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Great Recession, great recovery? Trends from the Current Population Survey

This article uses data from the Current Population Survey to examine the state of the U.S. labor market 10 years after the start of the Great Recession of 2007–09. By December 2017, unemployment rates had returned to prerecession lows for people of all ages, genders, major race and ethnicity groups, and levels of educational attainment. However, the long-term decline in labor force participation continued during this recovery, while long-term unemployment and involuntary part-time employment remained elevated.

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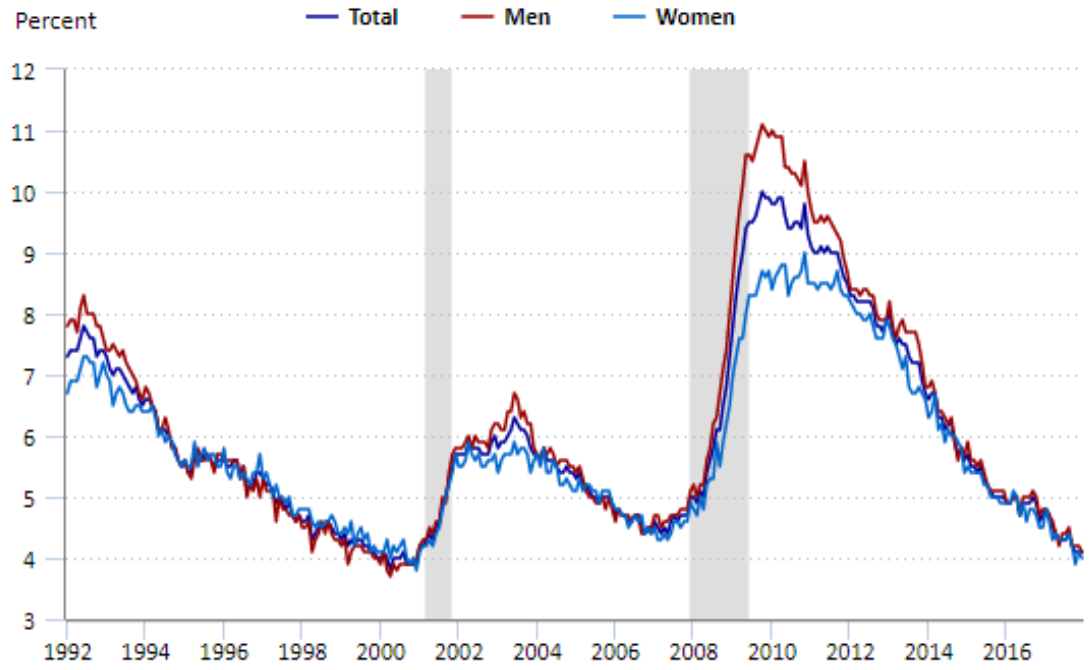
It has now been a decade since the start of the Great Recession—the most severe economic downturn in the United States since the Great Depression.[1] In a 2-year span starting in December 2007, the unemployment rate rose sharply, from about 5 percent to 10 percent. In late 2009, more than 15 million people were unemployed. Total employment, as measured by the Current Population Survey (CPS),[2] dropped by 8.6 million, or almost 6 percent. In 2010, however, the U.S. economy and labor market began to recover. By December 2017, the unemployment rate had fallen to 4.1 percent. Employment had grown by 16.0 million, reaching a level about 5 percent higher than that in November 2007. However, not all U.S. labor market indicators had returned to their pre-Great Recession levels. The number of long-term unemployed, especially those who had been jobless for a year or more, remained elevated. The ranks of those working part time involuntarily were still sizable. In addition, long-term trends, such as the decline in labor force participation, continued throughout the recession and recovery. This article uses CPS data on unemployment, labor underutilization, labor force participation, employment, and earnings to analyze how the U.S. labor market has recovered from the Great Recession.

Unemployment

The unemployment rate represents the number of people who are jobless, looking for a job, and available for work, as a percentage of the labor force (all people who are employed or unemployed). During the 2007–09 recession,[3] the unemployment rate more than doubled. (See figure 1.) The rate increased by 5.3 percentage points since November 2007, peaking at 10.0 percent in October 2009, when more than 15 million people were unemployed. This peak marked the highest unemployment rate since the aftermath of the 1981–82 recession, when the rate exceeded 10 percent for 10 consecutive months, from September 1982 to June 1983. The rate began to trend downward in April 2010, with sharper declines starting in January 2012. Between January 2012 and January 2016, the rate fell from 8.3 percent to 4.9 percent—an average decline of 0.9 percentage point per year. After holding steady for the first three quarters of 2016, the rate resumed its decline in the fourth quarter of 2016 and continued to fall throughout much of 2017. By December 2017, the unemployment rate had dropped to 4.1 percent, the lowest reading since December 2000.

Figure 1. Unemployment rates, by gender, seasonally adjusted, 1992–2017



Click legend items to change data display. Hover over chart to view data.
Note: Shaded areas represent recessions as determined by the National Bureau of Economic Research.
Source: U.S. Bureau of Labor Statistics, Current Population Survey.

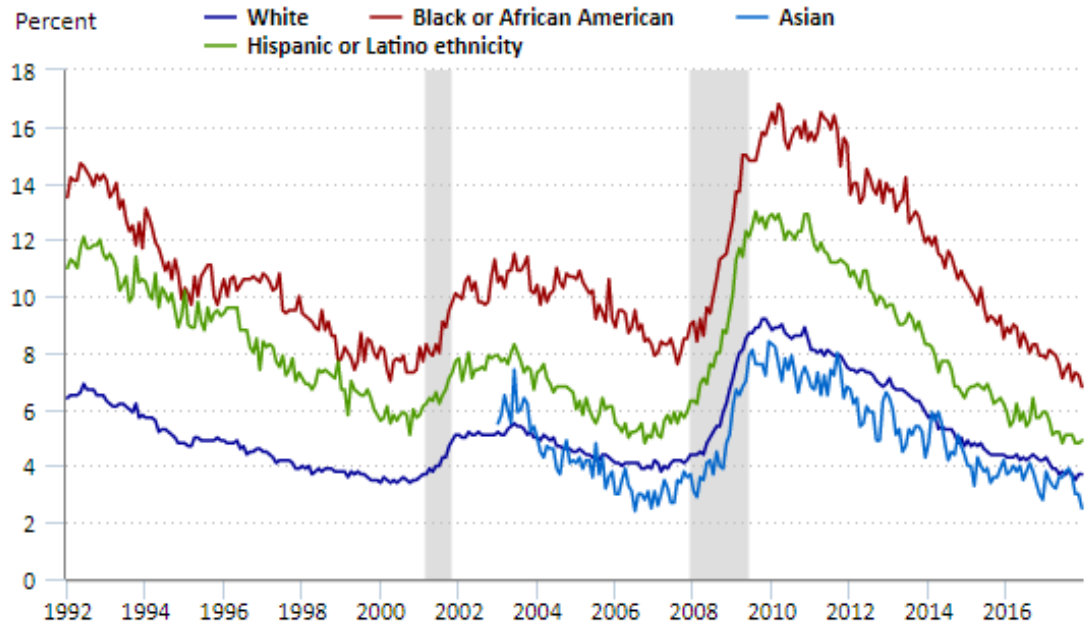
During and immediately after the recession, the unemployment rate increased markedly for people in all age, gender, race, ethnicity, and education groups. Groups with historically higher unemployment rates, such as young people, Blacks or African Americans, and those with less than a high school diploma, continued to experience higher unemployment rates throughout the recession. During the labor market recovery from 2010 onward, the unemployment rates for all groups declined. By December 2017, the rates had returned to—or fallen slightly below—their respective prerecession levels.

Following the recession, unemployment was higher among men than among women. The unemployment rate for men reached 11.1 percent in October 2009. Women fared mildly better. While the unemployment rate among women peaked at 9.0 percent in November 2010, it was at least 2 percentage points lower than the rate for men

for over a year (March 2009 to April 2010). This was the largest gap between male and female unemployment rates since the 1970s.[4] The relatively high unemployment rate for men in the aftermath of the recession reflected, in part, their concentration in cyclically sensitive occupations, such as construction and extraction occupations. As the recovery continued, the gender difference disappeared quickly, and unemployment among both groups began to decline at a healthy pace. In January 2012, unemployment rates for men and women converged at a little over 8 percent and have tracked each other closely since then. In December 2017, the unemployment rate for men was 4.1 percent; the rate for women was little different, at 4.0 percent.

During the recession, unemployment rates about doubled for all major race and ethnicity groups. (See figure 2.) Unemployment was highest among Blacks and people of Hispanic or Latino ethnicity, as has been the case since comparable race and ethnicity data were first collected in the 1970s. (Prior to 2003, people who reported more than one race were included in the group they identified as the main race.) The rate for Hispanics peaked at 13.0 percent in August 2009, and the rate for Blacks reached 16.8 percent in March 2010. The unemployment rates for Whites and Asians had lower peaks and tracked each other more closely. The rate for Whites reached a high of 9.2 percent in October 2009. Two months later, in December 2009, the rate for Asians peaked at 8.4 percent.

Figure 2. Unemployment rates, by major race and ethnicity group, seasonally adjusted, 1992–2017



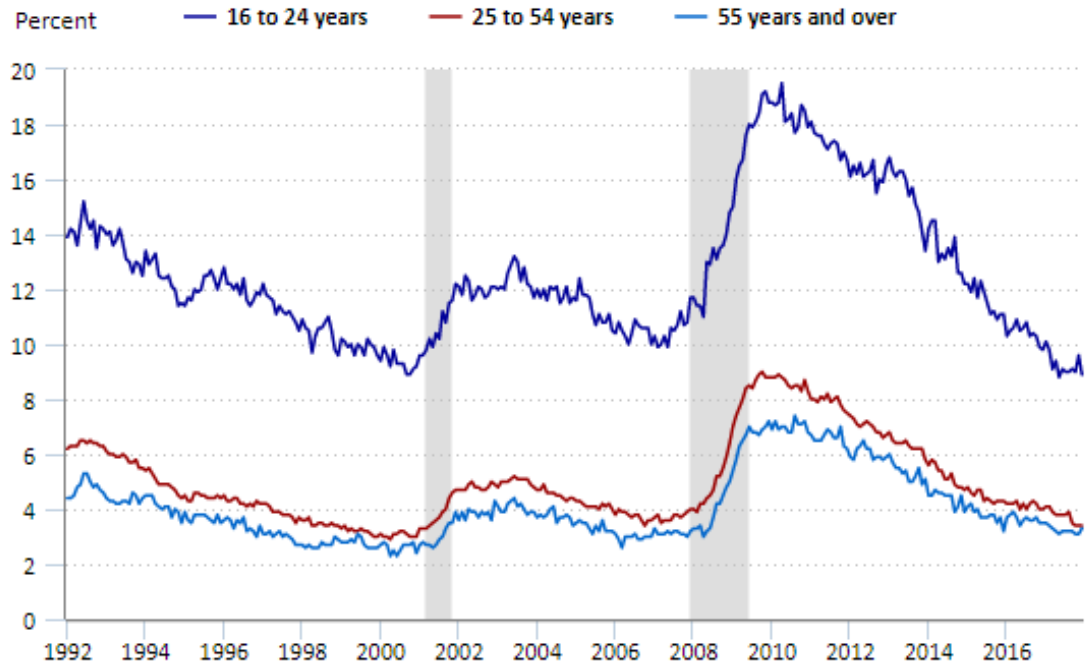
Click legend items to change data display. Hover over chart to view data.
Note: Shaded areas represent recessions as determined by the National Bureau of Economic Research. People of Hispanic or Latino ethnicity can be of any race.
Source: U.S. Bureau of Labor Statistics, Current Population Survey.

By December 2017, the unemployment rates for the four major race and ethnicity groups had returned to their prerecession levels. The rates for Blacks and Hispanics have remained higher than the rates for Whites and Asians. In December 2017, the unemployment rate for Blacks (6.8 percent) was 3.1 percentage points above that for Whites (3.7 percent) but the lowest in the series' history. The December 2017 rate for Hispanics (4.9 percent)

was 1.2 percentage points higher than the rate for Whites but also little different from the series' low.[5] The unemployment rate for Asians (2.5 percent) was 1.2 percentage points lower than that for Whites.

During the recession, the unemployment rates for prime-working-age (25 to 54 years old) and older (55 years and over) people more than doubled, peaking at 9.0 percent in October 2009 and 7.4 percent in August 2010, respectively. (See figure 3.) Young people (16 to 24 years old) saw their unemployment rate rise from 10.8 percent in November 2007 to a record high of 19.5 percent in April 2010.

Figure 3. Unemployment rates, by age group, seasonally adjusted, 1992–2017



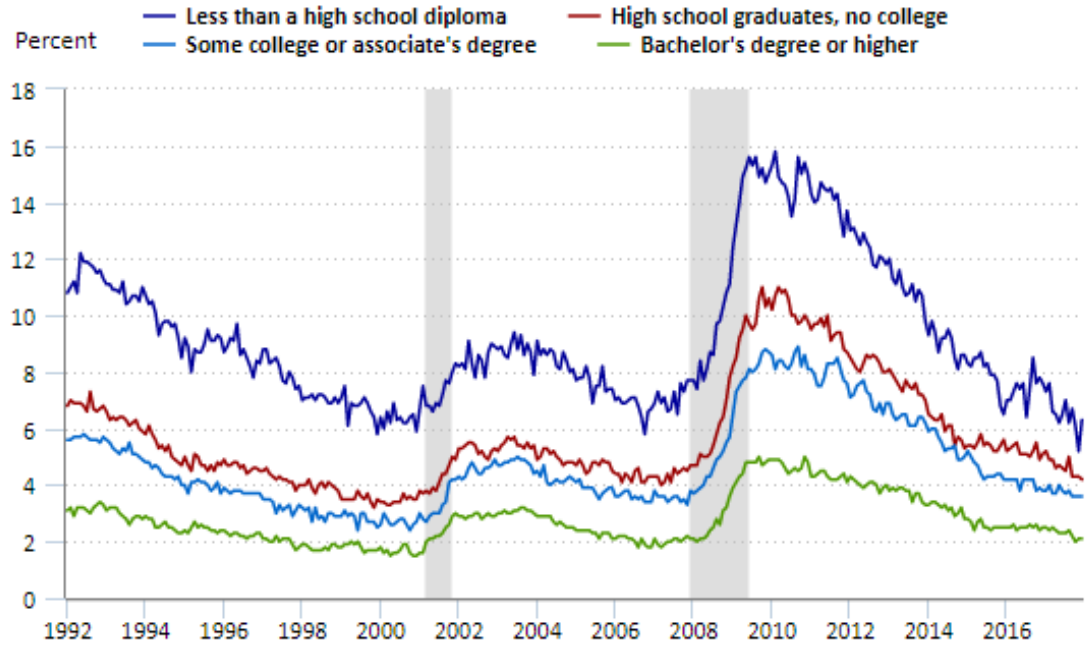
Click legend items to change data display. Hover over chart to view data.
Note: Shaded areas represent recessions as determined by the National Bureau of Economic Research.
Source: U.S. Bureau of Labor Statistics, Current Population Survey.

However, like the rates for major race and ethnicity groups, the unemployment rates for major age groups had returned to their prerecession levels by the end of 2017. In December 2017, the prime-working-age unemployment rate was 3.4 percent, and the rate for older workers was 3.3 percent. The youth unemployment rate fell slightly below its prerecession level, declining to 8.9 percent in December 2017. Of particular relevance to young people is their unemployment rate in the summertime, when many of them enter the labor force to find either temporary or permanent employment. On a not-seasonally-adjusted basis, the youth unemployment rate in July 2017 was 9.6 percent, the lowest summer reading since July 2000.[6]

During the recession, the unemployment rate for those age 25 and over continued to be higher for people without a college degree, consistent with a long-term historical pattern. (See figure 4.) For those with less than a high school diploma, the unemployment rate peaked at 15.8 percent in February 2010. The peak rate for high school graduates was 11.0 percent in October 2009 and March 2010, and the peak rate for those with some college or an

associate's degree was 8.9 percent in September 2010. The unemployment rate among those with a bachelor's degree or higher peaked at 5.0 percent in September 2009 and November 2010.

Figure 4. Unemployment rates of people 25 years and over, by educational attainment, seasonally adjusted, 1992–2017



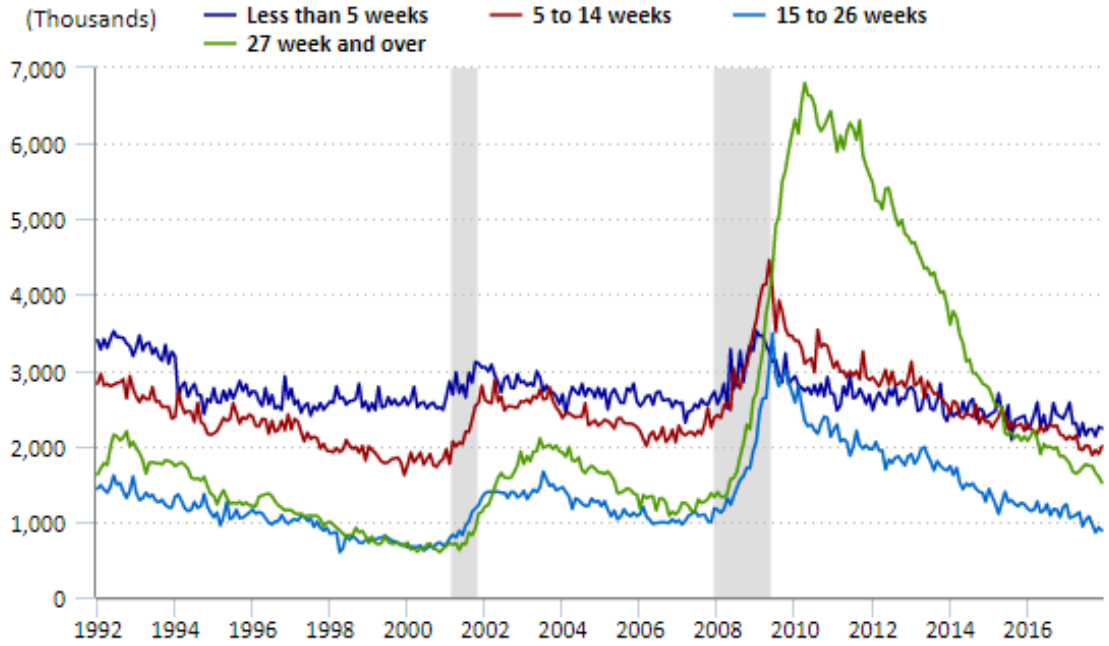
Click legend items to change data display. Hover over chart to view data.
Note: Shaded areas represent recessions as determined by the National Bureau of Economic Research.
Source: U.S. Bureau of Labor Statistics, Current Population Survey.

After 2010, however, the unemployment rates for all levels of educational attainment declined sharply until their pace of descent slowed in 2015. By 2017, the rates had returned to their prerecession levels. In December 2017, the unemployment rate for those with less than a high school diploma was 6.3 percent, and the rate for high school graduates was 4.2 percent. Among those with some college or an associate's degree, the rate was 3.6 percent, and for those with a bachelor's degree or higher, the rate was 2.1 percent.

Duration of unemployment

While overall unemployment rates by gender, age, race, ethnicity, and educational attainment have returned to their prerecession levels, differences remain in how long unemployed people have been trying to find work. Specifically, the distribution of unemployed people by duration of unemployment shifted toward longer time periods during and in the immediate aftermath of the recession, and it has not fully recovered. From 1948 to 2007, including during recessions, the majority of unemployed people were unemployed for less than 14 weeks (about 3 months).[7] (See figure 5.) The number of people unemployed for 15 to 26 weeks (3 to 6 months) and the number of people unemployed for 27 weeks or more (6 months or more) tracked each other closely, about doubling in response to downturns. However, these numbers rarely threatened to surpass the number of people who had been trying to find work for shorter periods. Although the median duration of unemployment has varied with the business cycle, it was less than 3 months from 1967 (when the measure was first calculated) to 2007.

Figure 5. Unemployed people, by duration of unemployment, seasonally adjusted, 1992–2017



Click legend items to change data display. Hover over chart to view data.
Note: Shaded areas represent recessions as determined by the National Bureau of Economic Research.
Source: U.S. Bureau of Labor Statistics, Current Population Survey.

During the 2007–09 recession, these relationships changed dramatically. The ranks of the long-term unemployed—those jobless for 27 weeks or longer—more than quadrupled in the two-and-a-half years starting in November 2007. At 6.8 million in April 2010, long-term unemployment represented an unprecedented 45.5 percent of total unemployment. This proportion remained above 40 percent for about 3 years, from December 2009 to November 2012. The median duration of unemployment increased from 8.6 weeks (about 2 months) in November 2007 to 25.2 weeks (about 6 months) in June 2010.

The number of unemployed people who had been trying to find work for shorter periods peaked near the official end date of the recession (June 2009). As civilian employment reached its trough at the start of 2010, layoffs declined, but job openings and hiring had not begun to recover.[8] The number of people who had been unemployed for less than 27 weeks declined, but the number of long-term unemployed remained elevated. Research suggests that, when job openings began to reappear, people who had been unemployed for a shorter period tended to be hired first. This, in turn, led to an increase in the proportion of the unemployed who had been looking for work for extended periods.[9]

Before the recession, in 2007, about 10 percent of the unemployed had been looking for work for 52 weeks or longer (about 1 year), and 3 percent had been looking for 99 weeks or longer (about 2 years). (See table 1.) The number of people experiencing this chronic unemployment increased markedly during the recession. Over the next 4 years, the number of people unemployed for a year or longer increased more than sixfold, from 704,000 in 2007 to 4.3 million in 2011. During the same period, the ranks of those unemployed for 2 years or longer rose almost eightfold, from 228,000 in 2007 to 1.9 million in 2011. From 2010 to 2012, about one in three unemployed people

had been looking for work for a year or longer. By the end of the 3-year period, the share of those unemployed for 2 years or longer approached 15 percent.[10]

Table 1. Unemployed people, by duration of unemployment, annual averages, 2007–17 (numbers in thousands)

Duration	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Number of unemployed											
Total unemployed	7,078	8,924	14,265	14,825	13,747	12,506	11,460	9,617	8,296	7,751	6,982
Less than 5 weeks	2,542	2,932	3,165	2,771	2,677	2,644	2,584	2,471	2,399	2,362	2,270
5 to 14 weeks	2,232	2,804	3,828	3,267	2,993	2,866	2,759	2,432	2,302	2,226	2,008
15 to 26 weeks	1,061	1,427	2,775	2,371	2,061	1,859	1,807	1,497	1,267	1,158	1,017
27 weeks and over	1,243	1,761	4,496	6,415	6,016	5,136	4,310	3,218	2,328	2,005	1,687
27 to 51 weeks	539	812	2,175	2,117	1,709	1,472	1,339	1,005	782	681	632
52 weeks and over	704	949	2,321	4,298	4,307	3,664	2,971	2,213	1,546	1,323	1,055
99 weeks and over	228	271	632	1,334	1,937	1,815	1,439	1,094	757	638	483
Percent distribution											
Total unemployed	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Less than 5 weeks	35.9	32.8	22.2	18.7	19.5	21.1	22.5	25.7	28.9	30.5	32.5
5 to 14 weeks	31.5	31.4	26.8	22.0	21.8	22.9	24.1	25.3	27.7	28.7	28.8
15 to 26 weeks	15.0	16.0	19.5	16.0	15.0	14.9	15.8	15.6	15.3	14.9	14.6
27 weeks and over	17.6	19.7	31.5	43.3	43.8	41.1	37.6	33.5	28.1	25.9	24.2
27 to 51 weeks	7.6	9.1	15.2	14.3	12.4	11.8	11.7	10.4	9.4	8.8	9.1
52 weeks and over	9.9	10.6	16.3	29.0	31.3	29.3	25.9	23.0	18.6	17.1	15.1
99 weeks and over	3.2	3.0	4.4	9.0	14.1	14.5	12.6	11.4	9.1	8.2	6.9

Source: U.S. Bureau of Labor Statistics, Current Population Survey.

By 2017, the number of people who had been unemployed for shorter periods returned to prerecession levels, reflecting increased hiring and fewer layoffs. Long-term unemployment declined as well, but the number of those who had been unemployed for a year or longer remained above its prerecession level. In December 2017, there were 1.5 million long-term unemployed, down by about 5 million from April 2010, but about 400,000 higher than the series' prerecession low. The number of people unemployed for a year or longer, at 1.1 million in 2017, was 50 percent higher than its 2007 level, while the number of people unemployed for 2 years or longer, at 483,000, was more than 2 times higher than it was a decade earlier. In 2017, the share of the unemployed who had been looking for work for at least a year was 15 percent; the share who had been looking for more than 2 years was 7 percent. Although long-term unemployment has been declining for the past six-and-a-half years, the median duration has only just returned to its prerecession level. In December 2017, the median duration was 9.1 weeks, compared with 8.6 weeks in November 2007.

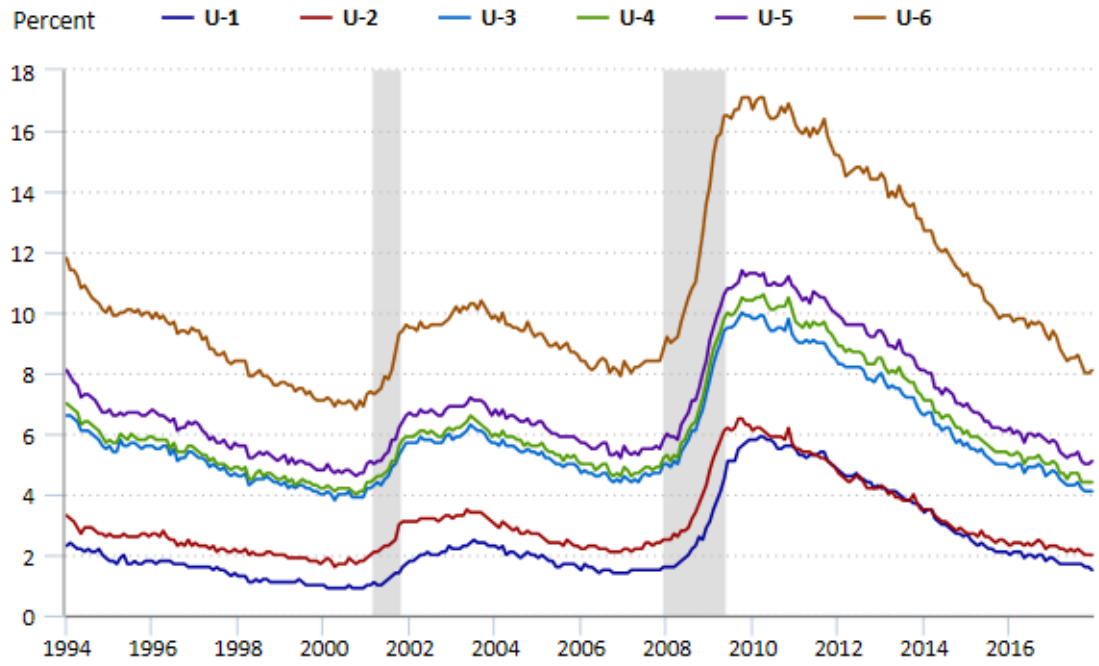
Labor underutilization

In addition to publishing the official unemployment rate, the U.S. Bureau of Labor Statistics (BLS) publishes five alternative measures of labor underutilization.[11] Designated U-1 to U-6 (U-3 is the official unemployment rate), these indicators capture a wider variety of labor market difficulties than does the unemployment rate alone. Two measures are more narrowly defined than the official unemployment rate: U-1 measures the number of people unemployed 15 weeks or longer, and U-2 measures the number of job losers and people who completed

temporary jobs (both measures are presented as a percentage of the civilian labor force). Three measures are broader in scope than the official unemployment rate, adding in groups elsewhere defined as being among those not in the labor force or employed. U-4 adds discouraged workers, U-5 adds all people marginally attached to the labor force (including discouraged workers), and U-6 adds all people marginally attached to the labor force as well as those working part time for economic reasons.[12]

During the recession, the alternative measures of labor underutilization typically tracked the official unemployment rate (U-3). (See figure 6.) All five measures increased dramatically during the recession, peaked in late 2009 or 2010, and have steadily declined since, returning to their prerecession levels by December 2017. In 2011, U-1 and U-2 converged for the first time in the series' history.[13] This was largely driven by the increase in long-term unemployment during the recovery described in the previous section.

Figure 6. Alternative measures of labor underutilization, seasonally adjusted, 1994–2017

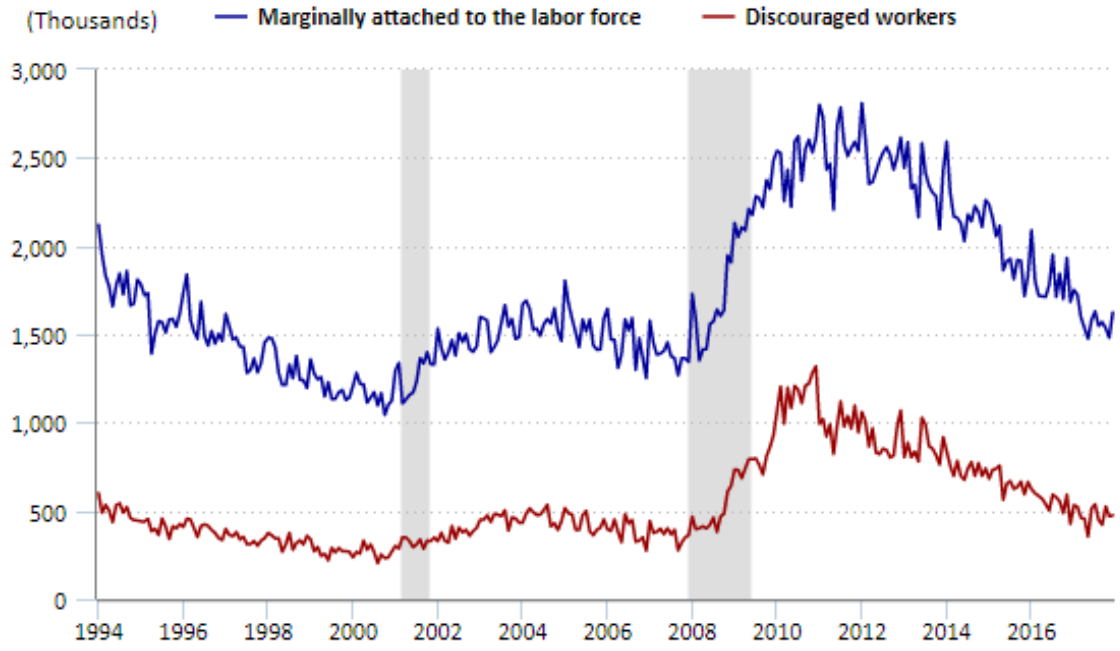


Click legend items to change data display. Hover over chart to view data.
Note: Shaded areas represent recessions as determined by the National Bureau of Economic Research. Measures of underutilization are as follows: U–1 = people unemployed 15 weeks or longer, as a percentage of the civilian labor force; U–2 = job losers and people who completed temporary jobs, as a percentage of the civilian labor force; U–3 = total unemployed, as a percentage of the civilian labor force (official unemployment rate); U–4 = total unemployed plus discouraged workers, as a percentage of the civilian labor force plus discouraged workers; U–5 = total unemployed, plus all people marginally attached to the labor force, as a percentage of the civilian labor force plus the marginally attached; U–6 = total unemployed, plus all people marginally attached to the labor force, plus total employed part time for economic reasons, as a percentage of the civilian labor force plus the marginally attached.
Source: U.S. Bureau of Labor Statistics, Current Population Survey.

U-4 and U-5 have tracked the unemployment rate closely during both the recession and the recovery. The number of people marginally attached to the labor force grew and declined at a rate similar to that of the unemployed. (See figure 7.) From late 2007 to early 2011, the ranks of the marginally attached doubled, from about 1.4 million to about 2.8 million, while the number of discouraged workers increased from about 350,000 to a peak of about 1.3 million. (The data are not seasonally adjusted.) By December 2017, the number of people marginally attached to the labor force had fallen to 1.6 million, and there were 474,000 discouraged workers. However, during both

recessions and recoveries, the marginally attached have represented a small share of all people not in the labor force. Even at its peak in 2011, the number of people marginally attached to the labor force represented only about 3 percent of the 86 million people not in the labor force.[14]

Figure 7. People not in the labor force, not seasonally adjusted, 1994–2017



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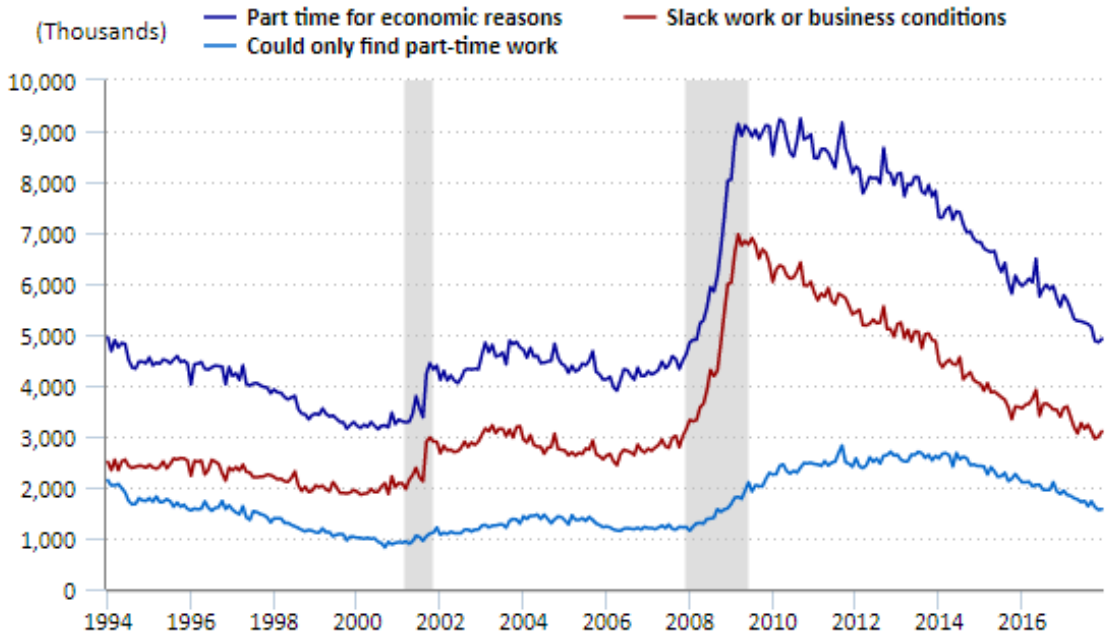
Note: Shaded areas represent recessions as determined by the National Bureau of Economic Research.
Source: U.S. Bureau of Labor Statistics, Current Population Survey.

During the recession, U-6 (the broadest measure of labor underutilization) increased from 8.4 percent in November 2007 to a peak of 17.1 percent in October 2009—an increase of 8.7 percentage points in less than 2 years. In April 2010, U-6 began to trend downward, and its decline accelerated after September 2011. By December 2017, the measure had reached 8.1 percent, little different from its prerecession level.

While U-6 has returned to its prerecession level, one of its components—the number of people employed part time for economic reasons (also referred to as involuntary part-time workers)—has remained elevated. (See figure 8.) These individuals would have preferred to work full time, but they were working part time because of slack work or business conditions or because they could not find a full-time job.[15]

Figure 8. People employed part time for economic reasons, seasonally adjusted, 1994–2017



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Note: Shaded areas represent recessions as determined by the National Bureau of Economic Research.
Source: U.S. Bureau of Labor Statistics, Current Population Survey.

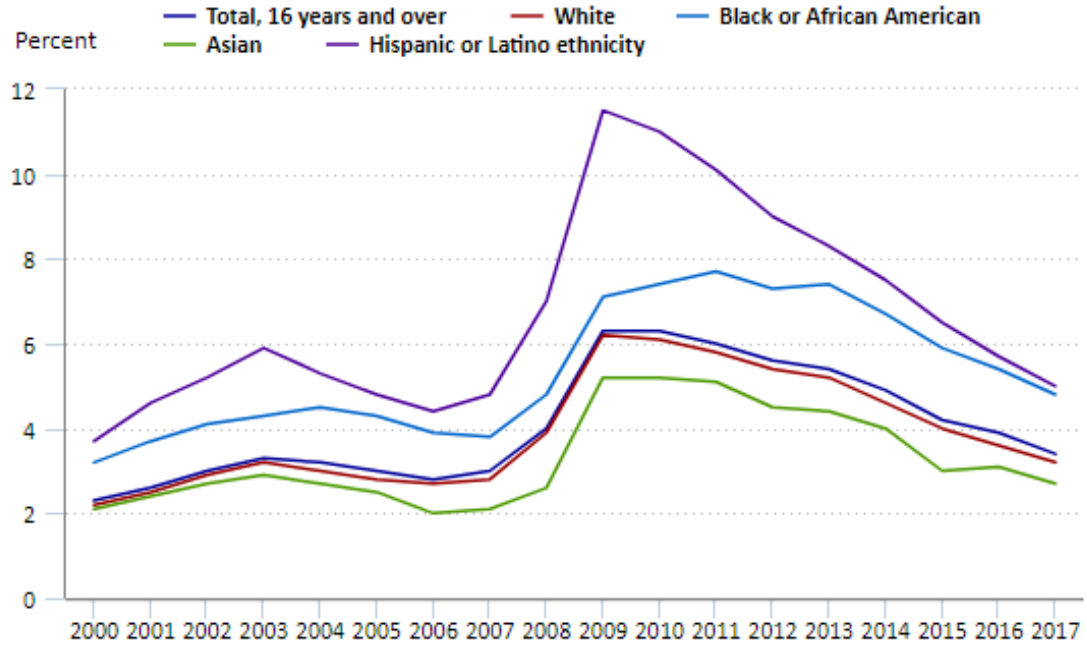
In April 2006, the number of involuntary part-time workers reached its prerecession low, 3.9 million. Over the next 4 years, this measure more than doubled, reaching 9.2 million, or 6.7 percent of total employment, in March 2010. The share of employment made up of involuntary part-time workers had not surpassed 5 percent since the 1981–82 recession.[16] Three-fourths of the increase between 2006 and 2010 was accounted for by those who were working part time because of slack work or business conditions.[17] This number started to increase sharply in November 2007 but turned downward immediately after the recession. By contrast, the number of people who could only find part-time work rose at a more modest pace during the recession and continued its upward trend well into the recovery. From November 2007 to June 2009, this measure increased from 1.2 million to 2.1 million, but rose an additional 724,000 before reaching its peak of 2.8 million in September 2011. The measure hovered around 2.6 million until mid-2014, when it began to trend downward.

The number of people employed part time for economic reasons has declined substantially since 2010, but has not completely returned to its prerecession level. In December 2017, there were 4.9 million involuntary part-time workers, or 3.2 percent of total employment. Involuntary part-time employment had declined by about 4 million from its peak, but the measure was still 1.0 million higher than its prerecession low. For much of 2006 and 2007, the number of people employed part time for economic reasons as a share of total employment was below 3 percent. The number of involuntary part-time workers who could only find part-time work numbered 1.6 million in December 2017, compared with 1.2 million before the recession. The number of those who were working part time because of slack work, 3.1 million, was 662,000 higher than it was in April 2006. Before, during, and after the

recession, involuntary part-time workers tended to be younger and employed in service or construction and extraction occupations.

Trends in involuntary part-time employment during the recession and recovery varied by race and ethnicity. (See figure 9.) Historically, Hispanics and Blacks have been more likely to be employed part time for economic reasons than Whites and Asians. (Asian estimates for 2000–02 are for Asians and Pacific Islanders; beginning in 2003, Asian is a separate category.) Involuntary part-time employment among Hispanics as a percentage of total employment rose sharply during the recession, from 5 percent in 2007 to 12 percent in 2009. This increase was partly due to the high concentration of Hispanics in construction occupations. The share for Blacks increased more slowly during the recession—peaking at 8 percent in 2011—and did not begin to trend down until later in the recovery. In 2017, the share for Hispanics (5 percent) was about the same as that for Blacks (5 percent), but both shares remained considerably higher than the shares for Whites (3 percent) and Asians (3 percent).

Figure 9. People employed part time for economic reasons as a percentage of total employment, by race and ethnicity, annual averages, 2000–17

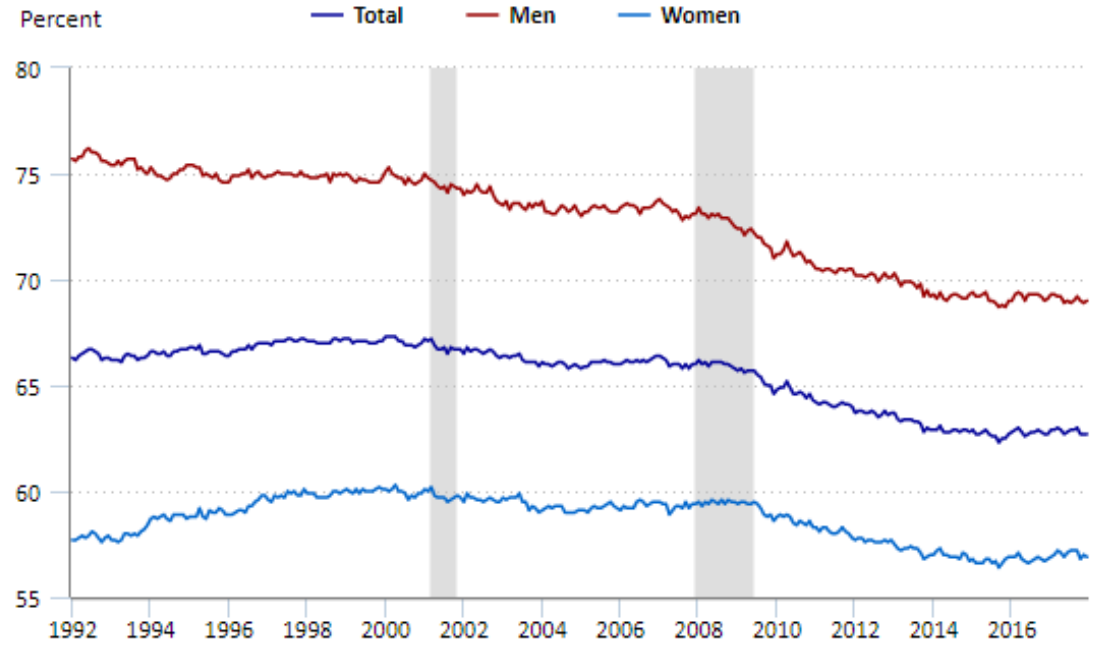


Click legend items to change data display. Hover over chart to view data.
Note: People of Hispanic or Latino ethnicity can be of any race.
Source: U.S. Bureau of Labor Statistics, Current Population Survey.

Labor force participation

Figure 10 presents the labor force participation rate—the share of the population working or looking for work—from 1992 to 2017. During the 2007–09 recession, the participation rate held fairly steady, declining by only 0.5 percentage point from November 2007 to July 2009. However, from July 2009 to September 2015, the rate fell 3.2 percentage points, down to 62.3 percent. At 62.7 percent in December 2017, the rate has shown little change, on net, in recent years.

Figure 10. Labor force participation rates, by gender, seasonally adjusted, 1992–2017



Click legend items to change data display. Hover over chart to view data.
Note: Shaded areas represent recessions as determined by the National Bureau of Economic Research.
Source: U.S. Bureau of Labor Statistics, Current Population Survey.

During the recession, labor force participation among men declined, while the rate for women held steady. For men, the labor force participation rate decreased 1.1 percentage points during the recession, down to 72.0 percent in July 2009, while the rate for women was 59.4 percent in July 2009, unchanged from November 2007. After the recession, participation declined proportionally among both men and women. From July 2009 to September 2015, the labor force participation rate for men declined 3.3 percentage points, to 68.7 percent, while the rate for women fell 3.0 percentage points, to 56.4 percent. Since then, the rates for both men and women have shown no clear trend, standing at 69.0 percent and 56.9 percent, respectively, in December 2017.

Among the major age groups, people 16 to 24 years old saw the largest decline in labor force participation during the recession. (See table 2.) From 2007 to 2010, the participation rate for young people declined 4.2 percentage points, to 55.2 percent. The decline was more pronounced among young people enrolled in school (−4.4 percentage points) than among those not enrolled in school (−2.2 percentage points). However, this downward trend, driven in part by increased school enrollment and fewer students working, predated the most recent recession. From 2000 to 2007, the participation rate for young people in school declined by 7.2 percentage points, while school enrollment increased steadily from 53.0 percent in October 2000 to 58.1 percent in October 2009.[18] During the recovery, the youth labor force participation rate held steady—at 55.5 percent in 2017, it was little changed from 2010. Together, these trends partly reflect the choice of many young people, especially teenagers, to focus on school or other extracurricular activities instead of participating in the labor force.[19]

Table 2. Labor force participation rates, by selected characteristics, annual averages, 1997–2017

Characteristics	1997	2007	2010	2017	Change, 1997–2007	Change, 2007–10	Change, 2010–17
Total, 16 years and over	67.1	66.0	64.7	62.9	-1.1	-1.3	-1.8
16 to 24 years	65.4	59.4	55.2	55.5	-6.0	-4.2	0.3
Enrolled in school	48.7	41.7	37.3	36.0	-7.0	-4.4	-1.3
Not enrolled in school	80.3	78.5	76.3	77.5	-1.8	-2.2	1.2
25 to 54 years	84.1	83.0	82.2	81.7	-1.1	-0.8	-0.5
55 years and over	30.9	38.6	40.2	40.0	7.7	1.6	-0.2
55 to 64 years	58.9	63.8	64.9	64.5	4.9	1.1	-0.4
65 years and over	12.2	16.0	17.4	19.3	3.8	1.4	1.9
Men, 16 years and over	75.0	73.2	71.2	69.1	-1.8	-2.0	-2.1
16 to 24 years	68.2	61.5	56.8	56.6	-6.7	-4.7	-0.2
Enrolled in school	47.2	38.9	35.0	33.5	-8.3	-3.9	-1.5
Not enrolled in school	86.6	84.5	81.0	81.1	-2.1	-3.5	0.1
25 to 54 years	91.8	90.9	89.3	88.6	-0.9	-1.6	-0.7
55 years and over	38.9	45.2	46.4	46.1	6.3	1.2	-0.3
55 to 64 years	67.6	69.6	70.0	70.6	2.0	0.4	0.6
65 years and over	17.1	20.5	22.1	23.9	3.4	1.6	1.8
Women, 16 years and over	59.8	59.3	58.6	57.0	-0.5	-0.7	-1.6
16 to 24 years	62.6	57.2	53.6	54.3	-5.4	-3.6	0.7
Enrolled in school	50.3	44.4	39.6	38.3	-5.9	-4.8	-1.3
Not enrolled in school	73.8	72.0	71.3	73.6	-1.8	-0.7	2.3
25 to 54 years	76.7	75.4	75.2	75.0	-1.3	-0.2	-0.2
55 years and over	24.6	33.2	35.1	34.7	8.6	1.9	-0.4
55 to 64 years	50.9	58.3	60.2	58.9	7.4	1.9	-1.3
65 years and over	8.6	12.6	13.8	15.7	4.0	1.2	1.9
Total, 16 years and over	67.1	66.0	64.7	62.9	-1.1	-1.3	-1.8
Men	75.0	73.2	71.2	69.1	-1.8	-2.0	-2.1
Women	59.8	59.3	58.6	57.0	-0.5	-0.7	-1.6
White, 16 years and over	67.5	66.4	65.1	62.8	-1.1	-1.3	-2.3
Men	75.9	74.0	72.0	69.5	-1.9	-2.0	-2.5
Women	59.5	59.0	58.5	56.4	-0.5	-0.5	-2.1
Black or African American, 16 years and over	64.7	63.7	62.2	62.3	-1.0	-1.5	0.1
Men	68.3	66.8	65.0	64.6	-1.5	-1.8	-0.4
Women	61.7	61.1	59.9	60.3	-0.6	-1.2	0.4
Asian, 16 years and over	—	66.5	64.7	63.6	—	-1.8	-1.1
Men	—	75.1	73.2	71.9	—	-1.9	-1.3
Women	—	58.6	57.0	56.4	—	-1.6	-0.6
Hispanic or Latino ethnicity, 16 years and over	67.9	68.8	67.5	66.1	0.9	-1.3	-1.4
Men	80.1	80.5	77.8	75.8	0.4	-2.7	-2.0
Women	55.1	56.5	56.5	56.4	1.4	0.0	-0.1

Note: People of Hispanic or Latino ethnicity can be of any race.

Source: U.S. Bureau of Labor Statistics, Current Population Survey.

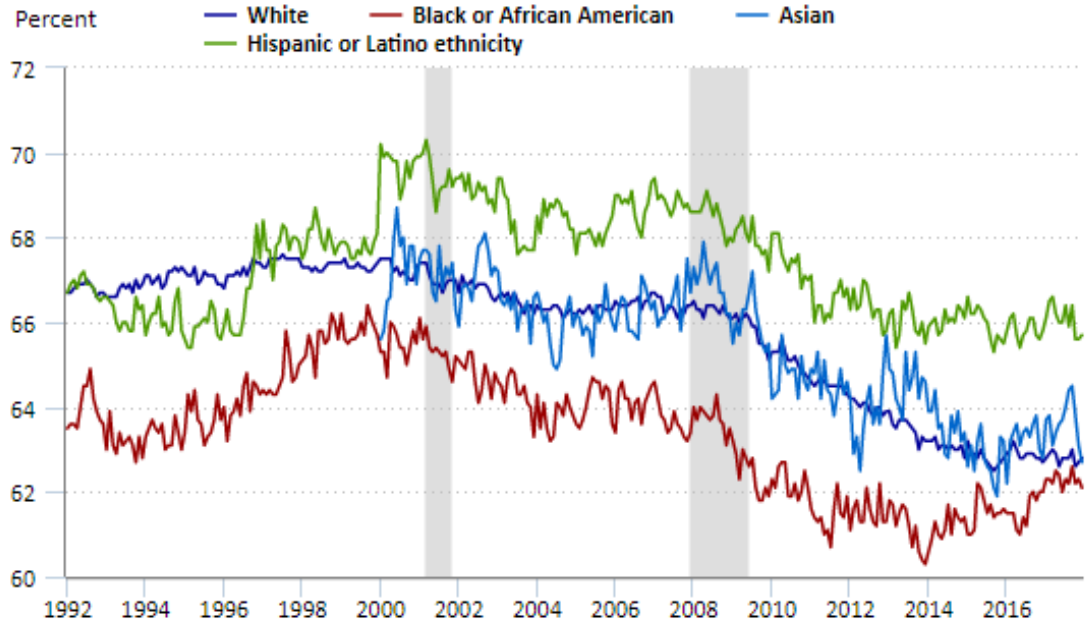
During and immediately after the recession, the labor force participation rate among those of prime working age (25 to 54 years old) declined, but it has begun to rebound in recent years. From 2008 to 2013, the rate declined 2.1 percentage points, down to 81.0 percent, holding steady for the following 2 years. Since 2015, the participation

rate had been on an upward trend that continued through 2017.[20] On a seasonally adjusted basis, the prime-working-age labor force participation rate was 81.9 percent in December.

For those age 55 and over, the recession marked the sunset of a nearly two-decade-long increase in labor force participation. From 1994 to 2012, the labor force participation rate for this group increased 11.1 percentage points, to 40.5 percent, and only about 1 percentage point of this increase occurred during the most recent recession.[21] In recent years, the rate has held steady, at about 40 percent. During the recession, labor force participation increased for both those 55 to 64 years and those 65 years and over. This movement likely reflected continued upward pressure from factors beyond the business cycle, including longer life expectancies, higher educational attainment, increases to the Social Security full retirement age, and the long-term shift from defined-benefit to defined-contribution pension plans.[22] During the recovery, however, the participation rate for 55- to 64-year-olds edged down by 0.4 percentage point, while the rate for those 65 years and over rose a further 1.9 percentage points. In 2017, 19.3 percent of people 65 years and over were in the labor force, up from 12.2 percent two decades ago.

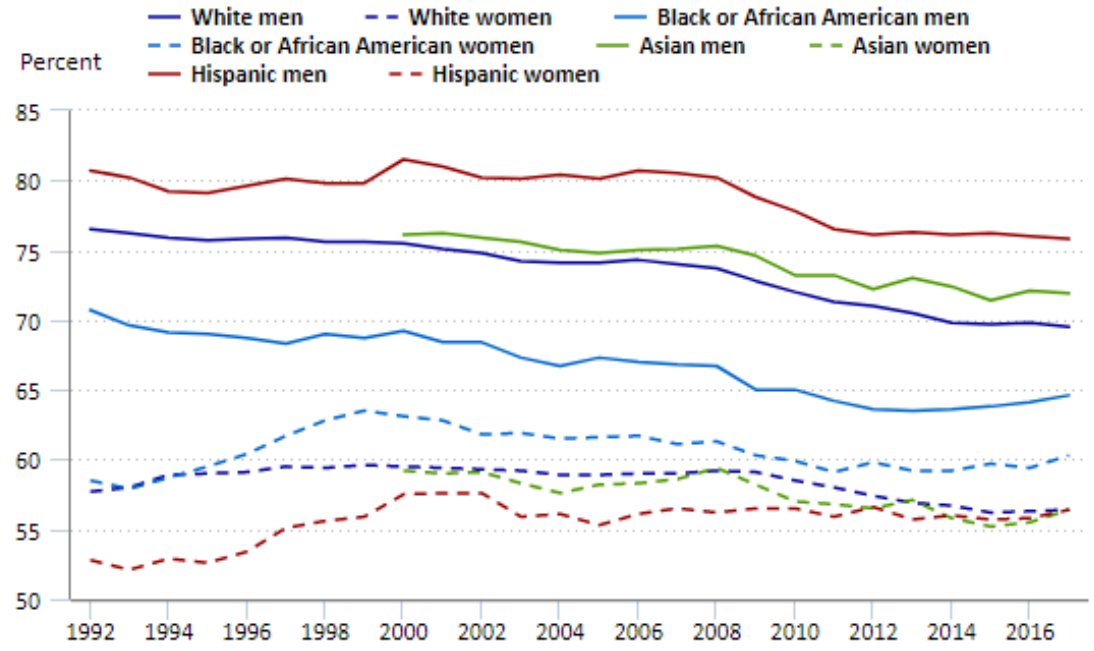
During the recession, labor force participation fell for men and women of almost all major race and ethnicity groups. (See table 2, figure 11, and figure 12.) The exception was Hispanic women, whose participation rate, at 56.5 percent in 2010, was unchanged, on net, from 2007. From 2007 to 2010, the labor force participation rates for White men (72.0 percent in 2010), Black men (65.0 percent), Asian men (73.2 percent), and Hispanic men (77.8 percent) all declined by about 2 percentage points. Over the same period, the rate for Asian women (57.0 percent in 2010) declined by 1.6 percentage points, the rate for Black women (59.9 percent) declined by 1.2 percentage points, and the rate for White women (58.5 percent) declined by 0.5 percentage point.

Figure 11. Labor force participation rates, by race and ethnicity, seasonally adjusted, 1992–2017



Click legend items to change data display. Hover over chart to view data.
Note: Shaded areas represent recessions as determined by the National Bureau of Economic Research. People of Hispanic or Latino ethnicity can be of any race. Data for Asians from 2000 to 2002 are not seasonally adjusted.
Source: U.S. Bureau of Labor Statistics, Current Population Survey.

Figure 12. Labor force participation rates, by gender and race and ethnicity, annual averages, 1992–2017



Click legend items to change data display. Hover over chart to view data.
Note: People of Hispanic or Latino ethnicity can be of any race.
Source: U.S. Bureau of Labor Statistics, Current Population Survey.

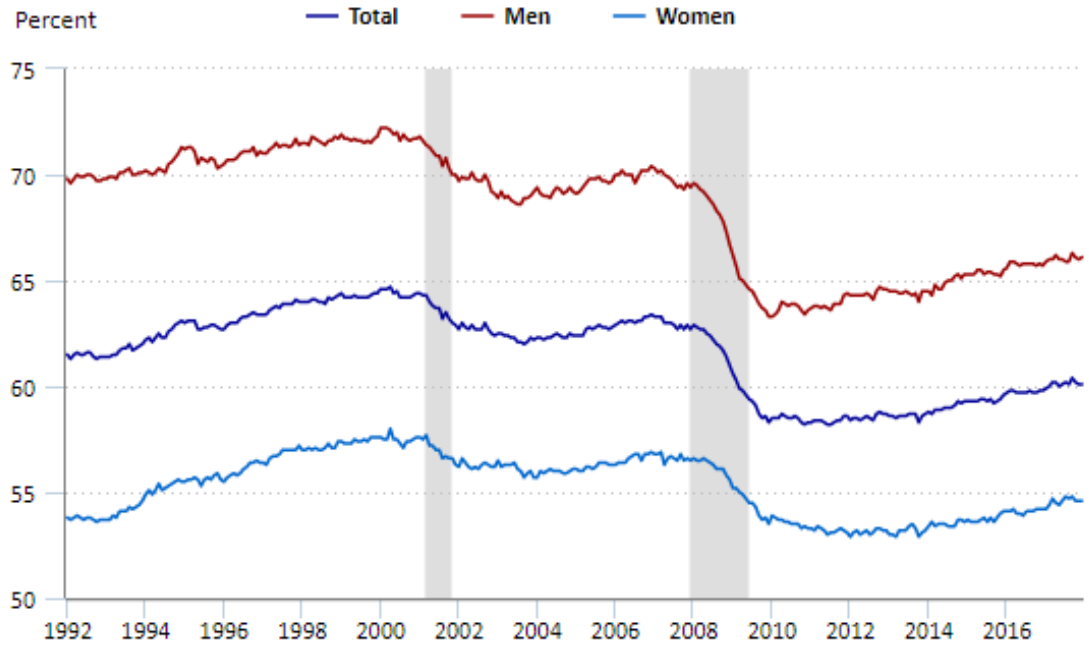
During the recovery, the labor force participation rates for White men and women continued to decline, but have leveled off in recent years. In 2017, 69.5 percent of White men and 56.4 percent of White women participated in the labor force. The participation rate for Black men edged down from 2010 to 2012 and held steady through 2014, but has trended up since, reaching 64.6 percent in 2017. The rate for Hispanic men, at 75.8 percent in 2017, has changed little since falling 1.3 percentage points between 2010 and 2011. Since 2010, the rate for Asian men has edged down to 71.9 percent in 2017. Finally, the 2017 rates for Asian (56.4 percent), Black (60.3 percent), and Hispanic (56.4 percent) women have changed little.

Although the overall labor force participation rate continued to fall during the recession and subsequent recovery, not all of this decline is directly attributable to the recession itself. Adding to the labor market stress caused by the recession, the oldest members of the baby-boom generation—typically defined as those born between 1946 and 1964—began to reach retirement age (62 years old, the age when Social Security benefits can first be drawn) in 2008. Since those 65 years and older participate in the labor force at a significantly lower rate than younger age groups, this demographic trend has naturally applied downward pressure on the participation rate. This is especially true for Whites—the oldest of the race and ethnicity groups, on average. Many economists have attempted to decompose the effects of aging and the recession on the decline in labor force participation. While exact estimates vary, most indicate that the aging of the U.S. population accounted for about half of the decline in labor force participation between 2007 and 2015.[23]

Employment

During and immediately after the recession, employment, as measured by the CPS, declined by 8.6 million. This decline drove down the employment–population ratio (the employed as a percentage of the civilian noninstitutional population) from 62.9 percent in November 2007 to 58.3 percent in December 2009. (See figure 13.) The 4.6-percentage-point drop was the largest decline in a 2-year span since the series began in 1948. During the early stages of the recovery, the employment–population ratio generally held steady, remaining in the 58.2- to 58.8-percent range. In 2014, the employment–population ratio began to recover. From 2014 to 2017, the ratio increased by about 1 percentage point, to 60.1 percent. However, the ratio remained about 3 percentage points below its prerecession level. This is partly the result of the aging and retirement of the baby-boom generation, the major factor placing downward pressure on the labor force participation rate.

Figure 13. Employment–population ratios, by gender, seasonally adjusted, 1992–2017

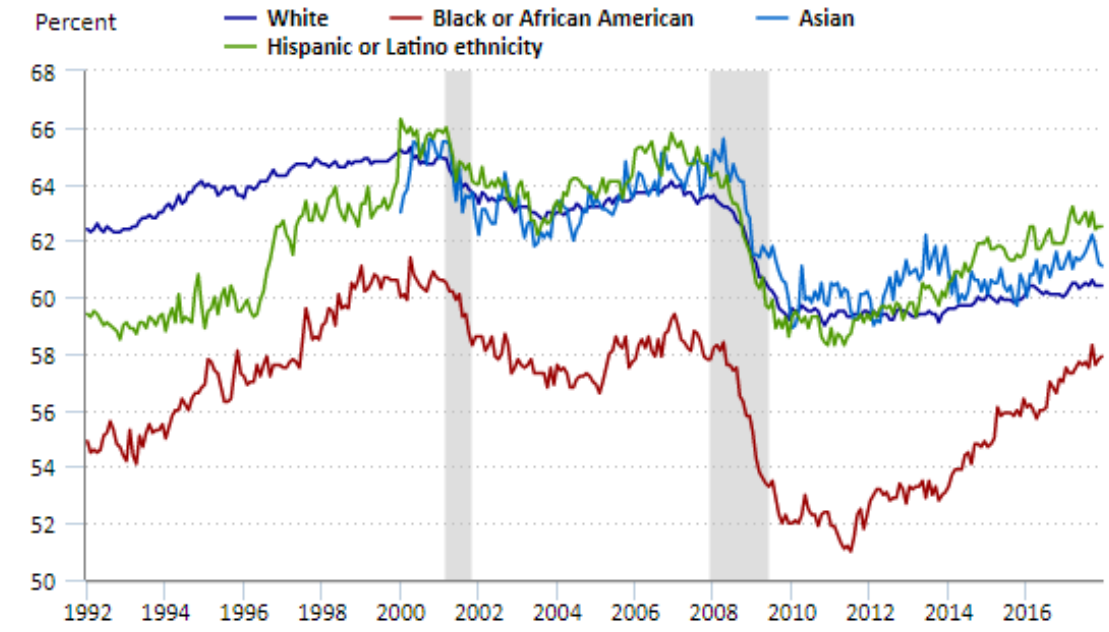


Click legend items to change data display. Hover over chart to view data.
Note: Shaded areas represent recessions as determined by the National Bureau of Economic Research.
Source: U.S. Bureau of Labor Statistics, Current Population Survey.

During the recession, the employment–population ratio for men declined by 6.3 percentage points, down to 63.3 percent in December 2009, and the ratio for women declined by 3.1 percentage points, down to 53.5 percent. The larger decline among men partially reflected their long-term decline in labor force participation. During the recovery, the ratio for men started to trend up almost immediately. The ratio for women, on the other hand, continued to trend down until 2012, hovering around 53 percent, and did not begin to rebound until late 2013. During the recovery up to December 2017, the ratio for men had risen by almost 3 percentage points, while the ratio for women had risen by just under 2 percentage points. In December 2017, the employment–population ratio for men was 66.1 percent, while the ratio for women was 54.6 percent. Both measures remain significantly below their prerecession levels.

Figure 14 presents employment–population ratios by race and ethnicity. During the 2001–07 expansion, the ratios for Whites, Asians, and Hispanics tracked each other closely, while the ratio for Blacks was significantly lower. Looking at these measures by gender reveals that Hispanic men had the highest employment–population ratio before the recession, while their female counterparts had the lowest ratio. (See table 3.) The low employment–population ratio before the recession among Blacks overall was driven by the relatively low ratio for Black men compared with men of other races. Black women, on the other hand, had an employment–population ratio similar to the ratios of White and Asian women.

Figure 14. Employment–population ratios, by race and ethnicity, seasonally adjusted, 1992–2017



Click legend items to change data display. Hover over chart to view data.
Note: Shaded areas represent recessions as determined by the National Bureau of Economic Research. People of Hispanic or Latino ethnicity can be of any race. Data for Asians from 2000 to 2002 are not seasonally adjusted.
Source: U.S. Bureau of Labor Statistics, Current Population Survey.

Table 3. Employment–population ratios, by age, gender, and race and ethnicity, annual averages, 1997–2017

Characteristics	1997	2007	2010	2017	Change, 1997–2007	Change, 2007–10	Change, 2010–17
Total, 16 years and over	63.8	63.0	58.5	60.1	-0.8	-4.5	1.6
Men	71.3	69.8	63.7	66.0	-1.5	-6.1	2.3
Women	56.8	56.6	53.6	54.6	-0.2	-3.0	1.0
White, 16 years and over	64.6	63.6	59.4	60.4	-1.0	-4.2	1.0
Men	72.7	70.9	65.1	66.9	-1.8	-5.8	1.8
Women	57.0	56.7	54.0	54.2	-0.3	-2.7	0.2
Black or African American, 16 years and over	58.2	58.4	52.3	57.6	0.2	-6.1	5.3
Men	61.4	60.7	53.1	59.4	-0.7	-7.6	6.3
Women	55.6	56.5	51.7	56.1	0.9	-4.8	4.4
Asian, 16 years and over	—	64.3	59.9	61.5	—	-4.4	1.6

See footnotes at end of table.

Table 3. Employment–population ratios, by age, gender, and race and ethnicity, annual averages, 1997–2017

Characteristics	1997	2007	2010	2017	Change, 1997–2007	Change, 2007–10	Change, 2010–17
Men	—	72.8	67.5	69.5	—	-5.3	2.0
Women	—	56.6	53.0	54.5	—	-3.6	1.5
Hispanic or Latino ethnicity, 16 years and over	62.6	64.9	59.0	62.7	2.3	-5.9	3.7
Men	74.5	76.2	68.0	72.3	1.7	-8.2	4.3
Women	50.2	53.0	49.6	53.2	2.8	-3.4	3.6

Note: People of Hispanic or Latino ethnicity can be of any race.

Source: U.S. Bureau of Labor Statistics, Current Population Survey.

During the recession, employment declined sharply for all major race and ethnicity groups, but the decline was most pronounced among Blacks. The employment–population ratio for Blacks declined by almost 7 percentage points during and after the recession. At the low point in July 2011, only about half (51.0 percent) of Blacks were employed. Consistent with historical patterns, Black men fared worse than did men of other race and ethnicity groups. In fact, from 2009 to 2011, their employment–population ratio fell below the ratio for White women and was level with the ratio for Asian women. The ratio for Black women trended similarly to the ratios for women of other race and ethnicity groups.

The ratios for major race and ethnicity groups held fairly steady for the first 2 years of the recovery, but have started to rebound in recent years. From 2012 onward, the ratios generally trended up, with Blacks seeing the largest increase. By December 2017, the employment–population ratio for Blacks was 57.9 percent, virtually returning to its prerecession level. The employment–population ratios of Whites (60.4 percent), Asians (61.1 percent), and Hispanics (62.5 percent), however, all remained well below their prerecession levels.

Employment by occupation

The recession certainly provided a negative employment shock to some occupations within the economy; however, there were differences across the major occupational groups. Since 2000, employment in management, professional, and related occupations and in service occupations has increased, seeing slower growth but no decline during the recession. In the remaining occupational groups, however, employment was essentially flat between 2000 and 2007, fell sharply during the recession, and had not returned to its 2007 level by 2017. (See table 4 and figure 15.)

Table 4. Employment, by major occupational group, annual averages, 2000–17 (numbers in thousands)

Occupational group	2000	2007	2010	2017	Percent change, 2000–07	Percent change, 2007–10	Percent change, 2010–17	Percent change, 2000–17
Total, 16 years and over	136,891	146,047	139,064	153,337	6.7	-4.8	10.3	12.0
Management, professional, and related occupations	46,301	51,788	51,743	60,901	11.9	-0.1	17.7	31.5

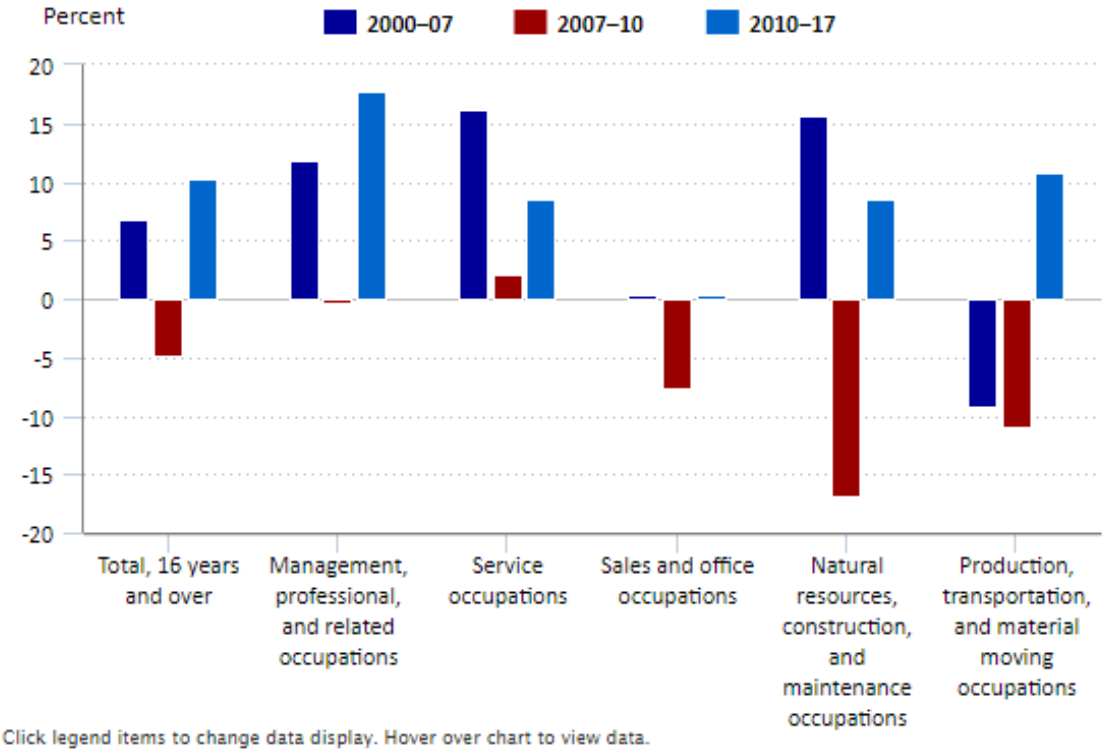
See footnotes at end of table.

Table 4. Employment, by major occupational group, annual averages, 2000–17 (numbers in thousands)

Occupational group	2000	2007	2010	2017	Percent change, 2000–07	Percent change, 2007–10	Percent change, 2010–17	Percent change, 2000–17
Service occupations	20,777	24,137	24,634	26,751	16.2	2.1	8.6	28.8
Sales and office occupations	36,169	36,212	33,433	33,566	0.1	-7.7	0.4	-7.2
Natural resources, construction, and maintenance occupations	13,607	15,740	13,073	14,193	15.7	-16.9	8.6	4.3
Production, transportation, and material moving occupations	20,037	18,171	16,180	17,927	-9.3	-11.0	10.8	-10.5

Source: U.S. Bureau of Labor Statistics, Current Population Survey.

Figure 15. Percent change in employment, by major occupational group, annual averages, 2000–17



Click legend items to change data display. Hover over chart to view data.
Source: U.S. Bureau of Labor Statistics, Current Population Survey.

During the recession, employment fell in natural resources, construction, and maintenance occupations (−16.9 percent); production, transportation, and material moving occupations (−11.0 percent); and sales and office occupations (−7.7 percent). These occupations often see declines during economic downturns. On the other hand, employment in management, professional, and related occupations was essentially unchanged (−0.1 percent)

from 2007 to 2010, and employment in service occupations rose by 2.1 percent. As a result, the share of employment in management, professional, and related occupations increased from 35.5 percent in 2007 to 37.2 percent in 2010, while the share employment in service occupations rose from 16.5 percent to 17.8 percent over the same period.

During the expansion, employment growth in management, professional, and related occupations and in service occupations has outpaced growth in other occupations. (Data for 2017 are not strictly comparable to data for 2010 because of a change to the occupational classification system.) Employment in management, professional, and related occupations rose by 17.7 percent from 2010 to 2017, and the number of people working in service occupations grew by 8.6 percent. Employment levels for these two occupational groups are well above their prerecession values and have both grown by close to 30 percent since 2000. In 2017, 39.7 percent of the employed worked in management, professional, and related occupations, and 17.4 percent worked in service occupations. From 2010 to 2017, employment changed little in sales and office occupations (0.4 percent) and grew modestly in production, transportation, and material moving occupations (10.8 percent) and in natural resources, construction, and maintenance occupations (8.6 percent). None of these three occupational groups has returned to its prerecession employment high.

Differences in the occupational distribution of employment among major race and ethnicity groups have also been consistent during the recovery. (See table 5.) While the shares of total employment in management, professional, and related occupations have increased for all the major race and ethnicity groups, the share for Asians, at 52.0 percent in 2017, continue to be the highest, followed by the shares for Whites (40.6 percent), Blacks (30.8 percent), and Hispanics (22.5 percent). In addition, in 2017, employed Hispanics (24.8 percent) and Blacks (24.2 percent) remained significantly more likely than Asians (16.8 percent) and Whites (16.2 percent) to be employed in service occupations. However, these differences may, in part, reflect gaps in educational attainment across race and ethnicity groups. Compared with Blacks and Hispanics, Asians and Whites are significantly more likely to be college graduates, and college graduates, in turn, are more likely to be employed in management, professional, and related occupations.

Table 5. Percentage of people employed in management, professional, and related occupations and in service occupations, by race and ethnicity, annual averages, 2000–17

Occupation, race, and ethnicity	2000	2007	2010	2017
Management, professional, and related occupations				
Total, 16 years and over	33.8	35.5	37.2	39.7
White	34.6	36.1	37.9	40.6
Black or African American	25.3	27.1	29.1	30.8
Asian	42.5	48.1	47.0	52.0
Hispanic or Latino ethnicity	16.0	17.8	18.9	22.5
Service occupations				
Total, 16 years and over	15.2	16.5	17.7	17.4
White	14.2	15.5	16.6	16.2
Black or African American	22.7	23.3	25.1	24.2
Asian	14.5	16.0	18.0	16.8
Hispanic or Latino ethnicity	22.4	24.1	26.4	24.8

Note: People of Hispanic or Latino ethnicity may be of any race.

See footnotes at end of table.

Source: U.S. Bureau of Labor Statistics, Current Population Survey.

Earnings

Another way to use CPS data in gauging the labor market recovery is to study how much workers earn.[24] Table 6 presents data on real median weekly earnings of full-time wage and salary workers.[25] Median earnings represent the midpoint of the distribution, where 50 percent of full-time wage and salary workers earn more in a typical week, and 50 percent earn less. Earnings data from the CPS are most useful for analyzing differences across demographic groups.[26] Note, however, that these comparisons are on a broad level and do not control for many factors that may be important in explaining earnings differences. Generally, differences in earnings between men and women, and between the major race and ethnicity groups, held steady during the recession and recovery.

Table 6. Real median weekly earnings of full-time wage and salary workers, by gender, major occupational group, and race and ethnicity, annual averages, 2000–17 (2017 dollars)

Characteristics	2000	2007	2010	2017	Percent change, 2000–07	Percent change, 2007–10	Percent change, 2010–17	Percent change, 2000–17
Total, 16 years and over	$820	$822	$840	$860	0.2	2.2	2.4	4.9
Men	912	906	926	941	-0.7	2.2	1.6	3.2
Women	702	726	752	770	3.4	3.6	2.4	9.7
White	840	846	860	890	0.7	1.7	3.5	6.0
Black or African American	675	673	687	682	-0.3	2.1	-0.7	1.0
Asian	875	981	961	1,043	12.1	-2.0	8.5	19.2
Hispanic or Latino ethnicity	568	595	601	655	4.8	1.0	9.0	15.3
Management, professional, and related occupations	1,153	1,177	1,195	1,224	2.1	1.5	2.4	6.2
Service occupations	520	537	538	544	3.3	0.2	1.1	4.6
Sales and office occupations	700	707	709	718	1.0	0.3	1.3	2.6
Natural resources, construction, and maintenance occupations	828	792	808	801	-4.3	2.0	-0.9	-3.3
Production, transportation, and material moving occupations	676	682	673	692	0.9	-1.3	2.8	2.4

Note: Real median earnings are adjusted for inflation with the use of the Consumer Price Index for All Urban Consumers. People of Hispanic or Latino ethnicity may be of any race.

Source: U.S. Bureau of Labor Statistics, Current Population Survey and Consumer Price Indexes.

During the recession, real median weekly earnings increased by 2.2 percent, from $822 in 2007 to $840 in 2010, after changing little, on net, over the previous 7 years. The increase during the recession may reflect, in part, the fact that many workers receiving lower pay were laid off or had their hours cut back.[27] From 2010 to 2017, real earnings edged up by only 2.4 percent, to $860 in 2017. While earnings grew at a slightly higher rate among

women than among men during the expansion, the increase was modest for both groups. Over the 7-year period, earnings for women increased by 2.4 percent, to $770 in 2017, and earnings for men increased by 1.6 percent, to $941 in 2017. Throughout the recession and recovery, the female-to-male earnings ratio remained in the 80- to 83-percent range.[28]

Differences in real earnings across the major race and ethnicity groups have also persisted throughout the recession and recovery. Since 2007, the Black-to-White earnings ratio has generally held steady, at about 79 percent, exhibiting a slight downward trend in recent years. At the same time, the Hispanic-to-White earnings ratio continued its slow upward trend, reaching about 74 percent in 2017. Finally, earnings for Asians in 2017 remained between 10 and 20 percent higher than those for Whites, as has been the case over the past decade.

Real median weekly earnings varied by major occupational group during the recession and recovery. In addition to seeing strong employment growth, management, professional, and related occupations had real earnings growth of 1.5 percent from 2007 to 2010 and 2.4 percent from 2010 to 2017. This was the only major occupational group with substantive positive change in earnings during both the recession and the recovery. Real median weekly earnings for the other four major occupational groups have edged up by only about $10 over the past decade. In 2017, earnings for workers in service occupations ($544) continued to be significantly lower than earnings for workers in sales and office occupations ($718); natural resources, construction, and maintenance occupations ($801); and production, transportation, and material moving occupations ($692).

Summary

Data from the CPS show that the U.S. labor market has improved substantially since the end of the Great Recession. By December 2017, unemployment rates had returned to prerecession levels for people of all ages, genders, major race and ethnicity groups, and levels of educational attainment. Other measures of labor underutilization had also improved, and employment–population ratios had begun to rebound. Many long-term trends in the labor market continued during the recovery. Labor force participation was mostly flat, driven in part by the aging of the population. Employment continued to grow both in management, professional, and related occupations and in service occupations—the highest and lowest paid occupational groups, respectively, in 2017. Stark differences in unemployment, employment, and earnings remained across major race and ethnicity groups and across educational attainment groups. Finally, some labor market indicators had not returned to their prerecession levels by the end of 2017. Involuntary part-time employment remained elevated, as did long-term unemployment.

SUGGESTED CITATION

Evan Cunningham, "Great Recession, great recovery? Trends from the Current Population Survey," *Monthly Labor Review,* U.S. Bureau of Labor Statistics, April 2018, https://doi.org/10.21916/mlr.2018.10

NOTES

1 Recession start and end dates are designated by the National Bureau of Economic Research (NBER). The NBER defines a recession as a “significant decline in economic activity spread across the economy, lasting more than a few months, normally visible in real GDP, real income, employment, industrial production, and wholesale-retail sales.” See “U.S. business cycle expansions and contractions” (Cambridge, MA: National Bureau of Economic Research, September 2010), http://www.nber.org/cycles.html.

2 The Current Population Survey (CPS) is a monthly national sample survey conducted by the U.S. Bureau of Labor Statistics and the U.S. Census Bureau. The survey, best known as the source of the official unemployment rate, measures the extent of employment and unemployment among the U.S. civilian noninstitutional population 16 years and over. For more information on the CPS, see https://www.bls.gov/cps.

3 See "U.S. business cycle expansions and contractions."

4 In the 1970s, the unemployment rate for women was higher than that for men.

5 This gap was the smallest since unemployment-rate data were first collected for Hispanics in 1973.

6 July is typically the summertime peak in youth employment. See *Employment and unemployment among youth—summer 2017*, USDL-17-1128 (U.S. Department of Labor, August 16, 2017), https://www.bls.gov/news.release/pdf/youth.pdf.

7 Note that CPS estimates of unemployment duration do not represent "spells" of unemployment or a completed period of job search. The data do not measure how many weeks an unemployed person took to find employment or leave the labor force. The measure represents the ongoing number of weeks individuals had been unemployed at the time they were surveyed. For more information, see Randy Ilg and Eleni Theodossiou, "Job search of the unemployed by duration of unemployment," *Monthly Labor Review*, March 2012, https://www.bls.gov/opub/mlr/2012/03/art3full.pdf; and Karen Kosanovich and Eleni Theodossiou Sherman, "Trends in long-term unemployment," *Spotlight on Statistics*, March 2015, https://www.bls.gov/spotlight/2015/long-term-unemployment/.

8 According to data from the BLS Job Openings and Labor Turnover Survey, in 2010, the job openings rate and the hiring rate ranged between 2.9 percent and 3.3 percent, with no clear trend. The rate of layoffs and discharges, on the other hand, declined from a peak of 1.9 percent in the first quarter of 2009 to 1.4 percent in the first quarter of 2010. See https://data.bls.gov/timeseries/JTS00000000JOR, https://data.bls.gov/timeseries/JTS00000000HIR, and https://data.bls.gov/timeseries/JTS00000000LDR.

9 Using research series from the CPS, Ilg and Theodossiou ("Job search of the unemployed," table 2, p. 44) find that despite accounting for over 40 percent of the unemployed, only 27 percent of the unemployed who found jobs in 2011 had been looking for work for 27 weeks or more. See also James D. Eubanks and David Wiczer, "Duration dependence and composition in unemployment spells," Federal Reserve Bank of St. Louis *Review*, vol. 98, no. 4 (Federal Reserve Bank of St. Louis, December 2016), https://files.stlouisfed.org/files/htdocs/publications/review/2016-12-05/duration-dependence-and-composition-in-unemployment-spells.pdf.

10 In the aftermath of the recession, the increase in long-term unemployment was so severe that, effective with data for January 2011, the CPS was modified to allow respondents to report longer durations of joblessness. For more information, see "Changes to data collected on unemployment duration" (U.S. Bureau of Labor Statistics), https://www.bls.gov/cps/duration.htm.

11 For discussion of the development of these measures, see Steven E. Haugen, "Measures of labor underutilization from the Current Population Survey," Working Paper 424 (U.S. Bureau of Labor Statistics, March 2009), https://www.bls.gov/osmr/research-papers/2009/pdf/ec090020.pdf. For analysis of recent trends, see Vernon Brundage, "Trends in unemployment and other labor market difficulties," *Beyond the Numbers*, vol. 3, no. 25, November 2014, https://www.bls.gov/opub/btn/volume-3/trends-in-unemployment-and-other-labor-market-difficulties.htm.

12 People marginally attached to the labor force are those who are not in the labor force, want and are available for a job, and have looked for work sometime in the past 12 months (or since the end of their last job if they held one within the past 12 months), but who are not currently looking for a job. Discouraged workers—a subset of the marginally attached—are those not currently looking for work because they believe that (1) no work is available in their line of work or area, (2) they could not find any work, (3) they lack the necessary school, training, skills, or experience, (4) employers think they are too young or too old, or (5) they would encounter hiring discrimination.

13 Historically comparable data for U-1 are available back to 1948, while data for U-2 are available back to 1967. See https://data.bls.gov/timeseries/LNS13025670&from_year=1948&to_year=2017&original_include_graphs=true and https://data.bls.gov/timeseries/LNS14023621&from_year=1967&to_year=2017&original_include_graphs=true.

14 People do not participate in the labor force for a variety of reasons, including (but not limited to) retirement, school attendance, disability, or taking care of their families.

15 A very small number of people are employed part time for economic reasons because of a seasonal decline in demand or because their job started or ended during the week.

16 Data on involuntary part-time employment before 1994 are not directly comparable because of the major CPS redesign in that year. Research has indicated that involuntary part-time employment was overestimated by 25 percent before the 1994 redesign. The present analysis adjusts for this overestimation by multiplying the involuntary part-time employment level by 0.8. See Anne E. Polivka and Steven M. Miller, "The CPS after the redesign: refocusing the economic lens" (U.S. Bureau of Labor Statistics, March 1995), https://www.bls.gov/osmr/research-papers/1995/pdf/ec950090.pdf.

17 An example of slack work or business conditions is a situation in which a manager of a restaurant, expecting fewer customers, tells his or her wait staff to work fewer hours in the reference week. For additional analysis of part-time employment for economic reasons during the recession, see Emy Sok, "Involuntary part-time work on the rise," *Issues in Labor Statistics*, Summary 08-08 (U.S. Bureau of Labor Statistics, December 2008), https://www.bls.gov/opub/ils/pdf/opbils71.pdf.

18 Estimates are from the CPS School Enrollment supplement, conducted annually in October. For more information, see *College enrollment and work activity of 2016 high school graduates*, USDL-17-0477 (U.S. Department of Labor, April 27, 2017), https://www.bls.gov/news.release/pdf/hsgec.pdf. Research suggests that the increase in school enrollment from 2007 to 2009 reflected both the continuation of a long-term trend and the tendency of enrollment to increase during economic downturns. For an in-depth discussion, see Lisa Barrow and Jonathan Davis, "The upside of down: postsecondary enrollment in the Great Recession," *Economic Perspectives*, vol. 36 (Federal Reserve Bank of Chicago, fourth quarter 2012), https://www.chicagofed.org/publications/economic-perspectives/2012/4q-barrow-davis.

19 See Teresa L. Morisi, "Teen labor force participation before and after the Great Recession and beyond," *Monthly Labor Review*, February 2017, https://doi.org/10.21916/mlr.2017.5.

20 Monthly seasonally adjusted data from the CPS show that the prime-working-age labor force participation rate has been on an upward trend since September 2015. See https://data.bls.gov/timeseries/LNS11300060.

21 Monthly seasonally adjusted data from the CPS show that the labor force participation rate for those 55 years and over increased from 38.9 percent in November 2007 to 40.0 percent in July 2009. See https://data.bls.gov/timeseries/LNS11324230.

22 See Diane W. Schanzenbach, Ryan Nunn, and Lauren Bauer, "The changing landscape of American life expectancy" (Washington, DC: The Hamilton Project, June 2016), http://www.hamiltonproject.org/assets/files/changing_landscape_american_life_expectancy.pdf; Gary Burtless, "Can educational attainment explain the rise in labor force participation at older ages?" Issue in Brief 13-13 (Center for Retirement Research at Boston College, September 2013), http://crr.bc.edu/wp-content/uploads/2013/09/IB_13-13-508x.pdf; Michael V. Leonesio, Benjamin Bridges, Robert Gesumaria, and Linda Del Bene, "The increasing labor force participation of older workers and its effect on the income of the aged," *Social Security Bulletin*, vol. 72, no. 1 (U.S. Social Security Administration, 2012), https://www.ssa.gov/policy/docs/ssb/v72n1/v72n1p59.html; and Frank W. Heiland and Zhe Li, "Changes in labor force participation of older Americans and their pension structures: a policy perspective," Working Paper 2012-18 (Center for Retirement Research at Boston College, August 2012), http://crr.bc.edu/wp-content/uploads/2012/07/wp_2012-18-508.pdf. For a schedule of changes to the Social Security full retirement age, see https://www.ssa.gov/planners/retire/retirechart.html.

23 For a summary of academic research on the decline in labor force participation, see *The labor force participation rate since 2007: causes and policy implications* (U.S. Council of Economic Advisers, July 2014), https://obamawhitehouse.archives.gov/sites/default/files/docs/labor_force_participation_report.pdf.

24 In this article, the term "earnings" refers to median usual weekly earnings of full-time wage and salary workers. The CPS data represent earnings before taxes and other deductions, and include any overtime pay, commissions, or tips typically received. In the case of multiple jobholders, only earnings received at their main job are included. Earnings reported on a nonweekly basis are converted to a weekly equivalent. The term "usual" is defined by the respondent, but if asked, interviewers are instructed to define the

term as more than half the weeks worked during the past 4 or 5 months. Wage and salary workers are defined as those who receive wages, salaries, commissions, tips, payment in kind, or piece rates. This definition includes both public and private sector employees, but excludes all self-employed people, regardless of whether their business is incorporated or unincorporated. Finally, full-time workers are those who usually work 35 hours or more per week at their main job.

25 Median earnings data have been adjusted for inflation with the use of the Consumer Price Index for All Urban Consumers (not seasonally adjusted). See https://data.bls.gov/timeseries/CUUR0000SA0?output_view=pct_1mth.

26 Data on median weekly earnings of full-time wage and salary workers from the CPS are distinct from data on average hourly earnings from the Current Employment Statistics (CES) survey. CES real-earnings data are derived from a survey of approximately 147,000 businesses and government agencies reporting information on their payroll records to BLS. For more information, see https://www.bls.gov/ces/home.htm.

27 In a recent article, Mary Daly and Bart Hobijn write that "about two-thirds (63.9 percent) of full-time workers who exit to unemployment were earning below median wages…. This means that in general when unemployment rises, it disproportionately pulls out workers making below median earnings…this serves to increase the aggregate median wage." They also find that "when exits from full-time employment to part-time employment/self-employment and not-in-the-labor-force increase, the aggregate median wage tends to rise." The authors' article also formally decomposes the contributions of these components on real wage growth during the Great Recession. See Mary C. Daly and Bart Hobijn, "The intensive and extensive margins of real wage adjustment," Working Paper 2016-04 (Federal Reserve Bank of San Francisco, March 2016), http://www.frbsf.org/economic-research/files/wp2016-04.pdf.

28 See https://data.bls.gov/timeseries/LEU0257917200.

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