

CBO

Labor Force Experiences of Recent Veterans



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Notes

Unless otherwise indicated, all years referred to in this report are calendar years, and all dollar amounts are expressed in 2017 dollars. Amounts are adjusted to remove the effects of inflation using the gross domestic product price index, with values of that index for 2017 projected by the Congressional Budget Office.

Numbers in the text and tables may not add up to totals because of rounding.

Data underlying the figures are posted along with this report on CBO's website.



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Summary

More than 3.8 million members of the U.S. military have left active-duty service since September 2001, a period that some federal agencies call the Gulf War II era (as opposed to the Gulf War I era, which spanned the period from August 1990 to August 2001). More than 2 million of those Gulf War II veterans were deployed in support of military operations in Iraq and Afghanistan. For decades, large federal programs have helped service members make the transition to civilian life and employment by offering unemployment insurance benefits, education assistance, and disability compensation. However, the 2007–2009 recession prompted policymakers to focus greater attention on how well veterans have fared in the civilian labor market during and after that downturn.

How Do Labor Force Outcomes Compare for Male Veterans and Civilians?

For this analysis, the Congressional Budget Office examined how rates of labor force participation and unemployment for male Gulf War II veterans during the 2008–2015 period compared with rates for male civilians—that is, men who had never served on active duty in the military. (The labor force participation rate measures the share of people who either are working or are available and looking for work. The unemployment rate measures the share of people in the labor force who do not have a job but are available and looking for work.) In the analysis, Gulf War II veterans include those who did not deploy to overseas operations as well as those who did.

In general, CBO found that the labor force outcomes of male Gulf War II veterans ages 22 to 44 were about the same as those of civilian men. In an effort to assess similar populations, CBO also compared the veterans most likely to be working or looking for work—those not in school or functionally disabled—with their closest civilian counterparts by accounting for differences in the average demographic characteristics of the two populations. That more detailed analysis also found that,

overall, such veterans had labor force outcomes over the 2008–2015 period that were similar to those of men who had never served on active duty in the military:

- Labor force participation rates were nearly the same, on average, for male veterans as for comparable civilians for all three of the age groups that CBO examined (22 to 24, 25 to 34, and 35 to 44). Those rates were slightly lower for veterans than for civilians, with the youngest group of veterans experiencing the largest difference (1.1 percentage points, see Table 1).
- Unemployment rates were nearly the same for male veterans over age 24 as for comparable civilians. But the 22- to 24-year-old veterans had an average unemployment rate that was about 2 percentage points higher than that of similar civilians.
- By 2014 and 2015 (the most recent years for which data are available), the gaps in labor force participation rates and unemployment rates between the youngest male veterans (ages 22 to 24) and civilians had narrowed substantially from the gaps seen during the recession years of 2008 and 2009.

CBO examined two other groups of male Gulf War II veterans: those who were enrolled in school and those who were functionally disabled. (The veterans and civilians considered disabled in this analysis are people who reported on federal surveys that they had difficulties with such things as sight, hearing, mobility, or independent living. Those functional disabilities are distinct from service-connected disabilities, which are determined by the Department of Veterans Affairs and form the basis for veterans' disability benefits.) In its analysis of those two groups—which did not account for differences in the average demographic characteristics of Gulf War II veterans and civilians—CBO found the following:

- Over age 24, male veterans who were enrolled in school were generally less likely to participate in the labor force than male civilian students. In all three

age groups, male veterans in school were more likely to be unemployed than male civilians in school. (The education benefits available to veterans may explain some of those differences.)

- Male veterans who were functionally disabled were much more likely to be in the labor force, and less likely to be unemployed, than civilian men with functional disabilities.

What Data Did CBO Use?

To estimate differences in employment outcomes for Gulf War II veterans and comparable civilians, CBO used data from the Census Bureau's American Community Survey (ACS) for a sample of households from 2008 through 2015. The ACS is one of the biggest surveys that the Census Bureau administers, reaching roughly 1 in 40 U.S. households each year. CBO relied on the ACS because it offers a larger data set than the one typically used for national employment statistics.

CBO's use of ACS data is the main reason that its findings differ from those of the Bureau of Labor Statistics (BLS), which regularly publishes reports about veterans' labor force experiences. BLS relies on data from another Census Bureau survey, the Current Population Survey (CPS). That survey showed large differences in the labor force participation and unemployment rates of young male veterans and civilians in some years of the 2008–2015 period. However, the CPS surveys far fewer households than the ACS and is therefore less reliable for analyzing small groups, such as the youngest Gulf War II veterans. (For details about differences between the two surveys and about why CBO used ACS data, see Appendix A.)

What Was CBO's Analytic Approach?

CBO limited the analysis to people between the ages of 22 and 44 because veterans in that age range are likely to have transitioned to the civilian workforce more recently than older veterans. People in that age range also make up a sizable majority of Gulf War II veterans. In addition, CBO focused its analysis on the labor force outcomes of male veterans and civilians, addressing the outcomes of women separately and in a more limited way. Women tend to have different labor force experiences than men, so analyzing both sexes together would make differences between veterans and civilians harder to interpret. In addition, women made up only 17 percent of Gulf War II veterans during the 2008–2015 period.

Table 1.

Labor Force Outcomes for Likely Workers Among Male Gulf War II Veterans and Civilians, Adjusted for Similar Observable Characteristics, 2008 to 2015

Ages	Average Labor Force Participation Rate ^a		Average Unemployment Rate ^b	
	Veterans	Civilians	Veterans	Civilians
22–24	91.9	93.0	14.7	12.6
25–34	94.5	95.2	8.2	7.6
35–44	95.2	95.8	4.5	4.8

Source: Congressional Budget Office, using 2008–2015 data from the American Community Survey.

This comparison is restricted to male U.S. citizens who have a high school diploma or higher, were not enrolled in school, and did not have functional disabilities (difficulties with activities of daily life, as reported in the American Community Survey, rather than service-connected disabilities as determined by the Department of Veterans Affairs). The table compares the labor force outcomes observed for those veterans with the outcomes that CBO predicts would have occurred for civilians if they had the same characteristics, on average, as veterans (in terms of educational attainment, age, race, ethnicity, marital status, region of residence, and year surveyed).

- The labor force participation rate is the percentage of people who either are working or are not working but are available for and actively looking for a job.
- The unemployment rate is the percentage of people in the labor force who are not working but are available for and actively looking for a job.

For the analysis, CBO first examined all male Gulf War II veterans ages 22 to 44 and then divided that population into three groups:

- Veterans who were enrolled in school (24 percent of male Gulf War II veterans),
- Veterans who were functionally disabled (11 percent), and
- Veterans who were neither in school nor functionally disabled (69 percent).

Veterans enrolled in school or reporting a functional disability (which are not mutually exclusive groups) were analyzed separately because their labor force decisions probably do not resemble those of other veterans.

Furthermore, large federal programs are available to help those two groups.

Veterans who were neither in school nor functionally disabled were the veterans most likely to be employed or actively looking for work. Any differences between their labor force outcomes and those of civilians may be of particular concern to policymakers because those veterans constitute the largest of the three groups and have fewer programs to assist them. To ensure that its analysis of labor force outcomes compared the veterans who were likely workers with the civilians who most closely resembled them, CBO adjusted the ACS data to account for ways in which the veteran and civilian populations may differ, on average—including in such observable characteristics as age and educational attainment.

Nevertheless, people who have served in the military have unobservable traits and experiences that may be difficult to quantify and may affect their labor market outcomes in different ways, pushing veterans either out of the labor force or toward employment. For example, the military may be better able than the civilian sector to screen for higher-ability applicants, using information not generally available to private employers. If that is the case, veterans may have better job prospects than their civilian counterparts. However, some skills that veterans learn in the military may not transfer well to the civilian sector. In addition, people who are leaving the military often face different challenges in searching for civilian employment than people who are moving from one civilian job to another.¹ This report describes such factors and their potential effects briefly but does not quantify them.

Number of Veterans From the Gulf War II Era

Between September 2001 and September 2016, more than 3.8 million members of the armed forces left active-duty service and transitioned to civilian life, CBO estimates.² Of those Gulf War II veterans, 2.8 million

served in the military's active component (the regular Army, Navy, Marine Corps, or Air Force). Another 1 million were members of the reserve component (the National Guard or Reserves) who had been called up temporarily to active-duty status for purposes other than training and who completed their call-ups. (For more about the distinction between the active and reserve components and other details of military service, see Box 1.) More than 2 million of those Gulf War II veterans had been deployed in support of operations in Iraq and Afghanistan. Today, veterans from the Gulf War II era account for about one in five U.S. veterans.

The population of Gulf War II veterans has typically grown by about 200,000 to 300,000 people per year. That growth has slowed in recent years, however, mainly as a result of two countervailing factors. On the one hand, the number of separations from the active component has risen since 2010, both because of an initiative to reduce the size of the force and because of improvements in the civilian labor market. On the other hand, the increase in separations from the active component has been more than offset by a decline in the number of reservists completing call-ups to active duty, as U.S. military forces have withdrawn from Iraq and Afghanistan.

Characteristics of Male Veterans From the Gulf War II Era

Various characteristics—including sex, age, and education—are likely to influence people's experiences in the labor force, regardless of whether they served in the military. In this analysis, CBO focuses on male veterans, who made up 83 percent of Gulf War II veterans during the 2008–2015 period that CBO examined.

The population of male Gulf War II veterans between the ages of 22 and 44 differs demographically from the male civilian population in that age range in several ways that can affect experiences in the labor force. (Those population classifications and other key terms used in

1. See Congressional Budget Office, *Transitioning From the Military to the Civilian Workforce: The Role of Unemployment Compensation for Ex-Servicemembers* (May 2017), www.cbo.gov/publication/52503.

2. Estimates of the number of veterans from the Gulf War II era vary widely. The RAND Corporation reported that there were 2.6 million veterans from that era as of 2014, whereas the Department of Veterans Affairs anticipated that there would be 4.4 million Gulf War II veterans by September 2016, according

to its population projections. See Christine Eibner and others, *Current and Projected Characteristics and Unique Health Care Needs of the Patient Population Served by the Department of Veterans Affairs* (RAND Corporation, 2015), www.rand.org/pubs/research_reports/RR1165z1.html; and Department of Veterans Affairs, National Center for Veterans Analysis and Statistics, "Veteran Population" (April 15, 2016), www.va.gov/vetdata/Veteran_Population.asp. CBO's total is based on administrative data from the Department of Defense on active-duty separations and reservists' call-ups since 2001.

Box 1.**Military Service of Active-Duty and Reserve Personnel**

The Department of Defense (DoD) oversees four services of the U.S. armed forces: the Army, Navy, Marine Corps, and Air Force. Each of those services has an active component and a reserve component. Together, the reserve component comprises the Army, Navy, Marine Corps, and Air Force Reserves; the Army National Guard; and the Air National Guard. (Unlike the Reserves, the National Guard is organized and controlled at the state level; it can act either as a state militia or as a federal military force.)

Members of the active component, who are full-time employees of DoD, total about 1.3 million military personnel. Reservists, who augment the active component when necessary, number about 1.1 million personnel. Most reservists (more than 800,000) are assigned to the Selected Reserve and must be available for active duty within 24 hours when the United States goes to war. Those reservists generally train (or drill) intermittently throughout the year. Unlike personnel in the active component, they can hold full-time civilian jobs. When a reservist is called up (also known as being mobilized or activated), he or she may be ordered to active duty for a period that can last as little as one day or as much as 24 months or longer. When members of the active or reserve component serve outside the United States away from their home station or home port, they are referred to as deployed.

The U.S. military is an all-volunteer force in which personnel sign an agreement, often for four years of active service, and take an oath of service. There are various gradations of service members, but one important distinction is between

enlisted personnel (who make up more than 80 percent of the active component) and officers. The main differences between the two are that officers typically have leadership responsibilities early in their military career and are expected to command units. Also, unlike enlisted personnel, officers generally must have a college degree to enter military service.

When service members formally leave the military, whether voluntarily or involuntarily, they may be referred to as separating. (Reservists coming off active duty are deactivated and reassigned to reserve status without being separated from the military.) Separating service members receive a discharge that is based on the reason they are leaving. Those discharges have several classifications, including honorable, general, other than honorable, and dishonorable. Military personnel who have at least 20 years of active service, or who incur a serious disability before that time, can retire from the military with an immediate pension and other benefits. Only about 20 percent of military personnel serve long enough to retire. (Reservists may receive a delayed pension, but they have different eligibility rules than members of the active component.)

Broadly speaking, anyone who has ever served on active duty in the U.S. military (for more than just training) may be considered a veteran. Not all veterans, however, are eligible for veterans' benefits provided by the federal government. For example, to qualify for health services from the Veterans Health Administration, veterans must have been discharged or released from active duty under other than dishonorable conditions.

this report are defined in Appendix B.) For example, in 2015, the average veteran in that group was more likely to have at least a high school diploma, be a U.S. citizen, be white, be married, and live in the South than the average civilian (see Table 2).

Age

The population of 22- to 44-year-old male Gulf War II veterans in CBO's analysis tended to be slightly younger, on average, than the population of civilian men in that age range. Using survey weights from the ACS to represent the entire population, CBO estimated that in 2015,

about 65 percent of male Gulf War II veterans in that age range (1.2 million of 1.9 million) were between the ages of 22 and 34, compared with about 60 percent of the civilian men (26 million of 45 million).

Part of the reason for the age difference is that a large portion of the service members who separated after 2001 were in their early or mid-20s when they left the military. For instance, in 2015, about one-quarter of the people who separated from the active component were 22- to 24-year-olds, who probably left after completing their first enlistment.

Table 2.

Characteristics of Male Gulf War II Veterans and Civilians, 2015

Percentage of Population

	Ages 22–44	
	Veterans	Civilians
Median Age	32	33
Educational Attainment		
Less than high school ^a	2	12
High school diploma ^b	22	28
Some college or associate's degree	51	30
Bachelor's or higher degree	25	30
Total	100	100
Citizenship Status—U.S. Citizen	99	86
Racial or Ethnic Group ^c		
White	67	57
Black	12	12
Hispanic	14	21
Other	7	10
Total	100	100
Marital Status—Married	54	44
Region of Residence		
Northeast	11	18
Midwest	19	21
South	45	36
West	26	25
Total	100	100
Rural area	8	7
Urban area	9	13
Suburban area ^d	68	68
Unknown	15	12
Total	100	100
Memorandum:		
Total Population (Thousands)	1,855	44,648
Number of People in Sample (Thousands)	15	374

Source: Congressional Budget Office, using 2015 data from the American Community Survey.

- Includes people who reported school attainment of grade 12 but received no diploma.
- Includes GED and alternative credentials.
- The Hispanic category includes anyone who reported Hispanic ancestry; the other three groups exclude them. The "Other" category consists of people who reported another race or who reported two or more races.
- Includes metropolitan areas not otherwise specified.

In general, younger men have less stable labor force experiences and more unemployment than older men.³ In addition, many young men attend school and thus may have lower labor force participation rates than older men.

Educational Attainment

In 2015, among the men in CBO's analysis, veterans had a different pattern of educational attainment than civilians, depending on age. Nearly all of the Gulf War II veterans had at least a high school diploma, whereas slightly less than 90 percent of civilian men between the ages of 22 and 44 did. Young veterans were much less likely to have completed college than young civilians, but the veterans continued their education later in life. By ages 35 to 44, slightly more veterans than civilians (36 percent compared with 32 percent) had at least a bachelor's degree (see Table 3).

Educational attainment is strongly related to labor force outcomes in the general population. People with more schooling are more likely to work and to have a full-time job; they also tend to earn a higher income.⁴ Beyond the labor market effects, furthering one's education can have many other benefits for individuals and society.

Citizenship

Ninety-nine percent of the male Gulf War II veterans in CBO's analysis were U.S. citizens in 2015, compared with 86 percent of the civilians. According to data from the Department of Defense (DoD), fewer than 5 percent of enlisted recruits in the active component in recent years were noncitizens. Various incentives exist to encourage foreign nationals to serve in the U.S. armed forces. For example, current service members and recently discharged veterans may have their application and naturalization process for citizenship accelerated, and they may be exempted from some naturalization requirements. Between October 2001 and September 2015, just over 100,000 service members became U.S. citizens while serving on active duty.

3. See Bureau of Labor Statistics, *Labor Market Activity, Education, and Partner Status Among America's Young Adults at 29: Results From a Longitudinal Survey* (April 8, 2016), www.bls.gov/news.release/nlsyth.nr0.htm.

4. See Dionissi Aliprantis and Margaret Jacobson, *Educational Attainment and Earnings* (Federal Reserve Bank of Cleveland, March 7, 2012), <http://tinyurl.com/j7lkuoe>.

Table 3.

Percentage of Population	Ages 22–24		Ages 25–34		Ages 35–44	
	Veterans	Civilians	Veterans	Civilians	Veterans	Civilians
	Educational Attainment					
Less than high school ^a	2	9	2	12	2	14
High school diploma ^b	39	30	23	27	16	27
Some college or associate's degree	54	41	53	29	46	27
Bachelor's or higher degree	5	19	21	32	36	32
Total	100	100	100	100	100	100
Marital Status—Married	31	9	50	37	66	63
Memorandum:						
Total Population (Thousands)	159	6,372	1,074	19,986	621	18,290
Number of People in Sample (Thousands)	1	51	9	164	5	159

Source: Congressional Budget Office, using 2015 data from the American Community Survey.

a. Includes people who reported school attainment of grade 12 but received no diploma.

b. Includes GED and alternative credentials.

Among working-age men, citizens were less likely to be in the labor force and more likely to be unemployed than noncitizens in 2015, CBO found. One reason may be that many immigrants come to the United States specifically to work. Among those who stay, research suggests that immigrants who naturalize have higher rates of employment, earn higher wages, and experience lower levels of poverty than immigrants who do not naturalize.⁵

Racial or Ethnic Group

Of the men in CBO's analysis, veterans were more likely to be white and less likely to be Hispanic than civilians. Roughly equal percentages of veterans and civilians were black. DoD data indicate that Hispanics have been less likely to join the military than men from other racial or ethnic groups in recent years. In 2015, 17 percent of enlisted recruits in the active component were Hispanic, although Hispanics made up 22 percent of the civilian population ages 18 to 24 (the typical age range for

joining the military). Historically, when Hispanics have joined, however, they have been more likely to complete their enlistment.

In CBO's analysis, working-age Hispanic men were more likely to be in the labor force (that is, working or looking for a job) than white men but were also more likely to be unemployed. White men had some of the highest labor force participation rates and the lowest unemployment rates of the groups that CBO examined.

Marital Status

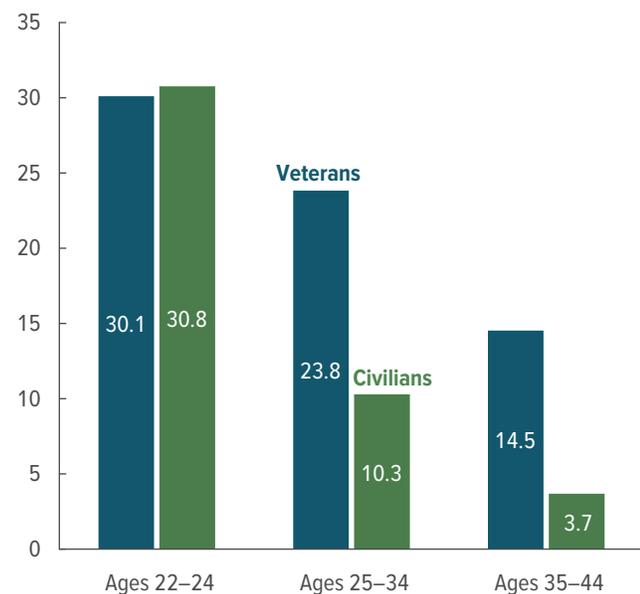
Male Gulf War II veterans were more likely to be married than civilian men, although the difference varied with age, CBO found (see Table 3). Men who serve in the military tend to marry at much younger ages than other men. (They also divorce at higher rates than the general population.) Part of the reason is that military personnel have different incentives to marry than civilians do. For instance, married service members receive larger housing allowances than unmarried personnel. And service members who would otherwise live in barracks or on a ship are permitted to move off base or into on-base family housing when they marry.

5. For a review of the literature on that topic, see Madeleine Sumption and Sarah Flamm, *The Economic Value of Citizenship for Immigrants in the United States* (Migration Policy Institute, September 2012), <http://tinyurl.com/zkkaftn>.

Figure 1.

School Enrollment Rates of Male Gulf War II Veterans and Civilians, 2015

Percentage of Population



Source: Congressional Budget Office, using 2015 data from the American Community Survey.

In general, young married men have higher labor force participation rates and lower unemployment rates than young men who are divorced, widowed, or never married.⁶ In addition, married men tend to earn more than unmarried men, even when other differences between the two groups are taken into account.⁷

Geographic Location

The Gulf War II veterans in CBO's analysis were more likely to live in the South and less likely to live in the Northeast than the civilians. The two most populous

states in the nation, California and Texas, had the most Gulf War II veterans; Virginia had a disproportionately large share of veterans. Among both veterans and civilians, only a small percentage lived in rural communities.

The ACS data used by CBO suggest that since 2008 there has been no distinct economic advantage for people living in any one of the four major census regions of the United States (Northeast, Midwest, South, and West). In addition, unemployment rates have been about the same in rural areas as in urban areas since the end of the 2007–2009 recession.⁸

Key Differences Between Male Gulf War II Veterans and Civilians

Two factors in particular can significantly affect the labor force participation and unemployment rates of working-age adults: attending school and having a disability. According to CBO's analysis, male Gulf War II veterans were much more likely than civilians to enroll in postsecondary school and were also more likely to have a functional disability.

Enrollment in Postsecondary School

Many veterans go back to school at older ages than civilians do. In 2015, for example, 24 percent of male Gulf War II veterans ages 25 to 34 were in school, compared with 10 percent of civilian men in that age group (see Figure 1). By ages 35 to 44, slightly more male veterans than civilians had a bachelor's or higher degree, but many of the veterans earned their degree later in life than the civilians did. Part of the reason is that veterans tend to pursue postsecondary education after they leave the military.

Veterans have especially strong incentives to return to school. The federal government offers much greater financial assistance for postsecondary education to veterans—in the form of education benefits provided by the Department of Veterans Affairs (VA)—than it does to people who have not served in the military. Veterans have received education benefits under various laws since the 1940s. But a newer initiative, the Post-9/11 GI Bill, increased those benefits. Under that program, VA pays tuition and fees at the in-state rate for eligible veterans attending public institutions of higher education for

6. See Bureau of Labor Statistics, *Labor Market Activity, Education, and Partner Status Among America's Young Adults at 29: Results From a Longitudinal Survey* (April 8, 2016), www.bls.gov/news.release/nlsyth.nr0.htm.

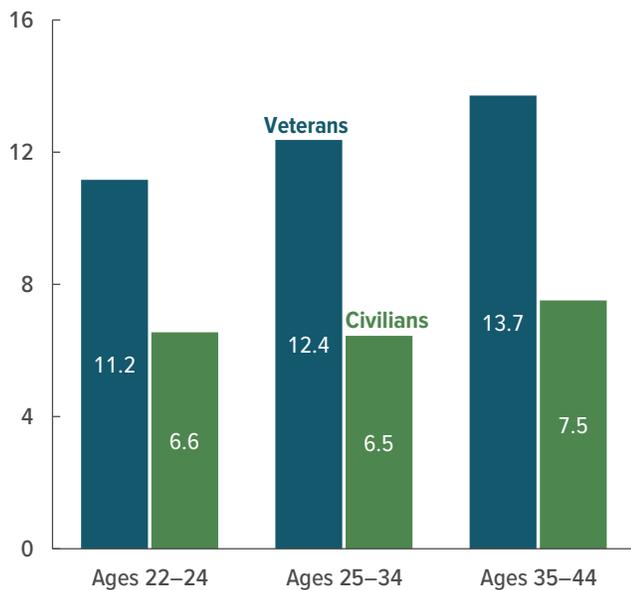
7. See Bureau of Labor Statistics, "Median Weekly Earnings by Sex, Marital Status, and Presence and Age of Own Children Under 18 in 2012," *Economics Daily* (December 3, 2013), www.bls.gov/opub/ted/2013/ted_20131203.htm; and Kate Antonovics and Robert Town, "Are All the Good Men Married? Uncovering the Sources of the Marital Wage Premium," *American Economic Association Papers and Proceedings*, vol. 94, no. 2 (May 2004), pp. 317–321.

8. See Department of Agriculture, *Rural America at a Glance: 2015 Edition*, Economic Information Bulletin 145 (November 2015, revised January 2016), <http://tinyurl.com/n3a85sz>.

Figure 2.

Functional Disability Rates of Male Gulf War II Veterans and Civilians, 2015

Percentage of Population



Source: Congressional Budget Office, using 2015 data from the American Community Survey.

Functional disabilities are difficulties with activities of daily life, as reported to the American Community Survey, rather than service-connected disabilities as determined by the Department of Veterans Affairs.

up to 36 months.⁹ For students who are enrolled more than half time, a housing stipend may also be available. To receive the full benefits, veterans must generally have served on active duty for three years, although veterans may receive partial benefits after as few as 90 days of active-duty service.¹⁰ Those benefits can be used up to 15 years after leaving the military.

9. For veterans attending private or foreign schools, VA paid tuition and fees up to \$21,970 for the 2016 academic year. (That limit is adjusted annually for inflation.)

10. Under the Post-9/11 GI Bill, education benefits may also be available to veterans who were discharged for a service-connected disability after serving for at least 30 continuous days on active duty. Reservists who were called up to active duty after September 11, 2001, may also be eligible for those benefits. In some circumstances, veterans may pass along their education benefits to their spouse and children. For more details about the full scope of eligibility requirements and benefits available, see the Post-9/11 Veterans Educational Assistance Act of 2008, P.L. 110-252, 122 Stat. 2357; and Department of Veterans

In 2015, more than 600,000 Gulf War II veterans received Post-9/11 GI Bill benefits. Roughly an additional 70,000 Gulf War II veterans received education benefits under the older Montgomery GI Bill.

Functional Disability

Functional disabilities are impairments that may restrict the ability to work or the income earned from working. For this analysis, someone responding to the American Community Survey was considered functionally disabled if he answered “yes” to at least one of six questions that ask whether the respondent has difficulty or serious difficulty with hearing, seeing, remembering, moving (such as walking or climbing stairs), self-care, or independent living.

According to 2015 data from the ACS, male Gulf War II veterans had a higher prevalence of functional disabilities than civilian men (see Figure 2). Although recruits must meet the military’s health and fitness standards, serious injuries and medical impairments may be more common among Gulf War II veterans than among civilians because of veterans’ intensive physical training and, in some cases, their combat experiences.

The ACS data also indicate that the prevalence of functional disabilities among veterans has risen in recent years. Some 13 percent of male Gulf War II veterans between the ages of 22 and 44 had a functional disability in 2015, up from 8 percent in 2008.

In addition, many veterans have a service-connected disability, which is a medical condition that develops or worsens during a service member’s time in the military. Such disabilities are not necessarily the same as functional disabilities. VA determines whether a veteran has a service-connected disability and ranks the severity of each medical condition in increments of 10 percent, with 100 percent being considered totally disabled.

Disability payments for veterans are based on that service-connected disability rating (as well as on whether the veteran has dependents and other criteria). Compensable conditions range widely in severity and type, from the loss of a limb to scars, sleep apnea, or hypertension. In 2017, the typical VA disability benefit ranges from \$134 per month for a veteran with a 10 percent rating

Affairs, “Education and Training: Post-9/11 GI Bill” (February 29, 2016), www.benefits.va.gov/gibill/post911_gibill.asp.

(such as for diabetes managed through diet) to \$2,916 per month for a veteran with a 100 percent rating (such as for kidney dysfunction requiring dialysis). A small number of veterans receive no compensation although they are deemed to have one or more service-connected disabilities; in those cases, VA cannot determine an actual limitation from the disability.

Veterans can apply for a disability rating and compensation—or request an increase in their disability award if their condition worsens—at any time after they leave active-duty military service. In the ACS data, the share of 22- to 44-year-old male Gulf War II veterans who reported having a VA disability rating grew from 22 percent in 2008 to 29 percent in 2015. For the entire sample period, the typical disability rating of those veterans was 10 percent or 20 percent. Data from VA and DoD indicate that of all veterans who were deployed overseas in support of operations during the Gulf War II era, more than 45 percent had a VA disability rating in fiscal year 2015. Although the ratings were dispersed fairly evenly, the most common was 60 percent.¹¹

Although the ACS asks whether a respondent has received a VA disability rating (and, if so, its level), CBO chose not to use the answer to that question in classifying veterans as disabled for this analysis. The reason is that a veteran with a service-connected condition is not necessarily functionally disabled or unable to work. And whereas most federal disability programs are designed to replace a portion of the wages lost because claimants are unable to work, many VA-determined disabilities may have little or no effect on a veteran's employability or earnings potential when benefits are awarded. Moreover, disability payments from VA are available throughout a veteran's life and are not reduced if a veteran works.

The relationship between having a functional disability and receiving a VA disability rating is complex. Because VA's definition of a service-connected disability is much broader than the definition typically used for functional disabilities, only about one-quarter of the Gulf War II veterans with a VA disability rating in CBO's data reported themselves as functionally disabled

in 2015. (Among those with a VA disability rating of 70 percent or higher, however, nearly half reported that they were functionally disabled.) Conversely, of the veterans who reported a functional disability, only about two-thirds had a VA disability rating. There are several possible reasons for that: They did not apply for VA benefits, they applied but their claims were still being adjudicated, or they became disabled after leaving military service.

Other Factors Unique to Veterans That Could Affect Their Labor Force Outcomes

People who volunteered and were accepted for military service tend to have different traits and experiences than people who did not serve in the military. Some of those traits are easy to observe and collect information about, such as the demographic characteristics that CBO used to compare veterans with similar civilians.

Other ways in which veterans differ from civilians may be harder to identify or quantify but could nonetheless affect their outcomes in the labor market. Such factors include the effects of veterans' military experience, employers' hiring preferences, veterans' service-connected disabilities, and veterans' transition to the civilian workforce, including the challenges they face in looking for a civilian job while serving in the military.¹² The effects of such factors are difficult to predict accurately, are hard to test for in the available data, and may counteract one another. Consequently, CBO did not adjust its data for differences between veterans and civilians in those factors.

Military Experience

In general, higher-quality job applicants can be expected to have better labor force outcomes. The military services screen their applicants using information about cognitive ability, education, criminal record, and health status that may not be available to private employers. For instance, the services give potential recruits a written aptitude test, the Armed Forces Qualification Test, which is also taken by many high school students across the country who are not pursuing a military career. In 2015, about 75 percent of enlisted recruits had scores in the top 50 percentiles

11. For more administrative data on VA disability awards to veterans who were deployed in support of operations, see Veterans Benefits Administration, *Annual Benefits Report, Fiscal Year 2015* (updated December 16, 2016), <http://tinyurl.com/ls2jkgq> (PDF, 838 KB).

12. The issues associated with that transition are discussed in Congressional Budget Office, *Transitioning From the Military to the Civilian Workforce: The Role of Unemployment Compensation for Ex-Servicemembers* (May 2017), www.cbo.gov/publication/52503.

for the test. In addition, applicants may be disqualified from serving in the military for a range of reasons, including having felony convictions, drug abuse problems, or certain health problems (although in some cases official waivers may be granted). Because of the military's screening process, many of the veterans who join the civilian workforce after leaving the armed forces may be higher-quality applicants for civilian jobs.¹³

The military trains its members in a variety of occupational skills, some of which are more highly valued by the private and public sectors than others are. For example, skills acquired in the military in such fields as computer programming, vehicle maintenance, and truck driving can transfer easily to the civilian sector, and veterans with those skills may find employment quickly. Their military skills also may be particularly valuable to DoD in staffing its civilian positions. In other cases, the training that service members received may not transfer directly. For instance, there is little demand in the private sector for ammunition and explosives handling. Moreover, even veterans who were trained in skilled fields in the military may not possess the credentials required under federal or state law or by civilian employers; for example, medics may not have emergency medical technician (EMT) certification.¹⁴ Because of the diversity of military training, some veterans may have an advantage and others a disadvantage in their employment opportunities after military service.

Tenure (the length of time that a worker has been with his or her current employer) may also be valued by future employers. Young veterans typically have completed a four-year enlistment contract in the military, which is longer than the job tenure of many civilians of similar

age. If employers view applicants with longer job tenure as more productive or able, veterans may find work more quickly than civilians.

Employers' Hiring Preferences

Opportunities for employment and the potential earnings associated with working are important factors in determining whether people enter the labor force and find a job. Employers' hiring preferences may affect those factors. Preferences can include employers' personal tastes (such as wanting to hire a worker with particular traits more than a worker without them) as well as legal advantages that are given to some people and not to others.

Employers may or may not want to hire veterans depending on their personal opinions about former service members. Some employers may believe that veterans suffer physical or emotional difficulties as a result of military service, making it harder for veterans to find a job than for civilians. Other employers may look favorably on applicants with military service because they believe that veterans have special skills or attributes, such as a sense of leadership or teamwork or a commitment to an organization. The fact that some private-sector employers have set goals for actively recruiting veterans supports that notion. The net effects of employers' personal preferences are unclear, however, because they are difficult to measure.

Legal preferences set in statute provide hiring preferences for veterans in certain cases and prohibit discrimination against veterans. Federal legislation enacted in 1944 (and amended many times since then) gives some veterans—including most Gulf War II veterans—preference in hiring for positions in the federal government. One result has been a significant concentration of veterans in the federal civilian workforce. The Office of Personnel Management reported that in fiscal year 2015, more than 40 percent of the new employees hired for nonseasonal, full-time, permanent positions in the executive branch were veterans. In that year, about 20 percent of working male veterans ages 22 to 44 were employed by the federal government, compared with less than 2 percent of male civilians in that age range. (The same was not true for state and local governments. The share of men ages 22 to 44 working for state and local governments was about the same for veterans as for civilians.)

13. Other researchers have pointed to the military's screening process as a possible explanation for why veterans are expected to have lower unemployment rates than civilians. However, that hypothesis has been difficult to substantiate empirically. See, for example, David S. Loughran, *Why Is Veteran Unemployment So High?* (RAND Corporation, 2014), www.rand.org/pubs/research_reports/RR284.html.

14. In recent years, many state governments have passed legislation or signed executive orders to assist veterans seeking credentialing or licensing in certain civilian occupations. See Amanda Dunker, Brent Parton, and Martin Simon, *Veterans' Licensing and Certification Demonstration: A Summary of State Experiences, Preliminary Findings, and Cost Estimates—Final Report* (prepared by the National Governors Association for the Department of Labor, September 2015), <http://tinyurl.com/kebwxa8> (PDF, 865 KB).

Federal law prohibits discrimination in employment on the basis of past, current, or future military service.¹⁵ However, such discrimination can be difficult to prove, and evidence about its extent is scant. In fact, veterans submit relatively few discrimination complaints against employers each year. In 2015, the Department of Labor reported fewer than 1,000 discrimination complaints filed by veterans, out of the 10 million veterans employed that year.¹⁶

Federal law also provides private-sector employers with tax credits for hiring veterans. Researchers found that the federal tax credits available to businesses who hired disabled veterans under the Work Opportunity Tax Credit program both increased employment among disabled veterans and substantially improved the earnings of those hired.¹⁷ The Veterans Opportunity to Work (VOW) to Hire Heroes Act of 2011 included new tax credits for employers who hired unemployed veterans and expanded existing tax credits for employers who hired veterans with service-connected disabilities. Those new tax credits expired at the end of calendar year 2013, and their effects on veterans' experiences in the labor force have not been studied.

Service-Connected Disabilities

Having a service-connected disability as defined by VA may affect a veteran's labor force outcomes in several ways, although the extent of those effects is unclear. On the one hand, veterans who receive VA disability payments may have a limited ability to work if they also have functional disabilities. In addition, the income available from VA disability payments may reduce veterans' incentive to work full time or, in some cases, at all.

15. See the Uniformed Services Employment and Reemployment Act of 1994 (USERRA), 38 U.S.C. §§4301-4335 (2012). That law also includes provisions that require veterans to be reemployed by their preservice employer under certain conditions, including when reservists who have been activated finish their call-up and return to reserve status.

16. The Employer Support of the Guard and Reserve, an office within DoD, also acts as an intermediary between reservists and employers. It reported mediating about 900 discrimination complaints in 2015. For more information on complaints filed, see Department of Labor, *USERRA Annual Report to Congress: Fiscal Year 2015* (July 2016), <http://tinyurl.com/jfp2q5b> (PDF 2.2 MB).

17. See Paul Heaton, *The Effects of Hiring Tax Credits on Employment of Disabled Veterans* (RAND Corporation, 2012), www.rand.org/pubs/occasional_papers/OP366.html.

On the other hand, VA disability compensation (unlike Social Security Disability Insurance) is paid for the rest of a veteran's life regardless of his or her ability to work. Thus, veterans do not have to forgo working to receive VA disability benefits. In addition, the tax credits available to private-sector employers who hire veterans with service-connected disabilities may boost employment of those veterans. And the special hiring preferences that exist for such veterans in federal employment give them an advantage over other veterans and civilians. BLS reports that veterans with a VA disability rating who are employed are much more likely than other veterans to work for the federal government.

Some analyses suggest that veterans with service-connected disability ratings have lower labor force participation rates than veterans without disability ratings.¹⁸ Other researchers have concluded that veterans who report multiple functional disabilities along with a VA disability rating have a low probability of working, but only if their VA disability rating is above 40 percent.¹⁹

Challenges in Transitioning to the Civilian Workforce

Service members who leave active duty may face challenges in their transition to civilian life. For example, at age 22, veterans are just beginning to enter the full-time civilian workforce in large numbers, whereas most civilians have already had one or more jobs by that age. (To join the military's active component as enlisted personnel, people must generally be at least 18—or 17 with parental consent—and must typically commit to serve on active duty for four years.) Veterans' job searches may be especially difficult because many veterans relocate from their last duty station—often to a different state—and because they may not have the same opportunities to look for a job while in the military that people who are already employed in the civilian sector typically have.

18. Some researchers have argued that VA disability payments have reduced the labor force participation rates of veterans in all age groups. See Courtney Coile, Mark Duggan, and Audrey Guo, "Veterans' Labor Force Participation: What Role Does the VA's Disability Compensation Program Play?" *American Economic Review: Papers & Proceedings*, vol. 105, no. 5 (May 2015), pp. 131–136, <http://dx.doi.org/10.1257/aer.p20151062>.

19. See Lynn H. Gerber and others, "Disability Among Veterans: Analysis of the National Survey of Veterans (1997–2001)," *Military Medicine*, vol. 181, no. 3 (March 2016), pp. 219–226, <http://dx.doi.org/10.7205/MILMED-D-14-00694>.

However, various support services exist for personnel leaving active duty. Nearly all separating service members are required to attend DoD's Transitional Assistance Program, which includes employment services and counseling. (Until November 2012, those services were voluntary, and the program was shorter.) Many other benefits, programs, and services—some of which are available to all veterans and others only to specific groups—also help veterans find employment.²⁰

A special program, Unemployment Compensation for Ex-Servicemembers (UCX), offers benefits to newly separating active-component personnel and deactivated reservists who are unemployed.²¹ CBO found that, of service members who separated from the Army's active component in fiscal year 2013, almost half applied for UCX benefits.²² Those benefits may reduce a veteran's incentive to find a job quickly, although finding a high-quality job may require a longer search. Overall, the effects of the various employment policies and programs on veterans' labor force outcomes are not known.

CBO's Approach to Analyzing Veterans' Labor Force Outcomes

To understand the labor force experiences of veterans from the Gulf War II era—those who did not deploy to operations as well as those who did—CBO analyzed data for the 2008–2015 period from the Census Bureau's American Community Survey.²³ (For a discussion of differences between data sources and why CBO relied on that survey rather than on another Census Bureau survey commonly used for employment statistics, see Appendix A.)

20. For a comprehensive list of programs and assistance, see Benjamin Collins and others, *Employment for Veterans: Trends and Programs*, Report for Congress R42790 (Congressional Research Service, May 11, 2015).

21. Deactivated reservists had been required to serve 90 continuous days or more on active duty to be eligible for UCX benefits, but that requirement was lengthened to 180 days in the National Defense Authorization Act for Fiscal Year 2016, P.L. 114-92, 129 Stat. 809.

22. See Congressional Budget Office, *Transitioning From the Military to the Civilian Workforce: The Role of Unemployment Compensation for Ex-Servicemembers* (May 2017), www.cbo.gov/publication/52503.

23. For the ACS data and its documentation, see Steven Ruggles and others, "Integrated Public Use Microdata Series: Version 6.0" (machine-readable database, University of Minnesota, 2015), <http://doi.org/10.18128/D010.V6.0>.

Other than the decennial census, the ACS is the largest survey that the Census Bureau administers, reaching about 1 in 40 households (roughly 2 million in all) each year. The ACS interviews members of those households about various topics, including their demographic information, employment status, education, disabilities, and military service.²⁴ The survey is designed to represent the U.S. civilian population as a whole. CBO used survey weights provided by the ACS to calculate estimates for the entire population on the basis of the people who were surveyed (see Appendix A).

CBO focused on two common measures of labor market outcomes: the labor force participation rate and the unemployment rate. The labor force participation rate is the share of people who either are working or are available and looking for work. The unemployment rate is the share of people in the labor force who are available and looking for a job but are not working.

CBO's analysis starts in 2008 because that is the first year for which the necessary ACS data are available and consistent across years. The analysis ends in 2015 because that is the most recent year for which data are available.

Selecting the Sample

In this analysis, CBO focused on male veterans for two reasons. First, if men and women are analyzed as a single group, differences in labor force experiences between the sexes make it harder to interpret differences between veterans and civilians. Second, for the youngest age group of female veterans, the sample size in the ACS is small, and conclusions based on those data are only suggestive. (For a general overview of the characteristics and labor force outcomes of female Gulf War II veterans, see Box 2.)

Reservists who were activated for any length of time for purposes other than training were included in the sample. Although they probably differ from veterans who served in the active component, those reservists cannot be identified separately in the ACS data. In addition, Gulf War II veterans (from either the active component or the reserve component) who deployed overseas in

24. ACS data are collected throughout the year and are combined to represent the characteristics of a given population over a period of one, three, or five years. (The three-year estimates were discontinued in 2011.) For this analysis, CBO used the ACS's one-year estimates, which are more suitable than longer estimates for assessing the changes in labor force participation and unemployment that occur over a relatively short time span.

support of recent conflicts cannot be separated in the data from veterans who did not.

In comparing veterans and civilians, CBO looked at men between the ages of 22 and 44 and divided them into three cohorts: those 22 to 24 years old, 25 to 34 years old, and 35 to 44 years old. Veterans under the age of 22 were excluded. A typical enlisted service member in the active component joins the military in his or her late teens, after finishing high school, and signs on for a four-year commitment. Veterans younger than 22 probably did not fulfill their initial contract, most likely because of medical issues or conduct problems. (However, service members who leave before completing their obligation are still considered veterans.)

CBO looked at 22- to 24-year-olds separately because that is the age range in which many enlisted service members are leaving the active component and are finding their first civilian job. CBO also examined 25- to 34-year-olds separately because in that age range, veterans are more likely than civilians to be in school, which tends to reduce their labor force participation. Veterans in the oldest cohort, ages 35 to 44, are more likely than younger veterans to have been reservists or to have retired from the military with pension benefits after a full, usually 20-year, career. (That group included a larger percentage of deactivated reservists and military retirees in the earlier years of the 2008–2015 period than in the later years.) Relatively few Gulf War II veterans from the active component left the military at age 45 or older, and consequently older veterans have probably been in the labor market for many years. Therefore, CBO did not include them in this analysis.

Using Unadjusted Data to Examine Outcomes for All Veterans, Those in School, and Those Reporting a Functional Disability

CBO used very similar methods to look at the total population of male Gulf War II veterans and at the subsets who were enrolled in school or were functionally disabled. For each of those groups (which are not mutually exclusive), CBO restricted the ACS sample to men ages 22 to 44 and calculated the percentage of veterans in the sample who were in the labor force and the percentage who were unemployed. CBO then compared those percentages with the analogous percentages for civilians. (Another way to look at labor market outcomes is to consider the percentage of the population that is employed. A comparison of employment rates is

discussed in Box 3.) For those simple comparisons, CBO did not make any adjustments to the data to account for differences in the average characteristics of veterans and civilians.

CBO included the general comparison for all male Gulf War II veterans because the Bureau of Labor Statistics frequently publishes estimates of the labor force participation and unemployment rates of those veterans. BLS's estimates are widely disseminated and attract significant interest from policymakers and others. However, as discussed in more detail below, they are based on different data than the estimates in this report.

CBO looked separately at veterans in school because the labor market decisions and outcomes of adult students differ from those of other working-age adults. Students may prefer not to have a job while concentrating on their studies, or they may accept certain jobs only while in school. The financial and personal returns from post-secondary education can be substantial; thus, veterans who are in school generally have better long-term prospects in the labor market than veterans who do not seek additional education. Temporarily lower rates of labor force participation or higher rates of unemployment for those veterans may be a misleading indicator of their later professional success.

CBO also examined veterans who reported a functional disability because people who are functionally disabled are unlikely to make the same decisions about working and have the same labor force outcomes as other adults. For example, people with disabilities may not be able to perform certain jobs or be employed at all. In addition, many disabled people receive monthly benefit payments from the federal government.

Using Adjusted Data to Analyze Outcomes for Veterans Who Are Likely Workers

The bulk of male Gulf War II veterans between the ages of 22 and 44 were neither in school nor functionally disabled during the 2008–2015 period. CBO conducted a more detailed analysis of that group, the veterans most likely to be working or looking for work, because their labor force decisions do not resemble those of other veterans. Moreover, they do not receive the same types of support as veterans who are in school or disabled.

To analyze those likely workers, CBO not only restricted the ACS sample to men ages 22 to 44 but also limited

Box 2.

Female Gulf War II Veterans

In 2015, the population of U.S. Gulf War II veterans included more than 600,000 women. Among veterans from all periods, men far outnumber women. But the veterans who have left active-duty service since September 2001 include a larger share of women, 17 percent, than veterans from any previous era. That percentage reflects increases over the past several decades in the number of women serving in the U.S. military.

Characteristics

Like male veterans, female Gulf War II veterans differ demographically from civilians. Data from the American Community Survey showed the following differences in characteristics between female veterans and civilians ages 22 to 44 in 2015:

- Female Gulf War II veterans in that age range tended to be younger than civilian women. About 70 percent were between the ages of 22 and 34, compared with nearly 60 percent of civilian women.
- Female Gulf War II veterans had higher average educational attainment than civilian women. Although about 35 percent of both groups had a bachelor's or higher degree, about 50 percent of female veterans had taken some college courses, compared with 33 percent of civilian women.
- A slightly higher percentage of female Gulf War II veterans than of civilian women were married (53 percent versus 50 percent). The difference was much greater among younger women.
- About 30 percent of female veterans ages 22 to 24 had children under the age of 5, compared with only 24 percent of civilian 22- to 24-year-old women.
- Nearly 30 percent of female Gulf War II veterans were federal employees, compared with just 2 percent of civilian women.

Labor Force Outcomes

Besides analyzing demographic differences, the Congressional Budget Office calculated labor force outcomes over the 2008–2015 period for all women ages 22 to 44, as well as for the same groups that CBO examined for men: people who were enrolled in school (33 percent of female Gulf War II veterans), people who were functionally disabled (9 percent), and people who were neither in school nor functionally disabled but who were high school graduates and U.S. citizens (60 percent). When CBO adjusted the data for that last group to account for differences between the veteran and civilian populations, it found that the differences in outcomes between female Gulf War II veterans and civilians were similar to those for men.

Labor Force Participation Rate. On average over the 2008–2015 period, female veterans and civilians ages 22 to 44 participated in the labor force at the same rate, 77 percent (see the table). Overall, female veterans who were enrolled in school were less likely to be in the labor force than female civilian students, probably because veterans are eligible for comprehensive education benefits and so may have less need to work while in school. Conversely, female veterans with functional disabilities were, on average, 9 percentage points more likely to be in the labor force than civilian women, possibly because of federal hiring preferences for disabled veterans. Female veterans with functional disabilities had similar labor force participation rates regardless of their age group, but for disabled civilian women, labor force participation rates declined with age.

When CBO adjusted the data for differences in the characteristics of veterans and civilians, female Gulf War II veterans had labor force participation rates similar to those of their civilian counterparts. Accounting for the larger percentage of young female veterans with children under age 5 is important. (The sample size for those young female veterans was small, however, so differences are only suggestive.)

Unemployment Rate. Overall, female Gulf War II veterans ages 22 to 44 were more likely to be unemployed than civilian women in that age range. Women who were in school or functionally disabled generally had the highest unemployment rates, and younger women generally had higher unemployment rates than older women.

When the data were adjusted for differences in average characteristics, female Gulf War II veterans generally had about the same unemployment rates as civilian women. Only among 22- to 24-year-olds did rates differ noticeably: Those veterans' average unemployment rate over the 2008–2015 period was about 2.5 percentage points higher than civilians' average rate. Young female veterans may have experienced more unemployment because they were transitioning to civilian life at higher rates than older veterans, and recently separated veterans appear to have higher unemployment rates than other veterans.¹ Moreover, recently separated veterans may be eligible for unemployment benefits, which could reduce their incentive to find a job quickly.

1. See Congressional Budget Office, *Transitioning From the Military to the Civilian Workforce: The Role of Unemployment Compensation for Ex-Servicemembers* (May 2017), www.cbo.gov/publication/52503.

Box 2.

Continued

Female Gulf War II Veterans**Labor Force Outcomes for Female Gulf War II Veterans and Civilians, 2008–2015**

	Ages 22–24		Ages 25–34		Ages 35–44		Total, Ages 22–44	
	Veterans	Civilians	Veterans	Civilians	Veterans	Civilians	Veterans	Civilians
All Women in CBO's Sample^a								
In the Labor Force (Percent)	75	77	76	77	80	77	77	77
Unemployed (Percent)	15	12	10	9	6	7	10	8
Total Population (Thousands)	322	49,399	1,655	163,137	727	162,672	2,703	375,208
People in Sample (Thousands)	3	412	14	1,408	6	1,504	23	3,324
Women Who Were Enrolled in School^a								
In the Labor Force (Percent)	67	71	69	76	75	78	70	75
Unemployed (Percent)	16	10	12	9	9	10	12	10
Total Population (Thousands)	124	17,471	586	23,691	174	11,153	884	52,315
People in Sample (Thousands)	1	149	5	205	1	104	7	459
Women Who Were Functionally Disabled^{a,b}								
In the Labor Force (Percent)	59	54	55	49	56	44	56	47
Unemployed (Percent)	17	24	22	21	11	18	18	20
Total Population (Thousands)	23	2,427	132	8,853	78	12,465	233	23,744
People in Sample (Thousands)	*	21	1	78	1	115	2	214
Women Who Were Not Enrolled in School or Functionally Disabled (Likely Workers)^c								
In the Labor Force (Percent)	81	80	83	83	85	85	d	d
Unemployed (Percent)	15	12	8	7	5	5	d	d
Total Population (Thousands)	179	24,669	961	105,564	484	113,319	1,623	243,553
People in Sample (Thousands)	1	206	8	935	4	1,076	14	2,217

Source: Congressional Budget Office, using 2008–2015 data from the American Community Survey.

People in the labor force either are working or are not working but are available for and actively looking for a job. Unemployed people (a subset of people in the labor force) are not working but are available for and actively looking for a job.

* = between zero and 500.

- a. For these comparisons, CBO did not restrict its data sample to U.S. citizens who have a high school diploma or higher and did not adjust the data to account for other differences in the average characteristics of veterans and civilians.
- b. Functional disabilities are difficulties with activities of daily life, as reported to the American Community Survey, rather than service-connected disabilities as determined by the Department of Veterans Affairs.
- c. For this comparison, CBO restricted its data sample to U.S. citizens who have a high school diploma or higher, were not enrolled in school, and did not have functional disabilities. The analysis compares the labor force outcomes observed for those veterans with the outcomes that CBO predicts would have occurred for civilians if they had the same characteristics, on average, as veterans (in terms of educational attainment, age, race, ethnicity, marital status, region of residence, and year surveyed).
- d. The analyses were conducted by age group, not for the entire sample, because age was an important factor in labor force outcomes.

Box 3.

Measuring Labor Force Outcomes Using the Rate of Employment

Like many public discussions of the labor market, this report focuses on the unemployment rate. That frequently cited statistic measures people who are not employed but who are actively looking for a job. Policymakers can use the unemployment rate to monitor the population of job seekers and to target policies to assist them. However, as an overall measure of labor force outcomes, the unemployment rate has limitations. It does not count people who have stopped looking for a job because they could not find work (discouraged workers). And it does not provide information about the share of adults who are not working because they are in school or retired or for other reasons.

An alternative measure is the rate of employment, also referred to as the employment-to-population ratio. It measures the percentage of all working-age people (generally those ages 16 to 64) who are employed. A higher employment rate means that a larger share of the working-age population is able to find a job and is working, which generally has positive effects on the economy. Conversely, a low employment rate may indicate that many people who would like a job are not able to find one. As an example, in 2007, the employment rate for adults ages 25 to 54 was about 80 percent. By 2010, following the recession, that rate had fallen to about 75 percent, its lowest level in 10 years.

The employment rate has its own disadvantages, however. Because it does not separate out the many people who do not want a job, policymakers cannot use it to concentrate their efforts on people who would like to find employment.

As part of this analysis, the Congressional Budget Office calculated the employment rate for all male Gulf War II veterans and civilians ages 22 to 44, as well as for the three subgroups that CBO examined: men in school, men reporting a functional

disability, and likely workers (those neither enrolled in school nor functionally disabled).¹ Over the 2008–2015 period, male Gulf War II veterans as a whole had an average employment rate of 80 percent, slightly lower than the 82 percent rate for civilian men (see the table). Of the subgroups, likely workers had the highest rates of employment, and functionally disabled men had the lowest. That pattern held true for all of the age groups that CBO analyzed.

Veteran status did not have much association with employment rates overall. However, rates differed substantially among veterans and civilians over age 24 who were enrolled in school and among functionally disabled men in all three age groups. Veterans over age 24 who were enrolled in school were about 5 percentage points less likely to be employed than civilian students, probably in part because many veterans have access to generous education benefits.² Conversely, veterans with functional disabilities were, on average, 12 percentage points more likely to work than disabled civilians. Part of that difference may stem from federal hiring preferences for disabled veterans (specifically, for those who have a service-connected disability rating from the Department of Veterans Affairs).

1. The functional disabilities that people reported on the American Community Survey are restrictions on the ability to perform certain activities, such as hearing, walking, or living independently. They are distinct from the service-connected disabilities that certain veterans have, as determined by the Department of Veterans Affairs.
2. Despite the differences for the middle and oldest age groups, average employment rates were nearly the same for the entire 22- to 44-year-old population of male Gulf War II veterans enrolled in school and the entire population of male civilian students because those two populations contain different shares of the three age groups.

Continued

the sample to U.S. citizens and people with a high school diploma. The additional restrictions allowed CBO to compare those veterans—nearly all of whom are citizens and high school graduates—with civilians who more closely resemble them. Veterans with service-connected disabilities were included in that group if they did not have a functional disability. (About one in five likely

workers among male Gulf War II veterans reported having a VA disability rating.)

In examining the association between veteran status and labor force outcomes, CBO accounted for differences in the observable characteristics of veterans and civilians. Specifically, CBO compared the outcomes seen for veterans in the sample with the outcomes that CBO predicted

Box 3.

Continued

Measuring Labor Force Outcomes Using the Rate of Employment

Employment Rates of Male Gulf War II Veterans and Civilians, Not Adjusted for Similar Observable Characteristics, 2008 to 2015

	Ages 22–24		Ages 25–34		Ages 35–44		Total, Ages 22–44 ^a	
	Veterans	Civilians	Veterans	Civilians	Veterans	Civilians	Veterans	Civilians
All Men in CBO's Sample ^b	71	70	79	82	85	85	80	82
Men Who Were Enrolled in School ^b	59	59	66	71	73	78	66	67
Men Who Were Functionally Disabled ^{b,c}	55	40	53	43	55	41	54	42
Likely Workers ^d	78	80	87	88	91	90	87	88

Source: Congressional Budget Office, using 2008–2015 data from the American Community Survey.

The employment rate is the percentage of people who have a job.

- The averages in the total column reflect the fact that each age cohort accounts for a different proportion of the veteran population than of the civilian population.
- For these comparisons, CBO did not restrict its data sample to U.S. citizens who have a high school diploma or higher and did not adjust the data to account for other differences in the average characteristics of veterans and civilians.
- Functional disabilities are difficulties with activities of daily life, as reported to the American Community Survey, rather than service-connected disabilities as determined by the Department of Veterans Affairs.
- Likely workers are defined as people who were neither enrolled in school nor functionally disabled. For this comparison, CBO restricted its data sample to U.S. citizens who have a high school diploma or higher, but it did not adjust the data to account for other differences in the average characteristics of veterans and civilians.

would have occurred for civilians if they had the same characteristics, on average, as veterans. Those predicted outcomes for civilians were based on a standard statistical model (the logit model) that accounted for the survey weights in the ACS data.

CBO used those statistical methods because the comparison between veterans and civilians is complicated. The two populations differ in many traits—such as average age and education level—that can affect their labor force outcomes. The statistical methods let CBO better quantify differences between similar veterans and civilians.

Labor Force Outcomes for All Male Gulf War II Veterans

To provide estimates comparable with some of the best-known statistics about veterans' labor force outcomes, CBO first examined all male Gulf War II veterans

between the ages of 22 and 44 (including those in school or with a functional disability) as a single group.

Labor Force Participation Rate

A simple comparison of male Gulf War II veterans and civilians—not adjusted for differences in the average characteristics of the two populations—shows that between 2008 and 2015, a smaller share of 22- to 44-year-old veterans were in the labor force than was the case for civilians in the same age range. The average labor force participation rate for those veterans as a whole was about 2 percentage points lower than the average rate for civilians (see Table 4). The difference for male veterans and civilians ages 25 to 34 was slightly larger. For men ages 22 to 24, however, the difference went in the other direction: A larger percentage of veterans than of civilians participated in the labor force.

Table 4.

Labor Force Outcomes for Male Gulf War II Veterans and Civilians, Not Adjusted for Similar Observable Characteristics, 2008 to 2015

Percentage of Population

	Ages 22–24		Ages 25–34		Ages 35–44		Total, Ages 22–44 ^a	
	Veterans	Civilians	Veterans	Civilians	Veterans	Civilians	Veterans	Civilians
All Men in CBO's Sample								
In the Labor Force	84	82	87	90	90	91	88	90
Unemployed	16	14	10	9	6	7	9	9
Men Who Were Enrolled in School								
In the Labor Force	72	67	75	79	82	85	76	75
Unemployed	18	13	13	10	11	9	13	11
Men Who Were Functionally Disabled^b								
In the Labor Force	74	54	66	55	64	51	66	53
Unemployed	25	27	19	22	13	18	18	21

Source: Congressional Budget Office, using 2008–2015 data from the American Community Survey.

For these comparisons, CBO did not restrict its data sample to U.S. citizens who have a high school diploma or higher and did not adjust the data to account for other differences in the average characteristics of veterans and civilians.

People in the labor force either are working or are not working but are available for and actively looking for a job. Unemployed people (a subset of people in the labor force) are not working but are available for and actively looking for a job.

- a. The averages in the total column reflect the fact that each age cohort accounts for a different proportion of the veteran population than of the civilian population.
- b. Functional disabilities are difficulties with activities of daily life, as reported to the American Community Survey, rather than service-connected disabilities as determined by the Department of Veterans Affairs.

The gap in labor force participation rates between veterans and civilians varied noticeably in certain years of the 2008–2015 period for some age groups. For example, in 2011, veterans in the 22–24 cohort were 5 percentage points more likely to be in the labor force than civilians of the same age.

Unemployment Rate

Average unemployment rates over the 2008–2015 period were the same for the total populations of male Gulf War II veterans and civilian men ages 22 to 44 (see Table 4). However, there was a gap in unemployment rates among younger men: In the 22–24 cohort, veterans were about 2 percentage points more likely to be unemployed than civilians, on average, over that period. The differences were more pronounced in some years. In 2009, for instance, the unemployment rate of 22- to 24-year-old veterans was 5 percentage points higher than

that of civilians. Older veterans (ages 35 to 44) had lower unemployment rates than civilians in all years except 2014 and 2015.

Despite those differences, the same age-related patterns of unemployment found in the civilian workforce existed for male Gulf War II veterans. In particular, younger men had higher unemployment rates than older men.

Comparison With BLS Reports

CBO's findings for male Gulf War II veterans as a whole are consistent with the conclusions of other researchers. However, they differ from some of the public reports regularly issued by the Bureau of Labor Statistics.²⁵ Those reports—which rely on data from the Census

25. See Bureau of Labor Statistics, *Employment Situation of Veterans* (various years).

Bureau's Current Population Survey—show much larger differences in the labor force participation rates and unemployment rates of male veterans and civilians in some years of the 2008–2015 period.

The discrepancies between CBO's and BLS's results stem from the use of different surveys. For some age groups, comparing male veterans and civilians produces very different results depending on whether the CPS or the ACS is used.²⁶ Such differences probably occur because, although the CPS is the federal government's official source for monthly estimates of unemployment in the United States, it has limitations for certain types of analyses, as the Census Bureau and BLS acknowledge.²⁷ CBO determined that the ACS was more appropriate than the CPS for estimating the labor force experiences of Gulf War II veterans (the reasons for that decision are discussed in Appendix A).

Labor Force Outcomes for Male Gulf War II Veterans Who Were in School or Functionally Disabled

The labor force participation and unemployment rates of people who are enrolled in school or who are functionally disabled are likely to differ substantially from those of people who are neither in school nor disabled. In 2015, among 22- to 44-year-old male Gulf War II veterans, 21 percent were enrolled in school and 13 percent reported a functional disability. CBO compared those veterans' labor force outcomes with the outcomes of civilian men enrolled in school or reporting a functional disability.

Veterans Enrolled in School

Students of all sorts—whether part-time or full-time—were more likely than nonstudents to be out of the labor force. And even when students were in the labor force,

they were more likely than nonstudents to be unemployed, CBO found.

Despite those commonalities, male Gulf War II veterans who were in school had different labor force participation rates and unemployment rates than male civilian students during the 2008–2015 period. Moreover, those differences varied with age. For instance, among 22- to 24-year-old students, veterans had a higher average labor force participation rate than civilians (72 percent versus 67 percent); among older students, however, the reverse was true (see Table 4).

In the case of unemployment, the average rate for 22- to 24-year-old veterans enrolled in school was 5 percentage points higher than the average rate for civilian students of the same age. The gap in unemployment rates narrowed to 3 percentage points for veterans in the 25–34 cohort and to just over 1 percentage point for veterans in the 35–44 cohort.

One possible reason that veterans in school had higher unemployment rates than civilian students was that some veterans may have qualified for unemployment benefits. In almost half of the states, students remain eligible for unemployment benefits if school attendance does not interfere with their ability and availability to accept suitable work, or if they can demonstrate that they are seeking and able to accept a full-time job. If veterans who were enrolled in school met those conditions and had earned sufficient wages in their recent military service, they could collect unemployment compensation while simultaneously using their Post–9/11 GI Bill education benefits. (After 2015, that practice was no longer permitted.)²⁸ Unlike veterans, civilian students may not have the work history necessary to collect unemployment benefits.

26. Researchers at RAND studying veterans' unemployment also found differences between the two data sources. See Paul Heaton and Heather Krull, *Unemployment Among Post–9/11 Veterans and Military Spouses After the Economic Downturn* (RAND Corporation, 2012), www.rand.org/pubs/occasional_papers/OP376.html; and David S. Loughran, *Why Is Veteran Unemployment So High?* (RAND Corporation, 2014), www.rand.org/pubs/research_reports/RR284.html.

27. For a detailed explanation of differences between the two surveys pertaining to labor force data, see Braedyn K. Kromer and David J. Howard, *Comparison of ACS and CPS Data on Employment Status* (Census Bureau, December 2011), <http://tinyurl.com/hcspom7> (PDF, 1.2 MB).

28. The National Defense Authorization Act for Fiscal Year 2016 (P. L. 114-92, 129 Stat. 828) prohibits veterans from using their Post–9/11 GI Bill education benefits while collecting unemployment compensation (with some exceptions). That prohibition took effect on November 25, 2015, so it did not materially affect veterans during the 2008–2015 period of this analysis. For information about previous eligibility for unemployment benefits, see Julie M. Whittaker and Alan Eder, *Unemployment Compensation (UC): Eligibility for Students Under State and Federal Laws*, Report for Congress R42707 (Congressional Research Service, September 7, 2012).

Functionally Disabled Veterans

People who reported having difficulty or serious difficulty with hearing, seeing, remembering, moving, self-care, or independent living were more likely than people without such functional disabilities to be out of the labor force and unemployed.²⁹ (As explained above, functional disabilities differ in important ways from the service-connected disabilities determined by VA.)

Even so, CBO's analysis found sizable differences in the labor force outcomes of veterans and civilians with functional disabilities. On average over the 2008–2015 period, 64 percent to 74 percent of functionally disabled male Gulf War II veterans (depending on age group) were in the labor force, compared with 51 percent to 55 percent of functionally disabled civilian men (see Table 4).³⁰ Unemployment rates, however, were much more similar for functionally disabled male veterans and civilians. In total, such veterans had an average unemployment rate that was 3 percentage points lower than that of civilians.

Veterans with functional disabilities may have higher labor force participation rates and lower unemployment rates than disabled civilians because many veterans receive preferential treatment in hiring and retention in both the private and the public sectors. Another possible explanation is that some veterans report a functional disability because they have a VA disability rating, even if their ability to work is not affected.

Labor Force Outcomes for Likely Workers Among Male Gulf War II Veterans

In particular, CBO analyzed the labor force outcomes of the male Gulf War II veterans most likely to be working

or looking for work: those neither enrolled in school nor functionally disabled. CBO compared their outcomes over the 2008–2015 period with outcomes for 22- to 44-year-old male civilians who were also neither enrolled in school nor functionally disabled. To make the comparison as similar as possible, CBO further restricted the civilians in the ACS sample to U.S. citizens with at least a high school diploma. CBO then used statistical techniques to account for differences between veterans and civilians in average educational attainment and some other observable traits that can affect labor force outcomes (age, race, ethnicity, marital status, region of residence, rural or urban location, and year surveyed).³¹

CBO's statistical analysis has limitations, some of which are common to any analysis based on survey data. First, the accuracy of CBO's estimates depends on how well the observable characteristics were measured in the ACS. Second, although CBO accounted for a common set of demographic characteristics, differences in some traits that cannot be measured directly (such as diligence or flexibility) may also affect the labor force outcomes of veterans and civilians. Third, because of data limitations, CBO could not estimate the effects of recent federal and private programs to help veterans.

Labor Force Participation Rate

Male Gulf War II veterans who were neither in school nor functionally disabled participated in the labor force at rates similar to those of comparable civilians over the 2008–2015 period (see Figure 3). The largest difference occurred among 22- to 24-year-olds, with veterans 1 percentage point less likely than civilians, on average, to be employed or actively looking for work during that period.

During the recession of December 2007 to June 2009, likely workers among veterans and civilians had similar labor force participation rates, except that in the youngest age group, veterans were about 2 percentage points less likely to be in the labor force than their civilian counterparts.

29. Research indicates that for veterans from the Vietnam War era, a diagnosis of post-traumatic stress disorder (PTSD) was associated with higher unemployment rates than those of veterans who did not have PTSD. See Elizabeth Savoca and Robert Rosenheck, "The Civilian Labor Market Experiences of Vietnam-Era Veterans: The Influence of Psychiatric Disorders," *Journal of Mental Health Policy and Economics*, vol. 3, no. 4 (December 2000), pp. 199–207, <http://dx.doi.org/10.1002/mhp.102>.

30. Other researchers found that Gulf War II veterans are more likely to report functional disabilities than civilians and than veterans who left the military before 2001. They are also more likely to be working full time than others with functional disabilities. See Jennifer Tennant, "Disability, Employment, and Income: Are Iraq/Afghanistan-Era U.S. Veterans Unique?" *Monthly Labor Review* (August 2012), pp. 3–10, <http://tinyurl.com/hdgsucj> (PDF, 1.9 MB).

31. For research about labor force outcomes for veterans from other eras, such as World War II and Vietnam, see a series of papers by Joshua Angrist, beginning with "Lifetime Earnings and the Vietnam Era Draft Lottery: Evidence From Social Security Administrative Records," *American Economic Review*, vol. 80, no. 3 (June 1990), pp. 313–336.

Although male Gulf War II veterans who were not students or functionally disabled had labor force participation rates similar to those of civilians overall, the differences were greater in certain years. For example, in 2013, veterans ages 22 to 24 were nearly 3 percentage points less likely to be in the labor force than comparable civilians. In 2015, by contrast, veterans in that age range were slightly more likely to be in the labor force than their civilian counterparts. Such year-by-year differences could be a result of sampling variation in the ACS or could be evidence of changes in veterans' economic situation.

CBO's analysis suggests that labor force participation rates among men differ more because of demographic characteristics than because of veteran status. For instance, among 22- to 24-year-olds who were likely workers, the average labor force participation rates of veterans and civilians differed by about 1 percentage point, whereas the average rates of men with a college degree and those with only a high school diploma differed by about 5 percentage points (after adjusting for differences in other observable traits).

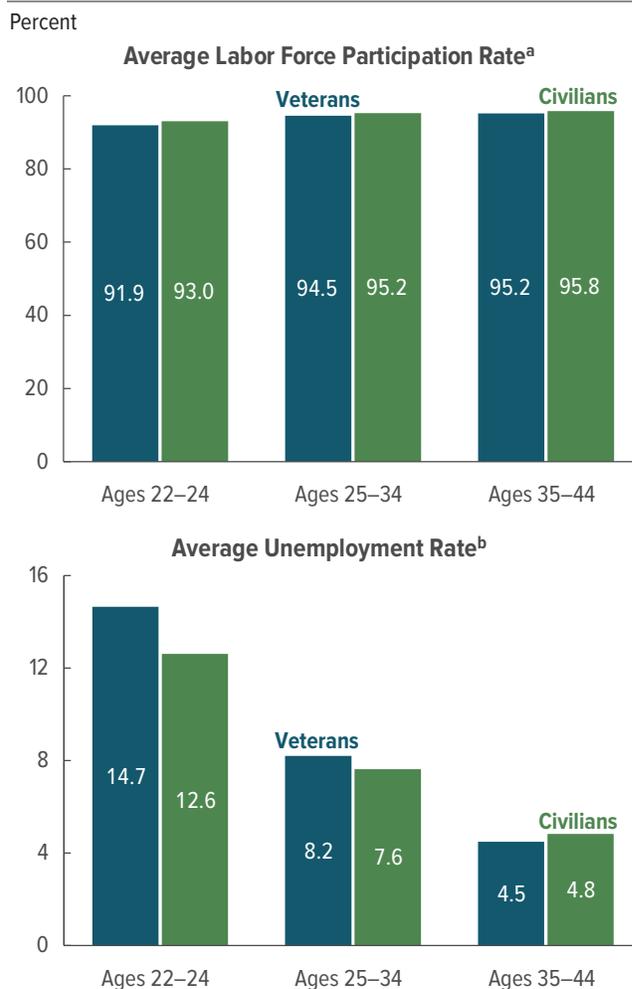
Unemployment Rate

Among U.S. citizens in the labor force with at least a high school diploma, male Gulf War II veterans between the ages of 22 and 44 who were neither in school nor functionally disabled had average unemployment rates over the 2008–2015 period similar to those of comparable civilians, CBO found. However, that overall similarity masks differences among age groups (see Figure 3). On average, male veterans ages 22 to 24 were about 2 percentage points more likely to be unemployed than their civilian counterparts over that period, and veterans ages 25 to 34 were 0.6 percentage points more likely to be unemployed than comparable civilians. In the 35–44 age range, by contrast, male Gulf War II veterans were 0.3 percentage points less likely to be unemployed than their civilian counterparts.

The 2007–2009 recession appears to have intensified differences in the unemployment rates of veterans and civilians in two age groups: 22 to 24 and 35 to 44. During the recession, the youngest veterans were about 4 percentage points more likely to be unemployed than similar civilians (as opposed to 2 percentage points more likely for the 2008–2015 period as a whole). Many of those young veterans were at the end of their first enlistment, and their desire to leave the military may have

Figure 3.

Labor Force Outcomes for Likely Workers Among Male Gulf War II Veterans and Civilians, Adjusted for Similar Observable Characteristics, 2008 to 2015



Source: Congressional Budget Office, using 2008–2015 data from the American Community Survey.

This comparison is restricted to male U.S. citizens who have a high school diploma or higher, were not enrolled in school, and did not have functional disabilities (difficulties with activities of daily life, as reported in the American Community Survey, rather than service-connected disabilities as determined by the Department of Veterans Affairs). The figure compares the labor force outcomes observed for those veterans with the outcomes that CBO predicts would have occurred for civilians if they had the same characteristics, on average, as veterans (in terms of educational attainment, age, race, ethnicity, marital status, region of residence, and year surveyed).

- The labor force participation rate is the percentage of people who either are working or are not working but are available for and actively looking for a job.
- The unemployment rate is the percentage of people in the labor force who are not working but are available for and actively looking for a job.

outweighed the disadvantages of looking for a job during a downturn. Veterans in the 35–44 age range had nearly a 1 percentage point lower unemployment rate than comparable civilians in 2008 and 2009.

In a few of the postrecession years covered by CBO’s analysis, young veterans also had substantially higher unemployment rates than their civilian counterparts. For example, from 2011 through 2013, the unemployment rate for veterans in the youngest cohort was about 3 percentage points higher than the rate for civilians in that age group. In 2015, however, the unemployment rate was the same for young veterans and civilians.

In such comparisons, accounting for characteristics other than veteran status is important. Differences in educational attainment, for example, explain more of the variation in unemployment rates in CBO’s analysis than veteran status does. Among men ages 22 to 24 (both veterans and civilians), the unemployment rate was nearly 10 percentage points lower over the 2008–2015 period for people with a college degree than for people with only a high school diploma, CBO estimates. Likewise, the unemployment rate for married men was 6 percentage points lower than the rate for unmarried men. (CBO found that married veterans had lower unemployment rates than unmarried veterans, but the difference by marital status was smaller among veterans than among comparable civilians.)

Why CBO Used the American Community Survey Instead of the Current Population Survey for This Analysis

The Current Population Survey (CPS) and the American Community Survey (ACS) are two highly regarded statistical surveys, both conducted by the Census Bureau. The CPS is a monthly survey of households designed to represent the U.S. civilian, noninstitutionalized population. Data from the CPS are regularly used by the Bureau of Labor Statistics (BLS) to report employment statistics for the United States. The ACS is a much larger, annual, general-purpose demographic survey of U.S. households. It collects information from about 2 million households each year, compared with 720,000 households a year for the CPS.

Although the two surveys collect some of the same information, the ACS is not focused on generating employment statistics, as the CPS is. Instead, the ACS reports more-detailed social, economic, and housing information that can be used to inform policymakers, distribute funding, and assess programs.

For certain years during the 2008–2015 period, the CPS and ACS show marked differences in veterans' labor force outcomes. As widely reported in the press, BLS estimated much higher unemployment rates for veterans—particularly for veterans ages 18 to 24—than for civilians on the basis of CPS data (see Figure A-1). Although unemployment rates are generally higher for young men than for most other demographic groups, the rates that BLS reported for young male veterans were as much as 11 percentage points higher than for civilian men in the same age range. CPS data also showed large spikes in unemployment rates for young male veterans in 2011 and 2013 that the Congressional Budget Office could find no external reason for; those large spikes did not appear in data from the ACS. In adjacent years, 2012 and 2014, CPS data showed much lower unemployment rates for those veterans and much smaller differences (2 to 3 percentage points) between their rates and those of young male civilians.

The two data sets also produced differing results for labor force participation rates. CPS data from 2008 to

2015 showed higher rates of labor force participation among 18- to 24-year-old male veterans than among male civilians in that age range. ACS data showed higher rates for those veterans as well, but the differences between the rates for veterans and civilians were larger.

CBO relied on ACS data for this report because guidance on the Census Bureau's website and communications with Census Bureau staff suggested that, for this analysis, the ACS had the following advantages over the CPS for estimating the labor force outcomes of male Gulf War II veterans:

- A larger sample size, which made it easier to study uncommon characteristics of small populations and to produce tabulations of finely detailed categories, for which the CPS's samples were too small to produce reliable estimates;
- Information on socioeconomic characteristics (particularly school enrollment after age 24) that were not always collected in the CPS; and
- Survey weights for several years that produced estimates of the veteran population that more closely matched CBO's estimates than did population estimates based on the CPS's survey weights.¹ (CBO's estimates of the size of the veteran population are based on information from the Department of Defense and other administrative data.)

Sample Size

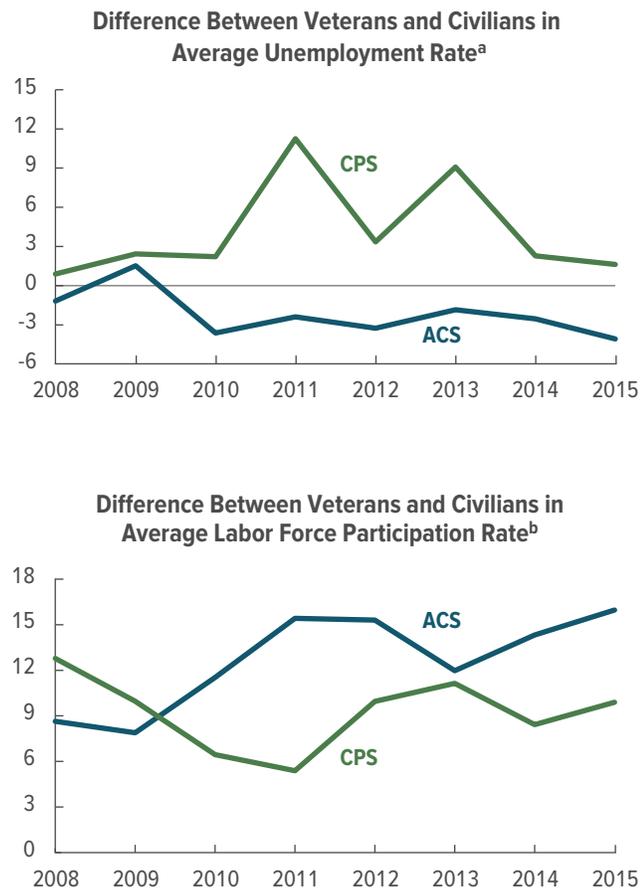
The ACS reaches roughly 1 in 40 U.S. households each year—three times as many as the CPS. That much larger sample was essential for identifying veterans from the Gulf War II era, who make up only about 1 percent of the U.S. population. In particular, the CPS's sample sizes for veterans under age 25 were very small; in some

1. For a more extensive discussion of the differences between the CPS and ACS, see Census Bureau, "Guidance on Survey Differences in Labor Force Estimates" (July 15, 2016), <http://tinyurl.com/h6nca8r>.

Figure A-1.

Differences in Labor Force Outcomes of Male Gulf War II Veterans and Civilians, Ages 18 to 24, Not Adjusted for Similar Observable Characteristics

Percentage Points



Source: Congressional Budget Office, using 2008–2015 data from the American Community Survey (ACS) and the Current Population Survey (CPS).

A positive number indicates that veterans ages 18 to 24 had a higher rate of labor force participation or unemployment than civilians in the same age range.

- The unemployment rate is the percentage of people in the labor force who are not working but are available for and actively looking for a job.
- The labor force participation rate is the percentage of people who either are working or are not working but are available for and actively looking for a job.

months, none of the respondents to the CPS in that age range were veterans. Thus, when CBO used both surveys to calculate the total number of Gulf War II veterans ages 22 to 24, the estimate based on the ACS was more consistent with data from the Department of Defense than the estimate based on the CPS was.

In addition to caveats noted by the Census Bureau, BLS advises caution in general when interpreting estimates from the CPS for small population groups. Such estimates tend to be associated with large sampling errors, which means that estimates from the sample may not closely match the underlying population.

An example of problems with small samples in the CPS is evident in data reported for male veterans ages 18 to 24. CPS data showed an average unemployment rate of 29 percent for those veterans in 2011, versus 18 percent for civilians in the same age range, and an unemployment rate of 25 percent for those veterans in 2013, versus 16 percent for civilians. In most other years of the 2008–2015 period, however, the differences in the unemployment rates of veterans and civilians ages 18 to 24 were not statistically significant—that is, they were not large enough for researchers to be confident that the differences were not simply a result of having a sample size that was too small.

Moreover, CBO could find no external evidence to explain the large spikes in unemployment rates in 2011 and 2013 that BLS reported. The ACS data that CBO used showed no such spikes—the gap between veterans’ and civilians’ unemployment rates was about 2 percentage points and had the opposite sign. In addition, there was no evidence from other sources to support sharp increases in veterans’ unemployment in those years. For instance, separations from the military were not substantially higher in 2011 and 2013 than in surrounding years, despite a drawdown in the size of military forces. Although it is impossible to be sure, a likely explanation is that those spikes were the sorts of errors that commonly occur when measuring small samples.²

- Using data from 2000 to 2006, researchers at the RAND Corporation investigated a similar issue and determined that an increase in unemployment for young veterans seen in CPS data, but not in ACS data, was probably attributable to sampling variability in the CPS. See Bogdan Savych, Jacob Klerman, and David Loughran, *Recent Trends in Veteran Unemployment as Measured in the Current Population Survey and the American Community Survey* (RAND Corporation, 2008), www.rand.org/pubs/technical_reports/TR485.html.

Availability and Accuracy of Data on School Enrollment and Service-Connected Disabilities

Another advantage of using the ACS is that it provides information that was not available from the CPS until 2013 about people over age 24 who are enrolled in school—and who thus, in many cases, are not in the labor force. Some of that group consists of veterans using their GI Bill benefits, who tend to be older than traditional students. The number of veterans who were enrolled in school according to ACS data aligned with the totals reported by the Department of Veterans Affairs (VA) for the number of people receiving benefits under the Post-9/11 GI Bill.

In addition, veterans' responses to the ACS about having a service-connected disability rating more closely resembled VA data on service-connected disabilities than the CPS data did. The consistency of those ACS data with VA's administrative data suggested that the other ACS data available for veterans were also fairly reliable.

Survey Weights

Both the ACS and the CPS include survey weights in their data sets so analysts can estimate a group's share of the U.S. population. (The survey weight is based on the number of people in the U.S. population that each survey respondent represents.) The ACS uses a single weight

for person-level analysis, whereas the CPS contains several weights for different groups.

CBO was concerned about the veteran-specific survey weight that the Census Bureau provided for use with CPS data for the early years in this analysis. That weight was based partly on information from VA about the sex, age (in five-year age bands), and period of service of veterans. The information that VA provided to the Census Bureau came mainly from the VetPop model, which VA uses to project the size of the veteran population. Precisely how VA estimated those totals is not publicly documented. CBO's estimate of the number of Gulf War II veterans did not match VetPop's, which suggested that using the CPS weight for veterans was problematic.

For more recent years in the analysis, the CPS veteran-specific survey weight yielded estimates very similar to those calculated by CBO, mitigating CBO's concerns for analyses using the CPS weight for 2013 and later. The ACS, conversely, diverged from CBO's estimates of the total population of Gulf War II veterans in 2014 and 2015. Unlike the decennial census, sample surveys such as the CPS and the ACS are not designed to provide definitive population counts. Rather, those surveys represent the entire U.S. population, and the share of Gulf War II veterans—or any other subgroup—is only roughly replicated.

Definitions of Groups Included in This Analysis

In its analysis, the Congressional Budget Office looked at the following groups of people who were included in the data from the American Community Survey (ACS).

Gulf War II veterans: Members of the U.S. armed forces who left active-duty service after September 2001. Those veterans number more than 3.8 million people and by September 2016 made up about 20 percent of all living U.S. veterans. For this analysis, CBO focused on male Gulf War II veterans between the ages of 22 and 44 who had left active-duty service through December 2015. They include people who separated from the military's active component and reservists who completed a call-up to active duty. (Deactivated reservists cannot be identified separately in the ACS data.) They also include people who did not deploy to overseas operations as well as those who did.

Men in the labor force: Those who had a job (that is, were employed) as well as those who did not have a job but were available for and actively seeking work (that is, were unemployed).

Men out of the labor force: Those who neither had a job nor were looking for work. According to documentation provided by the ACS, most men and women in this category were students, retired workers, caretakers of family members, or seasonal workers who were interviewed in an off-season.

Employed men: Those who were working full time or part time.

Unemployed men: Those who did not have a job—but who were available to start a job and were actively looking for work—during the four weeks before they were surveyed.

Men in school: Those who reported being enrolled full time or part time in school during the three months before they were surveyed.

Functionally disabled men: Those who reported limits on their ability to perform certain activities. CBO included in this category anyone who responded “yes” to at least one of the six questions in the ACS about whether someone has difficulty or serious difficulty with hearing, seeing, remembering, moving (such as walking or climbing stairs), self-care, or independent living.

Veterans with service-connected disability ratings: Veterans who have one or more medical conditions that developed or worsened during their period of military service, as determined by the Department of Veterans Affairs (VA). Such veterans typically receive disability compensation from VA. Those payments are meant to offset the *average* earnings lost as a result of such conditions, regardless of whether the recipient has experienced a reduction in earnings. Thus, many veterans who have service-connected conditions work full time. Because the definition of disability that VA uses is very broad, most veterans who have service-connected disability ratings did not report on the ACS that they are functionally disabled. Likewise, many veterans who are functionally disabled do not have service-connected disability ratings, perhaps because they became disabled after leaving the military.



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About This Document

This report was prepared at the request of the Ranking Member of the House Committee on Veterans' Affairs in the 113th Congress. In keeping with the Congressional Budget Office's mandate to provide objective, impartial analysis, the report makes no recommendations.

Elizabeth Bass and Heidi Golding of CBO's National Security Division prepared the report with guidance from Matthew Goldberg (formerly of CBO), Molly Dahl, and David Mosher. Helpful comments were provided by Nabeel Alsalam, William Carrington, David Newman, David Weaver, Matthew Woodward, and Dwayne Wright of CBO, as well as by Courtney Coile of Wellesley College, Shannon Desrosiers of CNA, Teresa Gerton of the Department of Labor, and Paul Heaton of the University of Pennsylvania. Staff at the Bureau of Labor Statistics, the Census Bureau, the Department of Defense, and the Department of Labor also provided comments. (The assistance of external reviewers implies no responsibility for the final product, which rests solely with CBO.)

Jeffrey Kling and Robert Sunshine reviewed the report, Christian Howlett edited it, and Jorge Salazar prepared it for publication. An electronic version is available on CBO's website (www.cbo.gov/publication/52418).

Keith Hall
Director
May 2017