

# **Labor Cost Inputs Used in the Employee Benefits Security Administration, Office of Policy and Research’s Regulatory Impact Analyses and Paperwork Reduction Act Burden Calculations**

**July 2017**

## **Labor Cost Estimation**

This document describes the data and methodology used for estimating labor costs for use in the Employee Benefits Security Administration (EBSA), Office of Policy and Research (OPR)’s regulatory impact analyses and Paperwork Reduction Act burden calculations. A brief general description of the data and the process will be presented, followed by a more detailed description of the data sources and the basic calculations of labor costs for specific occupations associated within the table, “EBSA OPR Labor Cost Inputs,” located at the end of this document.

## **Total Hourly Compensation**

Total compensation includes not only wages, but also nonwage benefits. Nonwage benefits include: paid leave (vacations, holidays, sick leave); supplementary pay (premium pay for overtime and work on holidays and weekends, shift differentials, and nonproduction bonuses); retirement (defined benefit and defined contribution plans); insurance (life insurance, health benefits, short-term disability, and long-term disability insurance); and legally required benefits (Social Security and Medicare, Federal and State unemployment insurance taxes, and workers’ compensation). Mean hourly wages by occupation for 2016 are obtained from the Bureau of Labor Statistics (BLS) National Occupational Employment and Wage Estimates, which is a product of the Occupational Employment Statistics (OES) survey from May 2016 found at <https://www.bls.gov/news.release/pdf/ocwage.pdf>. The BLS National Compensation Survey’s (NCS) Employee Cost for Employee Compensation (ECEC) program produces estimates of wages and salaries as a percentage of total compensation within major occupation groups in Table 2 of the January 2017 release found at [https://www.bls.gov/news.release/archives/ecec\\_03172017.pdf](https://www.bls.gov/news.release/archives/ecec_03172017.pdf). Total hourly compensation is then calculated by dividing the mean hourly wage rate from OES (Column 1 in the table below) by the wages and salaries to the total compensation percentage from the ECEC (Column 2 in the table below).

## **Overhead Costs**

Overhead costs are costs incurred that are not related to direct labor or direct materials and that must be paid on an ongoing basis regardless of the output of a firm. These costs are included in how much a firm will charge for its products or services and should also be incorporated into labor cost estimates.

The U.S. Census Bureau provides detailed total cost estimates for several categories of costs annually in their 2015 Annual Survey of Manufacturers (ASM), from December 2016, and their 2015 Service Annual Survey (SAS), from November 2016. The ASM provides data for each 6-digit NAICS (North American Industry Classification System) within the manufacturing sector and can be found at <http://www.census.gov/programs-surveys/asm/data/tables.html>. The SAS does not provide as much detail as the ASM, but it provides detailed cost data for at least every 2-digit NAICS with the exception of NAICS 55, management of companies and enterprises, and also provides some less aggregated levels of NAICS industries, all of which can be found at <http://www.census.gov/services/index.html>. The SAS also does not provide data on any government industries.

Given the detailed cost breakdown from the ASM and the SAS, total overhead cost for each 2-digit NAICS industry can be estimated.<sup>1,2</sup>

Example 1 below shows the how the industry-level overhead cost is calculated for NAICS 61, the Educational Services industry. The cost items within the shaded section are considered overhead, while the cost items outside the shaded section are considered direct costs.

**Example 1**

NAICS	NAICS Description	Item	Tax Status	Employer Status	2015 Expense (\$ in millions)
61	Educational Services	Total Operating Expenses	All Establishments	Employer Firms	52,692
61	Educational Services	Gross annual payroll	All Establishments	Employer Firms	20,347
61	Educational Services	Employer’s Cost for fringe benefits	All Establishments	Employer Firms	4,042
61	Educational Services	Health insurance	All Establishments	Employer Firms	1,460
61	Educational Services	Defined benefit pension plans	All Establishments	Employer Firms	129
61	Educational Services	Defined contribution plans	All Establishments	Employer Firms	393
61	Educational Services	Payroll taxes, employer paid insurance premiums (except health), and other employer benefits	All Establishments	Employer Firms	2,060
61	Educational Services	Temporary staff and leased employee expense	All Establishments	Employer Firms	1,432
61	Educational Services	Expensed equipment	All Establishments	Employer Firms	282
61	Educational Services	Expensed purchases of other materials, parts, and supplies	All Establishments	Employer Firms	1,838
61	Educational Services	Expensed purchases of software	All Establishments	Employer Firms	268
61	Educational Services	Purchased electricity and fuels (except motor fuels)	All Establishments	Employer Firms	427
61	Educational Services	Purchased electricity	All Establishments	Employer Firms	336
61	Educational Services	Purchased fuels (except motor fuels)	All Establishments	Employer Firms	91
61	Educational Services	Lease and rental payments	All Establishments	Employer Firms	3,994
61	Educational Services	Lease and rental payments for machinery, equipment, and other tangible items	All Establishments	Employer Firms	438
61	Educational Services	Lease and rental payments for land,	All Establishments	Employer Firms	3,556

<sup>1</sup> For NAICS 52 the 3-digit NAICS Codes 521, 522, 523, and 524 are used instead of the 2-digit NAICS codes due to the inclusion of commissions, benefits paid, and losses in the “all other operating expenses” category of the survey data. Because these costs are included in the “all other operating expenses” category, and the Department does not consider these costs to be overhead costs, the Department has adjusted this category to reflect the average “all other operating expenses” percentage of total costs for all other industries.

<sup>2</sup> For Family Practitioners and Registered Nurses the 4-digit NAICS codes within NAICS 62 are used since the majority of the occupation’s employment is in this industry and the detailed industries gave a better representation of the overhead costs.

	Services	buildings, structures, store spaces, and offices	Establishments	Firms		
61	Educational Services	Purchased repairs and maintenance	All Establishments	Employer Firms	646	
61	Educational Services	Purchased repairs and maintenance to machinery and equipment	All Establishments	Employer Firms	322	
61	Educational Services	Purchased repairs and maintenance to buildings, structures, and offices	All Establishments	Employer Firms	Unpublished	
61	Educational Services	Purchased advertising and promotional services	All Establishments	Employer Firms	1,818	
61	Educational Services	Depreciation and amortization charges	All Establishments	Employer Firms	1,643	
61	Educational Services	Governmental taxes and license fees	All Establishments	Employer Firms	365	
61	Educational Services	Other operating expenses	All Establishments	Employer Firms	15,590	
61	Educational Services	Data processing and other purchased computer services	All Establishments	Employer Firms	491	
61	Educational Services	Purchased communication services	All Establishments	Employer Firms	449	
61	Educational Services	Water, sewer, refuse removal, and other utility payments	All Establishments	Employer Firms	110	
61	Educational Services	Purchased professional and technical services	All Establishments	Employer Firms	2,700	
61	Educational Services	All other operating expenses	All Establishments	Employer Firms	11,840	
					Direct Costs:	25,821
					Overhead Costs:	26,871

While this approach provides an estimate for total overhead cost by industry, in order to calculate an estimate for total overhead cost by occupation, the industry overhead cost needs to be converted to an occupation overhead cost. The BLS Office of Employment Projections (EP) produces a matrix that provides the employment and the employment percentage of each NAICS industry that comprises an occupation based on data from the OES program staffing patterns. The 2014 full matrix can be found at [http://www.bls.gov/emp/ep\\_data\\_occupational\\_data.htm](http://www.bls.gov/emp/ep_data_occupational_data.htm). For an occupation, the overhead cost corresponding to the 2-digit NAICS code is multiplied by the percent of that occupation within the NAICS industry code. The allocated shares of overhead cost for each NAICS code within an occupation is then summed to estimate the yearly total overhead cost for all employees within an occupation.

Example 2 below shows the how the industry-level overhead costs are converted to occupation-level overhead costs for the Actuary occupation.<sup>3</sup>

<sup>3</sup> For some industries, the employment is low enough to round to zero on a percentage basis for the purposes of these calculations.

## Example 2

Occupation	Industry	Employment (Thousands)	Percent of Industry Employment	Overhead for Industry (\$ in millions)	Overhead for Occupation (\$ in millions)
Actuaries	Securities, commodity contracts, and other financial investments and related activities	0.3	0.0	166,179	0
Actuaries	Insurance carriers and related activities	17.2	0.7	326,905	2,288
Actuaries	Professional, scientific, and technical services	3.6	0.0	510,694	0
Actuaries	Management of companies and enterprises	2.1	0.1	362,589	363
Actuaries	Administrative and support and waste management and remediation services	0.1	0.0	208,620	0
Actuaries	Healthcare and social assistance	0.1	0.0	690,768	0
Total Employment:		23.1	Total Overhead Cost for all Employees:		2,651

The annual total overhead cost for all employees within an occupation is divided by the number of employees in the occupation to get the yearly total overhead cost per employee. Total overhead cost, which is listed in millions, is converted to thousands so that it is in line with employment, which is listed in thousands.

For example, in the Actuaries occupation, as discussed in Example 2 previously, the calculations are:  
 Annual overhead cost per employee =  $\$2,651 * 1000 \div 23.1 = \$113,287$

To calculate an hourly overhead cost per employee, the annual overhead cost per employee is divided by 2,080, the approximate number of work hours in one year, to estimate the hourly overhead cost for each employee within an occupation.<sup>4</sup>

For example, in the Actuaries occupation, as discussed in Example 2 previously, the calculations are:  
 Hourly overhead cost per employee =  $\$113,287 \div 2,080 \text{ hours} = \$54.47 \text{ per hour}$

## Labor Costs

Total hourly labor cost, as estimated through this method, is equal to the sum of the hourly total compensation and the hourly overhead cost for an occupation in 2016. In most circumstances, these 2016 values will serve as EBSA OPR's labor cost inputs for regulatory impact analyses until newer data

<sup>4</sup> 2,080 hours assumes that an employee works 40 hours per week for 52 weeks per year. As this may overstate average employee hours, actual overhead costs may be greater than our estimate.

are available.<sup>5</sup> For consistency between regulatory impact analyses and Paperwork Reduction Act (PRA) burden calculations, EBSA OPR will also use these 2016 values as labor cost inputs for PRA burden calculations until newer data are available.

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<sup>5</sup> Question 24 of the “Guidance Implementing Executive Order 13771, Titled “Reducing Regulation and Controlling Regulatory Costs”” memo from Dominic J. Mancini, Acting Administrator, Office of Information and Regulatory Affairs on April 5, 2017 states that agencies should adjust all estimates to 2016 dollars when conducting regulatory impact analyses.

## EBSA OPR Labor Cost Inputs

Occupation	Standard Occupational Classification Code	Mean Hourly Wage (\$)	W&S as % of Total Compensation	Total Compensation (\$ (1/2))	Overhead (\$)	2016 Total Labor Cost (\$)
						(3) + (4)
		(1)	(2)	(3)	(4)	(5)
<b>Management, business, and financial</b>						
Financial Managers	11-3031	67.17	66.7	100.70	57.20	157.90
<b>Professional and related</b>						
<i>Professional</i>						
Family and General Practitioners	29-1062	96.54	68.5	140.93	21.70	162.63
Computer Programmers	15-1131	40.95	68.5	59.78	42.96	102.74
Computer Systems Analysts	15-1121	44.05	68.5	64.31	49.37	113.68
Lawyers	23-1011	67.5	68.5	98.54	34.75	133.29
Compensation and Benefits Manager	11-3111	61.01	68.5	89.07	32.84	121.91
Compensation, benefits, and job analysis specialists	13-1141	31.97	68.5	46.67	38.75	85.42
Accountants and Auditors	13-2011	36.89	68.5	53.85	40.01	93.86
Actuaries	15-2011	54.87	68.5	80.10	54.47	134.57
Personal Financial Advisors	13-2052	59.18	68.5	86.39	87.73	174.12

<i>Paraprofessional</i>						
Paralegals and Legal Assistants	23-2011	25.57	68.5	37.33	32.41	69.74
<b>Registered nurses</b>						
Licensed Practical and Licensed Vocational Nurses	29-2061	21.56	67.1	32.13	15.31	47.44
<b>Office and administrative support</b>						
Secretaries, Except Legal, Medical, and Executive	43-6014	17.38	67.6	25.71	26.38	52.09
Receptionists and Information Clerks	43-4171	14.00	67.6	20.71	23.02	43.73
Mail Clerks and Mail Machine Operators, Except Postal Service	43-9051	14.7	67.6	21.75	35.60	57.35
Medical Secretaries	43-6013	16.85	67.6	24.93	17.62	42.55