

The Closing of the Jobs Gap

A Decade of Recession and Recovery

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ECONOMIC ANALYSIS
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The Jobs Gap Has Closed

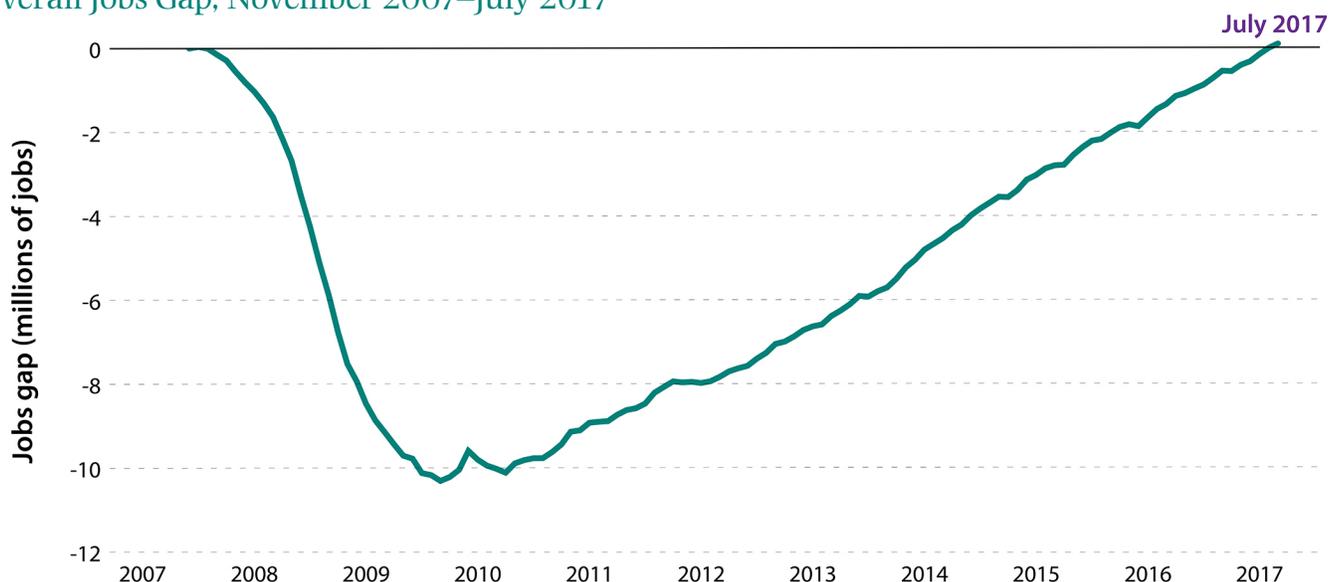
The Great Recession caused labor market devastation on a scale not seen for many decades. Millions of jobs were lost in the United States during 2008 and 2009, leaving the labor market with a hard road to recovery. Indeed, that recovery has required many years of job growth, and it was only in [April 2014](#) that total employment reached its pre-recession level.

However, this milestone did not mark a return to pre-recession labor market conditions. Because the U.S. population is growing, simply reaching the previous number of jobs is not sufficient to return to pre-recession employment rates. At the same time, more baby boomers have entered retirement, somewhat offsetting the effects of population growth and reducing the number of jobs needed for a full economic recovery.

In order to accurately track the progress of the labor market recovery, The Hamilton Project developed a measure of labor market health—the “[jobs gap](#)”—that reflects changes in both the level and the demographic composition of the U.S. population (more

FIGURE 1.

Overall Jobs Gap, November 2007–July 2017



Source: Current Population Survey and Current Employment Statistics, Bureau of Labor Statistics 2007–17 and authors’ calculations. See Schanzenbach and Boddy (2016) for details.

details regarding the jobs gap methodology are provided in appendix A). Beginning in May of 2010, The Hamilton Project has calculated the number of jobs needed to return to the national employment rate prior to the Great Recession, accounting for population growth and aging.

With today’s employment report, we can report that the national jobs gap relative to November 2007 has closed (see figure 1). This indicates that, by our calculations, nearly a full decade after the start of the recession, employment has returned to its demographically adjusted pre-recession level. This does not mean that all harm to the labor market resulting from the Great Recession has dissipated, nor that the economy is at full employment. It does mean, though, that the economy has added enough jobs to make up for the losses during the Great Recession.

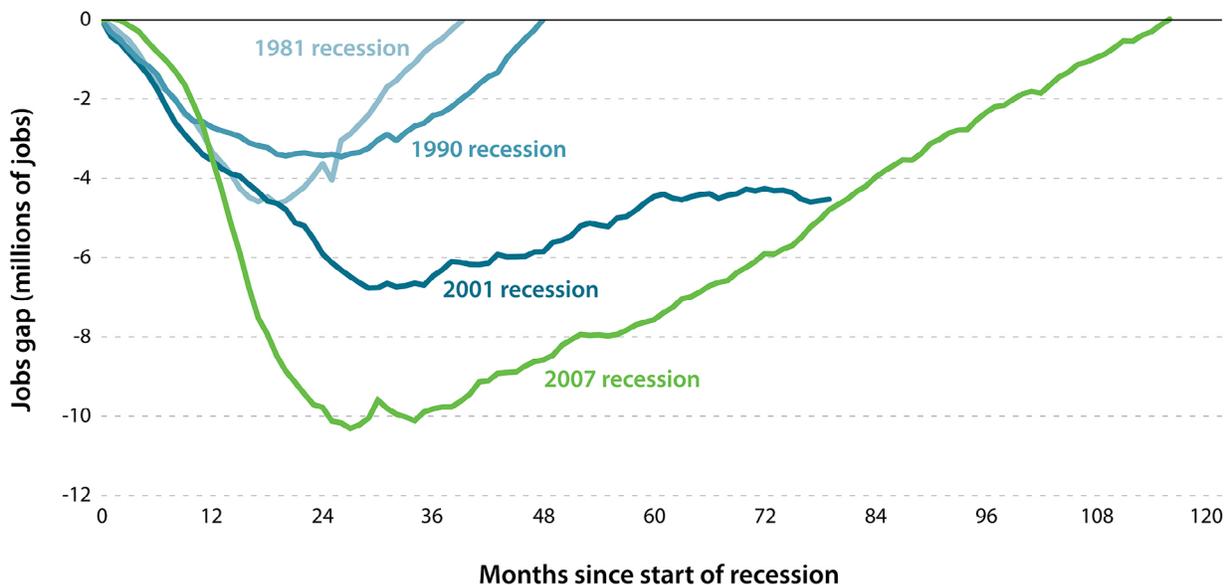
Because the population was growing while the labor market was shedding jobs, the trough of the jobs gap (more than 10 million jobs needed to recover to pre-recession employment rates) exceeded the actual decline in number of jobs (about 8.5 million). The average rate of recovery in the jobs gap after the trough of the Great Recession was 116 thousand jobs per month, and it took 89 months to close the gap.

To be sure, the closing of the jobs gap does not mean that the labor market scars of the Great Recession are entirely healed. Indeed, while some economic markers indicate a tight labor market—a low unemployment rate and relatively abundant job

openings—others, like [the depressed 25- to 54-year-old employment rate](#), [an elevated share of people working part-time for economic reasons](#), and [restrained wage growth](#), are consistent with a weaker labor market. The decline in the employment-to-population ratio for 25 to 54 year olds has been offset to some degree by rising employment rates for those 55 and older, helping to close the jobs gap.¹ Since November 2007, [the overall labor force participation rate has fallen](#) from 66.0 percent to 62.9 percent. However, much of this drop was due to demographic change, and a slight reduction in the [unemployment rate](#) over that period helped to mitigate the impact on employment. Appendix A provides additional detail regarding the economic forces underlying movement in the jobs gap.

In figure 2, we apply the jobs gap methodology to three other recent recessions: 2001, 1990, and 1981. Compared to these recessions, the jobs gap during the Great Recession was much larger and took years longer to close. The recessions of 1981 and 1990 involved smaller and briefer jobs gaps, with recovery to the demographically adjusted, pre-recession employment rate after 40 and 48 months, respectively. The 2001 recession saw a more gradual decline in jobs, and a slower recovery; the jobs gap from the 2001 recession did not close before the Great Recession started. The fact that the labor market was not necessarily at full strength at the start of the Great Recession is one reason the closing of the jobs gap does not necessarily signal an end to “slack” in the labor market: the under-used labor that could be profitably employed.

FIGURE 2.
Overall Jobs Gaps During and After the Last Four Recessions



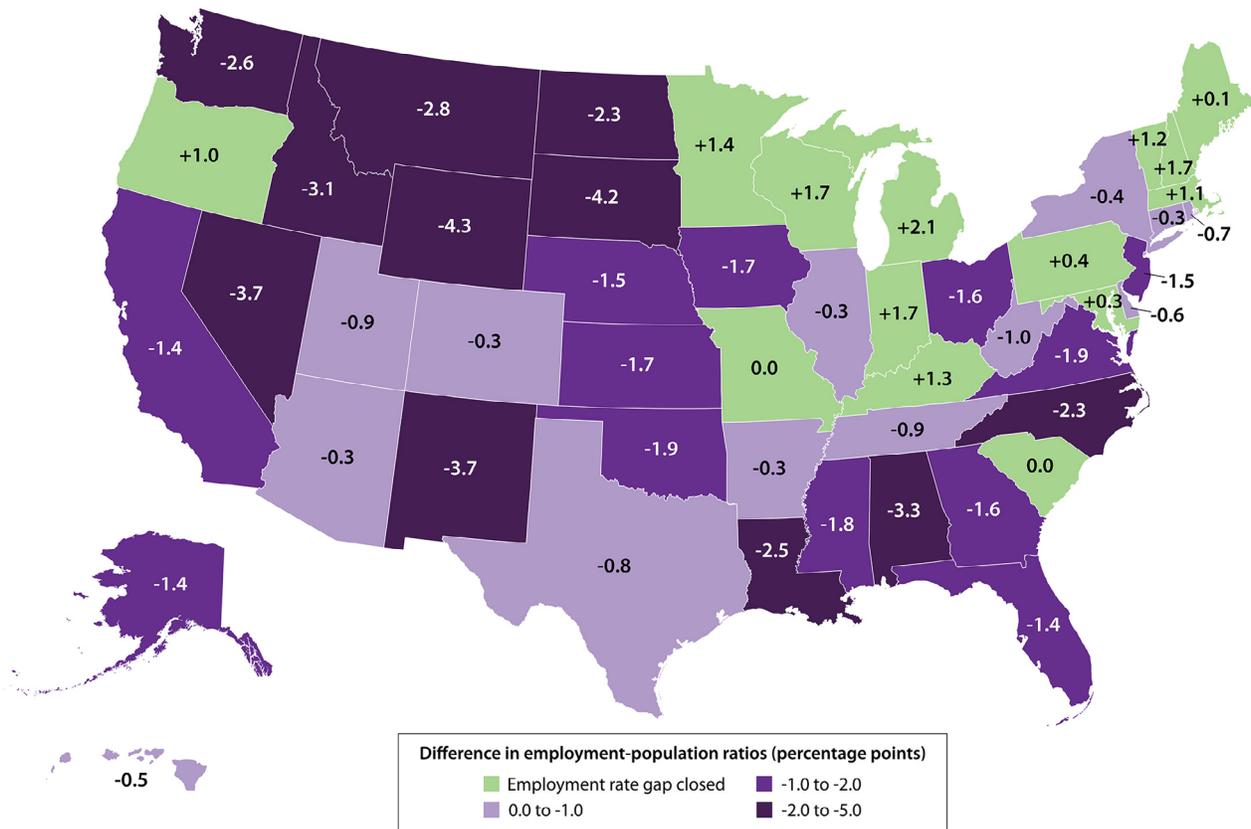
Source: Current Population Survey and Current Employment Statistics, Bureau of Labor Statistics 2007–17 and authors’ calculations. See Schanzenbach and Boddy (2016) for details.

An Uneven Recovery

The labor market recoveries depicted in figures 1 and 2 reflect the overall experience of the entire United States. However, not all regions of the country or demographic groups experienced the same recovery—while some groups have reached and substantially exceeded their pre-recession employment rates, others have lagged behind.² Because the payroll employment data (from the Current Employment Statistics survey) do not include information on demographic characteristics, we use individual-level Current Population Survey (CPS) data in these calculations. These data are less current than the payroll data—we use individual-level data through May 2017—and the growth in employment measured in the CPS is somewhat lower. Given these differences and the distinct features of the CPS data, we will now implement the jobs gap concept as an “employment rate gap,” defined as the difference between the demographically adjusted 2007 employment-to-population ratio and the actual employment-to-population ratio at a given point in time.

The long-run impact of the Great Recession was particularly uneven across regions of the country, leaving some states with larger 2017 employment rate gaps than others. Figure 3 shows the 2017 employment rate gap by state, giving a sense of which places have prospered relative to their 2007 baseline and which have not. To account for varying population levels and changes across states, we calculate the gap as the difference between the actual 2017 state employment rate and the demographically adjusted state employment rate. States shown in light green have reached or exceeded the demographically adjusted employment rates that prevailed before the Great Recession, while purple states continue to face employment rate gaps of varying sizes. States in the Northeast and Midwest have seen particularly strong job growth, adjusting for demographic change; for example, Massachusetts has closed its gap and added 1.1 percentage points. Some of the largest remaining gaps are observed in Western states, where Wyoming has the largest employment rate gap of -4.3 percentage points. Importantly, these differences may reflect differences in population growth and migration across the states.³

FIGURE 3.
Employment Rate Gap, by State



Source: Current Population Survey, Bureau of Labor Statistics 2007–17 and authors’ calculations.
 Note: The figure reflects the employment rate gap as of 2017 (January–May). Employment rate gaps that are less than one-tenth of one percentage point are shown as closed. The employment rate gap in Washington D.C. is closed (+1.9 percentage points).

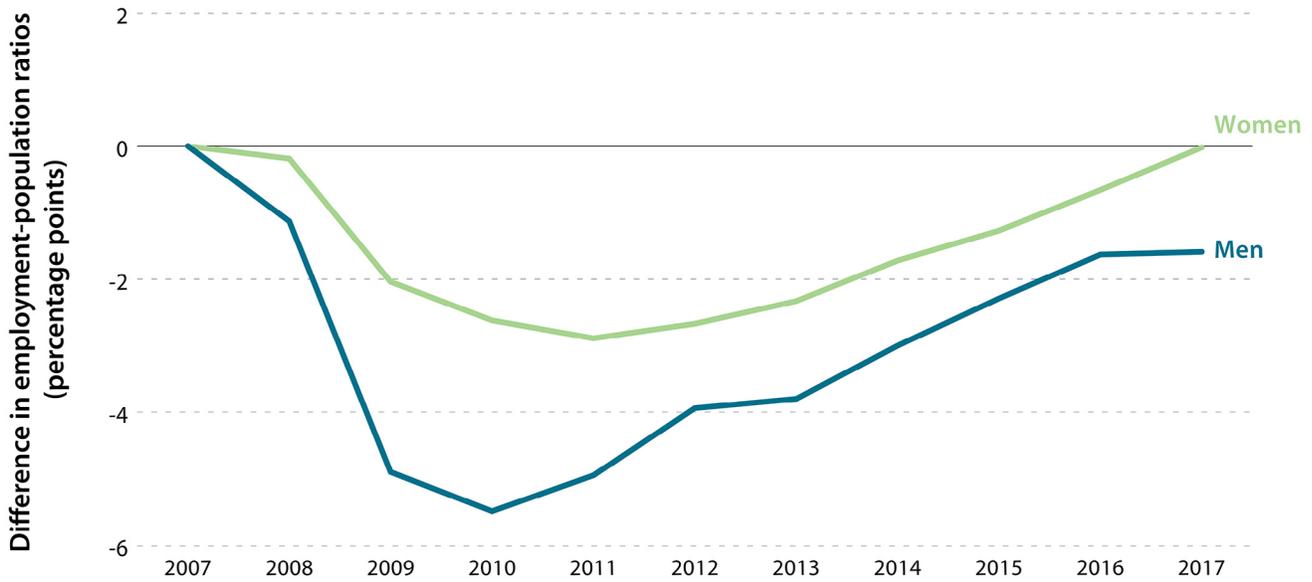
The employment rate gap recovery has been uneven in other respects: notably, women have outperformed men. Two male-dominated occupation groups—[production](#) and [construction](#)—were particularly hard hit during the Great Recession. Employment in these occupations remains low relative to other occupations, contributing to weaker employment growth for men over the last ten years. In addition, [the employment rate of men aged 25 to 54](#) had been [falling for several decades](#) prior to the Great Recession, driven by forces that are still not entirely understood, but possibly contributing to the disparities between the employment trajectories of men and women.

Figure 4 shows the employment rate gap separately for men and women. The immediate employment loss from the recession was somewhat less severe for women, with the gap reaching a trough of -2.9 percentage points in 2011. By contrast, the employment rate gap for men reached a low point of -5.5 per-

centage points in 2010. Men have considerably more ground to make up than do women to regain their pre-recession employment rate: the gap for men stands at -1.6 percentage points, while it has closed entirely for women. However, it is important to note that men remain employed at a much higher rate than women, even with their relative decline over the past ten years: 65.7 percent of men and only 54.8 percent of women are employed.

The disparate labor market experiences of racial groups over the business cycle have recently received [additional deserved attention](#). In figure 5, we show that, while whites were less hard hit in the immediate aftermath of the Great Recession than blacks and Hispanics, their recovery has been slower; whites are now in a worse position relative to their pre-recession employment rates than are blacks and Hispanics. The employment rate gap for blacks and Hispanics fell to a trough

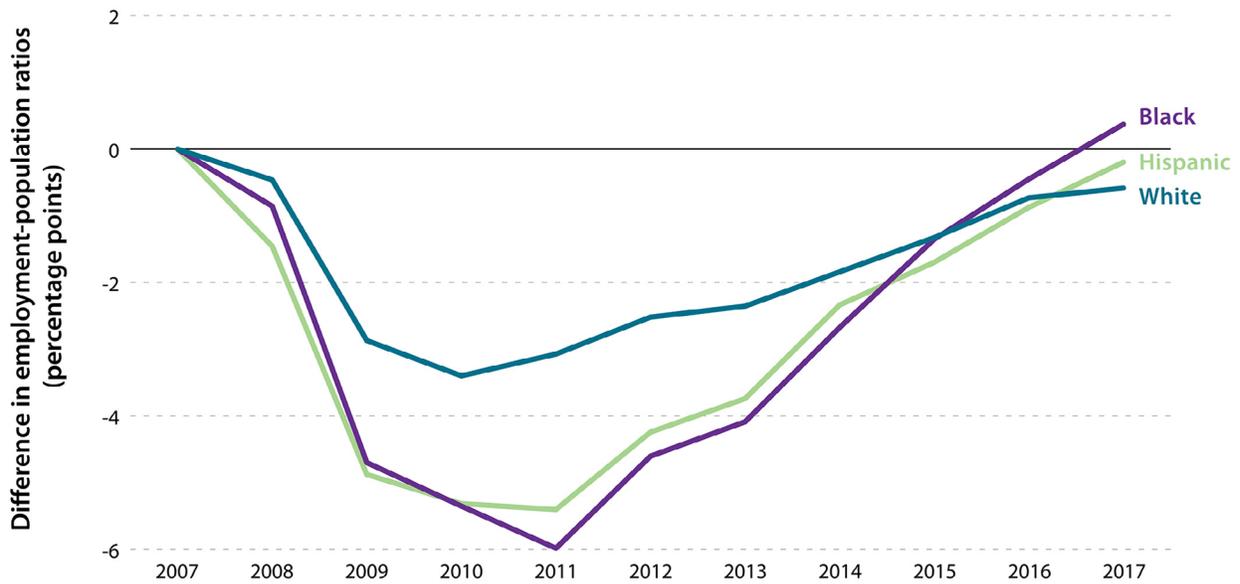
FIGURE 4.
Employment Rate Gap, by Gender



Source: Current Population Survey, Bureau of Labor Statistics 2007–17 and authors' calculations.
Note: Values plotted for 2017 are the average of January–May of that year. Employment-population ratios for the first five months of 2017 were 54.8% for women and 65.7% for men.

FIGURE 5.

Employment Rate Gap for Blacks, Hispanics, and Whites



Source: Current Population Survey, Bureau of Labor Statistics 2007–17 and authors' calculations.

Note: Race/ethnicity categories are mutually exclusive. Values plotted for 2017 are the average of January–May of that year. Employment-population ratios for the first five months of 2017 were 57.0% for blacks, 62.8% for Hispanics, and 59.9% for whites.

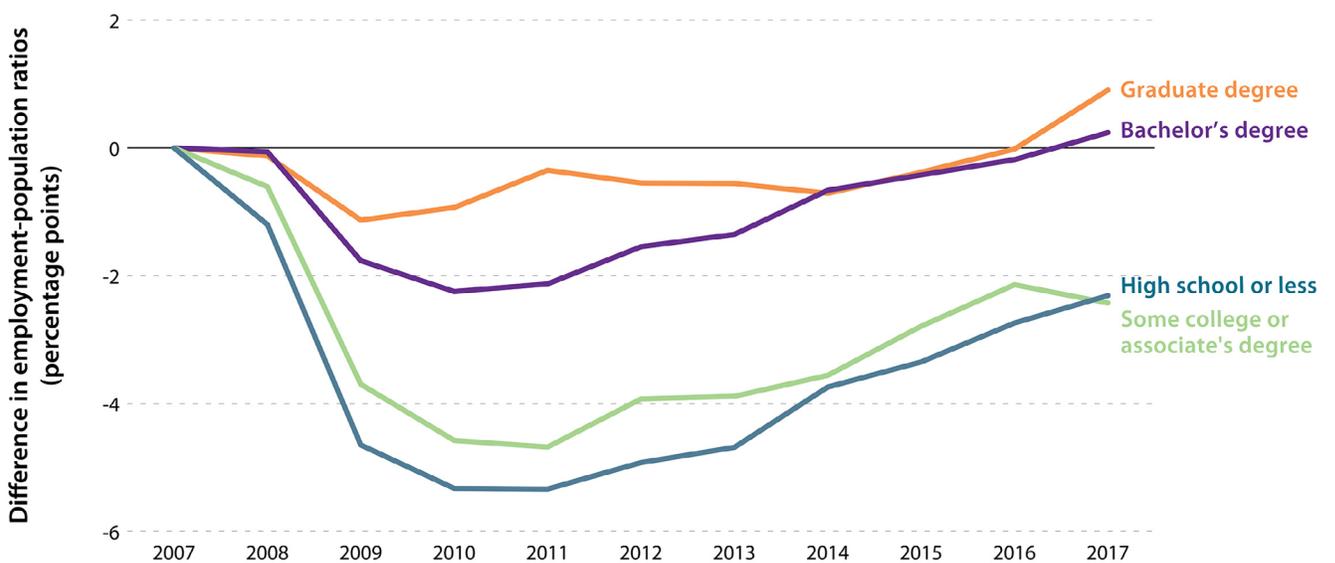


of -6.0 and -5.4 percentage points in 2011 before narrowing to 0.4 and -0.2 in 2017, respectively. By contrast, the trough was smaller and occurred earlier for whites, at -3.4 percentage points in 2010, and whites' employment rate gap now stands at

-0.6 percentage points. It is important to remember that each group's employment rate gap is measured relative to its pre-recession level. Blacks still face [higher levels of unemployment](#) and lower levels of employment than Hispanics or whites.

FIGURE 6.

Employment Rate Gap, by Educational Attainment



Source: Current Population Survey, Bureau of Labor Statistics 2007–17 and authors' calculations.

Note: Values plotted for 2017 are the average of January–May of that year. Employment-population ratios for the first five months of 2017 were 74.2% for people with graduate degrees, 71.9% for people with bachelor's degrees, 62.4% for people with some college or an associate's degree, and 49.3% for people with a high school degree or less.



In appendix B, we explore differences by race and gender in more depth, and find that the strong recovery among Hispanics is driven by women, while Hispanic males still face a -1.9 percentage point employment rate gap. Strikingly, the current gap for Hispanic women is 3.4 percentage points smaller than that of Hispanic men (appendix figure 4).

Finally, we examine the employment rate gaps for people with differing levels of education. Figure 6 shows that the employment rate gap has generally been largest for those with high school degrees or less, somewhat smaller for those with only some college or an associate's degree, and much smaller for people with bachelor's degrees or graduate degrees. At its trough, the employment rate gap for those with only a high school degree or less was -5.3 percentage points, as compared to -1.1 percentage points for those with graduate degrees. In fact, the employment rate gap for people with a high school degree or less is worse today than the gap was for those with a bachelor's degree in 2010.

Conclusion

Ensuring that the gains from economic progress are broadly shared must be a primary goal of economic policy. Since its inception, The Hamilton Project has worked to this end, maintaining a special focus on employment and policies to promote both skills development and wage growth. From this perspective, the Great Recession was particularly damaging insofar as it disproportionately harmed disadvantaged individuals and families. Now that—by one important marker—American workers have returned to their pre-recession position, it is important for policy makers to have a better understanding of how the labor market evolved during the recession and recovery.

Acknowledgments

We are grateful for valuable comments from Adam Looney, Kriston McIntosh, Jay Shambaugh, and Louise Sheiner, as well as excellent research assistance from Patrick Liu, Karna Malaviya, Greg Nantz, and Rebecca Portman. In addition, we thank the many individuals associated with The Hamilton Project who have contributed to the development of the jobs gap project over the years.

Appendix A: Constructing and Interpreting the Jobs Gap

The national jobs gap is calculated from a variety of data, including the payroll employment survey (from the Current Employment Statistics program), which provides an especially accurate monthly picture of the labor market. However, in order to show the jobs gap for various groups—for example, by state, gender, race, or educational attainment—data limitations necessitate a similar but distinct methodology that exclusively makes use of the Current Population Survey data.

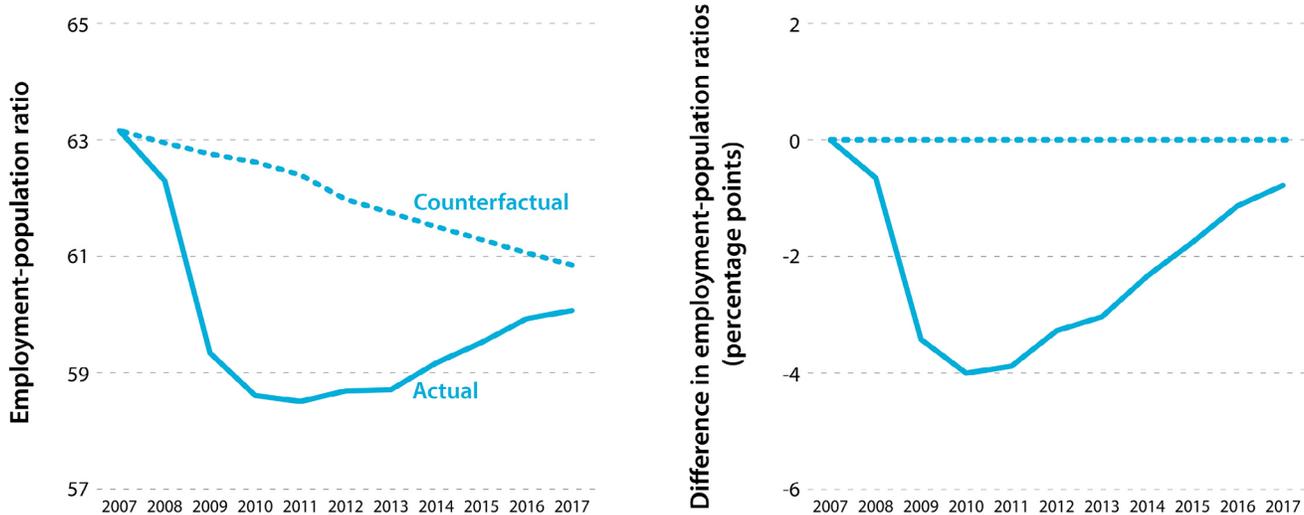
In the left panel of appendix figure 1, we show the difference made by these separate approaches, applying the latter methodology to show actual and demographically adjusted employment-to-population ratios for the entire U.S. population ages 16 and older. The solid line shows the actual ratio measured in individual-level CPS data, while the dashed line shows a “counterfactual” estimate that holds constant the

employment-to-population ratios for detailed age and gender groups (e.g., 30–34 year old men) at their initial 2007 levels.⁴ The counterfactual series is continuously declining over 2007–17, reflecting the ongoing aging of the U.S. population that would have lowered the national employment rate even in the absence of the Great Recession.

The right panel of appendix figure 1 shows the difference between the actual and counterfactual series. This is conceptually equivalent to the jobs gap plotted in figures 1 and 2, but as previously noted does not incorporate data from the payroll employment survey and is shown at an annual frequency. Consequently, taking this approach, the gap between actual and counterfactual employment rates (referred to as the employment rate gap in this paper) has not yet disappeared.

APPENDIX FIGURE 1.

Actual versus Counterfactual Employment-Population Ratios



Source: Current Population Survey, Bureau of Labor Statistics 2007–17 and authors’ calculations.
 Note: Values plotted for 2017 are the average of January–May of that year.



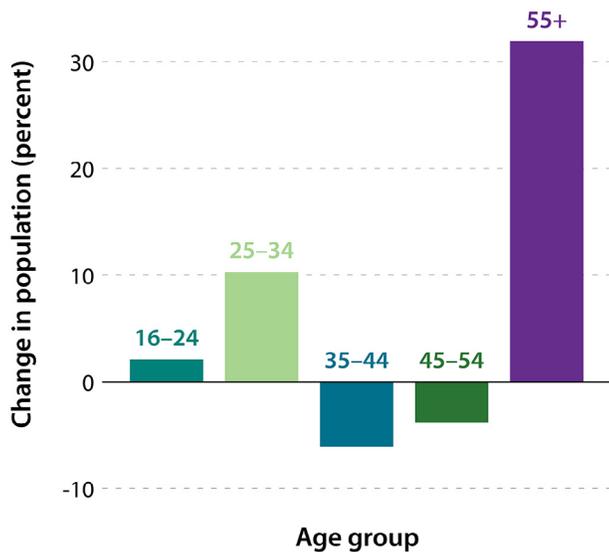
Aging and the Labor Market

The most important demographic change relevant to the measurement of the jobs gap is the aging of the U.S. population. It is sometimes tempting to think of population aging as a long-run trend that has little impact on shorter-run economic developments like the Great Recession and subsequent recovery. However, changes in the age composition of the population and the labor force can occur surprisingly quickly. From 2007 through mid-2017, population aging reduced the overall employment-to-population ratio by more than 2 percentage points.

Driving this reduction in employment are both an aging population and differing rates of employment by age. These factors are depicted in appendix figures 2a and 2b. Appendix figure 2a

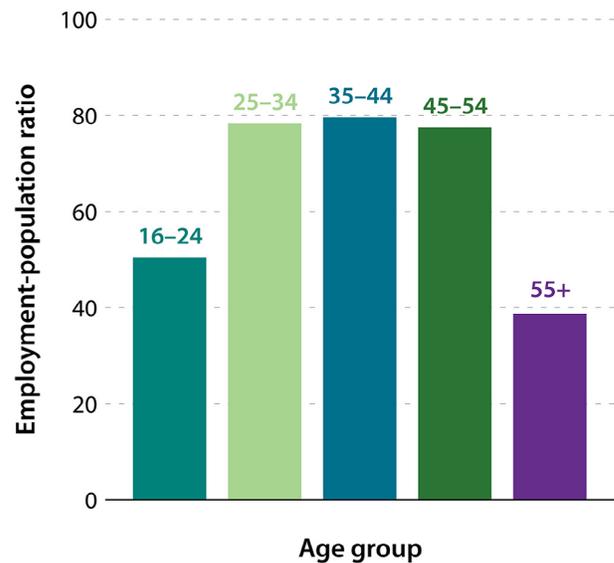
shows how the population has changed over the last ten years, with those 55 and older becoming relatively more numerous. Appendix figure 2b provides the other part of the picture: employment rates are much higher for those aged 25 to 54 than for those who are 55 or older, at 78.4 percent and 38.7 percent, respectively. Despite the increase over time in employment rates for those 55 and older (not shown), older individuals remain less likely to be employed than their younger counterparts, and population aging helped to depress the overall national employment rate over the last ten years.

APPENDIX FIGURE 2A.
Percent Change in Population, 2007–17



Source: Current Population Survey, Bureau of Labor Statistics 2007–17.
Note: Population change refers to the difference between average civilian non-institutionalized population for January–December 2007 and January–June 2017.

APPENDIX FIGURE 2B.
Employment-Population Ratio in 2017, by Age Group



Interpreting the Jobs Gap

Labor economists use a number of measures to assess developments in the economy. One commonly discussed measure is the employment rate of individuals aged 25 to 54, derived from the Current Population Survey. This rate plunged during the Great Recession and has not yet returned to its pre-recession level. By contrast, the jobs gap has recovered, powered largely by two factors. First, the employment rate of older individuals has risen from its pre-recession level, partially offsetting the fall

in the age 25 to 54 employment rate. Second, payroll employment has risen more quickly than employment measured in the Current Population Survey; given that payroll employment is used in The Hamilton Project's jobs gap methodology, this has contributed to a quicker improvement in the jobs gap. Appendix table 1 provides the most important details that help account for the closing of the gap.

APPENDIX TABLE 1.

Changes in Jobs Gap and Related Employment Measures, 2007–17

	Jobs gap	Household employment (thousands)	Change in household employment since Nov. 2007 (thousands)	Payroll employment (thousands)	Change in payroll employment since Nov. 2007 (thousands)	Employment-population ratio		
						Ages 25–54	Ages 55 and up	Ages 16 and up
2007, November	–	146,595	–	138,315	–	79.7%	37.8%	62.9%
2010, February	-10,304,000	138,581	-8,014	129,733	-8,582	75.1%	37.2%	58.5%
2017, July	19,000	153,513	6,573	146,615	8,089	78.7%	38.8%	60.2%

Source: Current Population Survey and Current Employment Statistics, Bureau of Labor Statistics 2007–17 and authors' calculations. See Schanzenbach and Boddy (2016) for details.

Appendix B: Additional Analysis by Race/Ethnicity and Gender

Both the employment rates and the business cycle sensitivity of blacks, Hispanics, and whites vary considerably. This merits particular attention as economists and policy makers seek to understand and address worker suffering during recessions. Appendix figure 3 therefore shows the actual (solid lines) and counterfactual (dashed lines) employment-to-population ratios for blacks, Hispanics, and whites. (The construction of the counterfactual lines is described at the beginning of appendix A.)

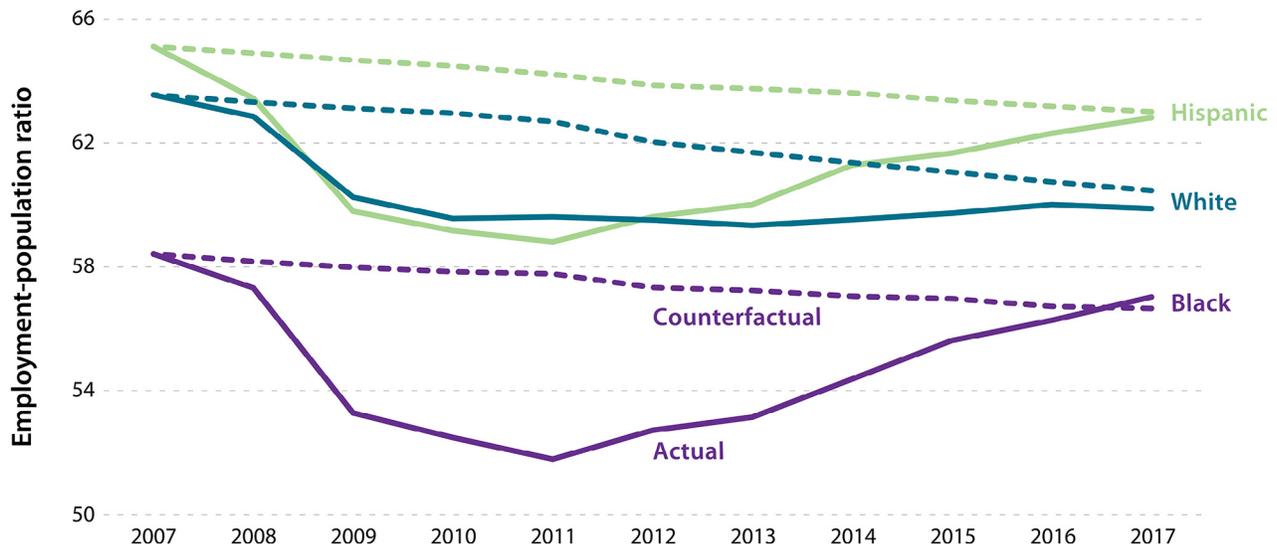
It is immediately evident that the employment rates of Hispanics are higher than those of whites, which are in turn higher than those of blacks. Before the Great Recession, these rates stood at 65.1, 63.6, and 58.4 percent, respectively. During the Great Recession, black and Hispanic workers were hit especially hard. However, in the years of recovery that followed, black and Hispanic employment recovered to near or above their demographically adjusted baselines, while white employment lagged slightly behind.

Next, we look more closely at the employment rate gap—the difference between the actual and counterfactual series shown in appendix figure 3—for particular groups defined by race and gender (e.g., Hispanic women). Interestingly, Hispanic women now have an employment rate gap fully 3.4 percentage points smaller than that of Hispanic men. This can be seen in appendix figure 4, which shows employment rate gaps for each race-gender group.

Women of each race have seen their employment rate gaps improve—relative to 2007 baselines—more than men. Of course, it is important to note that the baseline employment rates were quite different across these groups, as depicted in appendix figure 3. But it is striking that white and Hispanic men now have the largest gaps, at -1.3 and -1.9 percentage points, respectively.

APPENDIX FIGURE 3.

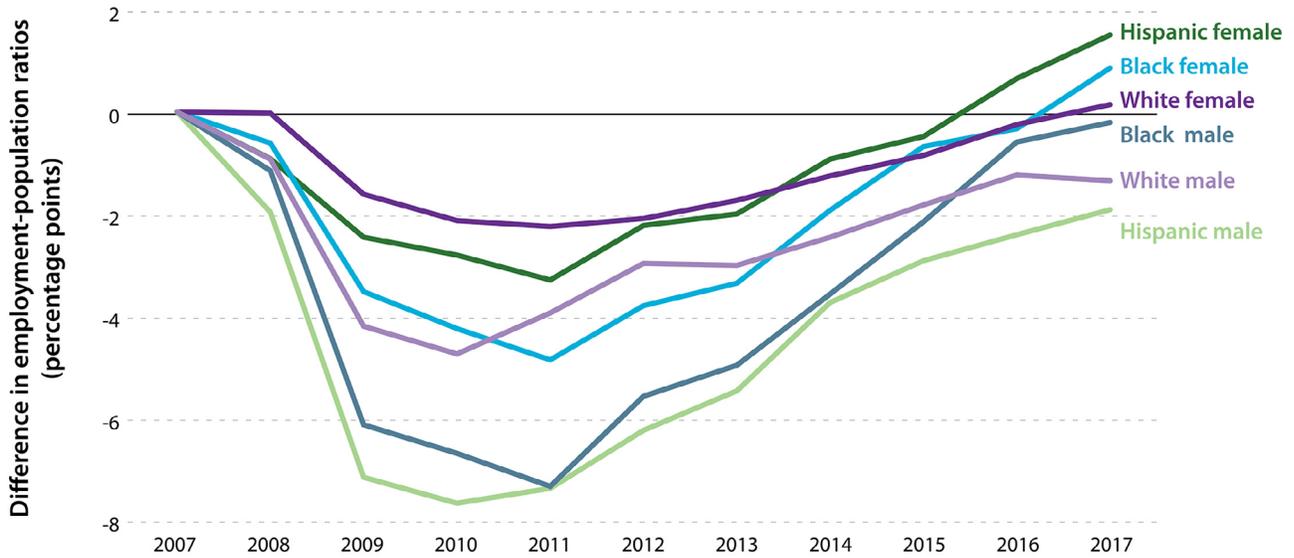
Actual versus Counterfactual Employment-Population Ratios, by Race/Ethnicity



Source: Current Population Survey, Bureau of Labor Statistics 2007–17 and authors' calculations.
 Note: Race/ethnicity categories are mutually exclusive. Values plotted for 2017 are the average of January–May of that year.

APPENDIX FIGURE 4.

Employment Rate Gap for Blacks, Hispanics, and Whites



Source: Current Population Survey, Bureau of Labor Statistics 2007–17 and authors' calculations.

Note: Values plotted for 2017 are the average of January–May of that year. Employment-population ratios for the first five months of 2017 were 55.8% for black females, 58.5% for black males, 53.6% for Hispanic females, 72.2% for Hispanic males, 54.8% for white females, and 65.2% for white males.



Endnotes

1. Note that the Hamilton Project's jobs gap is calculated using the Bureau of Labor Statistics' payroll survey. This survey has shown stronger growth than the household survey, which is used to calculate employment-to-population estimates. For additional discussion of The Hamilton Project jobs gap analysis, including details of methodology and interpretation, please refer to Schanzenbach and Boddy (2016) and appendix A.

2. Importantly, though our analysis of states and demographic groups takes the same basic approach as our national jobs gap calculation, the former differs in exclusively relying on the Current Population Survey. Because employment as measured by this dataset has recovered more slowly than payroll employment, recovery in the employment rate gap for state and demographic groups tends to be somewhat weaker. In addition, we describe the results that follow recovery in employment rates in percentage points rather than numbers of jobs. A final difference is that we present annual estimates for 2007–16. For 2017, we pool the available five months of data; seasonality does not appear to be an important factor in these calculations.

3. The case of North Dakota illustrates the employment rate gap methodology. There is a well-known economic boom in the state, which has had the largest percent increase in jobs (a gain of 78,392 jobs) since 2007. At the same time, though, migration to the state has boosted the population—particularly among younger workers with high levels of expected employment participation. The number of jobs created have not been enough to offset the change in demographic characteristics, especially since the fracking boom has subsided over the last few years.

4. We focus on adjustment for age and gender because these variables are determined prior to individuals' labor market decisions. Adjustments for other variables—like education—may yield different results, but would be more difficult to interpret.

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