

The State of Working America

12th Edition

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Jobs

EPI DIGITAL EDITION

This chapter is from *The State of Working America, 12th Edition*, an Economic Policy Institute book published by Cornell University Press in November 2012.

Data from this chapter should be attributed to the Economic Policy Institute's *The State of Working America, 12th Edition*.

Jobs

A function of demand

Employment is the foundation of family income and economic well-being for the vast majority of households that are not of retirement age. Even retired households need a strong past work history to enjoy economic security. It is through work that families have income to meet their material needs. Thus, whether the labor market is able to provide employment for willing workers is a key determinant of living standards.

Healthy job growth is growth that provides employment for all willing workers in a timely fashion. As we show, employment trends are driven by trends in aggregate demand (the total demand for goods and services in the economy). Simply put, jobs are created when demand for U.S. goods and services grows. The basic logic is straightforward—since workers provide goods and services, increasing demand for goods and services translates into job growth.

In periods of full employment, a healthy employment growth rate would be one that simply matches the growth rate of the labor force. But, contrary to assumptions often made by economists and policymakers, full employment is the exception rather than the rule in the U.S. labor market. An implicit message of this chapter is that ensuring healthy job growth requires an active macroeconomic policy that targets growth in aggregate demand sufficient to meet the growing supply of potential workers.

The business cycle from 2000 to 2007 failed dramatically in providing healthy job growth. After the strong job growth of the late 1990s (accompanied by an unemployment rate averaging 4.1 percent in 1999 and 2000) came the recession of 2001, which was followed by nearly two years of continued job loss. Job growth from 2000 to 2007 was the worst on record for a full business cycle,

and this historically weak job creation was costly for families. The resulting lower rates of employment and consequent lack of upward pressure on wages translated into forgone increases in living standards. Then, at the end of 2007, the Great Recession began, causing the most severe and sustained job loss this country had seen in seven decades, with the loss of 8.7 million jobs over a period of more than two years, dismantling the already-weakened foundation of economic security for countless American families.

Although job growth in the *recovery* from the Great Recession has thus far been similar in strength to job growth in the weak early stages of the recoveries that followed the recessions of the early 1990s and early 2000s, the length and severity of the Great Recession created a much larger jobs deficit. By the end of 2011, the labor market was still more than 10 million jobs below what was needed to return to the pre-recession unemployment rate. Specifically, the labor market was down 5.8 million jobs from December 2007 and short the roughly 4.5 million jobs that should have been *added* between the end of 2007 and the end of 2011 simply to keep up with normal growth in the working-age population (see Figure 1A in Chapter 1).

Since the unemployment rate of racial and ethnic minorities tends to be much higher than the overall unemployment rate in good times and bad, the substantial increase in unemployment in the Great Recession and its aftermath meant the unemployment rate of racial and ethnic minorities spiked even more dramatically. The annual unemployment rate peaked at 9.6 percent in 2010. However, the unemployment rate of blacks in 2010 was 15.9 percent, and that of Hispanics was 12.5 percent. By 2011, the overall annual unemployment rate had dropped to 8.9 percent, but 15.9 percent of black workers and 11.5 percent of Hispanic workers were still unemployed.

A contentious issue in the aftermath of the Great Recession is whether the persistent high unemployment is in large part *structural*—unemployment that occurs when the skills of job seekers do not match the requirements of available jobs. We find that today's unemployment is broad-based—i.e., not limited to particular sectors or occupations, or to workers with or without certain skills or educational credentials. In other words, the high unemployment in the aftermath of the Great Recession is not predominantly structural, but instead driven by low aggregate demand, i.e., a general lack of demand for goods and services, which translates into a general lack of demand for workers.

Our discussion concludes with a look at the costs of job loss and unemployment. The negative impact of job loss on income is severe and long-lasting, and does not just affect laid-off workers, but also their children and families. In addition, young workers who enter the labor market for the first time during a downturn suffer long-lasting damage to their career trajectories and incomes.

Table notes and figure notes at the end of this chapter provide documentation for the data, as well as information on methodology, used in the tables and figures that follow.

Job creation is a macroeconomic outcome

Jobs are created when demand for U.S. goods and services—and therefore demand for workers who provide them—grows. The most comprehensive measure of economic activity is gross domestic product, which is the total value of goods and services produced in an economy. As is widely acknowledged, changes in GDP over relatively short periods are largely a function of shifts in aggregate demand. Thus, GDP growth can serve as a proxy measure of demand growth. GDP growth translates into employment growth except when employers meet demand by increasing hours worked per employee, or increasing productivity (the average amount produced per hour worked). As explained in the text box that follows, employment growth is equal to GDP growth minus the growth of average hours minus the growth of productivity.

The relationship between economic activity and job growth

The most comprehensive measure of economic activity is gross domestic product, which is the total value of goods and services produced in an economy and is often simply called output. To see the relationship between changes in economic activity and jobs, note that

$$(1) \text{ Output} = (\text{Output}/\text{Total hours worked}) \cdot (\text{Total hours worked}/\text{Employment}) \cdot \text{Employment}$$

Further noting that $\text{Output}/\text{Total hours worked} = \text{Productivity}$, and $\text{Total hours worked}/\text{Employment} = \text{Average hours}$, we find that

$$(2) \text{ Output} = \text{Productivity} \cdot \text{Average hours} \cdot \text{Employment}$$

The terms in equation (2) can be rearranged to express employment as a function of output, average hours, and productivity in the following way:

$$(3) \text{ Employment} = \text{Output}/(\text{Average hours} \cdot \text{Productivity}),$$

and using a standard approximation, equation (3) can be expressed as growth rates, in particular by

$$(4) \text{ Employment growth} = \text{Output growth} - \text{Average hours growth} - \text{Productivity growth}.$$

Table 5.1 examines growth in average annual employment (the total number of jobs in the economy), GDP, average hours worked, and productivity in the United States over the last nearly six-and-a-half decades. For the roughly 30 years following World War II, employment grew 1.7 percent per year on average. This employment growth was the result of strong annual GDP growth (3.8 percent) and a slight decline in average hours (-0.3 percent annually). GDP growth was strong enough over this period that plenty of new jobs were needed to meet the

Table 5.1 Average annual change in employment, GDP, hours, and productivity, 1948–2011

	Employment	GDP	Average hours	Productivity
1948–1979	1.7%	3.8%	-0.3%	2.4%
1979–1989	1.7	3.0	0.0	1.3
1989–2000	1.5	3.3	0.0	1.8
1989–1995	1.2	2.4	-0.1	1.3
1995–2000	1.9	4.3	0.0	2.3
2000–2007	0.5	2.4	-0.2	2.1
2007–2011	-1.3	0.2	-0.1	1.5
2007–2008	-0.7	-0.3	-0.3	0.8
2008–2009	-4.2	-3.5	-1.3	2.1
2009–2010	-0.9	3.0	0.9	3.1
2010–2011	0.9	1.6	0.5	0.2

Note: Employment growth = GDP growth – average hours growth – productivity growth.

Source: Authors' analysis of unpublished Total Economy Productivity data from the Bureau of Labor Statistics Labor Productivity and Costs program

growing demand for goods and services despite strong annual productivity growth (2.4 percent).

In the 1980s, employment growth remained strong, but both GDP growth and productivity growth were substantially weaker. Comparing these two periods (1948–1979 and 1979–1989) highlights that a given level of job growth can be achieved through different combinations of GDP growth, hours growth, and productivity growth. While the rate of job creation was the same in these two periods, GDP growth and productivity growth were much greater from 1948 to 1979. For a given level of job growth, faster GDP and productivity growth is much preferred because productivity growth provides the *potential* for wages and living standards to grow over time: For a given level of job growth, the faster productivity grows—i.e., the more workers produce on average in an hour—the higher the potential for rising wages. This is discussed further in chapters 1 and 4.

The 1990s maintained strong job growth with high GDP and productivity growth, particularly in the latter half of the decade. Strong job growth combined with strong productivity growth led to broad wage and income growth, as discussed in chapters 2 and 4.

The 2000–2007 business cycle was a reversal of the strength of the late 1990s. Annual job growth dropped to just 0.5 percent, the worst performance for a full business cycle on record. The slow job growth from 2000 to 2007 was caused

by relatively weak GDP growth, most of which was absorbed by productivity growth. The historically weak job growth in turn translated into historically slow wage and income growth for most workers, discussed further in chapters 2 and 4.

And then the Great Recession began. When the housing bubble burst it caused a massive drop in demand for goods and services (and thus workers) as households losing wealth through declining home values pulled back on spending, home builders radically downsized after overbuilding during the bubble, and businesses facing shrinking demand for goods and services cut back on investments in plants and equipment. GDP dropped 3.8 percent between 2007 and 2009, and the economy shed jobs for more than two years. From December 2007 to February 2010, the economy lost 8.7 million jobs, with the bulk of those losses occurring between fall 2008 and mid-summer 2009.

Job growth from 2010 (the first full year of the recovery) to 2011 was a weak 0.9 percent, due to weak GDP growth and reinstatement of work hours that had been cut during the recession. Note that this weak job growth was *not* due to strong productivity growth, or “businesses doing more with less.” While productivity growth was high from early 2009 to early 2010, it grew only 0.2 percent between 2010 and 2011. (In fact, productivity growth was comparatively weak before and after 2009–2010, so that over the full period from 2007 to 2011 productivity growth was a subdued 1.5 percent.)

What these trends in GDP, productivity, hours, and employment growth suggest is a simple truth that is far too often overlooked in labor market analyses: Rapid job growth will only occur when growth in aggregate demand is strong. Further, what are often called “jobless recoveries” (the weak job growth following the last three recessions) should actually be called “growthless and jobless recoveries” to emphasize that there is no mystery behind why employment rebounded so slowly; the economy simply did not grow fast enough to spur rapid job growth.

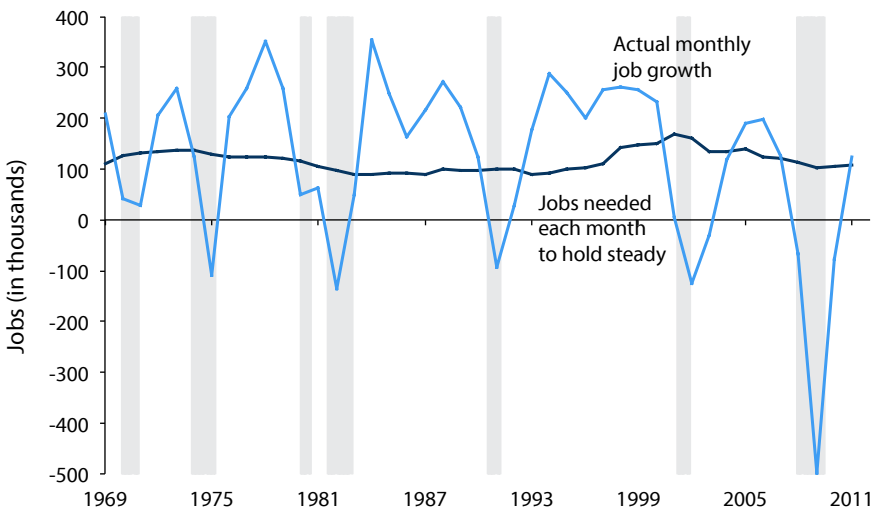
Zero is not the baseline for job growth

We know that overall economic growth is the main driver of job creation, but how do we judge whether economic growth is strong enough to provide enough jobs for our potential workforce? Later we delve much deeper into measures of slack in the labor market. Here we simply make the important point that at a minimum, the economy must add enough jobs every month to keep up with normal growth in the working-age population. In 2007, for example, there were 137.6 million jobs, and there were 231.9 million people of working age (typically defined as age 16 and older). This means there was one job for every 1.7 people of working age (this ratio is never 1-to-1 since not everyone of working age works or wants to work). Between 2007 and 2011, the working-age population grew a little less than 1 percent per year, which meant that there were nearly 8 million more people of working age in 2011 than in 2007. To provide one job for every

1.7 of these new workers, the economy should have added about 4.5 million jobs during this period—around 100,000 per month. In other words, the labor market would have needed roughly 100,000 jobs per month simply to “hold steady,” i.e., to sustain the same share of working-age people with a job.

Figure 5A shows the number of jobs needed each month just to hold steady, along with the number of jobs actually created per month in each year from 1969 to 2011. The hold-steady number increases as the working-age population grows and decreases as the labor market weakens (the latter is perhaps counterintuitive, but recall that this is the hold-steady number, and if the share of the population with a job declines, the economy needs to create fewer jobs simply to hold steady at that lower level). As previously noted, the labor market currently needs around 100,000 jobs per month to hold steady (as has been true for most of the last four decades). The hold-steady line is the job market baseline; it is what monthly job growth should generally be judged against. If job growth is higher than the hold-steady level, the labor market is getting stronger and the unemployment rate generally would be decreasing. Alternatively, if job growth is lower than the hold-steady level, the labor market is weakening, and the unemployment rate generally would be increasing. Of course, when the unemployment rate is high,

Figure 5A Jobs needed each month to hold steady and actual monthly job growth, 1969–2011



Note: To “hold steady” means to sustain the same share of working-age people with a job. See figure notes in the table and figure notes section for calculation of the hold steady line. Shaded areas denote recessions.

Source: Authors’ analysis of Bureau of Labor Statistics Current Employment Statistics and Current Population Survey public data series

the economy needs job growth to be much, much faster than the hold-steady rate (in the aftermath of the severe job loss of the Great Recession, *three or four times* faster) to get back to full employment in a reasonable time frame.

What are today's jobs like?

This section provides a picture of what kind of jobs make up the U.S. labor market, and how the composition has changed over time. We present basic breakdowns by industry and firm size, and by occupation (many of which cut across industries—for example, an accountant might be employed in a construction firm or government agency or hospital). Finally, we offer a very broad measure of a “good job” and examine how the share of workers in good jobs has changed over time.

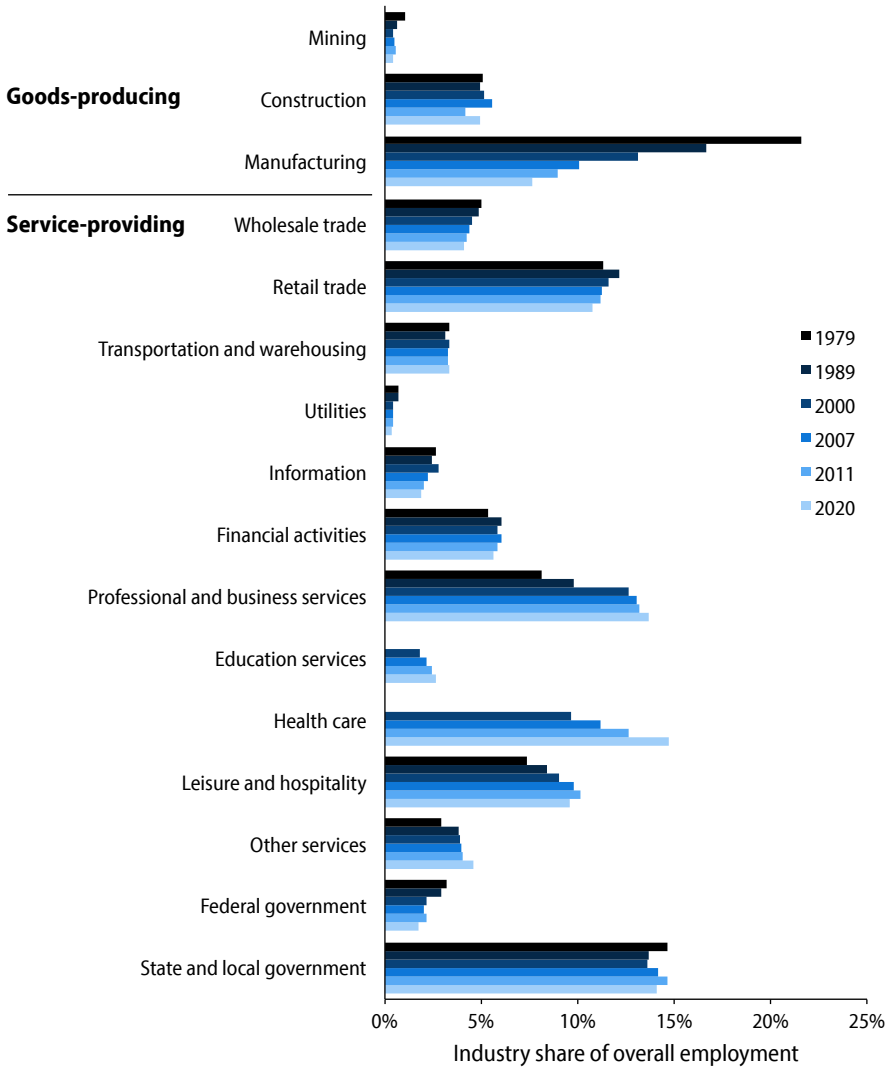
Industries

The economy can be roughly divided into goods-producing industries (manufacturing, construction, and mining) and service-producing industries (wholesale and retail trade, transportation and warehousing, utilities, information, financial activities, professional and business services, education and health services, leisure and hospitality, other services, and government). Over time, the U.S. economy has become more and more concentrated in producing services. In 1947, 61 percent of all jobs were in service-producing industries; six decades later, in 2007, it was 84 percent.

The ongoing shift can be seen in **Figure 5B**, which shows the distribution of jobs by industry (i.e., each industry's share of overall employment) at the last four business cycle peaks, and in 2011. It also shows the projected distribution in 2020. One salient point from this figure is that, with the exceptions of the decrease in manufacturing, the increase in health care and, to a lesser extent, the increase in professional and business services, the industry mix does not change very much or very quickly over time: All categories aside from manufacturing, health, and professional and business services changed by less than 3 percentage points—and most by *much* less—between 1979 and 2011. In other words, with some notable exceptions, the mix of industries employing workers has not changed dramatically over the last three decades. And looking at the projected distribution for 2020, it is not expected to change much over this decade, either, again with the notable exceptions of health care and manufacturing.

The sector that has seen the largest increase is health care. Note that in 1979 and 1989 data on health care and educational services are not available separately, and are thus not shown in the figure for those years, but *combined* they comprised 7.6 percent of employment in 1979 and 9.9 percent in 1989. Thus, health care alone grew from less than 7.6 percent in 1979 (not shown) to 11.2 percent in 2007 to 12.7 percent in 2011. Health care is also expected to see the

Figure 5B Distribution of employment, by industry, selected years, 1979–2011 (and 2020 projections)



Note: Data for health care (which includes social assistance services, which is a very small share of the category) and education services are excluded from the figure in 1979 and 1989 because disaggregated data were not available for these industries.

Source: Authors’ analysis of Bureau of Labor Statistics Current Employment Statistics, and BLS Employment Projections program (Table 2.1)

biggest increase this decade and is projected to make up 14.7 percent of employment by 2020.

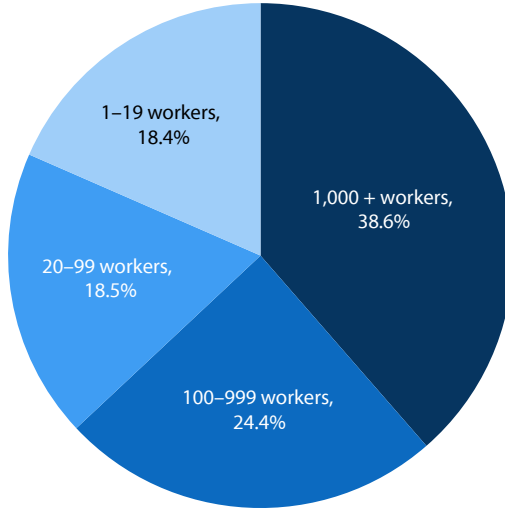
The sector that has declined the most is manufacturing, dropping from 21.6 percent of all workers in 1979 to 10.1 percent in 2007 to 8.9 percent in 2011. Since manufacturing jobs traditionally have provided high wages and good benefits, especially for workers without a college degree, the decline of manufacturing has meant a decline in a crucial source of good jobs. Chapter 4 further investigates the impact of industry shifts on wages and compensation.

While manufacturing employment naturally tends to decline as a share of total employment as an economy advances, since around 1997, overvaluation of the dollar relative to the currencies of U.S. trading partners has significantly contributed to the loss of manufacturing jobs. Note that if the dollar is overvalued (i.e., too “strong” relative to other currencies), that makes U.S. goods more expensive to consumers around the world, which decreases our exports. At the same time, an overvalued dollar makes goods from around the world cheaper to U.S. consumers, which increases our imports. Because manufactured goods make up the bulk of our international trade, both of these things reduce the overall demand for U.S. manufactured goods, and cost jobs in manufacturing. In other words, an overvalued dollar hurts manufacturing job growth. For example, had the United States had balanced non-oil trade with the rest of the world in 2007 instead of running large trade deficits, there would have been about four million more U.S. manufacturing jobs (Scott 2008). As a point of comparison, in 2007 the United States had 13.9 million manufacturing jobs.

Firm size

Most private-sector workers in the United States are employed by relatively large firms. As shown in **Figure 5C**, more than 60 percent of workers work in firms with 100 or more workers, and close to 40 percent work in firms of 1,000 or more workers. Less than 20 percent work in firms of fewer than 20 workers. Figure 5C provides breakdowns for the first quarter of 2011 only, but it should be noted that these shares have remained relatively stable since 2000. Despite the fact that most workers are employed in large firms, there is a prominent public discourse focusing on the importance of small firms for job *creation*. Do small firms create a disproportionate number of jobs?

Figure 5D shows gross job gains (the number of jobs added in either opening or expanding private-sector establishments) and gross job losses (the number of jobs lost in either closing or contracting private-sector establishments), along with net job growth (the difference between gross job gains and gross job losses), by firm size. From 2000 to 2007, for example, firms with fewer than 20 workers, while constituting less than 20 percent of employment, accounted for nearly 40 percent of all gross job gains. But while small businesses do create a lot of jobs,

Figure 5C Distribution of employment, by firm size, 2011Q1

Note: Data are for private-sector workers. Shares do not total to 100 percent due to rounding.

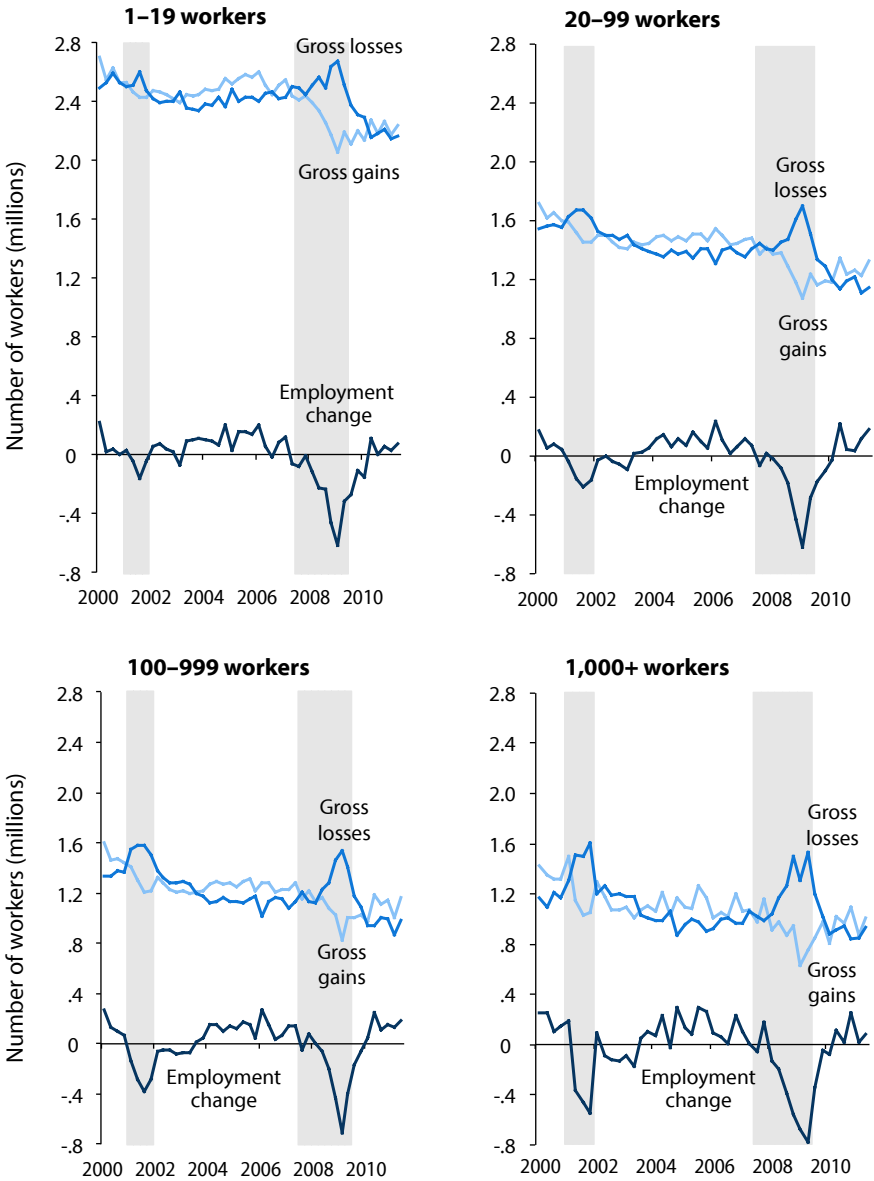
Source: Authors' analysis of Bureau of Labor Statistics Business Employment Dynamics program (Table F)

they also *lose* a lot of jobs. From 2000 to 2007, firms with fewer than 20 workers also accounted for nearly 40 percent of all gross job losses. Considering both job gains and job losses, we find that firms with fewer than 20 people accounted for just around a third of all *net* gains over this period. This is still disproportionately high, but research shows that that is driven by startup firms, which tend to be small. In other words, small firms do not create a disproportionate share of net new jobs once the age of the firm is taken into account (see Haltiwanger, Jarmin, and Miranda 2010). Larger firms, perhaps unsurprisingly, tend to be less volatile. Firms with 1,000 or more employees employ nearly 40 percent of workers, but constituted less than 20 percent of all gross job gains and less than 20 percent of all gross job losses over this period. They did, however, make up nearly a quarter of all *net* gains over this period.

Occupations

Occupations can be broadly grouped into three categories—white collar (management, professional, sales, and office occupations), blue collar (farming and forestry, construction, maintenance, production, and transportation and material moving occupations), and service occupations (health care support, protective service, food preparation and serving, building and grounds cleaning and maintenance, and

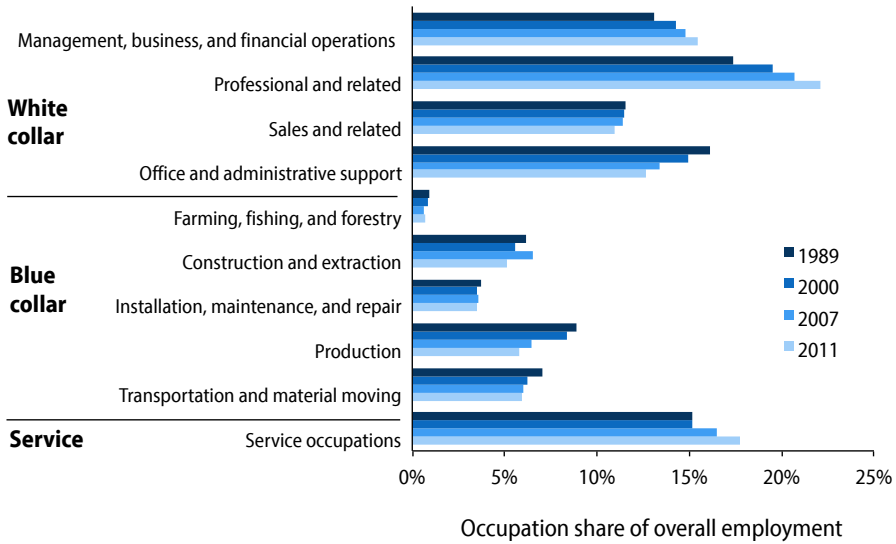
Figure 5D Job gains, losses, and net employment change, by firm size, 2000–2011



Note: Data are for private-sector workers and are quarterly, starting with the first quarter each year. Shaded areas denote recessions.

Source: Authors' analysis of Bureau of Labor Statistics Business Employment Dynamics program (Table 1)

Figure 5E Distribution of employment, by occupation, selected years, 1989–2011



Source: Authors' analysis of Current Population Survey public data series (Historical Table A-13)

personal care and service occupations). **Figure 5E** shows the distribution of jobs by major occupation (i.e., each occupation's share of overall employment) at the last three business cycle peaks, and in 2011. In the U.S. economy, the bulk of workers are in white-collar occupations (61 percent in 2011). That share has increased very modestly since the late 1980s (it was 58 percent in 1989). However, within white-collar occupations, there has been a shift—in particular, professional occupations' share has grown (from 17 percent in 1989 to 22 percent in 2011), as has management, business, and financial operations' share (from 13 percent in 1989 to 15 percent in 2011), while the share of jobs held by office and administrative support staff has declined (from 16 percent in 1989 to 13 percent in 2011).

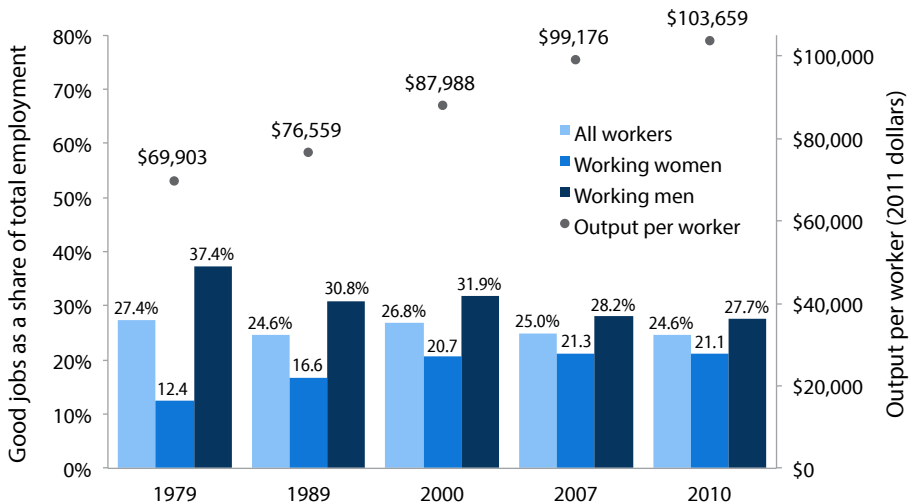
Consistent with the shift from goods-producing to service-producing industries, there has been a shift from blue-collar to service occupations. In 1989, 27 percent of workers were in blue-collar jobs, but that had dropped to 21 percent by 2011. Around half of that drop was among production workers, whose share declined from 9 percent to 6 percent over this period. Service occupations' share, on the other hand, grew, from 15 percent in 1989 to 18 percent in 2011.

Job quality

Defining job quality is not straightforward. For example, a job would almost certainly be considered high quality if it paid well; offered good health and pension benefits; provided paid vacation, sick days, and family leave; and offered good working conditions, a good work schedule, and job security. A job with some but not all of those characteristics falls into a gray area. John Schmitt and Janelle Jones (2012) of the Center for Economic and Policy Research have defined a “good” job modestly as a job that meets three criteria—it must pay at least \$18.50 per hour (the median male hourly wage in 1979 adjusted to 2010 dollars), offer health insurance, and offer a retirement plan of some kind. They have tracked the prevalence of good jobs over time.

Figure 5F presents good jobs (as defined above) as a share of total employment for recent business cycle peaks and for 2010. It also presents output per worker—the average value of goods and services produced by a worker in a year—as a benchmark for the economy’s *potential* for generating better jobs for more workers over time. Output per worker increased 48.3 percent—from \$69,903 to \$103,659—from 1979 to 2010, underscoring that workers were getting more productive and the country as a whole was getting richer over this period. If those

Figure 5F Good jobs as a share of total employment, all workers and by gender, and output per worker, selected years, 1979–2010



Note: See figure notes for definition of good jobs.

Source: Authors’ analysis of Schmitt and Jones (2012) and unpublished Total Economy Productivity data from the Bureau of Labor Statistics Labor Productivity and Costs program

gains were broadly distributed across the workforce, one would expect to see the share of good jobs increase accordingly. Instead, the share of good jobs declined. From 1979 to 2007, the share of good jobs in the economy dropped 2.4 percentage points. By 2007, only 25.0 percent of jobs paid at least \$18.50 per hour and offered health insurance and a retirement plan. From 2007 to 2010, while the number of people with jobs dropped dramatically due to the recession, output per worker continued to rise, from \$99,176 in 2007 to \$103,659 in 2010. However, the share of workers in good jobs remained essentially unchanged, dropping 0.4 percentage points. Altogether, while the value of the output workers produced rose dramatically from 1979 to 2010, the share of workers in good jobs shrank by 2.8 percentage points.

The decline in the share of good jobs is all the more troubling because it occurred when the workforce on average was becoming both older and more educated (a phenomenon that will be further discussed later in this chapter). All else equal, these factors would have *increased* the share of good jobs, as older and better-educated workers tend to be better able to secure quality employment because productivity tends to rise with both education and experience.

The figure also identifies important differences in the share of good jobs by gender. From 1979 to 2000, employed women made enormous progress by the good-jobs measure—the share in good jobs jumped from 12.4 percent to 20.7 percent. But over the 2000s the share of employed women with good jobs was essentially flat (a 0.3-percentage-point increase from 2000 to 2010). For men, the situation was much grimmer. From 1979 to 2000, the share of employed men with good jobs dropped 5.6 percentage points, and from 2000 to 2010, the share dropped an additional 4.2 percentage points. Altogether, the share of working men in good jobs dropped nearly 10 percentage points from 1979 to 2010.

Unemployment

The official definition of an unemployed person is someone who is jobless but available to work and actively seeking work (where “actively seeking” is defined as having looked for work in the last four weeks). The unemployment rate is the share of labor force participants (employed and unemployed people) who are unemployed. It is important to note that the unemployment rate is never expected to be zero. Even in a strong labor market, one characterized by “full employment,” there are always some people without jobs who are seeking work—workers who have newly entered or re-entered the labor market in search of work, or who quit or were laid off from a previous job and are searching for a new one.

A key question is how much unemployment is the “right” level, one where job seekers can find a suitable job and employers can find suitable workers in a reasonable time frame. Another way to think of the “right” level of unemployment is the level where the demand for workers is roughly equal to the supply. If

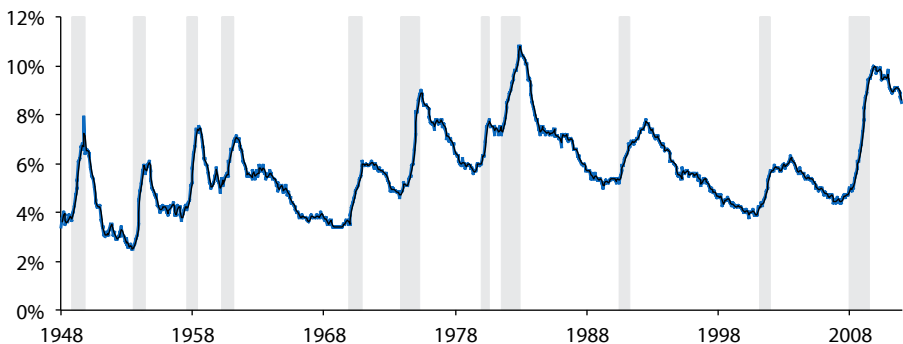
the demand is greater than the supply (i.e., if the unemployment rate is too low), then employers will have trouble finding the workers they need.

The primary concern with this situation is that it will cause wages to rise too fast (that is, faster than underlying productivity) as employers try to attract needed workers, and that this will fuel inflation. There is a debate about what is the lowest rate of unemployment that will *not* lead to increasing inflation (a theoretical rate that is often called the Non-Accelerating Inflation Rate of Unemployment, or the NAIRU). As a point of reference, however, it is useful to look to recent history: In the strong labor market of the late 1990s, the unemployment rate dropped dramatically—to a 4.1 percent average in 1999 and 2000—and *inflation did not accelerate*.

When demand for workers is *lower* than the supply (i.e., when the unemployment rate is elevated), problems occur at both the individual and economy-wide levels. When workers face job loss and unemployment, they and their families lose wages and benefits, and the adverse effects may last a very long time as career trajectories are interrupted. (Later in this chapter we further discuss the consequences of job loss and unemployment for individuals and their families.) The economy as a whole also loses the goods or services that would have been produced had they been working. In addition, because the purchasing power of unemployed workers is diminished, consumer demand declines, which leads to job loss for additional workers.

Figure 5G shows the unemployment rate from 1948 to 2011. Unsurprisingly, unemployment spikes sharply during recessions. What happens *after* recessions is also noteworthy. Up through the double-dip recession of the early 1980s, growth tended to be very strong once a recession ended, bringing the unemployment rate

Figure 5G Unemployment rate, 1948–2011



Note: Data are monthly and span Jan. 1948–Dec. 2011. Shaded areas denote recessions.

Source: Authors' analysis of Current Population Survey public data series

down quickly after it reached its peak. That is largely because recessions were essentially caused by the Federal Reserve, which raised interest rates to curb (either actual or incipient) inflation. This often meant that when it became clear that the economy had entered recession and the Federal Reserve lowered interest rates, a surge resulting from pent-up demand for interest-rate-sensitive goods (housing and durable goods, in particular) led to strong job growth, and the unemployment rate would drop.

But starting with the recession of the early 1990s, a different pattern has emerged, one characterized by slow growth following a recession, where the unemployment rate remains high for a very long time. This is largely because the last three recessions have *not* been caused by the Federal Reserve raising interest rates; there has been no need because inflation has been under control. Instead, these recessions were due to high levels of private-sector debt and the bursting of asset-market bubbles. (The early 1990s recession actually is a bit of a hybrid, with Federal Reserve tightening playing a role in the downturn, but asset-market deflation also clearly hampering recovery.) During this kind of recession and its aftermath, the Federal Reserve is in the situation of trying to stimulate the economy by cutting interest rates from levels that are not very high—or in the case of the Great Recession, basically zero. Further, since lowering interest rates stimulates the economy mainly by boosting the housing market, lowering interest rates may be ineffective anyway if housing is already overbuilt. So if fiscal policy—increasing net government spending to stimulate the economy—is not sufficiently expansionary, the recovery can take a long time to really take hold and raise employment growth to levels sufficient to absorb willing workers.

One thing to note in Figure 5G is that the unemployment rate in the 2000–2007 business cycle never returned to pre-recession levels before the Great Recession began. In 2000, the peak at the end of the 1989–2000 business cycle, the unemployment rate averaged 4.0 percent. But in 2007, the peak of the 2000–2007 business cycle, the unemployment rate averaged 4.6 percent, never regaining the strength of the late 1990s. The rise in the unemployment rate from 2000 to 2007 is unsurprising when we recall that the 2000–2007 business cycle is the weakest full business cycle on record in terms of job growth (see the discussion of Table 5.1).

Unemployment and age

A final thing to note in Figure 5G is that the unemployment rate in the Great Recession never got as high as it did during the downturn of the early 1980s, when it peaked at 10.8 percent at the end of 1982. In the Great Recession the unemployment rate peaked in October 2009 at 10.0 percent. Importantly, a key factor underlying that difference has nothing to do with better labor market conditions in the Great Recession, but simply with changes in the age composition of the labor force. The top panel of **Table 5.2** documents the aging of the labor

Table 5.2 Labor force share and unemployment rate, by age, 1979–2011

	1979	1989	2000	2007	2011	Change	
						1979–2007	2007–2011
Share of labor force							
Age 16–19	9.2%	6.4%	5.8%	4.6%	3.7%	-4.6	-0.9
20–24	15.0	11.4	10.0	9.9	9.9	-5.1	0.0
25–34	26.6	29.0	23.0	21.6	22.0	-5.0	0.3
35–44	18.8	24.7	26.3	23.2	21.3	4.4	-1.9
45–54	16.1	16.1	21.8	23.3	23.0	7.2	-0.3
55 and older	14.3	12.4	13.1	17.3	20.1	3.0	2.8
All	100.0	100.0	100.0	100.0	100.0		
Unemployment rate							
Age 16–19	16.1%	15.0%	13.1%	15.7%	24.4%	-0.4	8.7
20–24	9.2	6.9	7.2	8.2	14.6	-1.0	6.4
25–34	4.4	5.2	3.7	4.7	9.5	0.3	4.8
35–44	3.6	3.8	3.0	3.5	7.3	-0.1	3.9
45–54	3.2	3.2	2.5	3.2	7.1	0.0	3.9
55 and older	3.0	3.1	2.6	3.1	6.6	0.1	3.5
All	5.9	5.3	4.0	4.6	9.0	-1.2	4.3

Note: Percentage-point change shown in last two columns may not sum correctly due to rounding.

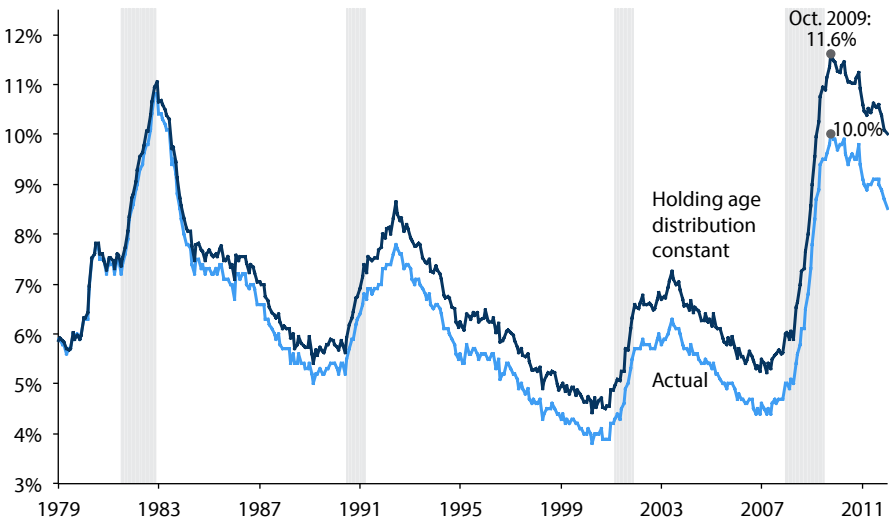
Source: Authors' analysis of Current Population Survey public data series

force by presenting the share of the labor force in different age categories at business cycle peak years between 1979 and 2007 and in 2011. In 1979 slightly less than half (49.2 percent) of the labor force was age 35 and older, but by 2007, almost two-thirds (63.8 percent) of the labor force was 35 and older, and 40.6 percent was 45 and older. The bottom panel of Table 5.2 shows that, for any given year, unemployment rates drop dramatically with age. For example, since 1979, the unemployment rate among teenagers has been at least 10 percentage points higher than among workers age 55 and older. Thus, the aging of the labor force would cause a decrease in overall unemployment rates *even if no individual age category experienced a decline in its unemployment rate*. From 1979 to 2007, the overall unemployment rate decreased by 1.2 percentage points, but *no* age categories experienced a decline that big—the largest change was a 1 percentage-point decline among workers age 20–24. All other categories experienced either much smaller declines or increases in their unemployment rates over this period. Thus,

the fact that the unemployment rate was lower in 2007 than in 1979 was due in large part to the composition of the workforce shifting toward lower-unemployment age groups.

Figure 5H shows the unemployment rate, along with what the unemployment rate would have been if the age distribution of the labor force had not changed from 1979 (but with the unemployment rates within each age category changing as they actually did). In other words, the simulated unemployment rate demonstrates what the unemployment rate would have been if the age distribution were held constant over time. The simulation shows that without the aging of the labor force since 1979, the unemployment rate would have peaked at 11.6 percent in October 2009 (well above the highest rate in the downturn of the early 1980s) instead of its actual peak of 10.0 percent. This is one example of why it is problematic to compare the unemployment rate of today with that of earlier periods. A later section of this chapter offers further examples of how the unemployment rate of today is not entirely comparable with that of earlier periods because of changing labor force participation trends among different groups of potential workers.

Figure 5H Unemployment rate (actual and holding age distribution constant), 1979–2011



Note: Data are monthly and span Jan. 1979–Dec. 2011. Shaded areas denote recessions.

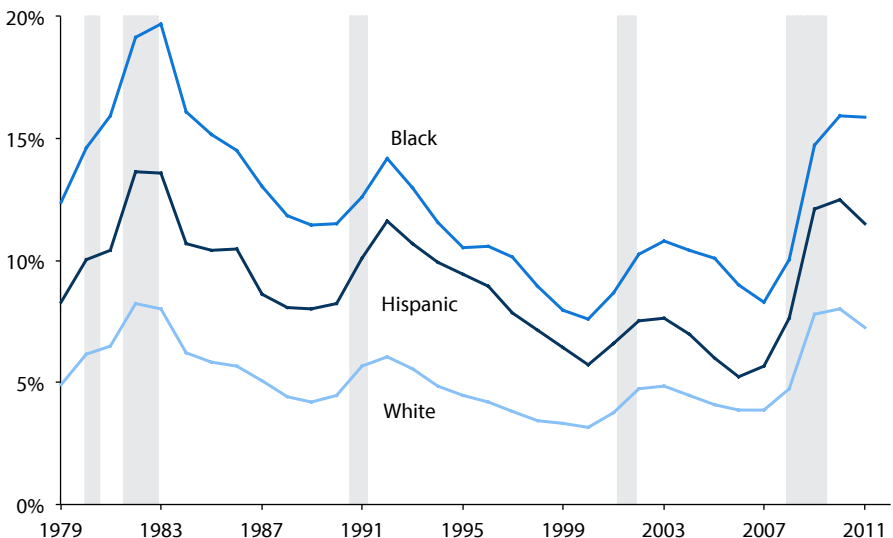
Source: Authors' analysis of Current Population Survey public data series

Unemployment and race/ethnicity, gender, and education

In addition to varying by age, unemployment rates differ enormously by other demographic characteristics, including by race and ethnicity, gender, and educational attainment. **Figure 5I** looks at unemployment rates by race and ethnicity. The figure shows that at nearly any given time over the last three decades, the unemployment rate of black workers was *more than twice as high* as that of white workers, and the unemployment rate of Hispanic workers was somewhere in between. During recessions the black-white gap in unemployment rates increases, as the unemployment rate of blacks increases more than that of whites. The same is true for the unemployment gap between Hispanic and white workers, though to a lesser extent. Between 2007 and 2010, the unemployment rate of whites increased by 4.2 percentage points (from 3.9 percent to 8.0 percent), while that of blacks increased by 7.7 percentage points (from 8.3 percent to 15.9 percent) and that of Hispanics increased by 6.8 percentage points (from 5.6 percent to 12.5 percent). (The actual percentage-point changes specified here do not match the difference between the shares because the shares are rounded.)

The highest annual unemployment rate of white workers since the onset of the Great Recession was 8.0 percent (in 2010), still less than the 8.3 percent 2007 (pre-recession) unemployment rate of blacks.

Figure 5I Unemployment rate, by race and ethnicity, 1979–2011



Note: Shaded areas denote recessions.

Source: Authors' analysis of basic monthly Current Population Survey microdata

Table 5.3 presents unemployment rates by educational attainment, with cross-tabulations by race and ethnicity. It first shows that in any time period, overall unemployment rates fall as educational attainment rises. For example, workers without a high school diploma have an unemployment rate that is typically more than five times as high as that of workers with an advanced degree. During economic downturns people with lower levels of education face greater increases in unemployment than those with higher levels of education—for example, between 2007 and 2010, unemployment among all workers without a high school diploma increased 8.5 percentage points, while unemployment among all workers with an advanced degree increased 1.8 percentage points. Note, however, that unemployment rates at all education levels more or less *doubled* between 2007 and 2010. The deterioration of demand for workers across the educational spectrum in the Great Recession and its aftermath is further examined in this chapter's discussion of structural and cyclical unemployment.

One of the most important points Table 5.3 makes is that large racial and ethnic disparities in unemployment exist across the educational spectrum. For example, white workers with a high school diploma but no more schooling saw their unemployment rate increase from 4.6 percent to 10.3 percent between 2007 and 2010, whereas similarly educated black workers saw their unemployment rate increase from 9.6 percent to 18.5 percent over the same period. Likewise, white workers with a college degree but no advanced degree saw their unemployment rate increase from 2.2 percent to 4.9 percent between 2007 and 2010, whereas black college graduates saw their unemployment rate increase from 3.5 percent to 9.8 percent. Note also that in any given year, the unemployment rate of black college graduates generally lies somewhere between the unemployment rate of white high school graduates and white workers with some college training but no college degree.

Table 5.4 presents unemployment rates by gender and education. During periods of relative strength in the labor market (such as in 2000 and 2007), men and women tend to have fairly similar unemployment rates (with the primary exception being that the unemployment rate of women without a high school degree is noticeably higher than that of men without a high school degree). During downturns, however, unemployment rates among men tend to increase much more than among women. Between 2007 and 2010, the overall male unemployment rate rose from 4.7 percent to 10.5 percent, while the overall female unemployment rate rose from 4.5 percent to 8.6 percent. This is largely due to the fact that men are overrepresented in many highly cyclical industries, such as manufacturing and construction, and are underrepresented in industries that tend not to see much job loss in recessions, such as education services and health services. In this chapter's section on job loss and gender in the Great Recession and its aftermath, we discuss this further.

Table 5.3 Unemployment rate, by education and race and ethnicity, 2000–2011

Education	Race and ethnicity	2000	2007	2010	2011	Change 2007–2010
Less than high school	All	9.4%	10.3%	18.8%	17.8%	8.5
	White	8.4%	10.9%	19.2%	18.1%	8.3
	Black	16.8	18.7	30.6	31.7	11.9
	Hispanic	8.2	7.6	15.5	14.1	7.9
	Asian	8.2	5.7	13.6	12.2	7.9
High school	All	4.3	5.4	12.0	11.1	6.5
	White	3.4%	4.6%	10.3%	9.2%	5.7
	Black	8.6	9.6	18.5	18.3	8.8
	Hispanic	5.1	5.5	13.5	12.3	8.0
	Asian	4.0	3.7	9.5	9.0	5.8
Some college	All	3.1	4.0	9.1	8.6	5.1
	White	2.7%	3.5%	7.9%	7.2%	4.4
	Black	4.9	6.4	13.7	14.3	7.3
	Hispanic	3.8	4.6	10.8	10.2	6.2
	Asian	4.1	4.0	9.0	8.4	5.0
College degree	All	2.0	2.4	5.7	5.2	3.2
	White	1.8%	2.2%	4.9%	4.5%	2.7
	Black	2.8	3.5	9.8	8.2	6.3
	Hispanic	2.5	2.9	7.1	6.9	4.2
	Asian	2.3	2.8	6.8	6.6	3.9
Advanced degree	All	1.4	1.7	3.5	3.3	1.8
	White	1.3%	1.6%	3.2%	3.0%	1.6
	Black	2.2	2.5	5.7	5.8	3.1
	Hispanic	1.8	1.6	4.3	3.8	2.7
	Asian	1.6	1.9	3.8	3.6	1.9

Source: Authors' analysis of basic monthly Current Population Survey microdata

Table 5.4 Unemployment rate, by gender and education, 2000–2011

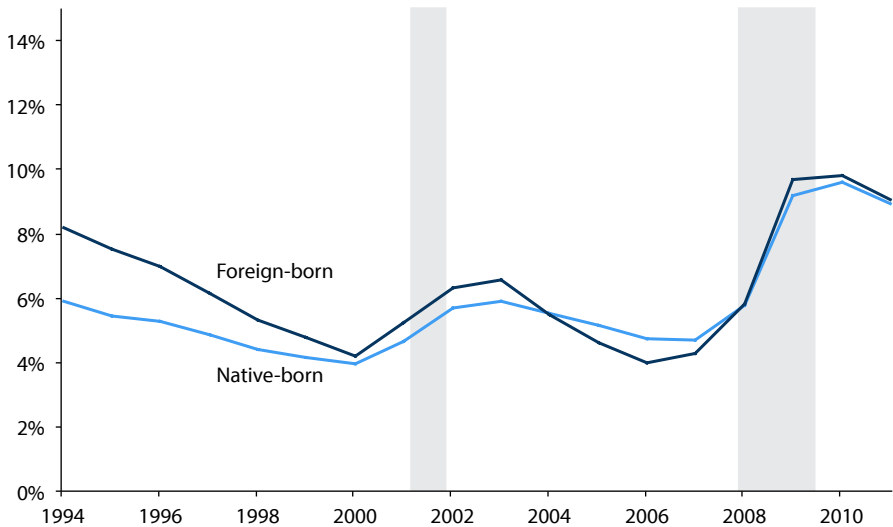
Gender	Education	2000	2007	2010	2011	Change 2007–2010
All		4.0%	4.6%	9.6%	8.9%	5.0
Men	Total	3.9%	4.7%	10.5%	9.4%	5.8
	Less than high school	8.6	9.7	18.8	17.1	9.1
	High school	4.3	5.6	13.2	11.8	7.5
	Some college	3.0	4.0	9.9	8.8	5.9
	College degree	1.8	2.4	5.9	5.2	3.5
	Advanced degree	1.4	1.6	3.3	3.2	1.7
Women	Total	4.1%	4.5%	8.6%	8.5%	4.1
	Less than high school	10.6	11.2	18.6	19.0	7.4
	High school	4.4	5.2	10.4	10.1	5.2
	Some college	3.2	4.0	8.3	8.5	4.3
	College degree	2.2	2.5	5.4	5.1	2.9
	Advanced degree	1.5	1.8	3.8	3.4	2.0

Source: Authors' analysis of basic monthly Current Population Survey microdata

Unemployment rates of foreign- and native-born workers

It is also instructive to dissect unemployment rates by whether workers were born inside or outside the United States. **Figure 5J** compares the unemployment rates of foreign- and native-born workers since 1994 (the earliest available year for these data). The figure shows that the unemployment rates of immigrants are buffeted by business-cycle dynamics to a greater degree than those of native-born workers. In other words, during expansions, immigrant unemployment rates drop more dramatically, and during contractions they increase more dramatically. During the expansion of the mid-2000s, the immigrant unemployment rate fell below that of native-born workers for the first time in this data series, but it crossed back above that of natives as the Great Recession took hold in 2008 and 2009. By 2011, the unemployment rates of native- and foreign-born workers were again similar, at 8.9 percent for native-born workers and 9.0 percent for foreign-born workers.

Figure 5J Unemployment rates of foreign-born and native-born workers, 1994–2011



Note: Shaded areas denote recessions.

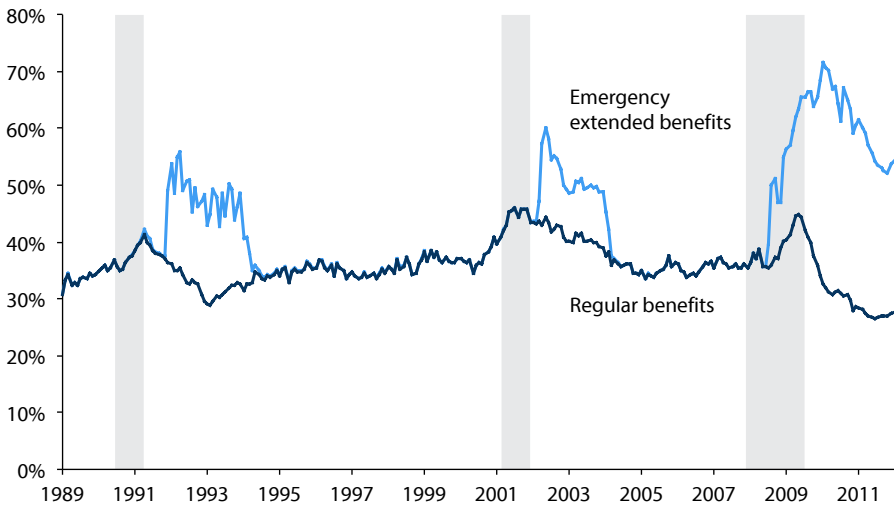
Source: Authors' analysis of basic monthly Current Population Survey microdata

Unemployment insurance benefits

Finally, it is important to note that the definition of unemployment has *nothing* to do with whether an unemployed person receives unemployment insurance (UI) benefits. To receive UI benefits, a worker must be unemployed (i.e., jobless but available to work and actively seeking work), but an unemployed worker may well not collect unemployment insurance benefits, or in fact may not even be eligible for them. Unemployed workers generally are eligible for UI benefits only if they are temporarily out of work through no fault of their own. For example, an employee who voluntarily quits or is fired for misconduct generally is not eligible for UI benefits. Further, new entrants to the labor market (e.g., new graduates) or re-entrants after a long absence (e.g., formerly stay-at-home parents) are not eligible.

Only employees who have recently worked can collect UI benefits, and even then the worker must have worked a minimum amount of time (generally longer than one year) and have received a minimum amount of earnings from his or her previous employer. In many states, workers are only eligible for UI benefits if they are looking for a full-time job. In addition, some states disqualify seasonal workers—and workers who were forced to leave their jobs because of, for example, medical reasons, also typically do not qualify for benefits.

Figure 5K Share of unemployed people with unemployment insurance benefits, 1989–2011



Note: Monthly data span Jan. 1989–Dec. 2011. Extended benefits are not seasonally adjusted. Shaded areas denote recessions.

Source: Authors' analysis of U.S. Department of Labor Unemployment Insurance program statistics and the Current Population Survey public data series

Figure 5K shows the share of unemployed people receiving unemployment insurance benefits, both regular state benefits and temporary emergency extensions of benefits passed by Congress during downturns in the labor market. With the exception of periods during and directly following recessions, generally only around 35 percent of the unemployed are eligible for and receive benefits. The share increases during downturns due both to temporary emergency extensions of benefits and to the fact that during recessions, a higher share of unemployed workers are unemployed because they were involuntarily laid off.

Due to the dramatic job loss in the Great Recession, the share of unemployed workers receiving benefits increased substantially; however, it still never exceeded 75 percent. Importantly, because so many unemployed workers faced such long spells of unemployment in the aftermath of the Great Recession, only about half of all workers receiving UI benefits received regular benefits—the rest had exhausted these and received emergency extended benefits. Long-term unemployment is discussed in greater depth later in this chapter.

Labor force participation: Structural and cyclical changes

The labor force participation rate is the share of working-age people who are either employed or unemployed (jobless but actively seeking work). When there is a change in the labor force participation rate, the question that arises is whether the change is *structural* or *cyclical*. *Structural* changes are due to longer-run changes in the labor force attachment of a particular group, changes that have nothing to do with the strength or weakness of the broader economy. *Cyclical* changes are due to a change in demand for workers, as more people either are drawn into the labor market because of strong job prospects or, conversely, leave or never enter the labor market because of weak job prospects.

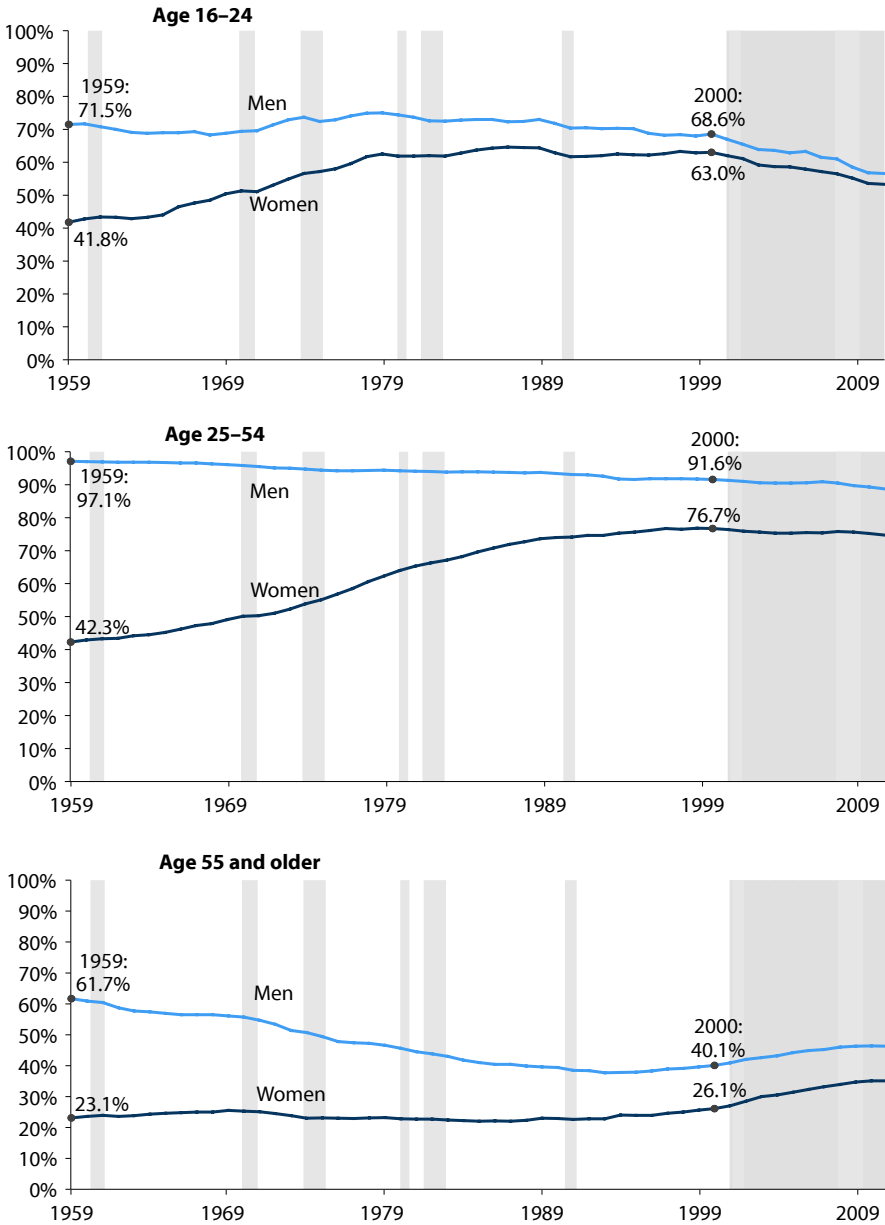
Perhaps the most dramatic structural change in the last century was the increased labor force participation of women. Their labor force participation rate nearly doubled from 1948 to 2000, increasing from 32.7 percent to 59.9 percent. Structural changes have also occurred in the labor force participation of different age groups. **Figure 5L** shows changes in the labor force participation rate of men and women in different age groups. Note that to try to isolate and examine structural changes over time, it is useful to look just through the year 2000; because the labor market has been so weak since that point, a significant portion of the post-2000 changes have likely been caused by weak demand for workers.

The share of young working-age men (age 16–24) in the labor force held roughly steady from 1959 to 1979, while young women’s labor force participation grew steadily, substantially closing the gender gap in labor force participation among young workers. From 1979 to 2000, labor force participation of young men declined, while labor force participation of young women plateaued. Some, but certainly not all, of this trend can be explained by increasing college enrollment of young people.

Gender differences in trends among “prime-age” workers, those age 25–54, are dramatic. Labor force participation among prime-age women increased through 2000, with particularly dramatic increases in the 1970s. Prime-age men, on the other hand, experienced gradual decline in labor force participation from 1959 to 2000.

Male workers age 55 and older saw substantial declines in labor force participation until the early 1990s, as retirement became more available to a broader swath of workers. For older women, labor force participation stayed relatively flat over this period. Starting in the early 1990s, however, the labor force participation of both women and men age 55 and older began to rise, likely due in part to both health insurance and pensions. First, most people get some portion of their health insurance coverage through their employer, and since health care costs have risen significantly, workers are working longer to retain health insurance. Second, because pensions are becoming less and less likely to provide

Figure 5L Labor force participation rate, by age and gender, 1959–2011



Note: Shaded areas denote recessions. Darker shading denotes years past 2000.

Source: Authors' analysis of Current Population Survey public data series

adequate retirement income, people are working longer to improve their economic security in retirement.

Aside from *structural* changes just discussed, there are also *cyclical* changes in the labor force participation rate. Because of the weak labor market since 2000, and particularly since 2007, it is likely that labor force participation rates would now be significantly higher if job prospects were better. The bottom row of **Table 5.5** shows that the labor force participation rate dropped from 66.0 percent in 2007 to 64.1 percent in 2011, a decline of 1.9 percentage points.

If the labor force participation rate *hadn't* dropped due to the weak labor market—and instead the people who made up the decline in the labor force participation rate (those who dropped out or didn't enter) were in the labor force and counted as unemployed—the unemployment rate would now be significantly higher. Table 5.5 explores the possible impact of the cyclical decline in the labor force participation rate since the start of the Great Recession on the unemployment rate. The table shows the labor force participation rate in 1989 and 2007 (two business cycle peaks) and in 2011 of men and women in different age groups. It also shows what the labor force participation rate would have been in 2011 if, from 2007 to 2011, it had followed its long-term trend. (Note that this exercise ignores the fact that the weak labor market from 2000 to 2007 also probably caused a cyclical decline in the labor force participation rate, and instead simply uses the 1989–2007 trend in the labor force participation rate as the long-term

Table 5.5 Decline in the labor force participation rate from 1989 to 2011 and its possible effect on the unemployment rate in 2011, by gender and age

Gender	Age	Labor force participation rate				Unemployment rate	
		1989	2007	2011	Counterfactual 2011 rate*	2011	Counterfactual 2011 rate**
Men	16–24	73.1%	61.5%	56.6%	59.8%	18.7%	23.1%
	25–54	93.7	90.9	88.7	90.3	8.2	9.8
	55+	39.6	45.2	46.3	45.9	7.0	6.1
Women	16–24	64.5%	57.2%	53.3%	56.5%	15.7%	20.5%
	25–54	73.7	75.4	74.7	75.6	7.6	8.8
	55+	23.0	33.2	35.1	35.8	6.2	8.1
All		66.5%	66.0%	64.1%	65.4%	8.9%	10.7%

* The column shows the labor force participation rate had it followed its long-term trend.

** The column shows the unemployment rate had the workers making up the difference between the 2011 labor force participation rate and its long-term trend instead been in the labor force and unemployed.

Source: Authors' analysis of basic monthly Current Population Survey microdata

structural trend. This exercise thus likely *understates* the cyclical decline in labor force participation.)

For each group except men age 55 and older, the labor force participation rate in 2011 would have been higher if it had followed its long-term trend. For prime-age (25–54) male workers, it would have been 1.6 percentage points higher; for prime-age female workers, it would have been about 1.0 percentage point higher. Overall, the labor force participation rate would have been 1.3 percentage points higher. In other words, this exercise suggests that around one-third of the decline in the overall labor force participation rate between 2007 and 2011 was part of a long-term structural trend, and about two-thirds—1.3 percentage points out of the 1.9 percentage-point decrease—was due to a cyclical drop in the demand for workers.

The last two columns of the table give the unemployment rate in 2011, and what the unemployment rate would have been if the workers who made up the difference between the 2011 labor force participation rate and its long-term trend—i.e., the workers who dropped out of, or never entered, the labor force because of weak job prospects—had instead been in the labor force and counted as unemployed. For all groups except men age 55 and older, the unemployment rate in 2011 would have been higher. For prime-age men, it would have been nearly 10 percent in 2011 instead of 8.2 percent, and for prime-age women it would have been nearly 9 percent instead of 7.6 percent. Overall, the unemployment rate would have been 10.7 percent instead of 8.9 percent.

This shows how cyclical declines in the labor force mean that the unemployment rate may severely understate weakness in the labor market. It also illuminates the possibility that when job openings and hiring pick up significantly and sidelined workers seeing better job prospects begin searching for work, the unemployment rate may not fall (or will fall less than it otherwise would have) even though job opportunities have actually improved. A key message here is that changes in the unemployment rate are difficult to interpret during periods when there are also cyclical changes in labor force participation.

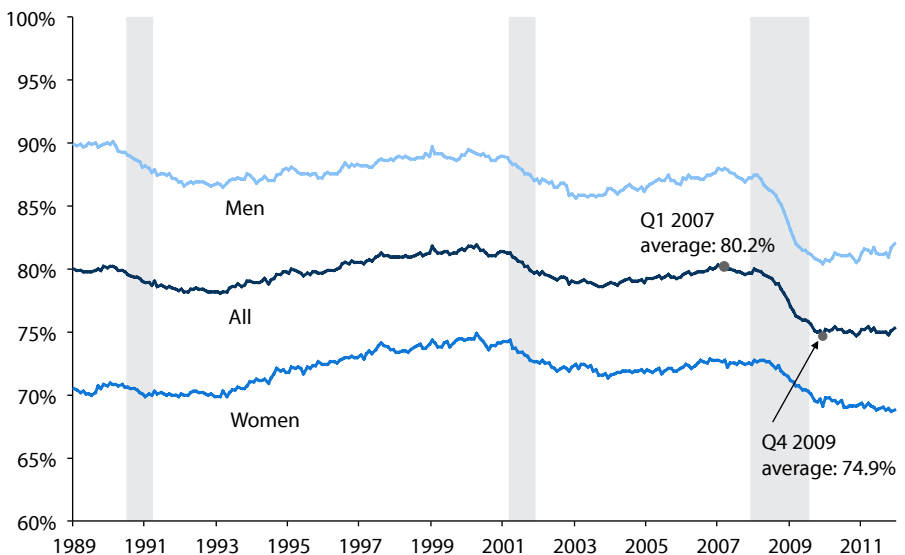
Beyond the unemployment rate: Other measures of labor market slack

As just discussed, the unemployment rate is an imperfect measure of changes in the strength or weakness of the labor market during times when the size of the labor force is affected by the state of the economy. However, there are a host of other available measures that are commonly used to help round out the picture of the strength of employment prospects.

Employment-to-population ratio

One of the most useful measures for assessing changes in the strength or weakness of job prospects during periods when the labor force is not growing normally is the employment-to-population ratio. This broad measure avoids issues related to changes in the labor force because it is simply the share of the relevant population with a job. **Figure 5M** shows changes in the employment-to-population ratio of 25–54 year olds. Looking at these “prime-age” workers is useful because their employment trends in recent years are generally not driven by other trends—such as increased college enrollment of young people or retiring baby boomers—but simply by aggregate demand for workers. The trends in the Great Recession and its aftermath are grim—the employment-to-population ratio of prime-age workers dropped from 80.2 percent in the first quarter of 2007 to 74.9 percent in the fourth quarter of 2009—an unprecedented fall. But perhaps even more startling is the lack of progress the following two years: From the fourth quarter of 2009 to the fourth quarter of 2011, the employment-to-population ratio stayed essentially flat. This suggests that the fall in the unemployment rate from the end of 2009 to the end of 2011 (see Figure 5G) was primarily because people dropped out of or didn’t enter the labor market due to the lack of job prospects—not because an increasing share of potential workers found employment.

Figure 5M Employment-to-population ratio, age 25–54, by gender, 1989–2011



Note: Data are monthly and span Jan. 1989–Dec. 2011. Shaded areas denote recessions.

Source: Authors’ analysis of Current Population Survey public data series

Underemployment

The definition of unemployment, by including only jobless workers who report that they are actively seeking work, overlooks jobless workers who want a job but have given up looking and those who have a job but can't get the hours they want or need. **Table 5.6** presents data on “underemployment,” a more comprehensive measure of slack in the labor market than unemployment. Underemployment includes workers who meet the official definition of unemployment as well as: 1) those who are working part time but want and are available to work full time (“involuntary” part timers), and 2) those who want and are available to work and have looked for work in the last year but have given up actively seeking work (“marginally attached” workers). While this is the most comprehensive measure of labor underutilization available from the Bureau of Labor Statistics, it does not include workers who are underemployed in a “skills or experience” sense (as in, say, a mechanical engineer working as a barista). Unfortunately, there is no widely cited national measure of underemployment that includes people who are underemployed in this sense of the word (unless they are also working part time but want a full-time job). Nevertheless, the underemployment rate gets much closer than the regular unemployment rate to measuring the share of the labor force that is un- or underutilized.

According to Table 5.6, unemployed workers constitute just slightly more than half of the total underemployed population. Involuntary part-time workers make up about one-third, with the remaining roughly 10 percent accounted for by people who want a job but have given up actively seeking work and thus are not counted as unemployed (i.e., marginally attached workers). In the weak labor market of 2000–2007, the number of underemployed workers grew from 10.1 million to 12.9 million. In the Great Recession and its immediate aftermath, the

Table 5.6 Underemployment, 2000–2011 (in millions)

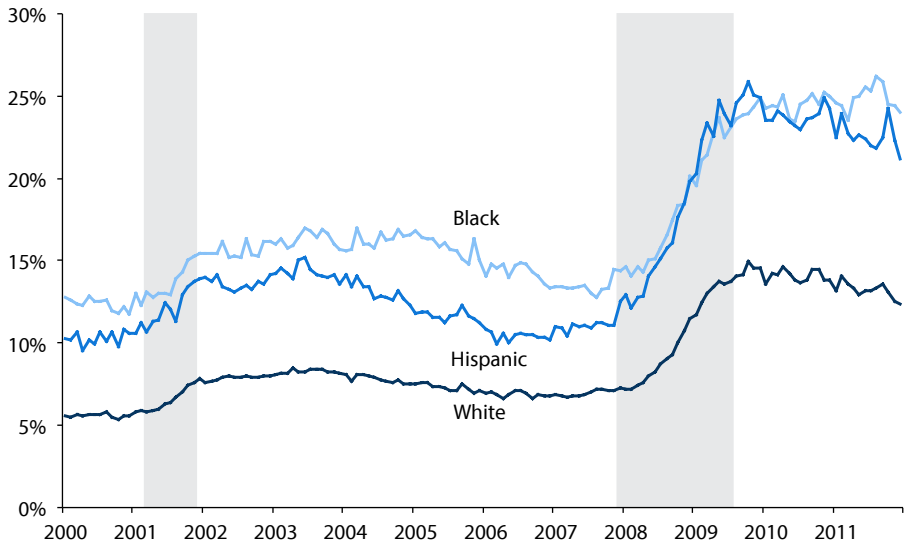
	2000	2007	2010	2011
Unemployed	5.7	7.1	14.8	13.7
Involuntary part time*	3.2	4.4	8.9	8.6
Marginally attached**	1.2	1.4	2.5	2.6
Total underemployed	10.1	12.9	26.2	24.9
Underemployment rate***	7.0%	8.3%	16.7%	15.9%

* Want and are available for full-time work

** Not looking for work but want and would take a job and have looked for work sometime in the last year

*** Total underemployed workers as a percent of the sum of the civilian labor force and marginally attached workers

Source: Authors' analysis of Current Population Survey public data series

Figure 5N Underemployment rate, by race and ethnicity, 2000–2011

Note: Data are monthly and extend to December 2011. Shaded areas denote recessions.

Source: Authors' analysis of basic monthly Current Population Survey microdata

total number of underemployed workers climbed from 12.9 million in 2007 to 26.2 million in 2010, or 16.7 percent of the total workforce—more than one out of every six workers.

Figure 5N shows the underemployment rate by race and ethnicity. As with unemployment (Figure 5I), racial and ethnic minorities have much higher *underemployment* rates than white workers; the underemployment rate of blacks is typically about twice as high as that of whites. One substantive difference between Figure 5N (underemployment by race/ethnicity) and Figure 5I (unemployment by race/ethnicity) is that Hispanic underemployment is about as high as black underemployment in periods of high overall underemployment. In comparison, the *unemployment* rate of Hispanics always falls firmly between the black and white unemployment rates. This difference arises because Hispanic workers are more likely to fall into the “involuntarily part time” category.

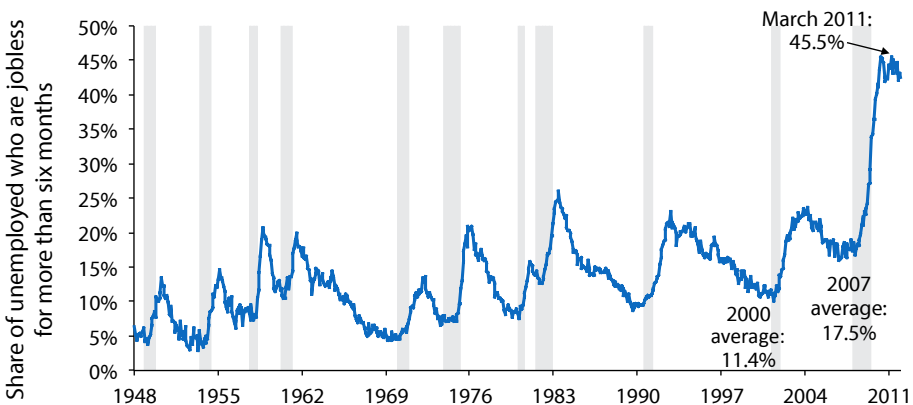
Long-term unemployment

Another important measure for understanding the job-finding prospects of unemployed workers is duration of unemployment. Perhaps the most frequently used unemployment duration measure is the share of unemployed workers who have

been unemployed for more than six months. (Six months is the maximum length of regular unemployment insurance benefits in most states.) Being unemployed for more than six months is commonly referred to as “long-term” unemployment. **Figure 50** shows the share of unemployed workers who have been out of work for more than six months. The increase in long-term unemployment over the business cycle from 2000 to 2007 is clear. In 2000, 11.4 percent of the unemployed were unemployed long term on average, but this increased to 17.5 percent in 2007. The length and severity of the Great Recession then caused an unprecedented rise in the share of unemployed out of work long term—to a peak of 45.5 percent in March 2011. Unsurprisingly, research (such as Valletta and Kuang 2012 and Rothstein 2012) shows that this dramatic and sustained increase is mainly due to severe and persistent weakness in the demand for labor and not such other factors as extended unemployment insurance benefits or a mismatch between worker skills and employer skill needs (the latter of which is discussed later in this chapter).

Who are the workers stuck in long-term unemployment? **Table 5.7** presents the long-term share by demographic group, education, and occupation. With the primary exception of age, the differences in long-term unemployment shares across different groups are generally small. This means that the characteristics of the long-term unemployed largely reflect those of the unemployed in general. Again, this is not surprising given the broad lack of demand for workers in the Great Recession and its aftermath. In 2011, 43.7 percent of the unemployed were unemployed long term. That was roughly the case among both men and women. Among different education categories there was also little variation: Workers with

Figure 50 Long-term unemployment, 1948–2011



Note: Data are monthly and span Jan. 1948–Dec. 2011. Shaded areas denote recessions.

Source: Authors' analysis of Current Population Survey public data series

Table 5.7 Long-term unemployment, by demographic group, education, and occupation, 2000–2011

		2000	2007	2011
All		11.4%	17.6%	43.7%
Gender	Men	12.2%	18.2%	44.0%
	Women	10.6	16.8	43.3
Education	Less than high school	10.6%	15.8%	39.0%
	High school	11.8	18.2	44.9
	Some college	10.8	17.2	45.1
	College degree	13.2	18.9	44.3
	Advanced degree	14.1	22.2	45.9
Race and ethnicity	White	9.6%	16.2%	42.4%
	Black	15.0	23.8	49.9
	Hispanic	12.2	14.3	39.8
Occupation	Management, business, and financial operations	14.7%	19.0%	49.7%
	Professional	10.6	19.0	42.4
	Service	11.3	16.5	39.8
	Sales	8.8	17.0	46.1
	Office and administrative support	11.9	17.8	48.6
	Farming, fishing, and forestry	8.0	14.8	22.9
	Construction and extraction	9.1	14.3	43.2
	Installation, maintenance, and repair	14.8	17.6	49.8
	Production, transportation, and material moving	13.0	19.5	46.3
Age	16–24	7.3%	11.9%	30.0%
	25–34	10.5	17.1	42.6
	35–44	13.5	19.8	47.6
	45–54	15.8	23.6	52.0
	55+	19.6	22.7	55.1

Note: Long-term unemployment measures the share of unemployed workers who have been unemployed for more than six months.

Source: Authors' analysis of basic monthly Current Population Survey microdata

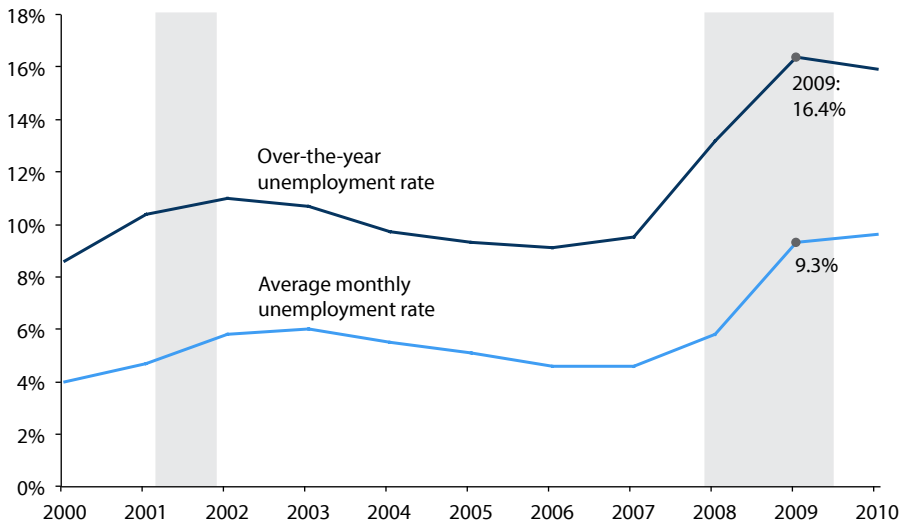
higher levels of education generally had slightly higher long-term unemployment shares, but not consistently—long-term unemployment as a share of the unemployed was slightly lower among workers with a four-year college degree only than among workers with a high school degree or some college but no college degree. Among race there was slightly more but still limited variation: In 2011, the share of unemployed workers out of work long term was 49.9 percent for black workers, compared with 42.4 percent for white workers and 39.8 percent for Hispanic workers. There was also surprisingly little variation among different occupations. With the exception of farming, fishing, and forestry occupations, which have a very low long-term unemployment share of 22.9 percent, the share out of work long term only ranged from 39.8 percent in service occupations to 49.8 percent in installation, maintenance, and repair occupations.

The biggest differences are in age; in every year examined, older workers tended to get stuck in unemployment longer than younger workers. In 2011, the long-term unemployment share of workers under age 25 was 30.0 percent, compared with 55.1 percent for workers age 55 and older. This is an interesting contrast to Table 5.2, which showed that older workers tend to have much lower unemployment rates. While older workers have more job stability and are less likely to face unemployment, if they *do* become unemployed, they tend to get stuck in unemployment for longer periods. This makes sense—an older worker is much more likely to have developed a specific set of knowledge and skills during his or her career, so if an older worker is unemployed, finding a job that *matches* those specific skills can take much longer than it does for a younger worker. This difference is particularly pronounced when job openings in general are very scarce, such as during the Great Recession and its aftermath.

Over-the-year unemployment

The official unemployment rate measures the share of the labor force unemployed *in a given month*. But this understates the number of people who are unemployed at some point over a longer period, since someone who is employed in one month may become unemployed the next, and vice versa. **Figure 5P** shows both the average monthly unemployment rate and the “over-the-year” unemployment rate—the share of workers who experienced unemployment at some point during the year. In 2009, when job loss during the Great Recession was most severe, 9.3 percent of the labor force was unemployed per month on average. However, 16.4 percent of the labor force—nearly one out of every six workers—was unemployed *at some point* in 2009.

Figure 5P Unemployment rate, average monthly and over-the-year, 2000–2010

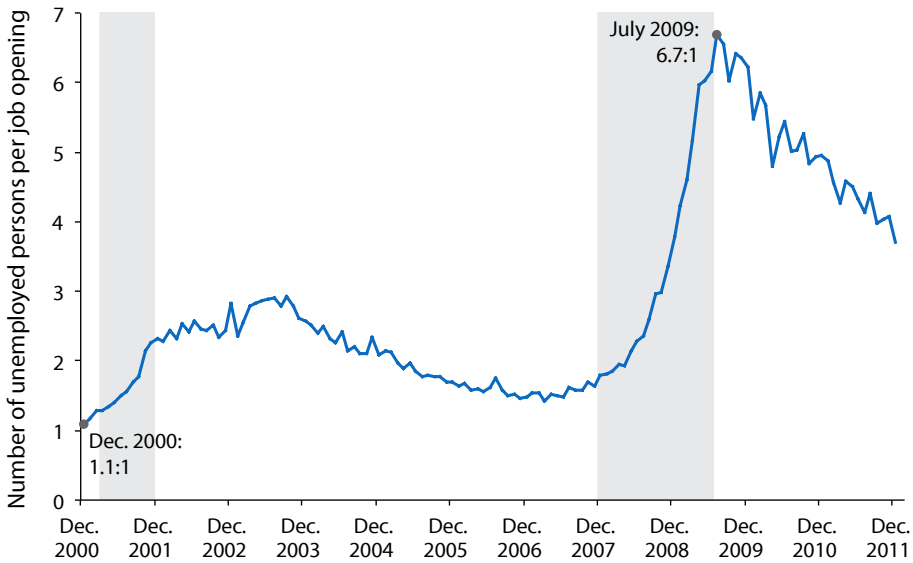


Note: Shaded areas denote recessions.

Source: Authors' analysis of Current Population Survey public data series and the Bureau of Labor Statistics *Work Experience of the Population*

Job-seekers ratio

An intuitive measure of job seekers' prospects for finding work is the "job-seekers ratio," the ratio of unemployed workers to job openings. **Figure 5Q** shows this ratio since December 2000 (when job openings data first became available). It is important to note that this ratio does *not* measure the number of *applicants* per job opening (reliable national data do not exist on the number of job applications filed each month). Rather, this measure is literally the number of unemployed workers divided by the number of job openings each month. It thus reveals how many unemployed workers there are for each available job, regardless of how many applications are filed. In December 2000, the ratio of job seekers to job openings was 1.1-to-1. In other words, there was roughly one job seeker per job opening at the end of the expansion of the 1990s, when the unemployment rate was below 4 percent. Over the weak labor market of the 2000–2007 business cycle, this ratio never again fell to the December 2000 low, but it did fall to 1.4-to-1 in the spring of 2007, when the unemployment rate was 4.4 percent. In the Great Recession, the job-seekers ratio spiked dramatically, to 6.7-to-1 in summer 2009, when the unemployment rate was 9.5 percent. The job-seekers ratio was above 4-to-1 for all of 2009 and 2010 and for most of 2011; a job-seekers

Figure 5Q Job-seekers ratio, Dec. 2000–Dec. 2011

Note: Data are monthly and span Dec. 2000–Dec. 2011. Shaded areas denote recessions.

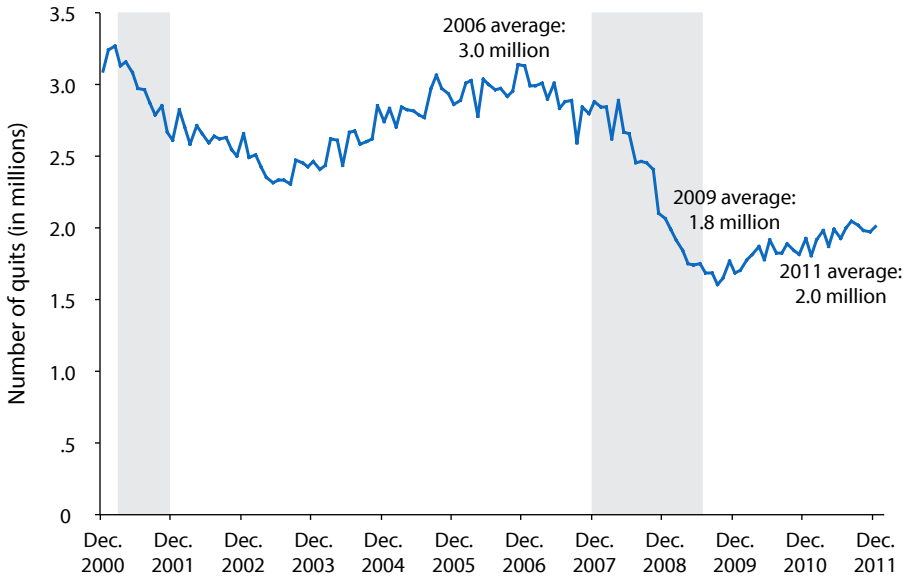
Source: Authors' analysis of Bureau of Labor Statistics Job Openings and Labor Turnover Survey and the Current Population Survey public data series

ratio above 4-to-1 means that there is simply no work for more than three out of four unemployed workers.

Voluntary quits

A final measure of the overall health of the labor market is, perhaps surprisingly, the number of *voluntary quits* in the labor market each month. All else equal, a larger number of voluntary quits represents a more dynamic labor market where job opportunities are plentiful. When job opportunities are plentiful, workers have the chance to change to jobs that better match their skills, experience, and interests and in which they are more productive and can command higher wages and better working conditions. During downturns, not only does hiring decrease, so does the number of voluntary quits, as outside job opportunities become scarce.

Figure 5R shows the number of voluntary quits since December 2000. Between 2006 and 2009, the average number of voluntary quits each month dropped by more than 40 percent, from 3.0 million to 1.8 million, and by 2011 had only increased to 2.0 million. This represents an enormous drop in opportunities for the workforce, and demonstrates how persistent high unemployment hurts wage growth for workers with jobs; the lack of outside options reduces an important

Figure 5R Voluntary quits, Dec. 2000–Dec. 2011

Note: Data are monthly and span Dec. 2000–Dec. 2011. Shaded areas denote recessions.

Source: Authors' analysis of data from the Bureau of Labor Statistics Job Openings and Labor Turnover Survey

avenue for individuals to see wage growth (changing jobs). Furthermore, with limited outside options for their workers, employers do not have to pay substantial wage increases to keep the workers they need. The effect of recessions on wage growth is further discussed in Chapter 4.

Recovering from the Great Recession

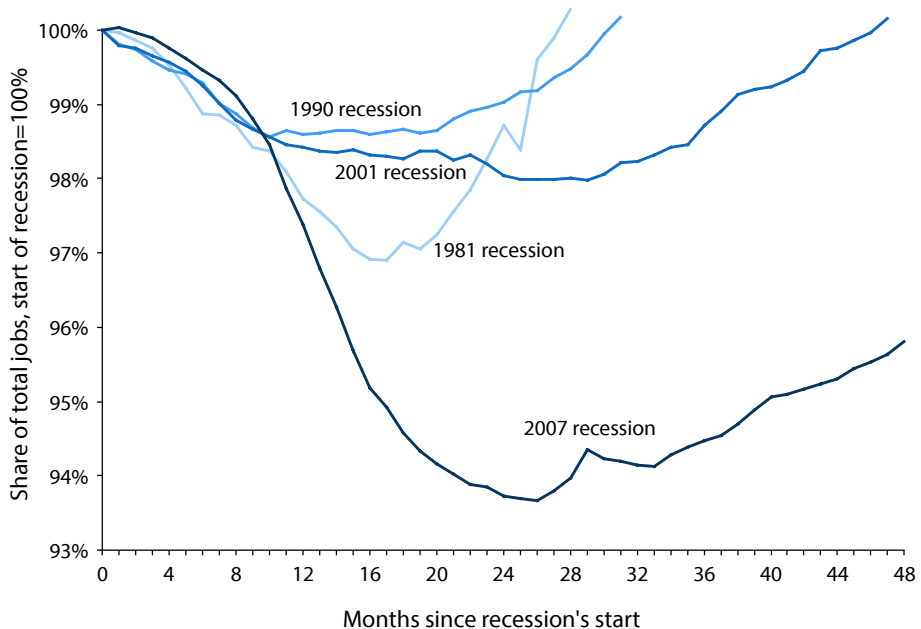
Evidence showing the devastating impact of the Great Recession on employment, unemployment, labor force participation, and other measures of job opportunities has been woven throughout this chapter. This section directly compares the Great Recession with earlier recessions, and the current recovery with earlier recoveries. It also examines two special topics—gender and job loss in the Great Recession and its aftermath, and whether *structural* unemployment comprises a meaningful portion of the increase in unemployment in the Great Recession and its aftermath.

Comparing the Great Recession and its aftermath with earlier recessions and recoveries

Figure 5S directly compares job loss in percentage terms since the start of each of the last four recessions. It shows just how large job losses were in the Great Recession relative to the losses of earlier downturns. In December 2011, four years after the start of the Great Recession in December 2007, the number of jobs as a share of pre-recession employment was far lower than at any point during even the very deep recession of the early 1980s. By historical standards, job loss in the Great Recession and its aftermath was nothing the United States had seen in more than seven decades since the Great Depression.

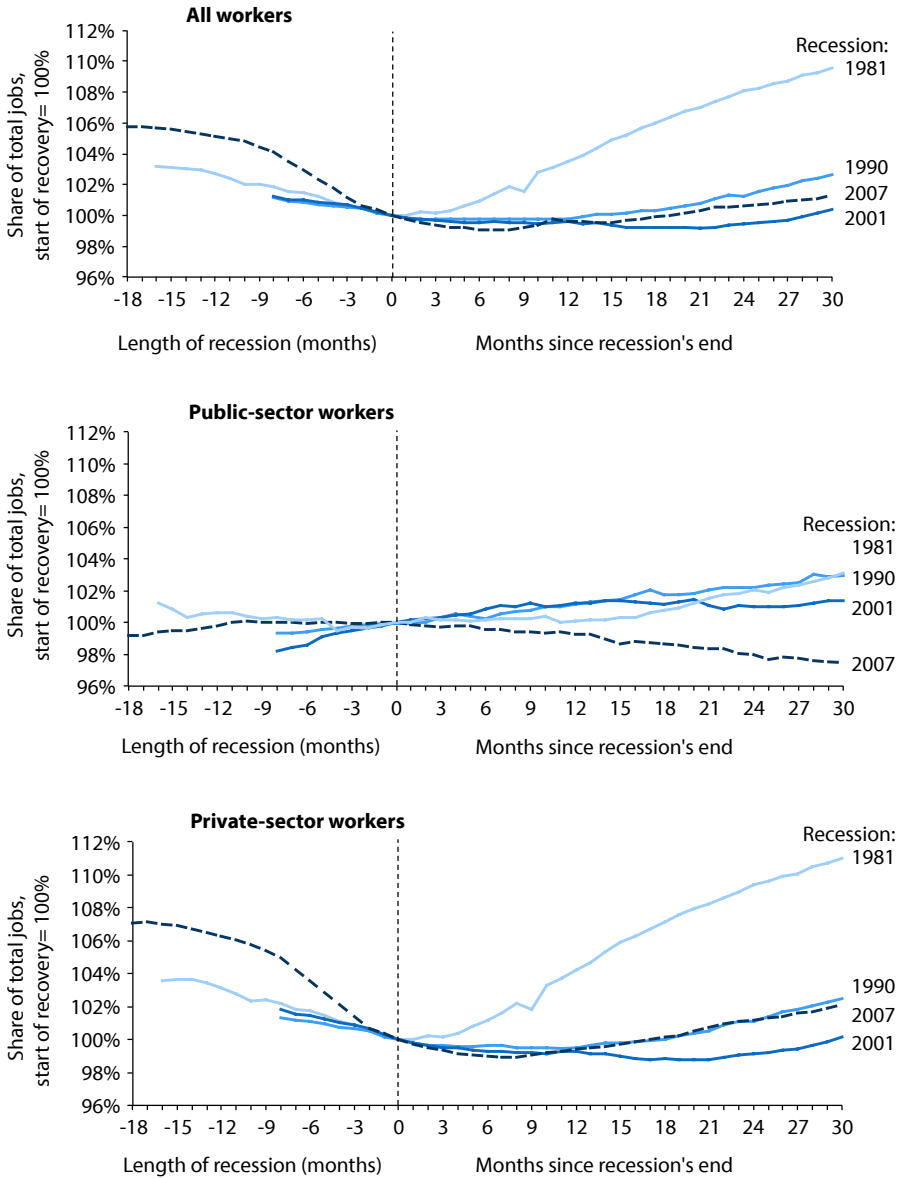
In the discussion of **Figure 5G**, we pointed out that starting with the early 1990s recession, a pattern emerged of slow growth and stubbornly high unemployment following the end of recessions. To examine this more directly, in **Figure 5T** we reorient **Figure 5S** to compare job growth starting in *recoveries* instead of at the beginning of recessions. The top section of the figure shows that the number of jobs fell much further and faster during the Great Recession than in the previous three recessions. But looking to the right of the dotted line, it becomes clear

Figure 5S Job change since the start of each of the last four recessions



Source: Authors' analysis of Bureau of Labor Statistics Current Employment Statistics

Figure 5T Job change since the start of each of the last four recoveries



Note: The line for each recession begins at the official start of the recession, so the length of the line to the left of zero indicates the length of each recession. Data for public-sector workers exclude temporary Census workers.

Source: Authors' analysis of Bureau of Labor Statistics Current Employment Statistics

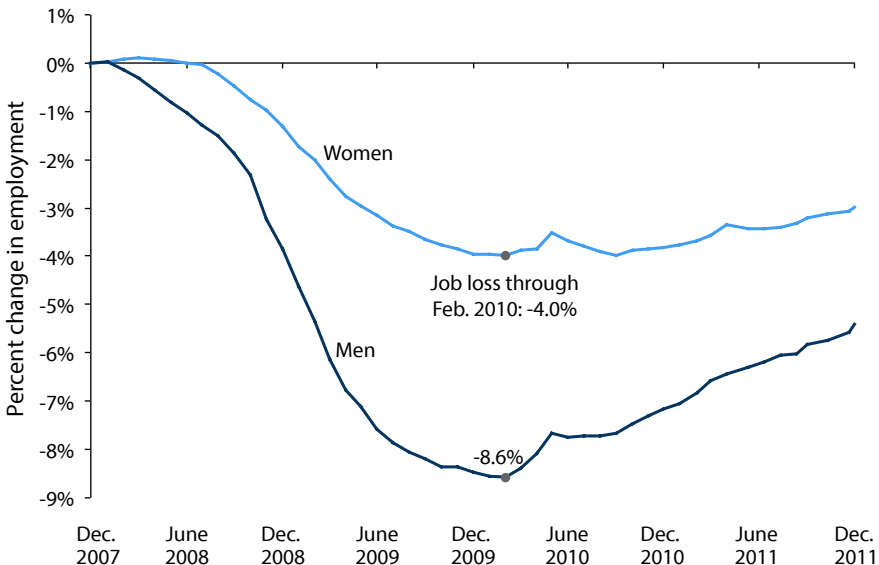
that job growth is not significantly weaker in the current recovery compared with the last two; it just slightly lags the job growth following the recession of 1990 and is actually faster than that of the recovery following the recession of 2001. The top section of Figure 5T underscores that the key difference between this recovery and the last two is the length and severity of the recessions that preceded them.

The bottom two sections of Figure 5T reveal an additional difference between this recovery and other recent recoveries—unprecedented public-sector job loss in the aftermath of the Great Recession. Private-sector job growth in the current recovery nearly matches that of the recovery following the early 1990s recession and is substantially stronger than that of the recovery following the early 2000s recession. But public-sector job losses in the current recovery—largely due to budget cuts at the state and local level—represent a large drag that was not weighing on earlier recoveries.

Job loss and gender in the Great Recession

Figure 5U looks at job loss during and after the Great Recession by gender. As the figure shows, men lost far more jobs than women did in the Great Recession (and, as shown in Table 5.4, the male unemployment rate rose much higher). In the

Figure 5U Job change, by gender, in the Great Recession and its aftermath (Dec. 2007–Dec. 2011)



Source: Authors' analysis of Bureau of Labor Statistics Current Employment Statistics

period of overall job loss between the start of the recession in December 2007 and February 2010, men lost 6.0 million jobs, or 8.6 percent of their total December 2007 employment. By comparison, women lost 2.7 million jobs, or 4.0 percent. In December 2007, women held 48.8 percent of payroll jobs, but by August 2009, men's greater job loss had increased women's share of payroll jobs to 50.0 percent for the first time ever. Since the economy started regaining jobs, however, the gender dynamic in job growth has reversed—between February 2010 and the end of 2011, women gained 663,000 jobs while men gained 2.2 million, and the share of payroll jobs held by women dropped to 49.3 percent. However, Figure 5U also demonstrates that despite making up more ground, by the end of 2011 men were still in a far deeper hole than women relative to pre-recession employment levels (-5.4 percent for men compared with -3.0 percent for women).

It is important to note that greater net job loss for men from 2007 to 2011 can be more than explained by the fact that *before the recession started*, men were more concentrated in industries that would sustain the most dramatic job losses, while women were more concentrated in industries that would incur the least dramatic job losses, or even job gains. **Table 5.8** shows the distribution of workers across industries overall and by gender in 2007, and net job gains or losses within each industry overall and by gender from December 2007 to December 2011. The industries with the largest overall job losses, manufacturing (down 14.1 percent) and construction (down 25.9 percent), also employed a very large share of men; 14.0 percent of male workers were in manufacturing in 2007 (compared with 6.0 percent of female workers), and 9.4 percent of male workers were in construction (compared with 1.4 percent of female workers). The industries that employed the greatest shares of women in 2007, health care (18.5 percent) and state and local government (17.2 percent), were not as hard-hit. Between 2007 and 2011, health care *grew* by 7.8 percent, and state and local government fell by “only” 2.4 percent. In short, before the recession started, the gender-industry mix was such that men were positioned in industries that would bear much greater job loss, meaning that, all else equal, men would see greater job loss.

However, as the last column of Table 5.8 demonstrates, within industries, men often fared *better*. Women experienced a larger percentage net drop in jobs (or smaller percentage net gain in jobs) between 2007 and 2011 in 10 out of 16 major industries: manufacturing, wholesale trade, retail trade, transportation and warehousing, utilities, information, financial activities, professional and business services, health care, and leisure and hospitality. Women fared better only in mining, construction, educational services, other services, and government.

Figure 5V shows how employment of men and women would have evolved if, in December 2007, *men and women had had the same industry distribution* but if job changes by gender within each industry had evolved as they actually did between December 2007 and December 2011. Essentially, this exercise looks at job

Table 5.8 Industry distribution and job loss, by gender, 2007–2011

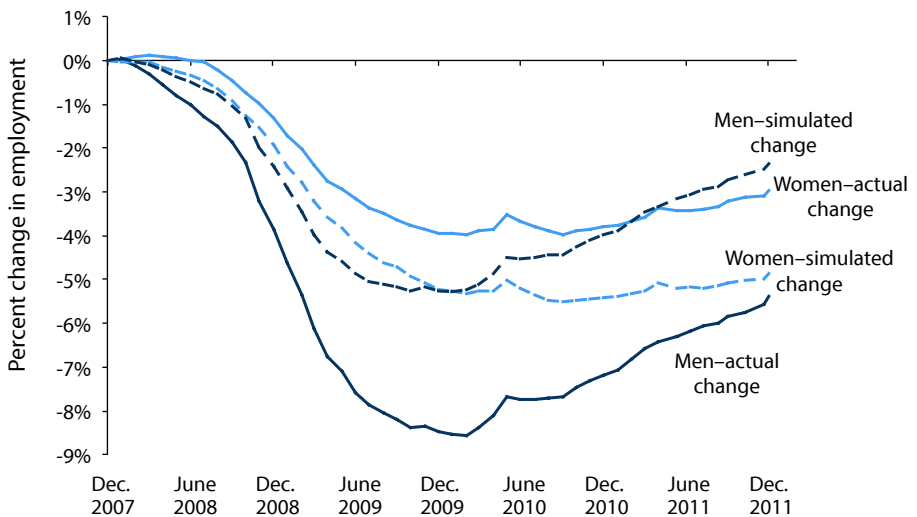
	Share of workers in various industries, 2007			Difference (women – men)	Net employment change, Dec. 2007–Dec. 2011			Difference (women – men)
	All	Women	Men		All	Women	Men	
Total nonfarm	100%	100%	100%		-4.2%	-3.0%	-5.4%	2.4
Mining	0.5%	0.1%	0.8%	-0.7	13.5%	16.4%	13.1%	3.3
Construction	5.5	1.4	9.4	-8.0	-25.9	-24.2	-26.1	1.9
Manufacturing	10.1	6.0	14.0	-8.0	-14.1	-18.6	-12.2	-6.4
Wholesale trade	4.4	2.7	5.9	-3.2	-7.8	-8.9	-7.3	-1.7
Retail trade	11.3	11.6	11.0	0.7	-5.4	-7.8	-3.0	-4.8
Transportation and warehousing	3.3	1.7	4.8	-3.2	-4.9	-10.1	-3.3	-6.8
Utilities	0.4	0.2	0.6	-0.3	0.4	-11.3	4.9	-16.2
Information	2.2	1.9	2.5	-0.5	-12.5	-16.8	-9.4	-7.3
Financial activities	6.0	7.4	4.7	2.7	-6.4	-8.2	-3.8	-4.4
Professional and business services	13.0	12.0	14.0	-2.0	-2.6	-3.2	-2.1	-1.0
Educational services	2.1	2.7	1.6	1.0	10.3	11.1	8.9	2.2
Health care and social assistance	11.2	18.5	4.2	14.3	7.8	6.8	11.8	-5.0
Leisure and hospitality	9.8	10.6	9.0	1.6	-0.7	-1.3	0.0	-1.3
Other services	4.0	4.3	3.7	0.5	-2.9	-1.7	-4.1	2.4
Federal government	2.0	1.8	2.2	-0.4	2.9	4.0	2.0	2.0
State and local government	14.2	17.2	11.5	5.7	-2.4	-2.0	-3.0	1.0

Note: Industry distribution shares may not total to 100 percent due to rounding.

Source: Authors' analysis of Bureau of Labor Statistics Current Employment Statistics

changes by gender in the Great Recession and its aftermath “controlling for industry.” It shows that, all else equal, if men and women had had the same industry distribution going into the recession, job loss through the end of 2009 would have been very similar for men and women, but since then, men’s job *gains* would have strongly outpaced women’s. This simple exercise confirms that men’s worse job losses in the Great Recession can be entirely explained by the industries in which men were concentrated before the recession started (i.e., controlling for industry, men and women saw very similar job loss from December 2007 to December

Figure 5V Simulated job change by gender in the Great Recession and its aftermath (Dec. 2007–Dec. 2011), controlling for industry



Note: Simulated lines assume that, in December 2007, women and men had the same industry distribution, but that male and female employment within each industry evolved as it actually did after 2007.

Source: Authors' analysis of Bureau of Labor Statistics Current Employment Statistics

2009). In the recovery, however, industry concentration does *not* fully explain the fact that men have seen stronger job growth. It does explain some of the gender difference in job growth in the recovery—in particular, women's disproportionate concentration in the public sector and the public sector's unprecedented job loss in the recovery (see the middle panel of Figure 5T) help explain why men have seen better employment growth in the recovery. However, industry concentration does not explain all of it—as Figure 5V shows, men are seeing stronger job gains in the recovery even after controlling for industry.

Unemployment in the aftermath of the Great Recession: Structural or cyclical?

Persistently high unemployment in the aftermath of the Great Recession has fueled a public debate about whether this unemployment is predominantly *cyclical* (caused by a lack of aggregate demand for workers—i.e., unemployment is high because employers don't need to hire) or *structural* (because the skills of job seekers do not match the requirements of available jobs—i.e., unemployment is high because employers want to hire but can't find the workers they need).

It is important to note that there are always labor market adjustments that create some degree of mismatch between the workers employers need and the workers who are available. The relevant question in a period of persistent high unemployment is whether that mismatch is an unusually large part of the unemployment story. The answer to this question has meaningful policy implications. If unemployment in the aftermath of the Great Recession is predominantly cyclical, then monetary and fiscal policy measures should be undertaken to bolster aggregate demand, which in that case would reduce unemployment without harmful side effects (in particular with little or no risk of accelerating inflation). But if unemployment is predominantly structural, attempts to bolster demand wouldn't help reduce unemployment, and might make things worse by accelerating inflation.

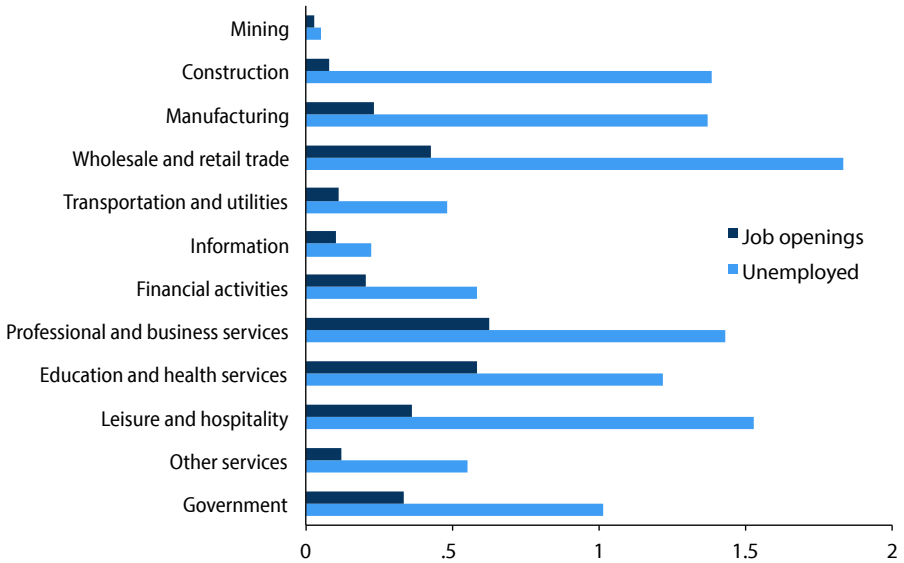
Perhaps the most important piece of information informing this discussion is the job-seekers ratio presented in Figure 5Q. This ratio shows that for all of 2009, 2010, and most of 2011, there have been more than *four times* as many unemployed workers as job openings. It cannot be the case that unemployment is being primarily driven by employers having job openings they can't fill (structural unemployment), because even if all job openings were filled immediately, more than three-fourths of unemployed workers would remain jobless.

Nevertheless, there is a great deal of further evidence that an increase in structural unemployment is not driving currently high unemployment. For example, if employers in certain sectors couldn't find suitable workers, we would expect to find industries with more job openings than unemployed workers—i.e., labor shortages. But there are no major sectors where this is happening. **Figure 5W** shows that the number of unemployed workers dramatically outnumbered job openings in every major sector in 2011. The sector with the lowest ratio of job seekers to job openings is mining, and even there it is nearly 2-to-1.

If structural unemployment were occurring in an *occupation* that exists in many industries, we might not find evidence of it in the industry breakdowns of Figure 5W. Job openings data do not exist by occupation, but unemployment data do, and, as shown in **Figure 5X**, they are revealing. If employers in particular occupations couldn't find enough workers, those occupations would not show a big increase in unemployment. However, Figure 5X shows a large increase in unemployment across all major occupation categories. The category with the smallest percent increase in unemployment is food preparation and serving, and even in that category there were nearly 70 percent more unemployed workers in 2011 than in 2007. In most occupations, the number of unemployed workers roughly doubled between 2007 and 2011.

An important thing to note in Figure 5X is that construction occupations do *not* stand out as an unusually large contributor to unemployment in the aftermath of the Great Recession. It is true that there was a big run-up in construction employment as the housing bubble inflated, and a dramatic drop in construction

Figure 5W Unemployed workers and job openings, by industry, 2011
(in millions)

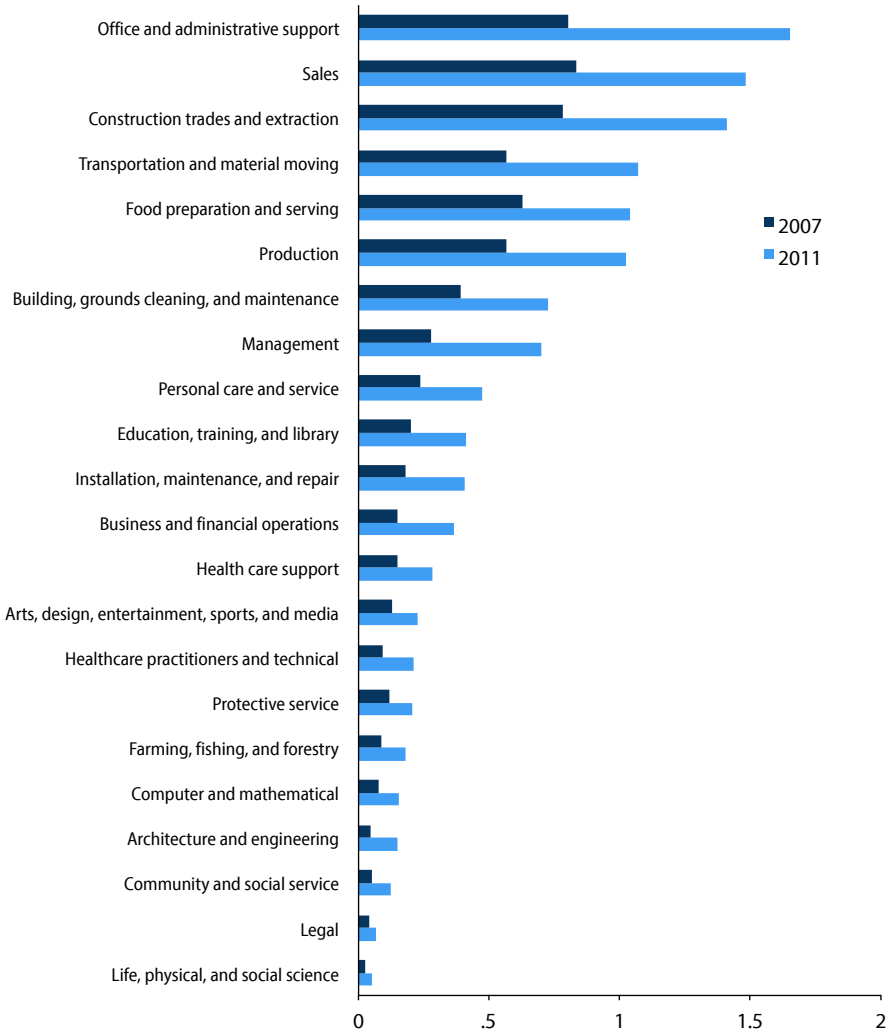


Note: Health services include social assistance service as a very small share of the category.

Source: Authors' analysis of Bureau of Labor Statistics Job Openings and Labor Turnover Survey and the Current Population Survey public data series

employment as the bubble burst and the recession took hold (see Table 5.8). But in proportional terms, the increase in unemployment among construction workers is very much in line with the increase in unemployment among workers in other occupations, which suggests that the skills of laid-off construction workers are at least as well-matched to the available jobs as those of laid-off workers in other occupations. In other words, unemployed construction workers are not driving today's unemployment (see also Schmitt and Warner 2011). Nor are they driving today's *long-term* unemployment, as shown in Table 5.7; in 2011, 43.2 percent of unemployed workers in construction and extraction occupations had been unemployed for more than six months, slightly *lower* than the overall share, 43.7 percent.

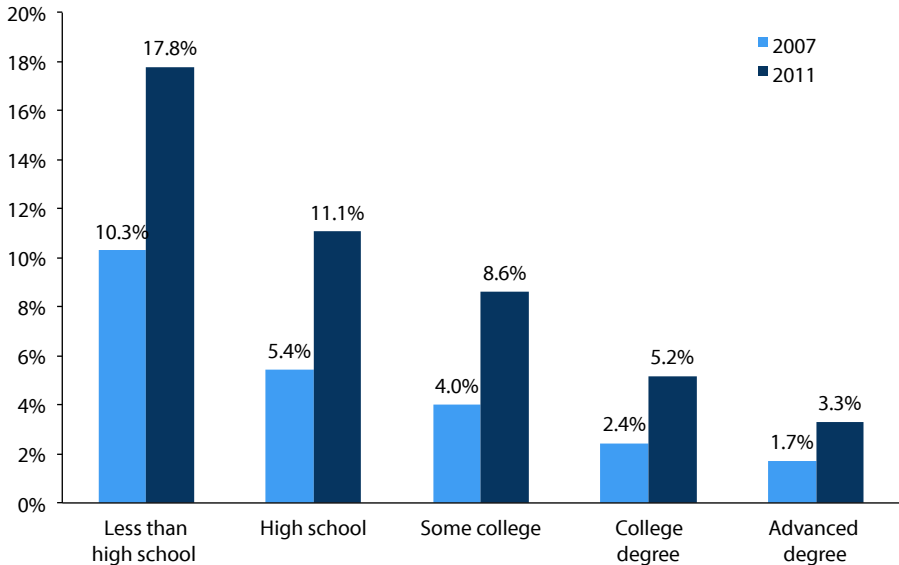
A final important place to investigate for evidence of structural unemployment is across education categories. As mentioned earlier (see Table 5.3), unemployment rates are much lower for workers with higher levels of education. Could this signal a shortage of workers with high levels of education? **Figure 5Y**, which shows the unemployment rate by education in 2007 and in 2011, reveals that while unemployment is substantially lower among workers with higher levels of education, they too have seen a large *percentage* increase in unemployment since

Figure 5X Unemployed workers, by occupation, 2007 and 2011 (in millions)

Source: Authors' analysis of basic monthly Current Population Survey microdata

before the recession started. Over the four years from 2007 to 2011, unemployment rates have roughly doubled in all categories. In other words, there has been a dramatic drop in demand for workers with even the highest levels of education.

In sum, data by industry, occupation, and education level all show a broad-based drop in demand for workers compared with before the recession started. This shows that the unemployment crisis in the aftermath of the Great Recession is primarily cyclical (caused by a drop in aggregate demand), not structural (in

Figure 5Y Unemployment rate, by education, 2007 and 2011

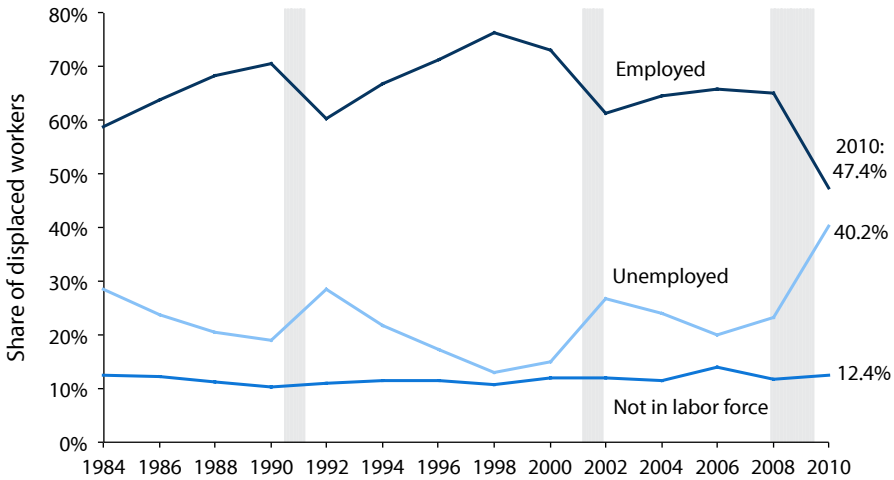
Source: Authors' analysis of basic monthly Current Population Survey microdata

other words, it is not caused by employers having difficulty finding the workers they need).

The consequences of job loss and unemployment for workers and their families

As mentioned in the earlier discussion of voluntary quits, workers who leave their jobs on their own accord but stay in the labor force generally move on to better circumstances in a new job with higher pay and improved working conditions. However, when workers lose their jobs involuntarily, they typically pay a large economic price. One cost is difficulty in finding a new job.

Figure 5Z shows the labor force status of workers who lost a job “not for cause” (i.e., due to a plant closing, a layoff, or the elimination of a job) at some point in the prior three years. The likelihood of reemployment for these workers is, unsurprisingly, cyclical—increasing in expansions and dropping in recessions. Less than half (47.4 percent) of workers who were laid off at some point from January 2007 to December 2009 were reemployed in January 2010—the lowest rate on record. The other 52.6 percent were unemployed or had dropped out of the labor force altogether.

Figure 5Z Labor force status of involuntarily displaced workers, 1984–2010

Note: Data are for workers who lost a job "not for cause" at some point in the prior three years. Shaded areas denote recessions.

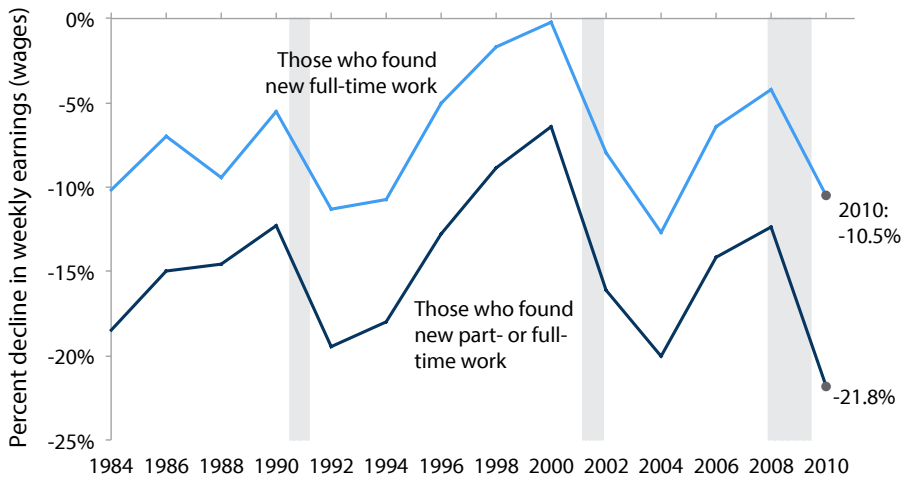
Source: Authors' analysis of Farber (2011, Table 6)

Displaced workers able to find another job tend to earn wages that are substantially lower than those paid in their previous job. The wage impact is also cyclical; during recessions, displaced workers who find new jobs face very large wage losses. Those losses are lower in expansions, though generally still sizeable.

Figure 5AA shows the average weekly earnings loss of workers who were involuntarily displaced from a full-time job in the prior three years, both overall and separately for those who found a new full-time job. Overall, workers who lost a full-time job in 2007–2009 but were reemployed in either full- or part-time jobs in 2010 faced record weekly wage cuts of 21.8 percent on average. Some of this drop is certainly due to the large increase in people working part-time who want full-time jobs (see the earlier section on underemployment, particularly Table 5.6). But even restricting the analysis to displaced workers with the best outcomes—those who were able to find another full-time job—the drop is still a staggering 10.5 percent.

The one exception to the phenomenon of large wage cuts following displacement was in the very strong labor market of the late 1990s. Workers who involuntarily lost a full-time job in 1997–1999 but found new full-time employment by 2000 saw almost no drop (-0.2 percent) in wages at their new job.

Figure 5AA Average decline in weekly earnings for involuntarily displaced full-time workers who found new work, 1984–2010



Note: Data are for workers who lost a full-time job at some point in the prior three years. Shaded areas denote recessions.

Source: Authors' analysis of Farber (2011, Table 16)

Judging from experiences in past recessions, the consequences of layoffs for displaced workers are not just severe, they are also long-lasting. The following discussion of the “scarring” effects of persistent high unemployment draws from a large body of research on these effects (Jacobson, LaLonde, and Sullivan 1993; von Wachter, Song, and Manchester 2009; Stevens 1997; Burgard, Brand, and House 2007; Sullivan and von Wachter 2009; Stevens and Schaller 2009; Oreopoulos, Page, and Stevens 2008; Oreopoulos, von Wachter, and Heisz 2008; and Kahn 2010).

This research shows that the average adult worker losing a stable job will see severe earnings reductions that last more than 15 to 20 years compared with what earnings would have been had the job not been lost. One of the reasons for this extended spell of depressed earnings is that the loss of a job is also often followed by a lengthy period of employment instability. Furthermore, in addition to financial hardship, displaced workers often experience declines in health during this period, which can lead to significant reductions in life expectancy (12 to 18 months).

Job losses also affect workers' children. Parental job loss is associated with reduced academic performance and higher rates of grade repetition. Even grimmer: The children of parents who lose work have substantially lower earnings as *adults* than children from otherwise-similar families that didn't face job loss. Finally,

the evidence from past recessions shows severe and long-lasting effects on young workers who are positioned to enter the labor market in a downturn. In particular, entering the labor market in a severe recession can lead to reduced earnings for up to 10 to 15 years. Young workers at all levels of educational attainment who enter the labor market during a downturn face higher rates of unemployment. And because of the scarcity of available jobs, these young workers are less likely to land a stable entry-level job that will lead to advancement, and are more likely to experience a lengthy period of instability in employment and earnings. All of these findings underscore the fact that economic recessions, which are often portrayed as short-term events, can and do cause long-lasting damage.

Conclusion

It is mainly through the job market that the country's economic growth reaches the vast majority of families not of retirement age. The great American jobs machine faltered from 2000 to 2007, producing the worst business cycle on record for job creation, and on its heels came the Great Recession and the most severe and sustained job loss this country had seen in seven decades. Although the recovery has been similar in strength to the recoveries that followed the recessions of the early 1990s and early 2000s, the length and severity of the Great Recession created a much deeper jobs deficit and a much higher unemployment rate this time around. When jobs are not plentiful, workers who do find employment are less likely to find a job that matches their skills and experience, and are less able to secure raises. And for workers who face job loss, the negative consequences for them and their families are severe and long-lasting.

Trends in job growth in recent decades—and especially during and after the Great Recession—offer a critical lesson: A healthy labor market is primarily a function of healthy growth in aggregate demand, while a sick labor market is a function of weak demand. This simple point is far too often ignored in debates about how to make labor markets more dynamic. Until the labor market regains its strength, strategies to boost demand and generate jobs must be a top national priority.

Table and figure notes

Tables

Table 5.1. Average annual change in employment, GDP, hours, and productivity, 1948–2011. Underlying data for total economy productivity are unpublished data provided to the authors by the Bureau of Labor Statistics Labor Productivity and Costs program.

Table 5.2. Labor force share and unemployment rate, by age, 1979–2011. Underlying data are from the Current Population Survey public data series.

Table 5.3. Unemployment rate, by education and race and ethnicity, 2000–2011. Underlying data are basic monthly Current Population Survey microdata.

Table 5.4. Unemployment rate, by gender and education, 2000–2011. Underlying data are basic monthly Current Population Survey microdata.

Table 5.5. Decline in the labor force participation rate from 1989 to 2011 and its possible effect on the unemployment rate in 2011, by gender and age. Underlying data are basic monthly Current Population Survey microdata. The counterfactual 2011 labor force participation rate is what the labor force participation rate would have been in 2011 if the labor force participation rate of each of 30 gender/age/education cells had continued on the same linear trend from 2007 to 2011 that they followed from 1989 to 2007, but if the relative sizes of those cells evolved as they actually did. (Note, there are three age groups: 16–24, 25–54, and 55+; and five education groups: less than high school, high school, some college, college degree, and advanced degree. The table presents aggregated results by gender and age.) The counterfactual 2011 unemployment rate is what the unemployment rate in 2011 would have been if the workers making up the difference between the actual and the counterfactual 2011 labor force participation rate were in the labor force and unemployed instead of out of the labor force.

Table 5.6. Underemployment, 2000–2011. Underlying data are from the Current Population Survey public data series. *Involuntary part time* refers to those who work part time for economic reasons, i.e., those who want and are available for full-time work, but who have had to settle for a part-time schedule. *Marginally attached* refers to those who are currently neither working nor looking for work but indicate that they want and are available for a job and have looked for work sometime in the past year.

Table 5.7. Long-term unemployment, by demographic group, education, and occupation, 2000–2011. Underlying data are from the Bureau of Labor Statistics Current Employment Statistics public data series.

Table 5.8. Industry distribution and job loss, by gender, 2007–2011. Underlying data are from the Bureau of Labor Statistics Current Employment Statistics public data series.

Figures

Figure 5A. Jobs needed each month to hold steady and actual monthly job growth, 1969–2011. *Actual monthly job growth*, the number of jobs added per month on average, comes from

the Bureau of Labor Statistics Current Employment Statistics (CES) public data series. *Jobs needed each month to hold steady* is the number of jobs needed per month on average in a given year to maintain the same ratio of payroll jobs to the working-age population that prevailed at the end of the prior year (payroll jobs data come from the CES, and the size of the working-age population age 16 and older comes from the Current Population Survey public data series). A three-year rolling average of the working-age population in December is used because of large year-to-year variability in the population growth rate as measured by the CPS.

Figure 5B. Distribution of employment, by industry, selected years, 1979–2011 (and 2020 projections). Underlying data for 1979–2011 are from the Bureau of Labor Statistics Current Employment Statistics public data series. Underlying data for 2020 are from the Employment Projections program, Table 2.1, “Employment by Major Industry Sector.”

Figure 5C. Distribution of employment, by firm size, 2011Q1. Underlying data are from the Bureau of Labor Statistics Business Employment Dynamics program, *National Firm Size Data—Supplemental Firm Size Class Tables*, Table F, “Distribution of Private Sector Employment by Firm Size Class, Not Seasonally Adjusted.”

Figure 5D. Job gains, losses, and net employment change, by firm size, 2000–2011. Underlying data are from the Bureau of Labor Statistics Business Employment Dynamics program, *National Firm Size Data—Size Class 1 Tables*, Table 1, “Private Sector Firm-level Gross Job Gains and Job Losses: Seasonally Adjusted, Dynamic Method.”

Figure 5E. Distribution of employment, by occupation, selected years, 1989–2011. Underlying data are from the Current Population Survey public data series, Historical Table A-13, “Employed and Unemployed Persons by Occupation, Not Seasonally Adjusted.” Service occupations include health care support, protective service, food preparation and serving, building and grounds cleaning and maintenance, and personal care and service occupations.

Figure 5F. Good jobs as a share of total employment, all workers and by gender, and output per worker, selected years, 1979–2010. Good jobs shares are from Schmitt and Jones (2012), and output per worker is from the Bureau of Labor Statistics Labor Productivity and Costs program (unpublished Total Economy Productivity data provided to the authors upon request). Good jobs are defined as those that pay at least \$18.50 per hour (the median male hourly wage in 1979 adjusted to 2010 dollars), have employer-provided health insurance where the employer pays at least some of the premium, and an employer-sponsored pension plan, including 401(k) and similar defined-contribution plans.

Figure 5G. Unemployment rate, 1948–2011. Underlying unemployment data are from the Current Population Survey public data series.

Figure 5H. Unemployment rate (actual and holding age distribution constant), 1979–2011. Underlying data are from the Current Population Survey public data series. The unemployment rate holding the age distribution constant since 1979 is the result of a simple exercise showing what the unemployment rate would be if the distribution of the labor force across age categories (ages 16–24, 25–34, 35–44, 45–54, and 55 and older) had not changed since January 1979, but the unemployment rates within each age category evolved as they actually did from January 1979 to December 2011.

Figure 5I. Unemployment rate, by race and ethnicity, 1979–2011. Underlying data are basic monthly Current Population Survey microdata. As with other CPS microdata analyses presented in the book, race/ethnicity categories are mutually exclusive (i.e., white non-Hispanic, black non-Hispanic, and Hispanic any race).

Figure 5J. Unemployment rates of foreign-born and native-born workers, 1994–2011. Underlying data are basic monthly Current Population Survey microdata.

Figure 5K. Share of unemployed people with unemployment insurance benefits, 1989–2011. Underlying data are from the Current Population Survey public data series and the U.S. Department of Labor's Unemployment Insurance Program Statistics, "Persons Claiming UI Benefits in Federal Programs (Expanded)" [Excel spreadsheet]. Extended benefits refer to those extended by Congress during downturns beyond the regular state-financed benefits. Shares are calculated by dividing the number of persons claiming regular benefits by the total number of unemployed persons, and by dividing the total number of persons claiming extended benefits or regular benefits by the total number of unemployed persons. Weekly unemployment insurance claims data are converted into monthly data from January 1989 to December 2011.

Figure 5L. Labor force participation rate, by age and gender, 1959–2011. Underlying data are from the Current Population Survey public data series.

Figure 5M. Employment-to-population ratio, age 25–54, by gender, 1989–2011. Underlying data are from the Current Population Survey public data series.

Figure 5N. Underemployment rate, by race and ethnicity, 2000–2011. Underlying data are basic monthly Current Population Survey microdata. As with other CPS microdata analyses presented in the book, race/ethnicity categories are mutually exclusive (i.e., white non-Hispanic, black non-Hispanic, and Hispanic any race).

Figure 5O. Long-term unemployment, 1948–2011. Underlying data are from the Current Population Survey public data series.

Figure 5P. Unemployment rate, average monthly and over-the-year, 2000–2010. Average monthly unemployment rate underlying data are from the Current Population Survey public data series, and over-the-year unemployment underlying data are from the U.S. Bureau of Labor Statistics *Work Experience of the Population* (annual economic news release).

Figure 5Q. Job-seekers ratio, Dec. 2000–Dec. 2011. Job openings data are from the U.S. Bureau of Labor Statistics Job Openings and Labor Turnover Survey, and unemployment data are from the Current Population Survey public data series.

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Figure 5S. Job change since the start of each of the last four recessions. Underlying data are from the Bureau of Labor Statistics Current Employment Statistics public data series. Data for each recession are indexed by the number of jobs in the first month of the recession. Monthly data span July 1989–December 2011.

Figure 5T. Job change since the start of each of the last four recoveries (all, private sector, and public sector). Underlying data are from the Bureau of Labor Statistics Current Employment Statistics public data series. Data for each recession are indexed by the number of jobs in the first month of the recession's recovery. Monthly data span July 1989–December 2011.

Figure 5U. Job change, by gender, in the Great Recession and its aftermath (Dec. 2007–Dec. 2011). Underlying data are from the Bureau of Labor Statistics Current Employment Statistics public data series. Data for each gender are indexed by the number of jobs held by workers of that gender in the first month of the recession.

Figure 5V. Simulated job change by gender in the Great Recession and its aftermath (Dec. 2007–Dec. 2011), controlling for industry. Underlying data are from the Bureau of Labor Statistics Current Employment Statistics public data series. The graph presents the results of an exercise showing how employment of men and women would have changed over the four-year period if, in December 2007, men and women had had the same industry distribution but if job changes by gender within each industry had evolved as they actually did between December 2007 and December 2011.

Figure 5W. Unemployed workers and job openings, by industry, 2011. Underlying data are from the Bureau of Labor Statistics Job Openings and Labor Turnover Survey and the Current Population Survey public data series.

Figure 5X. Unemployed workers, by occupation, 2007 and 2011. Underlying data are from basic monthly Current Population Survey microdata.

Figure 5Y. Unemployment rate, by education, 2007 and 2011. Underlying data are basic monthly Current Population Survey microdata.

Figure 5Z. Labor force status of involuntarily displaced workers, 1984–2010. Underlying data are from Farber (2011), Table 6, “Post-displacement Labor Force Status, 1984–2010.”

Figure 5AA. Average decline in weekly earnings for involuntarily displaced full-time workers who found new work, 1984–2010. Underlying data are from Farber (2011), Table 16, “Proportional Change in Real Weekly Earnings, Full-Time Job Losers.”