

CES–National Benchmark Article

BLS Establishment Survey National Estimates Revised to Incorporate March 2013 Benchmarks

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Authored by Wade Petty and Patrick Hu.

Wade Petty and Patrick Hu are economists in the Division of Current Employment Statistics – National, Office of Employment and Unemployment Statistics, Bureau of Labor Statistics. Telephone: (202) 691-6555; e-mail: CESInfo@bls.gov

Introduction

With the release of January 2014 data on February 7, 2014, the Bureau of Labor Statistics (BLS) introduced its annual revision of National estimates of employment, hours, and earnings from the Current Employment Statistics (CES) monthly survey of nonfarm establishments. Each year, the CES survey realigns its sample-based estimates to incorporate universe counts of employment—a process known as benchmarking. Comprehensive counts of employment, or benchmarks, are derived primarily from unemployment insurance (UI) tax reports that nearly all employers are required to file with State Workforce Agencies.

The benchmark this year, and its analysis, was substantially impacted by the inclusion of employment that was previously in Private households and considered out-of-scope. The relevant CES time series have been reconstructed to accurately account for this additional employment.

IMPORTANT Special notice regarding reconstructed data

Historical reconstructions for Services for the elderly and disabled and Funds, trusts, and other financial vehicles

The Quarterly Census of Employment and Wages (QCEW) program determined that UI records from a number of state programs that provide funding for Services for the elderly and disabled, North American Industry Classification System (NAICS) 624120, were incorrectly coded as being in Private households, NAICS 814. With the first quarter of 2013, QCEW began coding this employment under NAICS 624120. This change moved the employment from a previously out-of-scope industry to in-scope for the CES program, prompting a historical reconstruction to account for the employment in these state administered programs.

Six states were identified as having employment associated with their programs moved from out-of-scope to in-scope for CES purposes. Those states are California, Massachusetts, Missouri, Nebraska, Texas, and Washington. Working with QCEW microdata and information from the individual states, a historical time series of employment associated with the six programs was developed and added to the original published data to create a consistent time series. As there was no additional information that was available with regard to production employees, women employees, or any hours and earnings, the existing sample-based ratios were maintained at the detailed industry levels and applied to the new All Employees level to reconstruct the higher level series.

Another QCEW recoding effort with first quarter 2013 moved a majority of employment out of Funds, trusts, and other financial vehicles (NAICS 525). Similar to reconstructions completed with each new version of NAICS every five years, ratios relating to the industries that the employment moved to were applied to historical data to develop the reconstructed employment, hours, and earnings series. For CES purposes, the employment that remained in Funds, trusts, and other financial vehicles (CES Industry Code 55-525000) was a small enough amount that it was necessary to collapse the industry with another, specifically, All other financial investment

activities (CES Industry Code 55-523990¹). [Exhibit 1](#) below displays all detailed series affected by reconstructions.

Exhibit 1. Summary of CES detailed series impacted by reconstructions

NAICS Code	CES Industry Code	CES Industry Title	Description
52312	55-523120 ⁽¹⁾	Securities brokerage	Received employment from NAICS 525 reconstruction.
5232	55-523200 ⁽¹⁾	Securities and commodity contracts brokerage and exchanges	Received employment from NAICS 525 reconstruction.
52392	55-523920 ⁽¹⁾	Portfolio management	Received employment from NAICS 525 reconstruction.
52393	55-523930 ⁽¹⁾	Investment advice	Received employment from NAICS 525 reconstruction.
52399	55-523990 ⁽¹⁾	All other financial investment activities, including funds and trusts	Received employment from NAICS 525 reconstruction.
524114	55-524114 ⁽¹⁾	Direct health and medical insurance carriers	Received employment from NAICS 525 reconstruction.
524126	55-524126 ⁽¹⁾	Direct property and casualty insurers	Received employment from NAICS 525 reconstruction.
52421	55-524210 ⁽¹⁾	Insurance agencies and brokerages	Received employment from NAICS 525 reconstruction.
524292	55-524292 ⁽¹⁾	Third-party administration of insurance funds	Received employment from NAICS 525 reconstruction.
525	55-525000	Funds, trusts, and other financial vehicles	As noted in the rows above, NAICS 525 employment was distributed into 52312, 5232, 52392, 52393, 52399, 524114, 524126, 52421, and 524292. CES series 55-525000 was then collapsed into 55-523990.
5251	55-525100	Insurance and employee benefit funds	CES series 55-525100 was collapsed into 55-523990.
5259	55-525900	Other investment pools and funds	CES series 55-525900 was collapsed into 55-523990.
62412	65-624120 ⁽¹⁾	Services for the elderly and disabled	Employment related to state run programs for Services for the elderly and disabled reclassified from NAICS 814 into 62412.

⁽¹⁾ Published at second preliminary.

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¹ As a result of the collapse, the title for CES Industry Code 55-523990 was revised to All other financial investment activities, including funds and trusts.

Summary of the benchmark revisions

Impact of employment moving from Private households into CES scope

In most years, a discussion of revisions to the not seasonally adjusted employment level for the March benchmark also describes the revisions to the over-the-year change from the previous March benchmark level. This year, with the implementation of the March 2013 benchmark, historical data have been reconstructed back to April 1979 to include the employment that was previously out-of-scope. As a result of this reconstruction, the March 2012 not seasonally adjusted employment level has also been revised and the revisions associated with this benchmark can be looked at in several ways.

To eliminate the nonstandard impact on the benchmark from the additional employment coming from Private households, the reconstructed employment associated with the state programs was added to the originally estimated CES employment prior to calculating the benchmark error and performing the wedge (for more information on the CES wedging process, refer to the [Methods](#) section of this article). This approach better reflects the performance of the estimates for the benchmark time period. With the exception of [Exhibit 2](#), the tables in this article reflect that process.

Considering only the change to the employment level due to error, the reconstructed Total nonfarm employment estimate for March 2013 was revised downward by 119,000, or 0.1 percent, to 134,917,000. Since the March 2012 employment level now reflects changes due to the reconstruction, another measure of the impact of the benchmark is to consider the over-the-year change revision from March 2012 to March 2013. Prior to the implementation of the benchmark, the level change for Total nonfarm over that time period was 2,065,000. After the benchmark, the change is 2,036,000 which is 29,000 less than previously published.

Analysis of benchmark revisions

[Table 1](#) below shows the recent history of Total nonfarm percentage benchmark errors. Over the prior ten years, the annual benchmark error at the Total nonfarm level has averaged 0.3 percent (in absolute terms), with an absolute range of 0.1 percent to 0.7 percent.

Table 1. Percent differences between nonfarm employment benchmarks and estimates by industry supersector, March 2003-2013⁽¹⁾

CES Industry Code	CES Industry Title	2003	2004	2005	2006	2007	2008	2009	2010	2011 ⁽²⁾	2012	2013 ⁽³⁾
00-000000	Total nonfarm	-0.1	0.2	-0.1	0.6	-0.2	-0.1	-0.7	-0.3	0.1	0.3	-0.1
	(Level difference in thousands)	(-122)	(203)	(-158)	(752)	(-293)	(-89)	(-902)	(-378)	(67)	(424)	(-119)
05-000000	Total private	-.2	.2	-.2	.7	-.2	-.1	-.9	-.4	(4)	.4	-.1
10-000000	Mining and logging	.9	.7	-.3	1.2	(4)	.4	-3.5	-3.0	-.4	1.6	-1.2
20-000000	Construction	-.8	.6	.5	2.6	.1	.7	-2.9	-1.3	-.5	1.8	.3
30-000000	Manufacturing	-1.1	-.4	-.3	-.1	-1.0	-.1	-.7	-1.0	.1	-.2	.2
40-000000	Trade, transportation, and utilities	(4)	.2	.3	.6	.5	.2	-1.2	-.6	.4	.6	-.5
50-000000	Information	-2.6	-1.0	-2.1	-.5	-1.8	.3	-1.5	-.4	-.4	1.8	-.2
55-000000	Financial activities	.2	.1	-.8	.4	-1.3	-.3	-.1	.4	-.3	.6	-.1
60-000000	Professional and business services	-.7	-.2	-.4	1.3	.2	-.4	-.8	(4)	.7	(4)	(4)
65-000000	Education and health services	.3	.2	(4)	.5	-.2	-.1	-.3	(4)	-.6	(4)	-.3
70-000000	Leisure and hospitality	.5	1.2	.4	.3	-.8	-1.1	-.6	-.6	.7	.8	.5
80-000000	Other services	1.4	.5	-1.3	.5	.3	.2	-.8	.2	-2.0	1.1	-.4
90-000000	Government	.3	.1	(4)	(4)	-.2	.2	.1	.1	.1	-.3	(4)

⁽¹⁾ The differences listed in this table reflect the error due to normal benchmarking procedures. Typically this error is equal to the March benchmarked level minus the published March estimated level. However in some years, other factors beyond normal benchmarking procedures influence the difference between the benchmarked and published March estimate levels. Those years are footnoted.

⁽²⁾ A review of industries for the possible presence of noncovered employment in benchmark 2011 yielded 13 additional industries. As a result of including these industries, employment in the amount of 95,000 was added to the Total nonfarm benchmark level. The difference between the benchmarked and published March 2011 estimate level was 162,000. For this table, the 95,000 amount was added to the original published Total nonfarm and Total private March 2011 estimates before calculating the percent and level differences. Portions of the 95,000 amount were also added as appropriate to the original published March 2011 estimates of supersectors Financial activities and Education and health services before calculating the percent differences.

⁽³⁾ The percent and level differences in this column reflect reconstructions to series within CES supersectors Financial activities and Education and healthcare services. Each first quarter, the Quarterly Census of Employment and Wages (QCEW) program, whose data account for approximately 97 percent of the CES universe scope (see www.bls.gov/web/empsit/cestn.htm#section1), incorporates updated industry assignments. In 2013, these updates included two substantial groups of nonrandom, noneconomic code changes, one to Funds, trusts, and other financial vehicles (NAICS 525), and the other, a reclassification of approximately 466,000 in employment from Private households (NAICS 814), which is out of scope for CES, to Services for the elderly and persons with disabilities (NAICS 62412), which is in scope. These changes also had an impact, beyond what would be considered typical for a given benchmark year, on corresponding CES series. For more information about the changes to these industries, see the QCEW First Quarter 2013 News Release available at www.bls.gov/news.release/archives/cewqtr_09262013.htm or the reconstruction section of the CES Benchmark Article at [Special notice regarding reconstructed data](#).

⁽⁴⁾ Less than 0.05 percent.

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[Table 2](#) shows the nonfarm employment benchmarks for March 2013, not seasonally adjusted, by industry. Please note that the value presented in the column titled Estimate in Table 2 represents the original published estimate plus applicable reconstructions. The revision to the reconstructed Total nonfarm employment is -119,000.

Five supersectors had upward revisions. The largest upward revision occurred in Leisure and hospitality by an amount of 72,000, or 0.5 percent. Within this supersector, the revision was concentrated in Accommodation and food services, which was revised upward by 62,100, or 0.5 percent. Manufacturing was revised upward by 23,000, or 0.2 percent, with the vast majority of the increase attributed to Durable goods, which experienced an upward revision of 21,000, or 0.3 percent. Construction and Government were also revised upward by 14,000, or 0.3 percent, and 7,000 (less than 0.05 percent), respectively. The smallest upward revision of 4,000 (less than 0.05 percent) occurred in Professional and business services.

The remaining six supersectors saw negative revisions. The largest downward revision occurred in Trade, transportation, and utilities, which decreased by -131,000, or -0.5 percent. Within this supersector, the largest share of the revision was due to Retail trade with a revision of -110,300, or -0.8 percent. Retail trade was largely affected by a downward revision of -147,600, or -11.3 percent, in Department stores. The next largest negative revision occurred in the reconstructed Education and health services estimate, which experienced a drop of -61,000, or -0.3 percent, with most of the decrease occurring in Health care and social assistance (-41,500, or -0.2 percent). Other services was also revised downward by -22,000, or -0.4 percent, and Mining and logging and Financial activities exhibited identical level decreases of -10,000 (-1.2 percent and -0.1 percent, respectively). The smallest negative revision of -5,000, or -0.2 percent, occurred in Information.

Table 2. Nonfarm employment benchmarks by industry, March 2013 (in thousands)

CES Industry Code	CES Industry Title	Benchmark	Estimate ⁽¹⁾	Differences	
				Amount	Percent
00-000000	Total nonfarm	134,917	135,036	-119	-0.1
05-000000	Total private	112,644	112,770	-126	-.1
06-000000	Goods-producing	18,283	18,256	27	.1
07-000000	Service-providing	116,634	116,780	-146	-.1
08-000000	Private service-providing	94,361	94,514	-153	-.2
10-000000	Mining and logging	847	857	-10	-1.2
10-113300	Logging	49.0	47.7	1.3	2.7
10-210000	Mining	798.4	808.8	-10.4	-1.3
10-211000	Oil and gas extraction	193.0	191.0	2.0	1.0
10-212000	Mining, except oil and gas	207.6	220.1	-12.5	-6.0
10-212100	Coal mining	79.7	85.8	-6.1	-7.7

CES Industry Code	CES Industry Title	Benchmark	Estimate ⁽¹⁾	Differences	
				Amount	Percent
10-213000	Support activities for mining	397.8	397.7	.1	(2)
20-000000	Construction	5,501	5,487	14	.3
20-236000	Construction of buildings	1,226.1	1,212.2	13.9	1.1
20-236100	Residential building	574.7	551.7	23.0	4.0
20-236200	Nonresidential building	651.4	660.5	-9.1	-1.4
20-237000	Heavy and civil engineering construction	801.7	809.8	-8.1	-1.0
20-238000	Specialty trade contractors	3,473.1	3,464.7	8.4	.2
30-000000	Manufacturing	11,935	11,912	23	.2
31-000000	Durable goods	7,507	7,486	21	.3
31-321000	Wood products	344.2	340.4	3.8	1.1
31-327000	Nonmetallic mineral products	363.1	358.5	4.6	1.3
31-331000	Primary metals	397.7	397.4	.3	.1
31-332000	Fabricated metal products	1,419.8	1,425.1	-5.3	-4
31-333000	Machinery	1,105.0	1,104.3	.7	.1
31-334000	Computer and electronic products	1,067.1	1,082.3	-15.2	-1.4
31-334100	Computer and peripheral equipment	155.5	159.4	-3.9	-2.5
31-334200	Communications equipment	103.8	107.8	-4.0	-3.9
31-334400	Semiconductors and electronic components	375.2	379.4	-4.2	-1.1
31-334500	Electronic instruments	394.1	396.5	-2.4	-6
31-335000	Electrical equipment and appliances	373.1	363.6	9.5	2.5
31-336000	Transportation equipment	1,506.0	1,489.8	16.2	1.1
31-337000	Furniture and related products	354.9	350.7	4.2	1.2
31-339000	Miscellaneous durable goods manufacturing	575.8	573.9	1.9	.3
32-000000	Nondurable goods	4,428	4,426	2	(2)
32-311000	Food manufacturing	1,445.1	1,445.0	.1	(2)
32-313000	Textile mills	116.8	114.4	2.4	2.1
32-314000	Textile product mills	114.2	115.2	-1.0	-9
32-315000	Apparel	145.3	145.7	-.4	-.3

CES Industry Code	CES Industry Title	Benchmark	Estimate ⁽¹⁾	Differences	
				Amount	Percent
32-322000	Paper and paper products	377.7	375.3	2.4	.6
32-323000	Printing and related support activities	453.3	454.5	-1.2	-.3
32-324000	Petroleum and coal products	109.1	112.8	-3.7	-3.4
32-325000	Chemicals	792.1	793.3	-1.2	-.2
32-326000	Plastics and rubber products	654.1	654.2	-.1	(2)
32-329000	Miscellaneous nondurable goods manufacturing	220.1	215.3	4.8	2.2
40-000000	Trade, transportation, and utilities	25,366	25,497	-131	-.5
41-420000	Wholesale trade	5,684.5	5,704.7	-20.2	-.4
41-423000	Durable goods	2,849.3	2,843.2	6.1	.2
41-424000	Nondurable goods	1,958.7	1,980.1	-21.4	-1.1
41-425000	Electronic markets and agents and brokers	876.5	881.4	-4.9	-.6
42-000000	Retail trade	14,705.4	14,815.7	-110.3	-.8
42-441000	Motor vehicle and parts dealers	1,763.6	1,748.4	15.2	.9
42-441100	Automobile dealers	1,119.5	1,106.4	13.1	1.2
42-442000	Furniture and home furnishings stores	436.4	443.8	-7.4	-1.7
42-443000	Electronics and appliance stores	485.3	498.8	-13.5	-2.8
42-444000	Building material and garden supply stores	1,181.2	1,167.5	13.7	1.2
42-445000	Food and beverage stores	2,870.8	2,864.0	6.8	.2
42-446000	Health and personal care stores	1,003.9	1,019.5	-15.6	-1.6
42-447000	Gasoline stations	845.3	837.7	7.6	.9
42-448000	Clothing and clothing accessories stores	1,338.4	1,391.3	-52.9	-4.0
42-451000	Sporting goods, hobby, book, and music stores	570.8	561.7	9.1	1.6
42-452000	General merchandise stores	2,987.7	3,061.3	-73.6	-2.5
42-452100	Department stores	1,303.4	1,451.0	-147.6	-11.3
42-453000	Miscellaneous store retailers	773.6	785.2	-11.6	-1.5

CES Industry Code	CES Industry Title	Benchmark	Estimate ⁽¹⁾	Differences	
				Amount	Percent
42-454000	Nonstore retailers	448.4	436.5	11.9	2.7
43-000000	Transportation and warehousing	4,426.3	4,422.7	3.6	.1
43-481000	Air transportation	447.1	444.4	2.7	.6
43-482000	Rail transportation	231.8	230.5	1.3	.6
43-483000	Water transportation	64.2	61.5	2.7	4.2
43-484000	Truck transportation	1,342.9	1,348.2	-5.3	-.4
43-485000	Transit and ground passenger transportation	460.3	483.8	-23.5	-5.1
43-486000	Pipeline transportation	43.4	44.5	-1.1	-2.5
43-487000	Scenic and sightseeing transportation	23.6	21.4	2.2	9.3
43-488000	Support activities for transportation	589.1	584.2	4.9	.8
43-492000	Couriers and messengers	526.2	522.0	4.2	.8
43-493000	Warehousing and storage	697.7	682.2	15.5	2.2
44-220000	Utilities	549.3	553.9	-4.6	-.8
50-000000	Information	2,694	2,699	-5	-.2
50-511000	Publishing industries, except Internet	733.1	727.5	5.6	.8
50-512000	Motion picture and sound recording industries	369.5	401.5	-32.0	-8.7
50-515000	Broadcasting, except Internet	285.1	286.0	-.9	-.3
50-517000	Telecommunications	851.9	856.0	-4.1	-.5
50-518000	Data processing, hosting and related services	265.0	250.6	14.4	5.4
50-519000	Other information services	188.9	177.6	11.3	6.0
55-000000	Financial activities	7,813	7,823	-10	-.1
55-520000	Finance and insurance	5,856.8	5,876.4	-19.6	-.3
55-521000	Monetary authorities - central bank	17.6	16.5	1.1	6.3
55-522000	Credit intermediation and related activities	2,615.8	2,601.9	13.9	.5
55-522100	Depository credit intermediation	1,737.1	1,735.2	1.9	.1
55-522110	Commercial banking	1,316.6	1,308.8	7.8	.6

CES Industry Code	CES Industry Title	Benchmark	Estimate ⁽¹⁾	Differences	
				Amount	Percent
55-523000	Securities, commodity contracts, investments, and funds and trusts	859.2	875.6	-16.4	-1.9
55-524000	Insurance carriers and related activities	2,364.2	2,382.4	-18.2	-.8
55-530000	Real estate and rental and leasing	1,956.5	1,946.7	9.8	.5
55-531000	Real estate	1,427.8	1,416.7	11.1	.8
55-532000	Rental and leasing services	505.2	506.7	-1.5	-.3
55-533000	Lessors of nonfinancial intangible assets	23.5	23.3	.2	.9
60-000000	Professional and business services	18,173	18,169	4	(2)
60-540000	Professional and technical services	8,126.1	8,127.7	-1.6	(2)
60-541100	Legal services	1,129.0	1,123.1	5.9	.5
60-541200	Accounting and bookkeeping services	1,041.4	1,053.8	-12.4	-1.2
60-541300	Architectural and engineering services	1,323.0	1,325.8	-2.8	-.2
60-541500	Computer systems design and related services	1,670.8	1,667.3	3.5	.2
60-541600	Management and technical consulting services	1,150.5	1,160.3	-9.8	-.9
60-550000	Management of companies and enterprises	2,072.5	2,024.3	48.2	2.3
60-560000	Administrative and waste services	7,973.9	8,016.7	-42.8	-.5
60-561000	Administrative and support services	7,606.0	7,646.2	-40.2	-.5
60-561300	Employment services	3,139.5	3,183.9	-44.4	-1.4
60-561320	Temporary help services	2,495.2	2,535.0	-39.8	-1.6
60-561400	Business support services	836.3	834.5	1.8	.2
60-561700	Services to buildings and dwellings	1,745.1	1,743.5	1.6	.1

CES Industry Code	CES Industry Title	Benchmark	Estimate ⁽¹⁾	Differences	
				Amount	Percent
60-562000	Waste management and remediation services	367.9	370.5	-2.6	-.7
65-000000	Education and health services	21,153	21,214	-61	-.3
65-610000	Educational services	3,497.6	3,516.8	-19.2	-.5
65-620000	Health care and social assistance	17,655.3	17,696.8	-41.5	-.2
65-621000	Ambulatory health care services	6,417.7	6,454.5	-36.8	-.6
65-621100	Offices of physicians	2,416.0	2,418.7	-2.7	-.1
65-621400	Outpatient care centers	670.1	679.8	-9.7	-1.4
65-621600	Home health care services	1,213.0	1,256.4	-43.4	-3.6
65-622000	Hospitals	4,792.2	4,830.6	-38.4	-.8
65-623000	Nursing and residential care facilities	3,210.5	3,202.3	8.2	.3
65-623100	Nursing care facilities	1,652.9	1,659.3	-6.4	-.4
65-624000	Social assistance	3,234.9	3,209.4	25.5	.8
65-624400	Child day care services	866.6	879.8	-13.2	-1.5
70-000000	Leisure and hospitality	13,740	13,668	72	.5
70-710000	Arts, entertainment, and recreation	1,875.1	1,865.2	9.9	.5
70-711000	Performing arts and spectator sports	402.1	408.6	-6.5	-1.6
70-712000	Museums, historical sites, and similar institutions	133.3	131.6	1.7	1.3
70-713000	Amusements, gambling, and recreation	1,339.7	1,325.0	14.7	1.1
70-720000	Accommodation and food services	11,864.9	11,802.8	62.1	.5
70-721000	Accommodation	1,788.3	1,762.5	25.8	1.4
70-722000	Food services and drinking places	10,076.6	10,040.3	36.3	.4
80-000000	Other services	5,422	5,444	-22	-.4
80-811000	Repair and maintenance	1,205.3	1,194.4	10.9	.9
80-812000	Personal and laundry services	1,325.0	1,322.4	2.6	.2

CES Industry Code	CES Industry Title	Benchmark	Estimate ⁽¹⁾	Differences	
				Amount	Percent
80-813000	Membership associations and organizations	2,891.8	2,927.3	-35.5	-1.2
90-000000	Government	22,273	22,266	7	(2)
90-910000	Federal	2,781.0	2,762.0	19.0	.7
90-911000	Federal, except U.S. Postal Service	2,191.9	2,173.4	18.5	.8
90-919120	U.S. Postal Service	588.7	588.8	-.1	(2)
90-920000	State government	5,205.0	5,197.0	8.0	.2
90-921611	State government education	2,555.7	2,546.1	9.6	.4
90-922000	State government, excluding education	2,649.6	2,650.5	-.9	(2)
90-930000	Local government	14,287.0	14,307.0	-20.0	-.1
90-931611	Local government education	8,137.9	8,142.3	-4.4	-.1
90-932000	Local government, excluding education	6,148.9	6,165.1	-16.2	-.3

⁽¹⁾ The CES estimates in this column contain reconstructions to series within CES supersectors Financial activities and Education and healthcare services. Each first quarter, the Quarterly Census of Employment and Wages (QCEW) program, whose data account for approximately 97 percent of the CES universe scope (see www.bls.gov/web/emp/sit/cestn.htm#section1), incorporates updated industry assignments. In 2013, these updates included two substantial groups of nonrandom, noneconomic code changes, one to Funds, trusts, and other financial vehicles (NAICS 525), and the other, a reclassification of approximately 466,000 in employment from Private households (NAICS 814), which is out of scope for CES, to Services for the elderly and persons with disabilities (NAICS 62412), which is in scope. These changes also had an impact, beyond what would be considered typical for a given benchmark year, on corresponding CES series. For more information about the changes to these industries, see the QCEW First Quarter 2013 News Release available at www.bls.gov/news.release/archives/cewqtr_09262013.htm or the reconstruction section of the CES Benchmark Article at [Special notice regarding reconstructed data](#).

⁽²⁾ Less than 0.05 percent.

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[Exhibit 2](#) displays a comparison between the previously published estimates and the benchmarks for those CES series published at first preliminary release affected by reconstructions or collapses. The Benchmark column in Exhibit 2 reflects benchmarked values as presented in [Table 2](#) above, and the column titled As Previously Published represents the previously published estimates before the reconstructions were performed. The difference between the March 2013 published estimate and the final benchmarked employment level for Total nonfarm is 347,000, or 0.3 percent.

Exhibit 2. Nonfarm employment change from published estimates to benchmarks for affected industries, March 2013 (in thousands)

CES Industry Code	CES Industry Title	Benchmark	As Previously Published ⁽¹⁾	Differences	
				Amount	Percent
00-000000	Total nonfarm	134,917	134,570	347	0.3
05-000000	Total private	112,644	112,304	340	.3
07-000000	Service-providing	116,634	116,314	320	.3
08-000000	Private service-providing	94,361	94,048	313	.3
55-523000	Securities, commodity contracts, investments, and funds and trusts	859.2	826.0	33.2	3.9
55-524000	Insurance carriers and related activities	2,364.2	2,345.7	18.5	.8
65-000000	Education and health services	21,153	20,748	405	1.9
65-620000	Health care and social assistance	17,655.3	17,231.0	424.3	2.4
65-624000	Social assistance	3,234.9	2,743.6	491.3	15.2

⁽¹⁾ Estimates as previously published before any reconstructions are performed.

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Revisions in the post benchmark period

Post benchmark period estimates from April 2013 to December 2013 were calculated for each month based on new benchmark levels and new net birth/death factors. Net birth/death factors were revised to incorporate information from the most recent year of universe employment counts. [Table 3](#) shows the net birth/death model figures for the supersectors over the post benchmark period. From April 2013 to December 2013, the cumulative net birth/death model added 877,000, compared with 755,000 in the previously published April to December estimates.

Table 3. Net birth/death estimates by industry supersector, April – December 2013 (in thousands)

CES Industry Code	CES Industry Title	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Cumulative Total
10-000000	Mining and logging	1	2	3	2	2	1	2	0	0	13
20-000000	Construction	33	35	23	6	8	7	9	-13	-18	90
30-000000	Manufacturing	-2	6	3	-5	4	0	2	1	-1	8
40-000000	Trade, transportation, and utilities	18	24	13	3	18	13	35	4	4	132
50-000000	Information	0	4	0	0	3	-2	5	4	0	14
55-000000	Financial activities	4	8	4	1	6	-1	16	1	10	49
60-000000	Professional and business services	74	27	10	27	18	-15	70	7	-10	208
65-000000	Education and health services	20	18	-12	7	19	13	46	7	-4	114
70-000000	Leisure and hospitality	78	79	90	48	20	-44	-30	-21	6	226
80-000000	Other services	10	7	6	-3	1	-2	4	-1	1	23
Total nonfarm birth/death adjustment		236	210	140	86	99	-30	159	-11	-12	877

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[Table 4](#) presents revised Total nonfarm employment data on a seasonally adjusted basis for January 2013 through December 2013. The revised data for April 2013 forward incorporate the effect of applying the rate of change measured by the sample to the new benchmark level, as well as updated net birth/death model adjustments and new seasonal adjustment factors. Revisions to November and December also reflect incorporation of the annual CES sample update.

Table 4. Differences in seasonally adjusted levels and over-the-month changes, Total nonfarm employment, January - December 2013 (in thousands)

2013	Levels			Over-the-month changes		
	As Previously Published	As Revised	Difference	As Previously Published	As Revised	Difference
January	134,839	135,261	422	148	197	49
February	135,171	135,541	370	332	280	-52
March	135,313	135,682	369	142	141	-1
April	135,512	135,885	373	199	203	4
May	135,688	136,084	396	176	199	23
June	135,860	136,285	425	172	201	29
July	135,949	136,434	485	89	149	60
August	136,187	136,636	449	238	202	-36
September	136,362	136,800	438	175	164	-11
October	136,562	137,037	475	200	237	37
November	136,803	137,311	508	241	274	33
December ^(p)	136,877	137,386	509	74	75	1

^(p)Preliminary.

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Changes to the CES published series

With the release of the January 2014 first preliminary estimates, CES incorporated series changes related to annual sample adequacy and disclosure review and reconstructed the history of series impacted by the noneconomic code changes involving NAICS 525 (Funds, trusts, and other financial vehicles) and 62412 (Services for the elderly and persons with disabilities).

Series changes

All CES series are evaluated annually for sample size, coverage, and response rates. The following series changes result from a reevaluation of the sample and universe coverage for NAICS industries.

Some series have new CES industry codes or titles as a result of the series changes ([Exhibit 3](#)). These CES industry code or title changes have been applied to all data types published for the designated series. Historical data for those series with new CES industry codes or CES industry titles were impacted as noted on the remainder of this page; historical data are available under the new CES industry codes or CES industry titles.

Exhibit 3. Series with CES industry code or title changes

NAICS Code	Previous CES Industry Code	Previous CES Industry Title	New CES Industry Code	New CES Industry Title
336212,3,4	31-336214	Motor homes, travel trailers, and campers	31-336214	Truck trailers, motor homes, travel trailers, and campers
523,5 ⁽¹⁾	55-523000	Securities, commodity contracts, investments	55-523000	Securities, commodity contracts, investments, and funds and trusts
5239,51,59 ⁽¹⁾	55-523900	Other financial investment activities	55-523900	Other financial investment activities, including funds and trusts
52399,510,590 ⁽¹⁾	55-523990	All other financial investment activities	55-523990	All other financial investment activities, including funds and trusts

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The remaining series changes exhibits ([Exhibit 4](#) through [Exhibit 9](#)) reference the new CES industry codes and titles, not the previous CES industry codes and titles, as noted in [Exhibit 3](#).

Only directly estimated data types² are included in the series changes exhibits:

- All Employees (AE)
- AE Average Weekly Hours (AE AWH)
- AE average hourly earnings (AE AHE)
- AE Average Weekly Overtime Hours (AE AWOH)
- Women Employees (WE)
- Production Employees (PE)
- PE Average Weekly Hours (PE AWH)
- PE average hourly earnings (PE AHE)
- PE Average Weekly Overtime Hours (PE AWOH)

The directly estimated data types listed except for AE are collectively called non-AE data types. In order to more easily identify affected series, since AE series are published at a more detailed industry level than non-AE series, series changes exhibits are split by AE and non-AE data types. The non-AE tables cover all directly estimated non-AE data types.

The first group of series changes exhibits contains three exhibits referencing the AE data type and the second group contains three exhibits referencing all non-AE data types. The three exhibits in each group display the discontinued, collapsed, and new series. Discontinued series exhibits ([Exhibit 4](#) and [Exhibit 7](#)) display series for which the data types noted are no longer published. Collapsed series exhibits ([Exhibit 5](#) and [Exhibit 8](#)) display series for which the data types noted are no longer published because the industry no longer has sufficient sample to be estimated and published separately. Affected industries have been combined with other similar industries for estimation and publication purposes. Historical data for these series were reconstructed to provide consistent time series. New series exhibits ([Exhibit 6](#) and [Exhibit 9](#)) display series for which the data types noted are now published.

AE exhibits

Exhibit 4. Discontinued AE series

NAICS Code	CES Industry Code	CES Industry Title	Next Highest Published Industry
321991	31-321991	Manufactured and mobile homes	All other wood products (31-321990)
33142	31-331420	Rolled, drawn, extruded, and alloyed copper	Other nonferrous metal production (31-331400)
42442	41-424420	Packaged frozen food	Grocery and related products (41-424400)

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² CES estimates data in two ways: directly and indirectly. Directly estimated data types refer to data types for which estimates are calculated directly from the responding sample. Indirectly estimated data types refer to data types for which estimates are calculated from other directly estimated data types. Average weekly earnings of all employees and indexes of aggregate weekly hours of all employees are examples of indirectly estimated data types. For more information on indirectly estimated data types, see the CES Technical Notes at www.bls.gov/web/empsit/cestn.htm.

Exhibit 5. Collapsed AE series

NAICS Code	CES Industry Code	CES Industry Title	Collapsed into CES Industry
336212	31-336212	Truck trailers	Collapsed into Truck trailers, motor homes, travel trailers, and campers (31-336214)
5251 ⁽¹⁾	55-525100	Insurance and employee benefit funds	Collapsed into All other financial investment activities, including funds and trusts (55-523990)
5259 ⁽¹⁾	55-525900	Other investment pools and funds	Collapsed into All other financial investment activities, including funds and trusts (55-523990)

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Exhibit 6. New AE series

There are no new AE series published.

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Non-AE exhibits

Exhibit 7. Discontinued Non-AE series

NAICS Code	CES Industry Code	CES Industry Title	Discontinued From Publication	Next Highest Published Industry ⁽²⁾
3271	31-327100	Clay products and refractories	AE AWOH	Nonmetallic mineral products (31-327000)
3272	31-327200	Glass and glass products	AE AWOH, PE, PE AWH, PE AHE, PE AWOH	Nonmetallic mineral products (31-327000)
3314	31-331400	Other nonferrous metal production	PE, PE AWH, PE AHE, PE AWOH	Primary metals (31-331000)
33151	31-331510	Ferrous metal foundries	PE, PE AWH, PE AHE	Foundries (31-331500)
33152	31-331520	Nonferrous metal foundries	PE, PE AWH, PE AHE	Foundries (31-331500)
3325	31-332500	Hardware	WE	Fabricated metal products (31-332000)
3326	31-332600	Spring and wire products	WE	Fabricated metal products (31-332000)
332721	31-332721	Precision turned products	WE	Turned products and screws, nuts, and bolts (31-332720)

NAICS Code	CES Industry Code	CES Industry Title	Discontinued From Publication	Next Highest Published Industry⁽²⁾
332722	31-332722	Bolts, nuts, screws, rivets, and washers	WE	Turned products and screws, nuts, and bolts (31-332720)
3333	31-333300	Commercial and service industry machinery	PE AWOH	Machinery (31-333000)
333511	31-333511	Industrial molds	AE AWH, AE AHE, AE AWOH, WE	Metalworking machinery (31-333500)
333515,9	31-333519	Miscellaneous metalworking machinery	AE AWH, AE AHE, AE AWOH, WE	Metalworking machinery (31-333500)
3339	31-333900	Other general purpose machinery	PE AWOH	Machinery (31-333000)
3342	31-334200	Communications equipment	AE AWOH	Computer and electronic products (31-334000)
33637	31-336370	Motor vehicle metal stamping	AE AWOH	Motor vehicle parts (31-336300)
336411	31-336411	Aircraft	WE	Aerospace products and parts (31-336400)
337122	31-337122	Nonupholstered wood household furniture	PE AWOH	Other household and institutional furniture (31-337120)
3111	32-311100	Animal food	AE AWH, AE AHE, AE AWOH, PE, PE AWH, PE AHE, PE AWOH, WE	Food manufacturing (32-311000)
3112	32-311200	Grain and oilseed milling	AE AWH, AE AHE, AE AWOH, WE	Food manufacturing (32-311000)
3141	32-314100	Textile furnishings mills	PE, PE AWH, PE AHE	Textile product mills (32-314000)
3149	32-314900	Other textile product mills	PE, PE AWH, PE AHE	Textile product mills (32-314000)
3221	32-322100	Pulp, paper, and paperboard mills	PE AWOH	Paper and paper products (32-322000)
3222	32-322200	Converted paper products	PE AWOH	Paper and paper products (32-322000)
32411	32-324110	Petroleum refineries	PE, PE AWH, PE AHE, PE AWOH	Petroleum and coal products (32-324000)
32412,9	32-324190	Asphalt paving and roofing materials and other petroleum	PE, PE AWH, PE AHE, PE AWOH	Petroleum and coal products (32-324000)

NAICS Code	CES Industry Code	CES Industry Title	Discontinued From Publication	Next Highest Published Industry⁽²⁾
		and coal products		
32612	32-326120	Plastics pipe, fittings, and profile shapes	AE AWOH	Plastics products (32-326100)
32613,6	32-326160	Plastics bottles and laminated plastics plate, sheet, and shapes	AE AWOH	Plastics products (32-326100)
42394	41-423940	Jewelry	PE, PE AWH, PE AHE	Miscellaneous durable goods (41-423900)
42392,9	41-423990	Toy, hobby, and other durable goods	PE, PE AWH, PE AHE	Miscellaneous durable goods (41-423900)
42411,2	41-424120	Printing and writing paper and office supplies	AE AWH, AE AHE	Paper and paper products (41-424100)
42413	41-424130	Industrial paper	AE AWH, AE AHE	Paper and paper products (41-424100)
4542	42-454200	Vending machine operators	PE, PE AWH, PE AHE	Nonstore retailers (42-454000)
4543	42-454300	Direct selling establishments	PE, PE AWH, PE AHE	Nonstore retailers (42-454000)
525⁽¹⁾	55-525000	Funds, trusts, and other financial vehicles	PE, PE AWH, PE AHE	Other financial investment activities, including funds and trusts (55-523900)
811118	80-811118	Other automotive mechanical and elec. repair	PE, PE AWH, PE AHE	Automotive mechanical and electrical repair (80-811110)
811121	80-811121	Automotive body and interior repair	AE AWH, AE AHE, PE, PE AWH, PE AHE	Automotive body, interior, and glass repair (80-811120)
811122	80-811122	Automotive glass replacement shops	AE AWH, AE AHE, PE, PE AWH, PE AHE	Automotive body, interior, and glass repair (80-811120)
813212	80-813212	Voluntary health organizations	PE, PE AWH, PE AHE	Grantmaking and giving services (80-813200)

NAICS Code	CES Industry Code	CES Industry Title	Discontinued From Publication	Next Highest Published Industry ⁽²⁾
813219	80-813219	Other grantmaking and giving services	PE, PE AWH, PE AHE	Grantmaking and giving services (80-813200)

⁽²⁾ The industry listed is the next highest published industry for all data types discontinued from publication.

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Exhibit 8. Collapsed Non-AE series

NAICS Code	CES Industry Code	CES Industry Title	Collapsed into CES Industry	Data Types Collapsed
525 ⁽¹⁾	55-525000	Funds, trusts, and other financial vehicles	Collapsed into All other financial investment activities, including funds and trusts (55-523990)	AE AWH, AE AHE, WE

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Exhibit 9. New Non-AE series

There are no new non-AE series published.

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⁽¹⁾ Each first quarter, the Quarterly Census of Employment and Wages (QCEW) program, which accounts for approximately 97 percent of the CES universe scope (see www.bls.gov/web/empsit/cestn.htm#section1), incorporates updated industry assignments. In 2013, the updates included substantial nonrandom, noneconomic code changes to [NAICS 525](#) (Funds, trusts, and other financial vehicles). These changes also had an impact, beyond what would be considered typical for a given benchmark year, on corresponding CES series. For more information about the changes to Funds, trusts, and other financial vehicles, see the QCEW First Quarter 2013 News Release Box Note titled "Notable Industry Changes" available at www.bls.gov/news.release/archives/cewqtr_09262013.htm.

Why benchmarks differ from estimates

A benchmark revision is the difference between the benchmark employment level for a given March and its corresponding sample-based estimate. The overall accuracy of the establishment survey is usually gauged by the size of this difference. The benchmark revision often is regarded as a proxy for total survey error, but this does not take into account error in the universe data or infrequent events such as this year's historical reconstruction of previously out-of-scope employment. The employment counts obtained from quarterly UI tax forms are administrative data that reflect employer record-keeping practices and differing state laws and procedures. The benchmark revision can be more precisely interpreted as the difference between two independently derived employment counts, each subject to its own error sources.

Like all sample surveys, the establishment survey is susceptible to two sources of error: sampling error and nonsampling error. Sampling error is present any time a sample is used to make inferences about a population. The magnitude of the sampling error, or variance, relates directly to sample size and the percentage of the universe covered by that sample. The CES monthly survey captures slightly under one-third of the universe, exceptionally high by usual sampling standards. This coverage ensures a small sampling error at the Total nonfarm employment level.

Both the universe counts and the establishment survey estimates are subject to nonsampling errors common to all surveys – measurement, response, and processing errors. The error structures for both the CES monthly survey and the UI universe are complex. Still, the two programs generally produce consistent total employment figures, each validating the other.

Benchmark revision effects for other data types

The routine benchmarking process results in revisions to the series for production and nonsupervisory employees and women employees. There are no benchmark employment levels for these series; they are revised by preserving ratios of employment for the particular data type to all employee employment prior to benchmarking, and then applying these ratios to the revised all employee figures. These figures are calculated at the basic cell level and then aggregated to produce the summary estimates. Average weekly hours, average hourly earnings, and in manufacturing industries, average weekly overtime hours are not benchmarked; they are estimated solely from reports supplied by survey respondents at the basic estimating cell level.

The aggregate industry levels of the hours and earnings series are derived as a weighted average. The all employee employment estimates or the production and nonsupervisory employee employment estimates for the basic cells essentially act as weights for their respective hours and earnings estimates for broader industry groupings. Adjustments of the all employee estimates to new benchmarks may alter the weights used for both AE and PE hours and earnings, which, in turn, may change the estimates for both AE and PE hours and earnings at higher levels of aggregation.

Generally, new employment benchmarks have little effect on hours and earnings estimates for major industry groupings. To influence the hours and earnings estimates of a broader industry group, employment revisions have to be relatively large and must affect industries that have hours or earnings averages that are substantially different from those of other industries in their broader group. [Table 5](#) and [Table 6](#) provide information on the levels of specific hours and earnings series resulting from the March 2013 benchmark. At the Total private level, there was no change in average weekly hours estimates for both AE and PE from the previously published level. Total private average hourly earnings increased by two cents for AE and one cent for PE from the previously published level.

Table 5. Effect of March 2013 benchmark revisions to AE AWH and AE AHE estimates, selected industries

CES Industry Code	CES Industry Title	Average Weekly Hours			Average Hourly Earnings		
		Estimated ⁽¹⁾	Revised	Difference	Estimated ⁽¹⁾	Revised	Difference
05-000000	Total private	34.3	34.3	0.0	\$23.82	\$23.84	\$0.02
06-000000	Goods-producing	40.2	40.2	.0	25.00	24.97	-.03
08-000000	Private service-providing	33.2	33.2	.0	23.55	23.58	.03
10-000000	Mining and logging	42.7	42.7	.0	29.35	29.37	.02
20-000000	Construction	38.6	38.6	.0	26.08	26.04	-.04
30-000000	Manufacturing	40.7	40.7	.0	24.20	24.17	-.03
31-000000	Durable goods	41.1	41.1	.0	25.58	25.55	-.03
31-321000	Wood products	40.5	40.5	.0	17.93	17.96	.03
31-327000	Nonmetallic mineral products	41.5	41.5	.0	21.79	21.80	.01
31-331000	Primary metals	43.3	43.3	.0	24.39	24.35	-.04
31-332000	Fabricated metal products	41.1	41.1	.0	21.76	21.77	.01
31-333000	Machinery	41.3	41.4	.1	26.27	26.26	-.01
31-334000	Computer and electronic products	39.8	39.8	.0	32.95	32.95	.00
31-335000	Electrical equipment and appliances	40.7	40.7	.0	24.25	24.25	.00
31-336000	Transportation equipment	42.7	42.7	.0	29.01	28.96	-.05
31-336001	Motor vehicles and parts	42.7	42.6	-.1	23.46	23.40	-.06
31-337000	Furniture and related products	39.6	39.7	.1	18.60	18.59	-.01
31-339000	Miscellaneous durable goods manufacturing	39	39	.0	23.61	23.56	-.05
32-000000	Nondurable goods	40.1	40.1	.0	21.79	21.78	-.01

CES Industry Code	CES Industry Title	Average Weekly Hours			Average Hourly Earnings		
		Estimated ⁽¹⁾	Revised	Difference	Estimated ⁽¹⁾	Revised	Difference
32-311000	Food manufacturing	39.6	39.6	.0	18.16	18.16	.00
32-313000	Textile mills	40.9	40.9	.0	17.31	17.31	.00
32-314000	Textile product mills	38.5	38.6	.1	16.27	16.26	-.01
32-315000	Apparel	35.9	35.9	.0	17.48	17.47	-.01
32-322000	Paper and paper products	41.7	41.7	.0	24.30	24.27	-.03
32-323000	Printing and related support activities	37	37	.0	22.12	22.12	.00
32-324000	Petroleum and coal products	45	45	.0	36.78	36.88	.10
32-325000	Chemicals	42.1	42.1	.0	27.78	27.78	.00
32-326000	Plastics and rubber products	41	41	.0	20.20	20.20	.00
32-329000	Miscellaneous nondurable goods manufacturing	37.5	37.5	.0	21.48	21.48	.00
40-000000	Trade, transportation, and utilities	34.4	34.5	.1	20.83	20.85	.02
41-420000	Wholesale trade	38.5	38.5	.0	27.37	27.36	-.01
42-000000	Retail trade	31.4	31.4	.0	16.58	16.60	.02
43-000000	Transportation and warehousing	38.5	38.5	.0	22.02	22.10	.08
44-220000	Utilities	42.3	42.3	.0	35.00	35.01	.01
50-000000	Information	36	36.1	.1	32.55	32.61	.06
55-000000	Financial activities	36.9	36.9	.0	29.90	29.85	-.05
60-000000	Professional and business services	35.9	35.9	.0	28.43	28.49	.06
65-000000	Education and health services	32.6	32.6	.0	24.25	24.30	.05
70-000000	Leisure and hospitality	26.1	26.1	.0	13.48	13.48	.00

CES Industry Code	CES Industry Title	Average Weekly Hours			Average Hourly Earnings		
		Estimated ⁽¹⁾	Revised	Difference	Estimated ⁽¹⁾	Revised	Difference
80-000000	Other services	31.6	31.7	.1	21.20	21.32	.12

⁽¹⁾The CES estimates in this column contain reconstructions to series within CES supersectors Financial activities and Education and healthcare services. Each first quarter, the Quarterly Census of Employment and Wages (QCEW) program, whose data account for approximately 97 percent of the CES universe scope (see www.bls.gov/web/empst/cestn.htm#section1), incorporates updated industry assignments. In 2013, these updates included two substantial groups of nonrandom, noneconomic code changes, one to Funds, trusts, and other financial vehicles (NAICS 525), and the other, a reclassification of approximately 466,000 in employment from Private households (NAICS 814), which is out of scope for CES, to Services for the elderly and persons with disabilities (NAICS 62412), which is in scope. These changes also had an impact, beyond what would be considered typical for a given benchmark year, on corresponding CES series. For more information about the changes to these industries, see the QCEW First Quarter 2013 News Release available at www.bls.gov/news.release/archives/cewqtr_09262013.htm or the reconstruction section of the CES Benchmark Article at [Special notice regarding reconstructed data](#).

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Table 6. Effect of March 2013 benchmark revisions to PE AWH and PE AHE estimates, selected industries

CES Industry Code	CES Industry Title	Average Weekly Hours			Average Hourly Earnings		
		Estimated ⁽¹⁾	Revised	Difference	Estimated ⁽¹⁾	Revised	Difference
05-000000	Total private	33.6	33.6	0.0	\$20.02	\$20.03	\$0.01
06-000000	Goods-producing	41.2	41.2	.0	21.10	21.08	-.02
08-000000	Private service-providing	32.3	32.3	.0	19.80	19.81	.01
10-000000	Mining and logging	45.3	45.3	.0	26.80	26.81	.01
20-000000	Construction	39.3	39.3	.0	24.15	24.11	-.04
30-000000	Manufacturing	41.8	41.8	.0	19.23	19.21	-.02
31-000000	Durable goods	42.3	42.3	.0	20.25	20.23	-.02
31-321000	Wood products	42.6	42.6	.0	15.28	15.30	.02
31-327000	Nonmetallic mineral products	42.2	42.1	-.1	18.01	18.01	.00
31-331000	Primary metals	43.7	43.6	-.1	21.51	21.44	-.07
31-332000	Fabricated metal products	42.1	42.1	.0	18.32	18.32	.00

CES Industry Code	CES Industry Title	Average Weekly Hours			Average Hourly Earnings		
		Estimated ⁽¹⁾	Revised	Difference	Estimated ⁽¹⁾	Revised	Difference
31-333000	Machinery	43.3	43.3	.0	20.51	20.50	-.01
31-334000	Computer and electronic products	40.7	40.7	.0	23.35	23.35	.00
31-335000	Electrical equipment and appliances	41.5	41.5	.0	18.02	18.02	.00
31-336000	Transportation equipment	43.8	43.8	.0	24.40	24.34	-.06
31-336001	Motor vehicles and parts	44	44	.0	20.89	20.81	-.08
31-337000	Furniture and related products	40.1	40.1	.0	15.41	15.39	-.02
31-339000	Miscellaneous durable goods manufacturing	40.2	40.2	.0	17.10	17.08	-.02
32-000000	Nondurable goods	40.9	40.9	.0	17.53	17.52	-.01
32-311000	Food manufacturing	40.1	40.1	.0	15.41	15.41	.00
32-313000	Textile mills	42.2	42.2	.0	13.82	13.82	.00
32-314000	Textile product mills	39.2	39.2	.0	12.81	12.81	.00
32-315000	Apparel	37.2	37.2	.0	12.97	12.97	.00
32-322000	Paper and paper products	43.1	43.1	.0	20.32	20.29	-.03
32-323000	Printing and related support activities	38.3	38.3	.0	17.67	17.67	.00
32-324000	Petroleum and coal products	47	47.1	.1	34.40	34.51	.11
32-325000	Chemicals	42.8	42.8	.0	21.18	21.18	.00
32-326000	Plastics and rubber products	41.6	41.7	.1	16.14	16.13	-.01
32-329000	Miscellaneous nondurable goods manufacturing	40.4	40.4	.0	18.22	18.22	.00

CES Industry Code	CES Industry Title	Average Weekly Hours			Average Hourly Earnings		
		Estimated ⁽¹⁾	Revised	Difference	Estimated ⁽¹⁾	Revised	Difference
40-000000	Trade, transportation, and utilities	33.6	33.6	.0	17.58	17.61	.03
41-420000	Wholesale trade	38.5	38.5	.0	22.30	22.30	.00
42-000000	Retail trade	30	30.1	.1	13.98	14.00	.02
43-000000	Transportation and warehousing	38.4	38.4	.0	19.42	19.46	.04
44-220000	Utilities	41.7	41.7	.0	32.04	32.05	.01
50-000000	Information	35.4	35.6	.2	27.67	27.76	.09
55-000000	Financial activities	36.4	36.4	.0	23.72	23.66	-.06
60-000000	Professional and business services	35.1	35.1	.0	23.63	23.67	.04
65-000000	Education and health services	32.1	32.1	.0	21.13	21.15	.02
70-000000	Leisure and hospitality	25	25	.0	11.77	11.77	.00
80-000000	Other services	30.6	30.7	.1	17.87	17.94	.07

⁽¹⁾ The CES estimates in this column contain reconstructions to series within CES supersectors Financial activities and Education and healthcare services. Each first quarter, the Quarterly Census of Employment and Wages (QCEW) program, whose data account for approximately 97 percent of the CES universe scope (see www.bls.gov/web/empsit/cestn.htm#section1), incorporates updated industry assignments. In 2013, these updates included two substantial groups of nonrandom, noneconomic code changes, one to Funds, trusts, and other financial vehicles (NAICS 525), and the other, a reclassification of approximately 466,000 in employment from Private households (NAICS 814), which is out of scope for CES, to Services for the elderly and persons with disabilities (NAICS 62412), which is in scope. These changes also had an impact, beyond what would be considered typical for a given benchmark year, on corresponding CES series. For more information about the changes to these industries, see the QCEW First Quarter 2013 News Release available at www.bls.gov/news.release/archives/cewqtr_09262013.htm or the reconstruction section of the CES Benchmark Article at [Special notice regarding reconstructed data](#).

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Methods

Benchmark adjustment procedure

Establishment survey benchmarking is done on an annual basis to a population derived primarily from the administrative file of employees covered by UI. The time required to complete the revision process—from the full collection of the UI population data to publication of the revised industry estimates—is about ten months. The benchmark adjustment procedure replaces the March sample-based employment estimates with UI-based population counts for March. The benchmark therefore determines the final employment levels, while sample movements capture month-to-month trends.

Benchmarks are established for each basic estimating cell and are aggregated to develop published levels. On a not seasonally adjusted basis, the sample-based estimates for the year preceding and the nine months following the benchmark also are then subject to revision. Employment estimates for the months between the most recent March benchmark and the previous year's benchmark are adjusted using a "wedge-back" procedure. In this process, the difference between the benchmark level and the previously published March estimate for each estimating cell is computed. This difference, or error, is linearly distributed across the 11 months of estimates subsequent to the previous benchmark; eleven-twelfths of the March difference is added to February estimates, ten-twelfths to January estimates, and so on, ending with the previous April estimates, which receive one-twelfth of the March difference. The wedge procedure assumes that the total estimation error accumulated at a steady rate since the last benchmark. Applying previously derived over-the-month sample changes to the revised March level yields revised estimates for the nine months following the March benchmark (also referred to as the post benchmark period, see [Revisions in the post benchmark period](#)). New net birth/death model estimates also are calculated and applied during post benchmark estimation. The annual sample update is introduced in the November final sample-based estimates, which are released along with the January first preliminary sample-based estimates that coincide with the Benchmark release. The new sample is used for all subsequent estimates.

Benchmark source material

The principal source of benchmark data for private industries is the Quarterly Census of Employment and Wages (QCEW). The QCEW scope is defined by employment data provided to state employment security agencies by employers covered by state UI laws. BLS uses several other sources to establish benchmarks for the industries partially covered or exempt from mandatory UI coverage, accounting for nearly 3 percent of the nonfarm employment total.

Data on employees covered under Social Security laws, published by the U.S. Census Bureau in [County Business Patterns](#), are used to augment UI data for industries not fully covered by the UI scope, such as Non-office insurance sales workers, child daycare workers, Religious organizations, and Private schools and hospitals. Noncovered employment for state and local government hospitals and educational institutions is based on the Annual Survey of Public Employment and Payroll (ASPEP) conducted by the Census Bureau. Noncovered employment data from these

sources are available only on a lagged basis. Extrapolation to a current level is accomplished by applying the employment trends from the UI-covered part of the population in these industries to the noncovered part. Universe data for interstate railroads are obtained from the Railroad Retirement Board. More information on calculating noncovered employment in the CES program is available in the CES Technical Notes at www.bls.gov/web/empsit/cestn.htm#NCE.

Business birth and death estimation

Regular updating of the CES sample frame with information from the UI universe files helps to keep the CES survey current with respect to employment from business births and deaths. However, the timeliest UI universe files available will always be a minimum of six to seven months out of date. The CES survey thus cannot rely on regular frame maintenance alone to provide estimates for business birth and death employment contributions. BLS has researched both sample-based and model-based approaches to measuring birth units that have not yet appeared on the UI universe frame. Since the research demonstrated that sampling for births was not feasible in the very short CES production timeframes, the Bureau is utilizing a model-based approach for this component.

Earlier research indicated that while both the business birth and death portions of total employment are generally significant, the net contribution is relatively small. To account for this net birth/death portion of total employment, BLS is utilizing an estimation procedure with two components. The first component excludes employment losses from business deaths from sample-based estimation in order to offset the missing employment gains from business births. This is incorporated into the sample-based link relative estimate procedure by simply not reflecting sample units going out of business, but imputing to them the same trend as the other firms in the sample. The second component is an Autoregressive Integrated Moving Average (ARIMA) time series model designed to estimate the net birth/death employment not accounted for by the imputation. The historical time series used to create and test the ARIMA model was derived from the UI universe micro level database, and reflects the actual net of births and deaths over the past five years. The net birth/death model component figures are unique to each month and include negative adjustments in some months. Furthermore, these figures exhibit a seasonal pattern similar to the seasonal patterns of the continuing businesses.

Only error from the second component is directly measurable. Error from this component is measured by comparing the actual net of births and deaths from March 2012-13 — once it becomes available — with the model-based estimate. As [Table 7](#) shows, the actual net birth/death for April 2012 to March 2013 was approximately 230,000 above the forecasted amount used in the CES monthly estimates for the time period.

Table 7. Differences between forecasted and actual net birth/death, Total private employment, April 2012 – March 2013 (in thousands)

Benchmark 2013	2012												Total
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	
Actual Net Birth/Death	273	210	162	88	103	-30	202	-3	-2	-345	147	60	865
Forecast Net Birth/Death	206	205	122	66	89	-14	118	-36	-1	-314	102	92	635
Difference	67	5	40	22	14	-16	84	33	-1	-31	45	-32	230
Cumulative Difference	67	72	112	134	148	132	216	249	248	217	262	230	

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Availability of revised data

[LABSTAT](#), the BLS public database on the Internet, contains all historical employment, hours, and earnings data revised as a result of this benchmark, including both not seasonally adjusted and seasonally adjusted data. The data can be accessed at www.bls.gov/ces/, the CES homepage.

Seasonal adjustment procedure

For technical information on how seasonal adjustment is performed in the CES program, refer to the Seasonal Adjustment section of the CES Technical Notes, available at www.bls.gov/web/empsit/cestn.htm#section5e. For more information on seasonal adjustment model specifications and special model adjustments, please see the Seasonal Adjustment Model Specification List section of the CES Seasonal Adjustment Files and Documentation page, available at www.bls.gov/web/empsit/cesseasadj.htm#samodel.

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Wade Petty and Patrick Hu, Economists
U.S. Bureau of Labor Statistics | Division of Current Employment Statistics – National
PSB Suite 4860, 2 Massachusetts Avenue, NE Washington, DC 20212-0001
www.bls.gov/CES | Telephone: 1-202-691-6555 | CESinfo@bls.gov