1,030**	-871	-712	-394	242
Georgia	**-220**	-126	-32	155	530
Hawaii	**-68**	-55	-42	-15	38
Idaho	**-92**	-72	-52	-12	68
Illinois	**-1,238**	-1,132	-1,025	-812	-386
Indiana	**-227**	-178	-129	-30	167
Iowa	**-365**	-328	-290	-215	-65
Kansas	**-184**	-146	-108	-31	122
Kentucky	**-146**	-103	-60	26	198
Louisiana	**56**	96	137	217	378
Maine	**-137**	-123	-110	-84	-31
Maryland	**-680**	-621	-562	-444	-208
Massachusetts	**-919**	-853	-786	-653	-387
Michigan	**-832**	-758	-683	-533	-234
Minnesota	**-616**	-568	-521	-426	-236
Mississippi	**16**	55	94	173	330
Missouri	**-376**	-323	-270	-163	50
Montana	**-60**	-49	-38	-16	28
Nebraska	**-192**	-170	-149	-106	-20
Nevada	**-274**	-250	-226	-179	-84
New Hampshire	**-160**	-148	-136	-112	-64
New Jersey	**-1,286**	-1,200	-1,115	-945	-604
New Mexico	**-43**	-21	2	47	137
New York	**-2,203**	-1,973	-1,743	-1,282	-361
North Carolina	**-568**	-450	-331	-94	380
North Dakota	**-96**	-88	-79	-62	-28
Ohio	**-685**	-585	-486	-288	109
Oklahoma	**-143**	-102	-62	18	179
Oregon	**-343**	-300	-257	-170	3
Pennsylvania	**-1,246**	-1,142	-1,037	-828	-410
Rhode Island	**-134**	-125	-116	-97	-60
South Carolina	**-245**	-197	-148	-50	145
South Dakota	**-59**	-51	-43	-26	7
Tennessee	**-169**	-116	-64	40	249
Texas	**-1,147**	-898	-648	-148	851
Utah	**-139**	-116	-93	-48	43
Vermont	**-78**	-71	-64	-51	-24

Virginia	**-559**	-493	-426	-293	-27
Washington	**-823**	-744	-665	-507	-191
West Virginia	**-96**	-73	-49	-3	90
Wisconsin	**-445**	-388	-331	-217	11
Wyoming	**-83**	-73	-63	-43	-3
NATIONAL*	**72**	**164**	**270**	**861**	**5,074**
10 YEARS*	**720**	**1,640**	**2,700**	**8,610**	**50,740**

* The first column of estimates ($2,000 employer penalty per worker) is shown in bold as it is the assumption made in the main analyses as shown in the manuscript.

8c. Selective Divestment Strategy

We consider the Selective Divestment Strategy in the context of current state Medicaid expansions which would be federally supported under the ACA. Columns in the tables generally show individual components of savings (costs) that the strategies induce. They are shown in green if they result in saving from the SLGs perspective and in red if they result in a cost. For the current Medicaid expansion scenarios in states that have not expanded Medicaid, we make two assumptions: 1) no savings from federal support for Medicaid expansions; 2) SLGs in states without Medicaid expansions increase compensation to households below 138% of the FPL so that their household falls at 138% of the FPL and hence they qualify for maximal exchange subsidies and cost-sharing. For current workers, assumption #2 induces some increases in federal taxes that the SLGs must also offset because of increased incomes. The component costs and savings for current workers are shown in Appendix Tables 13. Of note, since full divestment for retirees under age 65 is cost saving and no employer penalties are relevant to this subgroup, we use the data presented in Appendix Table 8 for the retiree portion of this strategy as well.

In the Selective Divestment Strategy, we sum the component savings and costs for current worker and retiree subgroups. Unlike the Full Divestment Strategy, penalties are assessed for workers who qualify for federal subsidies or cost-sharing, so these penalty estimates are reported in the tables directly. Of note, like the Full Divestment Strategy, a $0 penalty may be relevant if SLGs were to successfully challenge the applicability of the penalty to them – if so, the component costs and savings could be summed omitting the employer penalty column.

We also consider the Selective Divestment Strategy under a hypothetical scenario in which all states implement Medicaid expansions. These results are shown in Appendix Tables 14, with those relevant to retirees the same as Appendix Table 11. Note that in the full Medicaid expansion scenario, SLGs do not increase the household incomes of those below 138% of FPL up to 138% since those falling below 138% of FPL qualify for federal support under Medicaid which produces larger savings for the SLGs.

Appendix Table 13. Component Savings and Costs from Selective Divestment for Current Employees below 400% of the Federal Poverty Level Assuming Current Medicaid Expansions Only ($1,000,000s)

	Savings from Federal Government Subsidies and Cost-Sharing	Savings from Federal Support of Medicaid Expansions*	Additional Federal Taxes Compensated by State and Local Governments	Employer Penalties Paid to the Federal Government	Additional Compensation to bring Household below 138% of the Federal Poverty Level up to That Level*
Alabama	537	0	57	222	17
Alaska	66	0	15	36	1
Arizona	547	81	65	224	0
Arkansas	231	63	14	81	0
California	1,929	492	274	858	0
Colorado	245	89	32	113	0
Connecticut	176	26	25	79	0
Delaware	41	8	6	20	0
District of Columbia	18	1	2	9	0
Florida	1,133	0	110	502	43
Georgia	916	0	113	402	76
Hawaii	87	30	17	43	0
Idaho	159	0	15	69	3
Illinois	549	66	75	253	0
Indiana	457	0	49	188	14
Iowa	205	37	29	96	0
Kansas	269	0	39	129	27
Kentucky	366	98	33	156	0
Louisiana	444	0	42	181	21
Maine	77	0	11	37	2
Maryland	269	91	35	121	0
Massachusetts	256	56	35	116	0
Michigan	401	71	55	180	0
Minnesota	205	13	33	101	0
Mississippi	405	0	43	165	23
Missouri	398	0	51	174	4
Montana	84	0	7	34	3
Nebraska	138	0	21	66	3
Nevada	105	5	21	55	0
New Hampshire	48	0	7	25	4
New Jersey	371	32	50	164	0
New Mexico	174	83	17	80	0
New York	1,227	464	177	579	0
North Carolina	982	0	98	415	34
North Dakota	33	9	6	18	0
Ohio	744	94	92	319	0
Oklahoma	319	0	35	134	22
Oregon	251	56	30	116	0
Pennsylvania	416	0	63	211	14
Rhode Island	31	9	5	13	0

South Carolina	332	0	41	163	4
South Dakota	57	0	10	29	3
Tennessee	450	0	48	203	34
Texas	1,945	0	229	831	130
Utah	199	0	23	78	4
Vermont	29	3	4	13	0
Virginia	377	0	59	189	5
Washington	419	31	63	192	0
West Virginia	182	44	19	84	0
Wisconsin	385	0	52	168	12
Wyoming	58	0	7	26	1

* For states without Medicaid expansions, savings from federal support of Medicaid is $0 but additional savings are captured by increasing the household incomes of workers falling below 138% of the federal poverty lines up to 138% such that these households qualify for federal subsidies and cost-sharing for exchange-purchased plans.

Appendix Table 14. Component Savings and Costs from Selective Divestment for Current Employees below 400% of the Federal Poverty Level Assuming Medicaid Expansions in All States ($1,000,000s)

	Savings from Federal Government Subsidies and Cost-Sharing	Savings from Federal Support of Medicaid Expansions	Additional Federal Taxes Compensated by State and Local Governments	Employer Penalties Paid to the Federal Government
Alabama	485	164	55	211
Alaska	63	19	15	35
Arizona	547	81	65	224
Arkansas	231	63	14	81
California	1,929	492	274	858
Colorado	245	89	32	113
Connecticut	176	26	25	79
Delaware	41	8	6	20
District of Columbia	18	1	2	9
Florida	1,056	258	108	480
Georgia	887	287	110	389
Hawaii	87	30	17	43
Idaho	160	26	15	69
Illinois	549	66	75	253
Indiana	442	72	49	186
Iowa	205	37	29	96
Kansas	262	115	38	126
Kentucky	366	98	33	156
Louisiana	412	132	41	174
Maine	74	8	11	36
Maryland	269	91	35	121
Massachusetts	256	56	35	116
Michigan	401	71	55	180
Minnesota	205	13	33	101
Mississippi	340	166	39	149
Missouri	396	37	51	174
Montana	82	17	7	33
Nebraska	137	16	20	66
Nevada	105	5	21	55
New Hampshire	48	8	7	25
New Jersey	371	32	50	164
New Mexico	174	83	17	80
New York	1,227	464	177	579
North Carolina	965	172	99	414
North Dakota	33	9	6	18
Ohio	744	94	92	319
Oklahoma	304	105	35	129
Oregon	251	56	30	116
Pennsylvania	411	58	62	208
Rhode Island	31	9	5	13
South Carolina	321	104	40	156
South Dakota	50	10	10	28
Tennessee	422	147	49	197
Texas	1,860	600	226	817

Utah	191	42	23	77
Vermont	29	3	4	13
Virginia	368	91	58	186
Washington	419	31	63	192
West Virginia	182	44	19	84
Wisconsin	352	137	52	164
Wyoming	54	12	7	25