

Labor Force and Employment Estimates Smoothed for Population Adjustments

Background

In order to produce estimates from survey data, statistical weights must be applied. Population controls are independent estimates of population used to weight the Current Population Survey (CPS) sample results to reflect the civilian noninstitutional population age 16 and older. The population controls are developed by the U.S. Census Bureau. They are based on decennial census information and administrative data the Census Bureau incorporates between decennial census years, such as birth and death statistics, along with the Census Bureau's estimates of net international migration.

With the release of January data each year, the Bureau of Labor Statistics (BLS) incorporates adjusted population controls into the CPS estimates. The adjustments reflect an annual review of the components of population change—births, deaths, and net international migration—and of the methodology the Census Bureau used to estimate population. Following a decennial census, the adjustments also reflect a new population base determined by that census. When introducing the annual adjustments, BLS typically does not revise the historical national labor force data series to reflect the new controls because of the extensive effort needed to revise and verify the many time series produced from the CPS, and because the revisions would be negligible for most series.

Time series comparability issues and the introduction of smoothed series

Substantial adjustments to the population controls in some years have created historical comparability problems in some CPS data series, particularly the national labor force and employment levels. In December 2003, BLS outlined a method to smooth such level shifts in these two series as a convenience to its data users. The method distributes the amount of the level shift incrementally over a multi-year period, rather than incorporating the entire change in January of the year in which it was implemented. (See Marisa L. DiNatale, *Creating Comparability in CPS Employment Series*, on the BLS website at <http://www.bls.gov/cps/cpscomp.pdf>.)

BLS' initial application of the smoothing method distributed the January 2000 and January 2003 level shifts that resulted from the introduction of Census 2000-based population controls over the relevant historical time periods for each. The January 2000 level shift, which represented the difference between the 1990 census-based estimates and those based to Census 2000, was smoothed from January 1990 through December 1999, thus approximating data series for the 1990s on a Census 2000 population base. The January 2003 level shift, which represented estimated population growth since Census 2000, was smoothed from January 2000 through December 2002.

BLS provided updated versions of the smoothed, seasonally adjusted labor force and employment series in subsequent years, following significant adjustments to the Census 2000 population base. Each time, the series were smoothed from January 2000 forward. Data for 1990–1999 were not further revised. With release of data for January 2012, BLS incorporated the first population controls based on Census 2010; in accordance with previous practice, this adjustment effect was smoothed from January 2000 through December 2011. At that time, prior intercensal smoothings to the Census 2000 base (that is, those made in January 2003–2011) were removed. After further review, BLS has re-introduced those smoothings with this update so that data users can gauge labor force and employment changes using series that reduce the distortion that accompanies the January introduction of intercensal population adjustments.

The population control adjustments introduced in January 2013 represent estimated population growth since the 2010 Census. The effects of these adjustments were therefore smoothed from January 2010 through December 2012.

The updated smoothed labor force and employment series are presented in the following tables. Users should be aware that these smoothed series will not match the official estimates in BLS publications or the BLS website databases. In addition, these estimates would differ from those calculated using other smoothing methods.

Civilian labor force smoothed for adjustments in population controls, 1990–1999 and 2000–2012, seasonally adjusted

(In thousands)

	January	February	March	April	May	June	July	August	September	October	November	December
1990	125,845	125,734	125,837	125,697	125,953	125,645	125,816	126,087	126,001	126,116	126,203	126,287
1991	126,112	126,189	126,420	126,742	126,382	126,549	126,384	126,392	126,905	126,909	126,981	126,956
1992	127,566	127,524	127,934	128,184	128,475	128,829	128,945	129,008	128,908	128,444	128,872	128,998
1993	128,856	128,926	129,079	129,077	129,772	129,932	129,931	130,166	129,826	130,145	130,296	130,539
1994	131,210	131,296	131,038	131,272	131,444	131,237	131,341	131,980	132,139	132,477	132,637	132,710
1995	132,811	132,901	132,906	133,404	132,673	132,784	133,193	133,199	133,489	133,607	133,517	133,426
1996	133,545	133,896	134,138	134,381	134,654	134,697	135,302	135,083	135,560	135,982	136,082	136,202
1997	136,560	136,517	137,025	137,164	137,281	137,387	137,668	137,824	137,894	137,865	138,209	138,418
1998	138,370	138,401	138,539	138,465	138,703	138,800	138,947	138,942	139,679	139,685	139,801	140,070
1999	140,456	140,433	140,207	140,452	140,615	140,852	140,977	140,981	141,189	141,353	141,623	141,790
2000	142,260	142,443	142,414	142,724	142,355	142,551	142,232	142,461	142,458	142,556	142,889	143,168
2001	143,713	143,607	143,823	143,462	143,204	143,237	143,527	143,150	143,848	143,938	144,085	144,143
2002	143,715	144,477	144,299	144,536	144,742	144,605	144,593	144,792	145,327	145,083	144,803	144,822
2003	145,054	145,193	145,091	145,517	145,519	146,047	145,456	145,392	145,453	145,614	145,871	145,579
2004	146,111	145,963	146,182	146,074	146,273	146,651	146,867	146,724	146,561	146,922	147,274	147,156
2005	147,161	147,480	147,493	148,010	148,329	148,292	148,470	148,800	148,960	148,992	149,041	148,992
2006	149,292	149,704	149,862	149,917	150,091	150,361	150,371	150,695	150,629	150,993	151,342	151,653
2007	151,885	151,711	151,764	151,138	151,356	151,709	151,708	151,390	152,035	151,791	152,422	152,490
2008	153,260	152,844	153,090	152,943	153,466	153,468	153,614	153,777	153,698	153,994	153,750	153,758
2009	153,781	154,070	153,683	154,014	154,273	154,236	154,028	153,819	153,332	153,317	153,395	152,627
2010	153,212	153,460	153,720	154,337	153,873	153,388	153,476	153,846	153,736	153,453	153,913	153,424
2011	153,531	153,561	153,656	153,782	153,862	153,684	153,645	154,033	154,407	154,348	154,440	154,294
2012	154,450	154,923	154,809	154,556	155,108	155,263	155,112	154,768	155,181	155,705	155,452	155,648

Note: This is a research series and will not match the official labor force estimates in BLS publications or the BLS website databases.

This research series reflects seasonally adjusted Current Population Survey labor force levels that have been smoothed to minimize the effects of level shifts from population control adjustments in the official series in January 2000 and January of 2003–2013.

Data from 1990–1999 were smoothed for the Census 2000 population control adjustment.

Data from 2000–2010 were smoothed for the intercensal adjustments to the Census 2000 population base that occurred in January 2003–2011.

Data from 2000–2011 were smoothed for the 2010 Census population adjustment made in January 2012.

Data from 2010–2012 were smoothed for the intercensal adjustment to the 2010 Census population base made in January 2013.

Source: Bureau of Labor Statistics, Current Population Survey (CPS).

Employment smoothed for adjustments in population controls, 1990–1999 and 2000–2012, seasonally adjusted

(In thousands)

	January	February	March	April	May	June	July	August	September	October	November	December
1990	119,093	119,082	119,238	118,898	119,209	119,052	118,891	118,894	118,628	118,651	118,432	118,379
1991	118,089	117,915	117,823	118,293	117,634	117,845	117,785	117,712	118,169	118,052	118,033	117,740
1992	118,265	118,050	118,454	118,748	118,709	118,764	119,071	119,195	119,101	119,020	119,280	119,413
1993	119,503	119,715	119,995	119,938	120,594	120,781	120,970	121,373	121,081	121,363	121,722	122,031
1994	122,547	122,679	122,534	122,908	123,497	123,277	123,362	124,013	124,372	124,811	125,230	125,448
1995	125,402	125,681	125,720	125,722	125,207	125,321	125,629	125,677	125,972	126,241	126,052	125,963
1996	126,013	126,542	126,779	126,924	127,189	127,562	127,922	128,161	128,540	128,909	128,801	128,904
1997	129,358	129,370	129,981	130,247	130,584	130,544	130,970	131,172	131,194	131,368	131,859	131,898
1998	131,958	132,053	132,072	132,484	132,614	132,545	132,643	132,718	133,333	133,359	133,655	133,994
1999	134,436	134,276	134,381	134,402	134,775	134,855	134,905	135,097	135,227	135,529	135,862	136,092
2000	136,552	136,585	136,681	137,243	136,597	136,900	136,485	136,609	136,833	137,022	137,249	137,534
2001	137,691	137,519	137,683	137,193	136,979	136,754	136,945	136,109	136,707	136,246	136,086	135,889
2002	135,536	136,266	135,998	135,941	136,347	136,216	136,207	136,492	137,082	136,781	136,289	136,187
2003	136,580	136,622	136,552	136,727	136,616	136,838	136,501	136,553	136,590	136,940	137,354	137,318
2004	137,771	137,827	137,724	137,935	138,092	138,398	138,763	138,766	138,666	138,895	139,377	139,257
2005	139,407	139,533	139,786	140,369	140,708	140,798	141,094	141,486	141,439	141,571	141,508	141,746
2006	142,251	142,544	142,814	142,821	143,135	143,385	143,222	143,630	143,806	144,289	144,495	144,915
2007	144,807	144,821	145,068	144,326	144,626	144,770	144,599	144,364	144,907	144,597	145,226	144,892
2008	145,583	145,354	145,276	145,314	145,083	144,905	144,693	144,358	144,223	143,943	143,237	142,502
2009	141,692	141,180	140,256	140,183	139,778	139,530	139,419	138,999	138,326	137,935	138,174	137,532
2010	138,190	138,376	138,520	139,049	139,010	138,904	138,925	139,164	139,148	138,859	138,809	139,059
2011	139,495	139,718	139,896	139,864	139,944	139,672	139,781	140,148	140,447	140,603	141,066	141,196
2012	141,695	142,110	142,115	142,032	142,404	142,553	142,359	142,276	143,090	143,448	143,401	143,432

Note: This is a research series and will not match the official employment estimates in BLS publications or the BLS website databases. This research series reflects seasonally adjusted Current Population Survey employment levels that have been smoothed to minimize the effects of level shifts from population control adjustments in the official series in January 2000 and January of 2003–2013. Data from 1990–1999 were smoothed for the Census 2000 population control adjustment. Data from 2000–2010 were smoothed for the intercensal adjustments to the Census 2000 population base that occurred in January 2003–2011. Data from 2000–2011 were smoothed for the 2010 Census population adjustment made in January 2012. Data from 2010–2012 were smoothed for the intercensal adjustment to the 2010 Census population base made in January 2013.

Source: Bureau of Labor Statistics, Current Population Survey (CPS).