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NATIONAL DEFENSE RESEARCH INSTITUTE

Why Is Veteran Unemployment So High?

David S. Loughran

Prepared for the Office of the Secretary of Defense

Approved for public release; distribution unlimited

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Preface

Veteran unemployment increased markedly during the Great Recession. This report describes the historical time-series in veteran unemployment, compares the veteran unemployment rate to that of non-veterans, and examines how veteran unemployment varies with time since military separation. The report also describes and investigates a variety of commonly cited hypotheses for why veteran unemployment exceeds that of otherwise similarly situated non-veterans. This report will be of interest to policymakers and military manpower analysts interested in the civilian labor market outcomes of veterans.

This research was sponsored by the Office of the Assistant Secretary of Defense for Reserve Affairs, and conducted within the Forces and Resources Policy Center of the RAND National Defense Research Institute, a federally funded research and development center sponsored by the Office of the Secretary of Defense, the Joint Staff, the Unified Combatant Commands, the Navy, the Marine Corps, the defense agencies, and the defense Intelligence Community. For more information on the RAND Forces and Resources Policy Center, see <http://www.rand.org/nsrd/ndri/centers/frp.html> or contact the director (contact information provided on the web page).

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Summary

More than a decade of war in Iraq and Afghanistan has brought renewed attention to challenges faced by U.S. veterans—important among them, the unemployment rates experienced by service members after leaving the military. Public concern has been fueled by recession-driven unemployment rates across the United States that have exceeded 8 percent between February 2009 and August 2012. How will veterans fare when they enter a relatively weak civilian labor market? Do veterans experience unemployment rates significantly higher than their non-veteran civilian counterparts? And if so, why?

According to official statistics, the unemployment rate of young military veterans ages 18–24 reached 29 percent in 2011. However, this type of aggregate statistic does not necessarily paint an accurate picture. It fails, for example, to take into consideration differences in the characteristics of veterans and non-veterans, such as that veterans are more likely to be U.S. citizens, that they are more likely to have a high school diploma or GED, and that veterans primarily represent a male population, since women make up only about 15 percent of active component service members today. It also fails to put veteran unemployment rates into perspective by comparing them to non-veteran populations with the same distribution of age and race/ethnicity. Controlling for all these factors provides a more accurate comparison.

The unemployment rate of veterans ages 18–65 is higher than the unemployment rate of similarly situated non-veterans. Between 2000 and 2011, younger veterans (ages 18–24) were on average 3.4 percentage points more likely to be unemployed than younger non-veterans. Using data from the Current Population Survey (CPS), the difference between veteran and non-veteran youth unemployment increased substantially between 2008 and 2011, but then declined between 2011 and 2012. Using data from the American Community Survey, which includes a larger number of veterans than does the CPS, this post-2008 trend is not apparent, though these data do show a similar difference between veteran and non-veteran unemployment in each year.

The difference between veteran and non-veteran unemployment decreases with age and with time since separation from active-duty service. Between 2000 and 2008, the veteran youth unemployment rate averaged 10.7 percent compared to 8.0 percent among non-veteran youth. But the unemployment rates of older veterans and non-veterans were much closer: 5.2 percent versus 4.9 percent for those ages 25–30; 4.2 percent versus 3.6 percent for those ages 31–40; and 3.6 percent versus 3.0 percent for those ages 41–65. Though unemployment rates are higher between 2009 and 2012, a similar trend can be observed for younger veterans as compared to older veterans, with both the unemployment rate and the difference between veteran and non-veteran unemployment declining with age.

Related to unemployment is the labor force participation rate, with veterans experiencing a decline in labor force participation relative to non-veterans between 2000 and 2012. Many observers believe that the official unemployment rate underestimates true unemployment since the measure excludes individuals who have dropped out of the labor force—including those who drop out after a period of unemployment because they become “discouraged” with the job search process. CPS data show that in the early 2000s, younger veterans were both more likely to be unemployed and more likely to be in the labor force. In 2005, and then again between 2009 and 2012, younger veterans have been less likely to be in the labor force than non-veterans. The same trend is seen among older veterans as well.

Why Is Veteran Unemployment So High?

Commonly cited reasons for why veteran unemployment is high relative to non-veteran unemployment include poor health, selection, employer discrimination, skills mismatch, and job search. But most of these hypotheses have little support in the available data. Veterans are somewhat more likely to suffer health conditions that limit work opportunities, but that fact explains little of the observed difference between veteran and non-veteran unemployment. The employer discrimination and skills mismatch hypotheses have little direct support, although both could be investigated further.

The best available evidence supports the hypothesis that relatively high rates of veteran unemployment reflect the fact that veterans, especially younger veterans, are more likely to have recently separated from a job—namely, military service. Consequently, they are more likely to be engaged in job search, which takes time, especially during periods of slow economic growth. The available evidence lends little support to the hypothesis that veterans are inherently disadvantaged in the civilian labor market. If military service significantly disadvantaged veterans over the long run, one would expect the difference in veteran and non-veteran unemployment to persist with age.

If job search is the best explanation for high veteran unemployment, then policy considerations to mitigate unemployment could focus on this area. So, what can be done to shorten the search period? One possibility, limiting unemployment benefits available to recently separated veterans, would likely reduce the length of unemployment following separation, but the net effect of such a policy action on the long-term federal budget is unclear. Moreover, there is very limited evidence on the effectiveness of other federal policies aimed at facilitating the transition of veterans into the civilian labor market. More research on the effectiveness of existing policies is certainly needed. But it is also possible that relatively high veteran unemployment is an unavoidable cost of maintaining a volunteer military that relies so heavily on the services of the young.

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Abbreviations

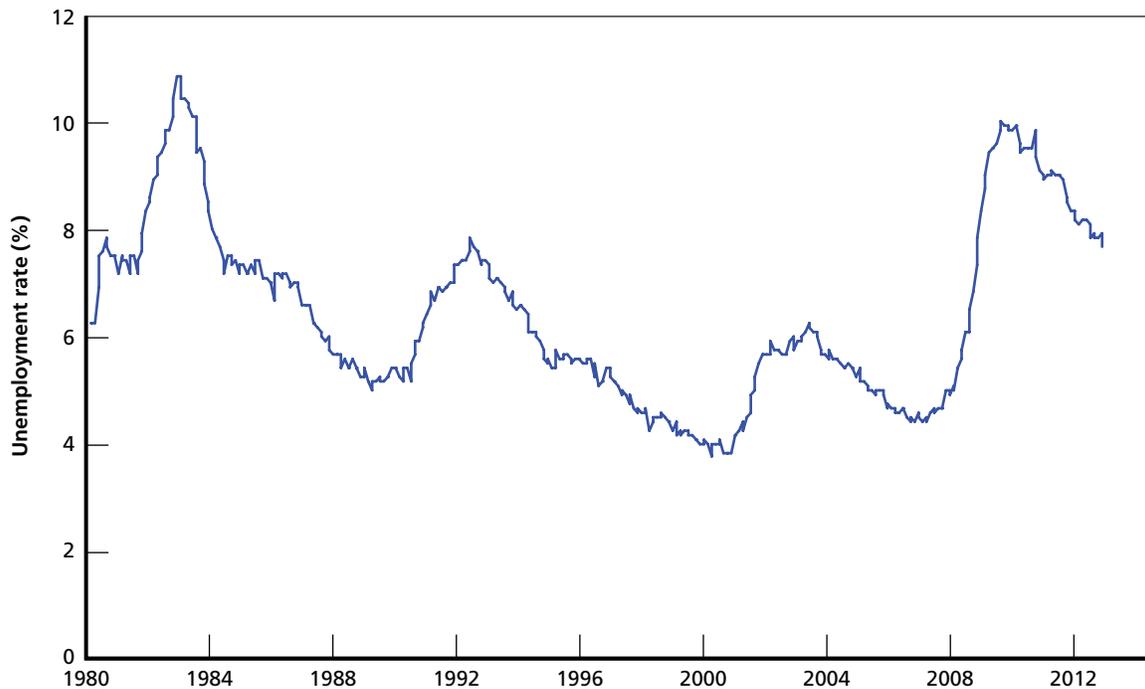
ACS	American Community Survey
ASVAB	Armed Services Vocational Aptitude Battery
BLS	Bureau of Labor Statistics
CPS	Current Population Survey
DoD	U.S. Department of Defense
DoL	U.S. Department of Labor
NLSY97	1997 National Longitudinal Survey of Youth
PaYS	U.S. Army Partnership for Youth Success
TAP	Transition Assistance Program
UCX	Unemployment Compensation for Ex-Servicemembers
VA	U.S. Department of Veterans Affairs

Introduction

The Great Recession, which took place from December 2007 to June 2009, precipitated one of the greatest sustained increases in unemployment in U.S. history. According to official statistics published by the Bureau of Labor Statistics (BLS), the seasonally adjusted unemployment rate exceeded 8 percent between February 2009 and August 2012 (see Figure 1.1). As of December 2012, the U.S. Federal Reserve projected the unemployment rate would remain above 7 percent through 2013 (U.S. Federal Reserve, 2012).

The public has long been concerned about the transition of military service members into the civilian labor market following a period of active-duty military service in either the active or reserve components. With above-average numbers of service members likely to enter a relatively weak civilian labor market in 2013 as a result of a reduction of troop levels in Iraq and Afghanistan, a likely drawdown in the active component, and very high unemployment among

Figure 1.1
Official U.S. Unemployment Rate, by Year



SOURCE: BLS data.

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recent veterans, public concern about the transition process is only growing.¹ According to BLS, the unemployment rate of young veterans ages 18–24 was 29.1 percent in 2011 (Bureau of Labor Statistics, 2011). Expenditures on Unemployment Compensation for Ex-Servicemembers (UCX) totaled \$730 million in 2011, up from \$232 million in 2002.²

With veteran unemployment well above historic norms, both Democratic and Republican lawmakers have called upon the U.S. Department of Defense (DoD), U.S. Department of Labor (DoL), and U.S. Department of Veterans Affairs (VA) to design and implement more effective programs to facilitate entry into the civilian labor market. In November 2011, for example, Congress unanimously passed and President Obama signed into law the VOW to Hire Heroes Act giving employers a tax credit of up to \$5,600 for each veteran they hire who has been unemployed for six months or more.³ The act also makes the Transition Assistance Program (TAP), an interagency employment workshop coordinated by DoD, DoL, and VA, mandatory for all separating service members, provides older unemployed veterans an additional year of Montgomery GI Benefits, provides disabled veterans up to one year of additional Vocational Rehabilitation and Employment Benefits, and allows service members to apply for federal jobs prior to separation.

While it is undeniable that veteran unemployment during the Great Recession has been high by historical standards, discussions of veteran unemployment in the media and in other public forums often gloss over some of the key features of the data underlying those statistics. In particular, those discussions often fail to show the historical time-series in veteran unemployment, make comparisons between veterans and non-veterans without controlling for demographic differences between the two groups (e.g., differences in age, gender, race/ethnicity, educational attainment, citizenship), fail to account for sampling variation inherent in survey-based data, and rarely present data showing how veteran unemployment declines with time since separation. The present report seeks to provide a more complete and thorough presentation of available statistics on veteran unemployment and place those statistics in the context of the broader literature on the transition of service members from the military into the civilian workforce.

More specifically, this report has three objectives. The first is to document recent trends in veteran unemployment as recorded in two nationally representative data sources: the Current Population Survey (CPS), which is the source for official monthly unemployment statistics, and the American Community Survey (ACS), which is less frequently administered (annually rather than monthly) but has the advantage of containing much larger samples of veterans than does the CPS. The ACS data are used to make more precise comparisons between veteran and non-veteran unemployment than are typically provided in official statistics as well as to characterize the transitory nature of veteran unemployment. The second objective of the report is to review a number of hypotheses for why veterans would be more likely to be unemployed than non-veterans, and the extent to which those hypotheses are supported by published research

¹ See, for example, Gregg Zoroya, “Veterans’ Jobless Rate Falls but Remains High,” *USA Today*, January 6, 2013.

² Author’s calculation from weekly unemployment insurance data published by the U.S. Department of Labor, Employment and Training Administration.

³ The act gives a \$2,400 tax credit for hiring veterans unemployed for a month or more, \$5,600 for veterans unemployed for six months or more, and \$9,600 for veterans with a service-connected disability who have been unemployed for six months or more.

findings. The third objective is to suggest directions for further research on the causes of veteran unemployment and the effectiveness of policies to reduce veteran unemployment.

The Facts About Veteran Unemployment

This chapter employs CPS and ACS data to establish five facts about veteran unemployment:

- The unemployment rate of veterans ages 18–65 is higher than the unemployment rate of similarly situated non-veterans.
- In the CPS, the difference between veteran and non-veteran youth (ages 18–24) unemployment increased substantially between 2008 and 2011, but then declined between 2011 and 2012; this post-2008 trend is not apparent in the ACS.
- Labor force participation of veterans declined relative to that of non-veterans in the CPS between 2000 and 2012; this trend is not apparent in the ACS.
- The difference between veteran and non-veteran unemployment decreases with age.
- The difference between veteran and non-veteran unemployment decreases with time since separation from active-duty service.

Data for this study are drawn from the monthly CPS between January 2000 and December 2012 and the annual ACS between 2001 and 2011. BLS publishes official estimates of the number of unemployed and employed individuals and the corresponding unemployment and employment rates based on the monthly CPS survey of approximately 60,000 households. The survey is designed to generate nationally representative estimates of the level of and changes in the U.S. unemployment rate over time. To increase the precision of estimates of the change in the unemployment rate over time, a CPS dwelling unit (i.e., a unique address) is interviewed for four consecutive months, not interviewed for eight months, and then interviewed again for four consecutive months. These dwelling units are then dropped from the sample. New dwelling units are added to the sample every month to maintain an approximately constant sample size (U.S. Census Bureau).

Although the CPS is among the largest periodic surveys in the world, it nonetheless surveys relatively few veterans, as veterans represent a relatively small percentage of the U.S. population. The relatively small number of veterans in the CPS means that estimates of their unemployment rate will be considerably less precise than corresponding estimates for non-veterans.

The ACS is a relatively new survey conducted by the Census Bureau designed to generate nationally representative estimates of a variety of demographic and work-related population characteristics. The primary advantage of the survey relative to the CPS is its much larger sample size. The survey was first fielded in 2000 and has been fielded annually since; the last available data at the time this report was published were for 2011. The sample size of the ACS increased significantly between 2000 and 2001 and then again between 2004 and 2005 as the survey moved from demonstration to full implementation. Between 2001 and 2004 the

ACS sampled about 800,000 addresses in 1,240 counties. Since 2005, the sampling frame has included approximately 3 million addresses in 3,141 counties in the 50 states, District of Columbia, and Puerto Rico (U.S. Census Bureau).

The sections below compare the unemployment rates of veterans and non-veterans. An individual is considered unemployed if he or she is not employed,¹ has looked for work in the past four weeks, and is currently available to work. The unemployment rate is the ratio of unemployed workers to total (employed and unemployed) workers. Individuals who are out of the labor force (i.e., neither employed nor unemployed) are excluded from the computation of the unemployment rate.

A number of sample restrictions are employed in both the CPS and ACS to control for gross differences in the characteristics of veterans and non-veterans. Extracts are restricted to male U.S. citizens ages 18–65 who have earned at least a high school diploma or GED and who are not currently serving on active duty;² individuals serving in the reserves in a training capacity are included in both CPS and ACS samples. Women are not included in either sample, since women represent only about 15 percent of active component service members today and because differences in the labor force behavior of men and women would require us to conduct analyses separately by gender (Office of the Under Secretary of Defense for Personnel and Readiness, 2011). Moreover, sample sizes in the CPS are too small to make statistically meaningful comparisons between female veterans and non-veterans.

Unless otherwise noted, all statistics reported in this chapter and in Chapter Three control for differences in age and self-reported race/ethnicity (white, black, other) between veterans and non-veterans. Comparisons of means weight the non-veteran sample so that it has the same distribution of age and race/ethnicity as the veteran sample.

Comparisons of Veteran and Non-Veteran Unemployment in the CPS

According to the CPS data, between 2000 and 2012 unemployment among male veterans ages 18–65 was 1.3 percentage points lower than unemployment among non-veterans. However, this simple comparison, comparable to what is reported in the BLS's monthly "Employment Situation" reports (Bureau of Labor Statistics, 2012), does not account for two important differences between veterans and non-veterans: Veterans are (1) much more likely than non-veterans to be U.S. citizens and (2) much more likely to have graduated from high school. In the sample, 99.6 percent of male veterans ages 18–65 are U.S. citizens compared to 90.3 percent of male non-veterans; 96 percent of male veterans have a high school diploma compared to 86 percent of male non-veterans.

When the sample is restricted to male U.S. citizens who have earned at least a high school diploma or GED and controlled for differences in the age and race/ethnicity distribution of veterans and non-veterans, one sees that unemployment is actually somewhat higher for veterans than it is for non-veterans. Between 2000 and 2012, veterans in this sample are

¹ Employed individuals consist of all persons who (1) did any work for pay or profit during the survey reference week, (2) did at least 15 hours of unpaid work in a family-operated enterprise, or (3) were temporarily absent from their regular jobs because of illness, vacation, bad weather, industrial dispute, or various personal reasons.

² Only a small fraction of enlistees enter the U.S. military with a GED; the CPS, however, does not distinguish between high school diploma and GED.

0.7 percentage points more likely to be unemployed than are non-veterans. The remainder of the tables and figures in this document restrict the sample to male U.S. citizens who have earned a high school diploma or GED.

Table 2.1 and Figure 2.1 show that the difference between veteran and non-veteran unemployment is considerably higher for the youngest male veterans. Between 2000 and 2008, the veteran youth (ages 18–24) unemployment rate averaged 10.7 percent compared to 8.0 percent among non-veteran youth. The unemployment rates of older veterans and non-veterans were much closer: 5.2 percent versus 4.9 percent for those ages 25–30; 4.2 percent versus 3.6 percent for those ages 31–40; and 3.6 percent versus 3.0 percent for those ages 41–65.

The gap between veteran and non-veteran unemployment grew considerably in the 2009–2012 period. The youngest veterans had an unemployment rate of 21.6 percent during this period compared to 13.5 percent among younger non-veterans, a difference of 8.1 percentage points. This gap in unemployment also grew for veterans ages 25–30, but by much less in percentage point terms.

Comparing CPS- and ACS-Based Estimates of Unemployment Differences

The CPS is designed to survey a nationally representative cross-section of the civilian population. As such, the number of veterans in the survey is small compared to the number of non-veterans. During our sample period, the average annual number of veteran observations in the CPS is 55,133 compared to 284,623 non-veteran observations (see Table 2.2). As explained above, though, the CPS surveys the same physical address about four times on average each year, which means that the typical survey respondent is surveyed multiple times per year (an

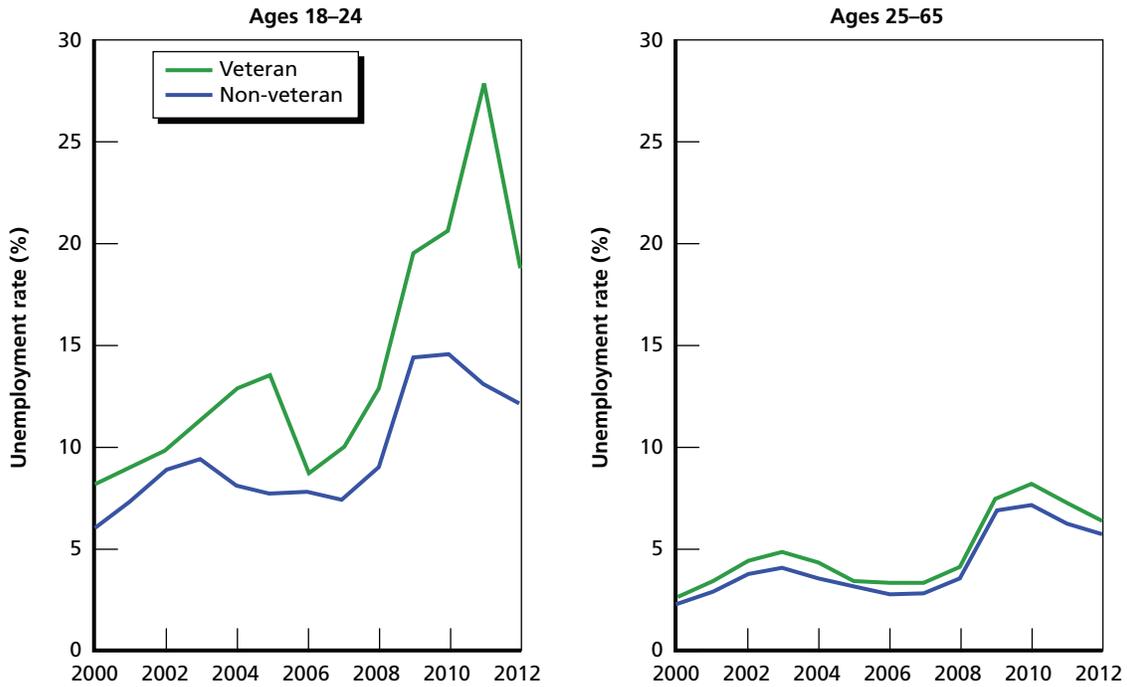
Table 2.1
Average Unemployment Rate, by Year, Age, and Veteran Status

Age	Veterans	Non-Veterans	Difference	Number of Veterans
2000–2008				
18–24	10.7	8.0	2.7	8,248
25–30	5.2	4.9	0.3	26,975
31–40	4.2	3.6	0.6	89,450
41–65	3.6	3.0	0.6	415,341
2009–2012				
18–24	21.6	13.5	8.1	2,554
25–30	12.2	9.0	3.2	9,286
31–40	7.6	6.9	0.7	26,097
41–65	6.9	6.3	0.7	138,776

SOURCE: Data from 2000–2012 monthly CPS.

NOTES: Sample restricted to male U.S. citizens ages 18–65 who have earned at least a high school diploma or GED and who are not currently serving on active duty. Average unemployment rate of non-veterans reweighted to reflect the age and race/ethnicity distribution of veterans.

Figure 2.1
Unemployment Rate, by Age, Year, and Veteran Status



SOURCE: Data from 2000–2012 monthly CPS.

NOTES: Sample restricted to male U.S. citizens who have earned at least a high school diploma or GED and who are not currently serving on active duty. Average unemployment rate of non-veterans reweighted to reflect the age and race/ethnicity distribution of veterans.

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Table 2.2
Average Annual Number of Observations, by Survey, Age, Year, and Veteran Status

Age	Year	CPS (All)		CPS (Unique)		ACS	
		Veteran	Non-Veteran	Veteran	Non-Veteran	Veteran	Non-Veteran
18–24	2000–2005	951	37,309	384	14,462	851	26,534
18–24	2006–2011	728	37,645	296	14,226	1,433	57,593
25–30	2000–2005	3,195	37,834	1,135	13,260	2,237	26,540
25–30	2006–2011	2,442	40,464	871	13,763	3,898	55,697
31–40	2000–2005	10,772	73,091	3,624	24,313	7,742	52,837
31–40	2006–2011	7,274	67,214	2,364	21,647	11,235	98,103
41–65	2000–2005	48,334	125,947	15,885	41,014	37,880	102,701
41–65	2006–2011	37,730	148,251	11,958	46,342	54,087	193,217

SOURCE: Data from 2000–2012 monthly CPS and 2001–2011 ACS.

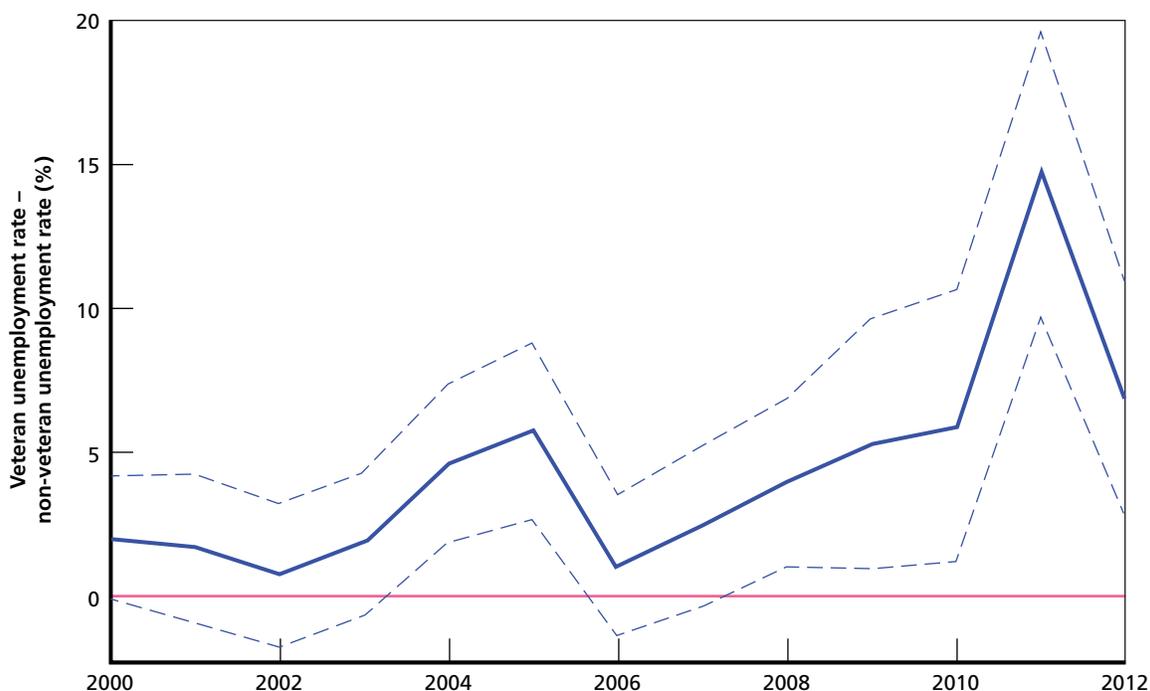
NOTES: Sample restricted to male U.S. citizens who have earned at least a high school diploma or GED, who are not currently serving on active duty, and are not out of the labor force. CPS-Unique counts one observation per individual in each year.

average of three times per year in our sample). Thus, the effective sample size of the CPS for the purposes of computing annual averages is considerably smaller.

In our sample, there are an average of 18,046 unique veterans surveyed each year. This sample size is sufficient to detect small differences in the unemployment rate of veterans and non-veterans overall. For younger veterans, though, the estimated 95-percent confidence intervals surrounding annual differences in veteran and non-veteran unemployment are relatively large, since there are only 337 unique young veterans surveyed each year on average. Indeed, as can be seen in Figure 2.2, in many years of our sample, one cannot reject at the 95-percent confidence level the hypothesis that the veteran and non-veteran youth unemployment rates are identical. Between 2004 and 2005, and then again between 2008 and 2012, the difference in veteran and non-veteran youth unemployment is substantial and statistically significant. In 2011, this difference rises to 14.7 (standard error: 2.5) percentage points, but falls back to 6.7 (2.1) percentage points in 2012.³

Over the entire sample period, the average annual difference in veteran and non-veteran youth unemployment is 3.58 percent (standard error: 0.48 percent), which is statistically sig-

Figure 2.2
Regression-Adjusted Difference Between Veteran and Non-Veteran Unemployment Rate, by Year:
CPS, Ages 18–24



SOURCE: Data from 2000–2012 monthly CPS.

NOTES: Sample restricted to male U.S. citizens ages 18–24 who have earned at least a high school diploma or GED and who are not currently serving on active duty. Linear regression controls for age and race/ethnicity. Dashed lines denote the 95-percent confidence interval (standard errors clustered at the individual level).

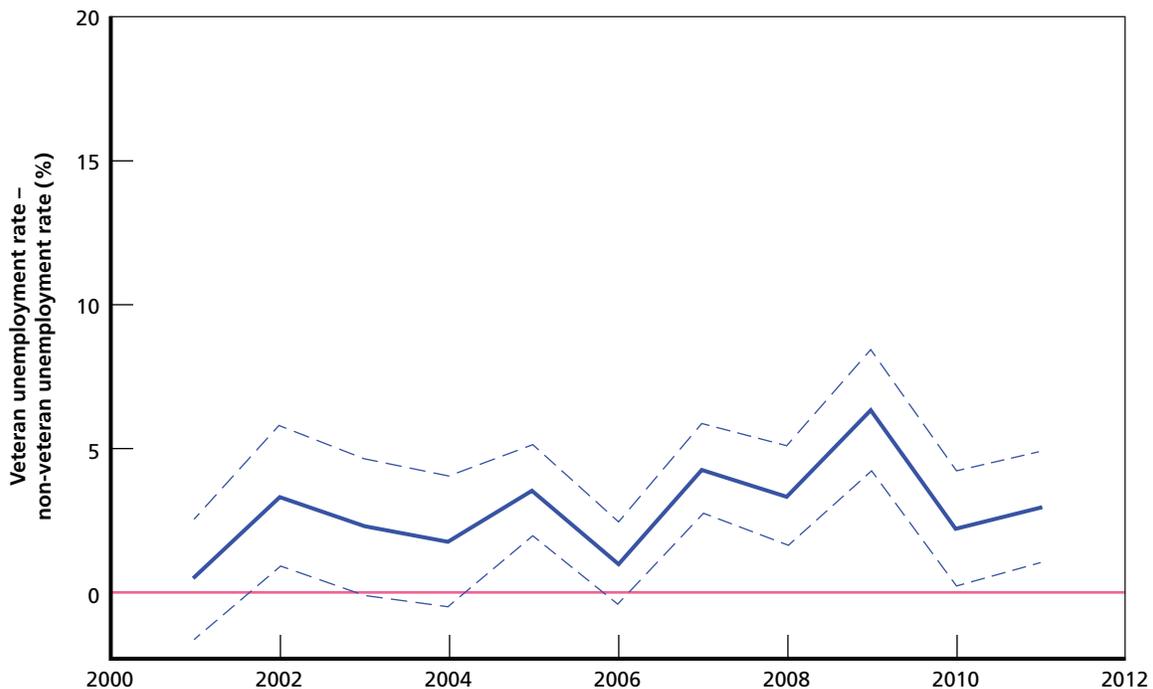
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³ Figure 2.2 graphs the estimated coefficients on veteran status obtained from year-by-year linear regressions of unemployment on veteran status, a vector of age dummy variables, and race/ethnicity (white, black, other). The estimated 95-percent confidence interval is derived from the estimated standard errors on veteran status from those linear regressions.

nificant at the 99-percent confidence level.⁴ The addition of controls for education, marital status, region of residence, month and year surveyed, and months in sample have virtually no effect on the estimated difference between veteran and non-veteran youth unemployment: 3.60 percent (0.48 percent) over this period of time.

Figure 2.3 graphs the difference between veteran and non-veteran youth unemployment using the ACS, which surveys substantially larger numbers of veterans (see Table 2.2).⁵ In the 2006–2011 period, for example, the ACS on average surveyed 1,672 male veterans ages 18–24 each year compared to 301 veterans surveyed by the CPS. The ACS data reveal a similar difference between veteran and non-veteran youth unemployment in each year. However, the ACS data do not show the upward trend in the difference between veteran and non-veteran youth unemployment that is apparent in the CPS post-2008. The spike in relative veteran youth unemployment in 2011 also is not apparent in the ACS. The levels and trends in unemploy-

Figure 2.3
Regression-Adjusted Difference Between Veteran and Non-Veteran Unemployment Rate, by Year:
ACS, Ages 18–24



SOURCE: Data from 2001–2011 ACS.

NOTES: Sample restricted to male U.S. citizens ages 18–24 who have earned at least a high school diploma or GED and who are not currently serving on active duty. Linear regression controls for age and race/ethnicity. Dashed lines denote the 95-percent confidence interval.

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⁴ This estimate is the estimated coefficient on veteran status obtained from a linear regression of unemployment on veteran status, a vector of age dummy variables, and race/ethnicity (white, black, other) employing the same data used in Figure 2.2 but pooled across all years. The estimated 95-percent confidence interval is derived from the estimated standard error on veteran status from that linear regression.

⁵ The estimates recorded in Figures 2.3 and 2.4 are derived in the same manner as those recorded in Figure 2.2 (see footnote 3).

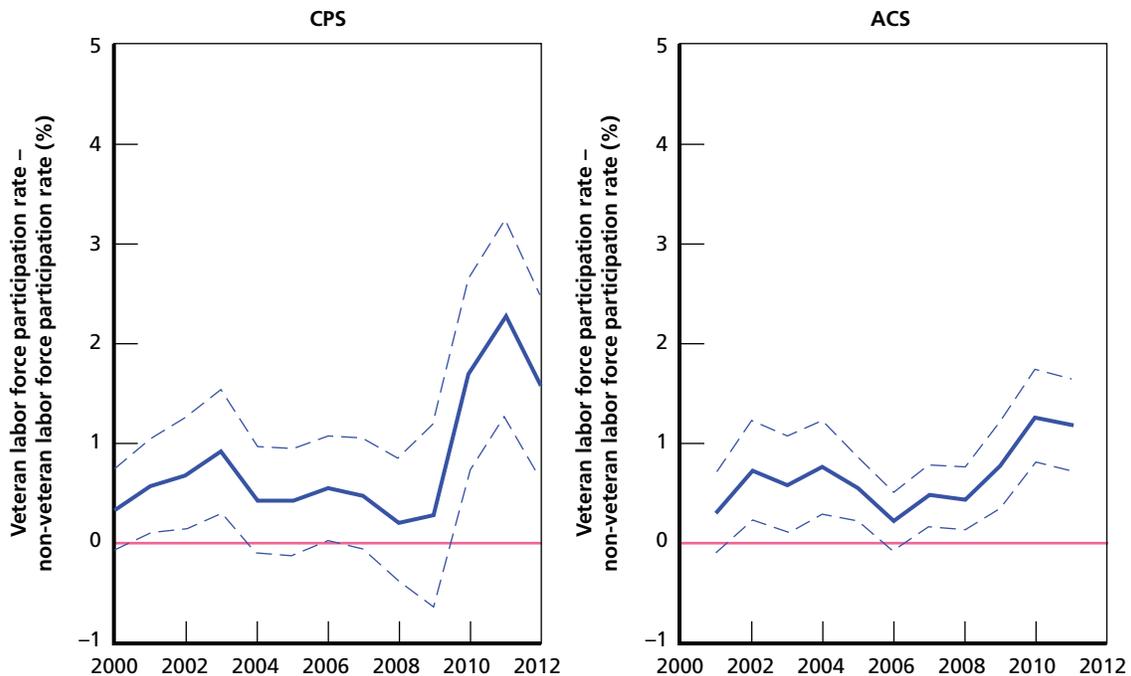
ment differences between older (ages 25–40) veterans and non-veterans are more similar across the CPS and ACS, although the ACS again shows less of a post-2008 increase in this difference than what is observed in the CPS (see Figure 2.4).

Labor Force Participation

Many observers believe that the official unemployment rate underestimates true unemployment, since the measure excludes individuals who have dropped out of the labor force. Many individuals who are not seeking work are truly no longer in the labor force; they may be in school, caring for young children at home, or retired. Others, however, may drop out of the labor force after a period of unemployment because they become “discouraged” with the job search process. That is, these individuals would like to work but have not been able to find a job for some time and so report to the CPS or other labor market survey that they have stopped looking for work. The discouraged worker hypothesis is commonly cited during periods of high unemployment when unemployment declines despite lackluster jobs creation.

Figures 2.5 and 2.6 show the time trend in the difference between veteran and non-veteran labor force participation. In the CPS (Figure 2.5), veteran labor force participation has been falling relative to non-veteran labor force participation since 2000. In the early 2000s,

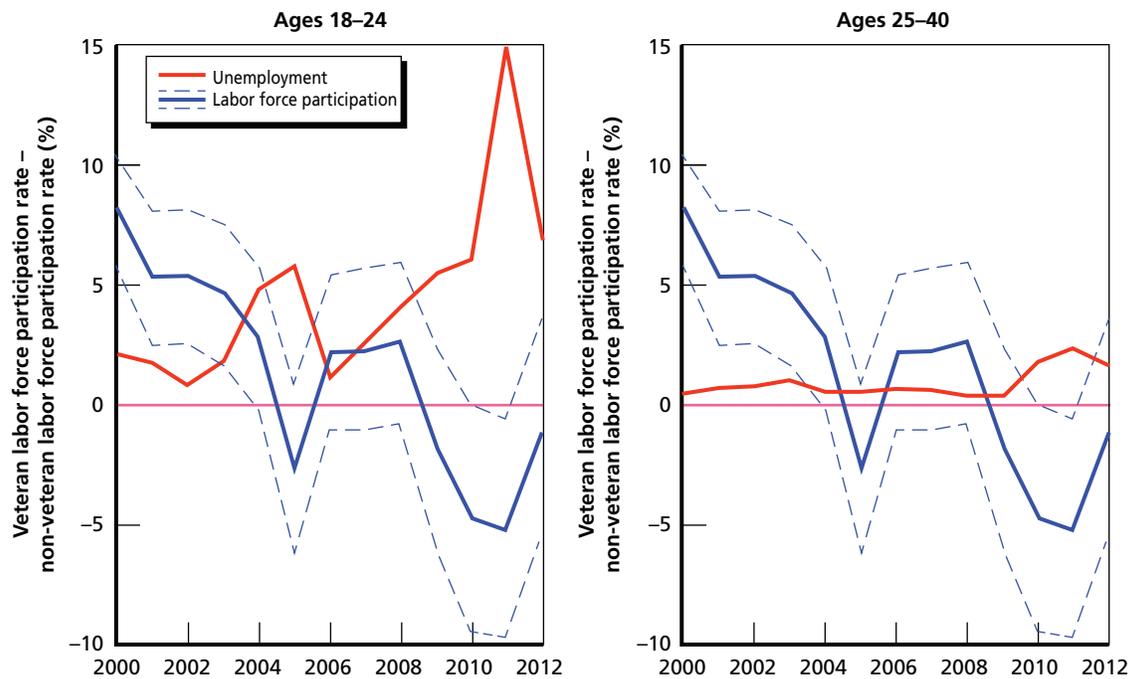
Figure 2.4
Regression-Adjusted Difference Between Veteran and Non-Veteran Unemployment Rate, by Year and Survey: Ages 25–40



SOURCE: Data from 2000–2012 monthly CPS and 2001–2011 ACS.

NOTES: Sample restricted to male U.S. citizens ages 25–40 who have earned at least a high school diploma or GED and who are not currently serving on active duty. Linear regression controls for age and race/ethnicity (standard errors clustered at the individual level in the CPS). Dashed lines denote the 95-percent confidence interval.

Figure 2.5
Regression-Adjusted Difference Between Veteran and Non-Veteran Labor Force Participation Rate, by Year and Age: CPS



SOURCE: Data from 2000–2012 monthly CPS.

NOTES: Sample restricted to male U.S. citizens who have earned at least a high school diploma or GED and who are not currently serving on active duty. Linear regression controls for age and race/ethnicity. Dashed lines denote the 95-percent confidence interval (standard errors clustered at the individual level).

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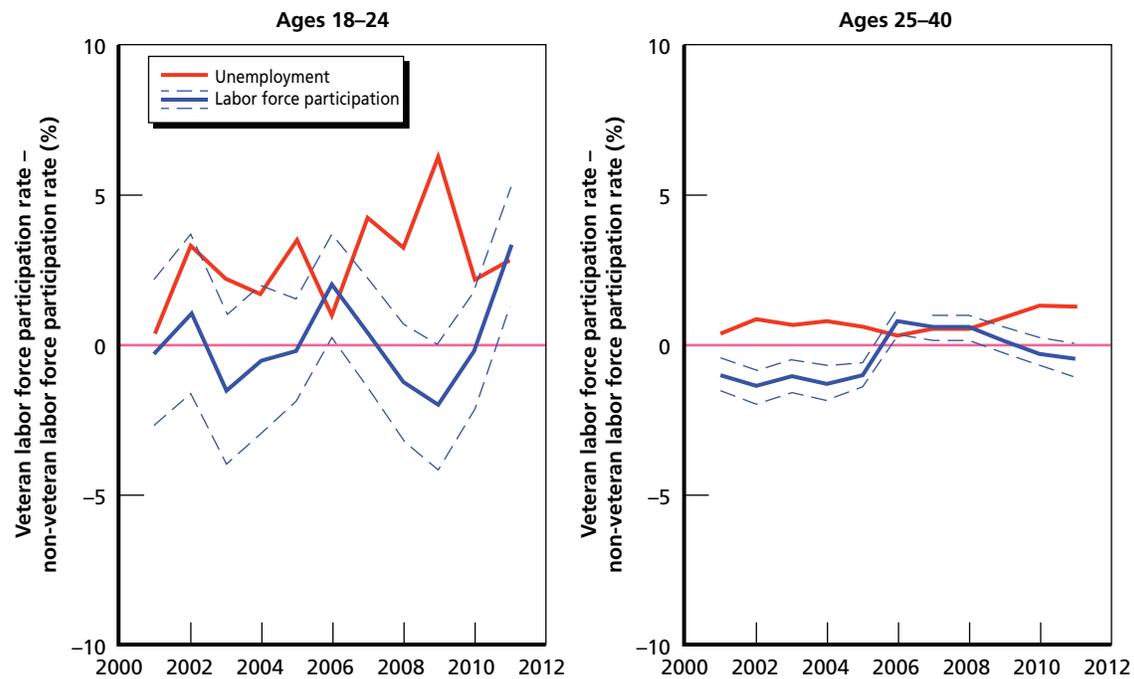
younger veterans were both more likely to be unemployed and more likely to be in the labor force. In 2005, and then again between 2009 and 2012, younger veterans have been less likely to be in the labor force than non-veterans. The same trend is evident in relative labor force participation among older veterans.

Based on the CPS data alone, one might speculate that this trend reflects greater discouragement among veterans when the civilian labor market is poor or perhaps a growing tendency for veterans to go back to school following military service. These trends could also reflect a tendency for military personnel to take time away from both school and the labor market following active combat duty. These hypotheses might warrant separate investigation, but it is worth noting that no such trend in relative labor force participation is apparent in the ACS, which draws into question whether the trend in relative labor force participation observed in the CPS will persist.

The Effect of Time Since Separation

As discussed further in the next chapter, one might expect the difference between veteran and non-veteran unemployment to decline with time since separation. The fact that younger veterans are much more likely than older veterans to have recently separated from the military

Figure 2.6
Regression-Adjusted Difference Between Veteran and Non-Veteran Labor Force Participation Rate, by Year and Age: ACS



SOURCE: Data from 2001–2011 ACS.

NOTES: Sample restricted to male U.S. citizens who have earned at least a high school diploma or GED and who are not currently serving on active duty. Linear regression controls for age and race/ethnicity. Dashed lines denote the 95-percent confidence interval (standard errors clustered at the individual level).

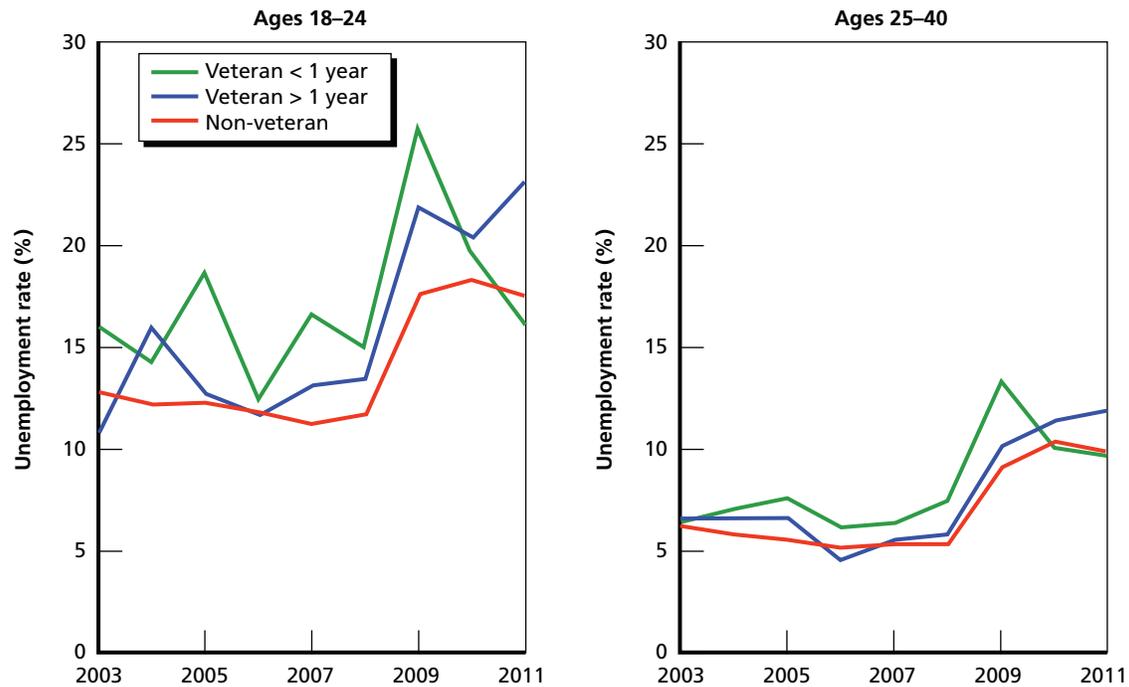
RAND RR284-2.6

could, in principle, explain their relatively high unemployment rates. Black et al. (2008), for example, show that unemployment among young veterans falls sharply in the first two years following separation from the military. The unemployment rate of young veterans in their sample was 25 percent in the first month following separation. Twenty-three months later, their unemployment rate had fallen to 7 percent. These averages, though, are based on the small number of young veterans—202—separating from the military between 1998 and 2005 that were surveyed by the 1997 National Longitudinal Survey of Youth (NLSY97). While the NLSY97 has the advantage of tracking individuals over time, and permits comparisons across a large number of outcomes controlling for a rich array of individual-level characteristics, the small number of veterans contained in the survey draws into question how well those results generalize to the overall population of veterans.

Neither the CPS nor ACS is designed for the purpose of tracking individuals longitudinally, but both surveys, nonetheless, offer some evidence of the effect of time since separation on unemployment. Since 2003, the ACS has asked veterans whether they served on active duty within the last 12 months. The survey also asks veterans whether they have served since September 11, 2001.⁶ Figure 2.7 graphs the unemployment rate of non-veterans, veterans who

⁶ The CPS has asked since 2006 whether veterans served after September 11, 2001, but has never asked whether they served within the prior 12 months.

Figure 2.7
Unemployment Rate, by Length of Military Separation, Age, and Year



SOURCE: Data from 2001–2011 ACS.

NOTES: Sample restricted to male U.S. citizens who have earned at least a high school diploma or GED and who are not currently serving on active duty. Average unemployment rate of non-veterans and veterans separated for more than one year is reweighted to reflect the age and race/ethnicity distribution of veterans separated for less than one year.

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separated within the last 12 months, and veterans who served since September 11, 2001, but not in the last 12 months. For both younger and older veterans, the graph shows that unemployment is highest among veterans who have separated within the past year. However, the difference in unemployment between more and less recently separated veterans observed over the entire sample period is not particularly large. For younger veterans this difference over the entire sample period is just 0.18 percentage points and statistically insignificant. The difference in unemployment between more and less recently separated older (ages 25–40) veterans is 0.56 percentage points and statistically significant at the 95-percent confidence level.⁷ Expanding the younger group of veterans to ages 18–30 results in a larger mean difference in unemployment between more and less recently separated veterans of 1 percentage point, which is statistically significant at the 99-percent confidence level.

Although the CPS is not designed to be a longitudinal survey, most respondents are nonetheless surveyed multiple times. Each individual CPS respondent can be surveyed up to eight times, since each dwelling unit (specific residential address) is surveyed eight times. Individuals who move away from a specific address (and are not surveyed by proxy) are lost from the sample; conversely, an individual who moves to a sampled address during the sample period

⁷ Statistical significance is determined via linear regression employing the same approach described in footnote 4, but where veteran status is now further categorized by time since separation.

will be added to the sample. The survey data denote the “month-in-sample” for each survey response with months 1–4 indicating the first four months the address was surveyed and months 5–8 indicating the second four months the address was surveyed, but corresponding to months 13–16 in calendar time (because addresses are not surveyed at all in months 5–12).

For veterans, by definition, time since separation increases with the number of months since they first appear in the CPS sample (e.g., a veteran who appears in the CPS sample in month 8 will have been separated for 16 more months than when he appeared in the sample in month 1). Thus, all else equal, one might expect a veteran’s likelihood of unemployment to fall with the number of months he appears in the sample. Of course, one might also expect unemployment to fall among non-veterans with the number of months they appear in the survey sample, since individuals with longer survey tenure are less likely to have moved recently and moves are correlated with unemployment both because a move might precipitate a period of unemployment and because unemployment and job search might necessitate a change of address. Another hypothesis, however, is that the rate at which unemployment declines with months in sample will be greater for younger veterans than for younger non-veterans because veterans are more likely to have recently separated from a job—namely, military service—when they first join the CPS sample.

To test this hypothesis, the sample is limited to respondents who are surveyed at least twice, and then further to the first and last observation recorded for each respondent. Then the following linear regression is estimated:

$$Unemployed_{it} = \alpha + \beta_1 Veteran_i + \beta_2 \Delta MIS_{it} + \beta_3 Veteran_i \times \Delta MIS_{it} + \delta X_{it} + \phi Z_t + \varepsilon_{it},$$

where $Veteran_i$ is a dummy variable for whether individual i is a veteran, ΔMIS_{it} counts the number of calendar months passing between a respondent’s first and last observation, and X_{it} is a vector of individual-level characteristics including age, race, month in sample, survey month, and year. Z_t is a vector of year and month fixed effects, and ε_{it} is an idiosyncratic error term. Thus, β_1 measures the overall effect of being a veteran on unemployment (conditional on $\Delta MIS_{it} = 0$), β_2 measures the effect of the number of months included in the CPS sample, and β_3 measures the incremental effect of number of months included in the sample for veterans. An estimate of $\beta_3 < 0$ implies the unemployment rate of veterans and non-veterans is converging over time, all else equal.

Table 2.3 reports the results of estimating the above equation correcting for correlations in the error term at the individual level.⁸ For individuals ages 18–24, the estimated coefficient on $Veteran_i$ indicates that the unemployment rate of veterans in this sample is 5.29 percentage points higher than the unemployment of non-veterans when first surveyed by the CPS. The estimated coefficient on ΔMIS_{it} indicates that the unemployment rate of CPS respondents declines by an average of 0.10 percentage point for each month spent in sample. The coefficient of primary interest, β_3 , is a statistically significant -0.41 , indicating that unemployment declines by an additional 0.41 percentage points per month relative to non-veterans for each month spent in sample. On average, CPS respondents in this sample spend seven months in the survey, suggesting that the gap between veteran and non-veteran unemployment declines by 2.87 percentage points during the sample period, a 46-percent decline relative to the base-

⁸ Stata’s “cluster” command is employed, which provides a standard Huber-White correction for unknown correlations in individual-level errors.

Table 2.3
Estimated Correlation Between Months-in-Sample and
Unemployment, by Age

Variable	Estimate	
	18–24	25–40
Veteran	5.29 (0.58)	0.82 –(0.14)
Δ MIS	–0.10 (0.02)	–0.15 (0.01)
Veteran \times Δ MIS	–0.41 (0.11)	–0.03 (0.02)
Observations	234,472	636,564
R ²	0.03	0.02

SOURCE: Data from 2000–2012 monthly CPS.

NOTES: Sample restricted to male U.S. citizens who have earned at least a high school diploma or GED, are not currently serving on active duty, and were surveyed at least twice. Only first and last observations for each respondent are used. Regression also controls for age, race/ethnicity, year, month, and month in sample. Standard errors (in parentheses) are clustered at the individual level.

line gap of 5.29 percentage points. The table also shows that there is no relative decline in unemployment among older veterans ages 25–40, which is consistent with the likelihood that these veterans, on average, are much less likely to have been recently separated from military service.

Five Hypotheses for High Veteran Unemployment

This chapter begins with a description of five commonly cited hypotheses for why veteran unemployment is high relative to non-veteran unemployment. The chapter then discusses why existing research findings are most consistent with what could be called the “job search” hypothesis. The five hypotheses are:

- **Poor health.** Military service causes poor physical and mental health and poor health causes unemployment.
- **Selection.** Individuals who choose to apply for military service have characteristics that make it more likely they will be unemployed in the future than do individuals who do not choose to apply for military service.
- **Employer discrimination.** Civilian employers discriminate against veterans.
- **Skills mismatch.** The military develops skills that do not transfer well to civilian occupations.
- **Job search.** Veterans, especially younger veterans, are more likely to have recently separated from a job—namely, military service—and finding a new job takes time.

One way to categorize these hypotheses is by whether they have their greatest effect on unemployment in the long run, medium run, or short run (although any one of these hypotheses could be relevant to explaining differences in unemployment in multiple periods). The first two hypotheses—poor health and selection—are perhaps most relevant to explaining long-term (chronic) unemployment among veterans, since they imply permanent differences between veterans and non-veterans that could affect relative employability. Employer discrimination could also result in long-term differences in unemployment if such discrimination cannot be overcome by civilian labor market experience. The fourth hypothesis—skills mismatch—is relevant to explaining elevated levels of veteran unemployment in the medium term under the assumption that any mismatch in skills can be rectified by education and training. Finally, the fifth hypothesis—job search—is relevant to explaining short-term unemployment; job search typically requires months, not years. The following sections discuss the extent to which published studies and existing data support each hypothesis.

Poor Health

It is uncontroversial that military service can lead to physical and mental injury and that such injury can limit civilian labor market opportunities. The question, however, is whether the

prevalence of such injuries can explain observed differences in unemployment between veterans and non-veterans. The ACS asks a series of questions about health and disability that can be used to examine this possibility.

First, Table 3.1 shows that younger veterans are, in fact, more likely to report that they have a physical or mental condition that makes it difficult for them to work (“work disability”). They are also more likely to report having difficulty walking or climbing stairs and having vision or hearing problems. These differences are apparent among both younger and older veterans. About 13 percent of younger veterans and 17 percent of older veterans have a service-connected disability rating. Differences in health persist but are less pronounced once the sample is limited to veterans in the labor force (a necessary condition for being unemployed).

To test whether these differences in health can account for differences in unemployment, we estimate linear regressions of unemployment on veteran status and the set of health measures described in Table 3.1. Table 3.2 shows that while these health measures have large positive effects on unemployment, their inclusion in the model does not substantially affect the estimated difference between veteran and non-veteran unemployment. The coefficient on veteran status declines only slightly with the inclusion of these disability variables in the sample ages 18–24. The decline in the coefficient on veteran status is more substantial in the sample ages 25–40 when disability variables are included, although the overall difference in unemployment between veterans and non-veterans in this sample is small (about one-half of 1 percent).

Table 3.1
Self-Reported Disability Status, by Veteran Status and Age

Disability	Ages 18–24		Ages 25–30	
	Veteran	Non-Veteran	Veteran	Non-Veteran
All				
Work disability	0.031	0.028	0.041	0.035
Mobility disability	0.032	0.017	0.048	0.030
Sight or hearing disability	0.023	0.013	0.021	0.017
Cognitive disability	0.036	0.040	0.029	0.028
Service-connected disability	0.130	NA	0.170	NA
In the labor force				
Work disability	0.021	0.018	0.022	0.017
Mobility disability	0.025	0.012	0.034	0.017
Sight or hearing disability	0.022	0.012	0.019	0.014
Cognitive disability	0.028	0.032	0.018	0.016
Service-connected disability	0.120	NA	0.160	NA

SOURCE: Data from 2008–2010 ACS for service-connected disability; 2001–2007 ACS for all other statistics.

NOTE: Sample restricted to male U.S. citizens who have earned at least a high school diploma or GED and are not currently serving on active duty.

Table 3.2
Estimated Correlation Between Veteran Status, Disability, and Unemployment, by Age

Variable	Ages 18–24		Ages 25–40	
	(1)	(2)	(1)	(2)
Veteran	2.45 (0.35)	2.35 (0.35)	0.50 (0.07)	0.33 (0.07)
Work disability		11.93 (0.49)		11.60 (0.19)
Mobility disability		4.85 (0.58)		5.40 (0.17)
Sight or hearing disability		1.79 (0.55)		2.35 (0.19)
Cognitive disability		8.11 (0.36)		6.10 (0.18)
Observations	298,398	298,398	930,299	930,299
R ²	0.03	0.03	0.02	0.01

SOURCE: Data from 2001–2007 ACS.

NOTES: Sample restricted to male U.S. citizens who have earned at least a high school diploma or GED, and are not currently serving on active duty. Regression also controls for age, race/ethnicity, and survey year.

Thus, while veterans might be more likely than non-veterans to suffer an injury that impairs their ability to work, the available evidence does not support the hypothesis that this increased incidence of injury accounts for their elevated unemployment.

Selection

Military veterans are a select group of individuals. They volunteered to serve in the military, and the military selected them to serve. Moreover, these individuals chose to separate or were separated from the military at a particular point in time. Thus, it seems clear that veterans, even prior to military service, might differ from non-veterans in any number of ways that could be correlated with subsequent civilian labor market outcomes including unemployment. Enlistment criteria alone suggest that veterans will differ from non-veterans in a variety of important ways, including aptitude, educational attainment, health, citizenship, and criminal background (Angrist, 1990, 1998; Loughran et al., 2011), that, all else equal, might be expected to lower veteran unemployment relative to non-veterans. Veterans might also differ from non-veterans in less-readily measurable ways such as motivation or “drive,” attitudes toward risk taking, and respect for authority, all of which could lead to differences in unemployment between veterans and non-veterans that have nothing to do with military service per se.

From an empirical standpoint, one cannot reject the hypothesis that this type of selection leads to biased estimates of the causal effect of military service on unemployment. That is, one

cannot be certain whether the observed difference between veteran and non-veteran unemployment under- or overstates the causal effect of military service on unemployment.

The question here, though, is not so much whether one can interpret mean differences in unemployment (conditional on gender, age, race/ethnicity, education, and citizenship) as the causal effect of military service on unemployment, but rather whether the sample of veterans drawn from the CPS and ACS are likely to be disadvantaged in the civilian labor market relative to non-veterans for reasons that relate to their pre-service characteristics, such as aptitude, health, or attitudes toward risk. It is our understanding that the NLSY97 is the only data source that allows one to investigate this question directly in a recent cohort of youth.

The NLSY97 began in 1997 with a cohort of 8,984 youths ages 12–16 as of December 31, 1996. The study has surveyed these same individuals every year since, recording a rich array of individual-level data on demographic, educational, labor market, health, and other outcomes. In the NLSY97, 405 males reported having ever served in the military as of the 2009 survey wave. The percentile scores on the Armed Services Vocational Aptitude Battery (ASVAB) and the health of these veterans (prior to entering the military) are then compared with the non-veterans in the NLSY97 sample, limiting the sample as in Chapter Two to male U.S. citizens who had received a GED or a high school diploma by the last survey wave.

Controlling for differences in race/ethnicity and age in 1997, respondents who eventually joined the military scored on average 3.6 percentile points higher on the ASVAB than respondents who did not; veterans were about 3-percent less likely to score in the bottom 30th percentile of the ASVAB distribution (see Table 3.3). Veterans were also healthier prior to joining the military than were their non-veteran peers. In 1997, respondents who subsequently joined the military were more likely to report they were in excellent or very good health, less likely to report taking medication for a chronic condition, less likely to have an emotional or behavioral problem, and were less likely to be overweight or obese than were respondents who did not subsequently join the military.

Thus, by these measures and in this data set at least, veterans do not appear to be any more likely than non-veterans to have observable characteristics that would lead them to have difficulty finding a job in later years. Indeed, in many ways, veterans appear to have observable characteristics that would provide them with a relative advantage in the civilian labor market, which suggests other factors are at play in causing elevated levels of unemployment following military separation.

Skills Mismatch

It is commonly asserted that military veterans are disadvantaged in the civilian labor market because their military skills are in low demand in the civilian economy (i.e., their military skills do not “transfer” well to civilian occupations). This disadvantage could lead to comparatively long periods of job search and unemployment. But there is little evidence to suggest that military training does, in fact, leave veterans with a skills deficit relative to their civilian peers. While it is reasonable to assume that some skills learned in the military will be in higher demand in the civilian sector than others, that is also likely to be true of civilians, some of whom have skills in high demand and some of whom do not.

The only study that attempts to quantify skill transferability comes to the conclusion that skill transferability is similar between individuals who received training in the military

Table 3.3
Estimated Correlation Between Veteran Status, Aptitude, and Health Prior to Military Service

Dependent Variable	Observations	Mean	Effect of Veteran Status
ASVAB percentile	3,144	47.67	3.60 (15.47)
ASVAB percentile >31	3,144	0.97	0.03 (0.01)
Excellent or very good health	3,904	0.77	0.05 (0.02)
Medication for chronic condition	3,461	0.11	-0.06 (0.02)
Emotional problem	3,462	0.15	-0.07 (0.02)
BMI	3,802	22.04	-0.81 (0.22)
BMI >24 (overweight)	3,802	0.20	-0.07 (0.02)
BMI >29 (obese)	3,802	0.05	-0.03 (0.01)

SOURCE: Data from NLSY97.

NOTES: Sample restricted to male U.S. citizens who earned at least a high school diploma or GED by the last survey wave. Each cell reports the effect of veteran status on the dependent variable listed estimated from a separate linear regression of the dependent variable on veteran status, age in 1997, and race/ethnicity. All variables measured in 1997. Standard errors are in parentheses.

and individuals who received training from civilian employers (Mangum and Ball, 1989). Goldberg and Warner (1987) show that veterans of the all-volunteer era whose principal military occupation was combat arms earn less than veterans whose principal military occupation developed a technical skill (e.g., communications, electrical engineering), but that study does not account for the fact that individuals select into military occupations and that the selection process could drive differences in earnings independently of differences in occupation.

Thus, the skills mismatch hypothesis is not well supported by existing studies both because skill transferability is likely to be a problem to some extent for both veterans and non-veterans and because veterans are not randomly assigned to military occupations. It is entirely possible that veterans that choose and were assigned to military occupations that did not develop skills in high demand in the civilian labor market would have acquired low-demand skills regardless of their military career. It is important to acknowledge, too, that the military is known for developing desirable soft skills, such as discipline, punctuality, initiative, and determination.

However, how civilian employers view those soft skills, and the fact that they were developed within the military environment, is not known.

On the other hand, post-separation schooling could obscure the full extent of any skill mismatch engendered by military service. According to Simon et al. (2009), for example, a little more than one-third of enlisted veterans who separated between 1993 and 2000 made use of Montgomery GI Bill benefits within the first two years of separation. Whether these individuals might have had a difficult time finding a job in the civilian labor market had they not gone back to school is unknown.

What is known, however, is that the gap between veteran and non-veteran unemployment declines rapidly with age and time since separation. This fact suggests that whatever skills mismatch is engendered by military service is overcome within a short period of time, at least insofar as it affects unemployment.

Employer Discrimination

Although specifically prohibited by federal law, it is possible that civilian employers discriminate against veterans. This discrimination could be the result of prejudice (e.g., some employers simply do not like the military institution or its members) or stereotyping (e.g., some employers believe that veterans do not make good employees because they have inappropriate skills or suffer mental illness). Employers might also be reluctant to hire members of the reserve components fearing they might be called to active duty, requiring the employer to backfill the position.

One commonly used approach to detect employer discrimination is through the use of an audit study. Audit studies present employers with applicants identical but for some individual-level immutable trait such as age, gender, or race/ethnicity. The mode of presentation varies across studies, but the most common approach is via the resume or job application. Although it is illegal to ask applicants about protected characteristics such as age, gender, and race/ethnicity, resumes and job applications can be crafted in such a way as to strongly suggest the presence of these characteristics (e.g., through the applicant's name or past work experience). Audit studies have been used to test for the existence of discrimination against a variety of characteristics, although race/ethnicity is the most common focus (see, for example, Bertrand and Mullainathan, 2004, and Oreopoulos, 2011).

Only one study to date has used this approach to test whether veterans suffer discrimination in the civilian labor market. Kleykamp (2009) faxed 984 pairs of resumes in response to advertisements for entry-level position job openings in New York City. The pairs of resumes were matched on key employment-related characteristics with veteran status indicated by work history and an indication of honorable discharge from service. Every hypothetical job candidate had earned a four-year college degree from a local noncompetitive college. Call-back rates for veterans and non-veterans were generally statistically indistinguishable but for one case: black veterans who indicated a combat arms occupation were less likely than black non-veterans to receive a call back.

Thus, while it is inevitable that some employers do in fact discriminate against veterans, the evidence reported by Kleykamp (2009) does not suggest discrimination plays a major role in the employment outcomes of veterans. More audit studies could be conducted to examine the robustness of this finding.

Job Search

Searching for a new job takes time. Employers are searching for individuals with certain characteristics, and individuals are searching for employers with certain characteristics. Even in a large and dynamic labor market such as the United States, this search process will take time. BLS (2011) estimates the median weeks needed to find a new job among the unemployed was five between 1994 and 2008; median weeks required to find a new job increased to ten in 2010.

Although one cannot demonstrate this directly with available data, it seems likely that veterans, especially younger veterans, are more likely to have recently separated from a job than are their civilian counterparts. Some veterans secure civilian employment before separating from the military, but the nature of military life may make it particularly difficult to make such arrangements. Thus, one obvious hypothesis for high unemployment among veterans relative to non-veterans is that veterans are more likely to be looking for work than non-veterans simply because they are more likely to have recently separated from a job, and finding a new job takes time regardless of veteran status.

The statistics presented in Chapter Two are consistent with this hypothesis, especially if one makes the reasonable assumption that younger veterans, all else equal, are more likely to have separated recently than older veterans:

- The difference between veteran and non-veteran unemployment declines with age (see Table 2.1).
- The difference between veteran and non-veteran unemployment increased markedly during the Great Recession among those ages 18–24, but much less so for those ages 25–30, and hardly at all for those ages 30–40 (see Table 2.1); these facts are consistent with the common-sense assertion that, once an individual is separated, finding a job during periods of high unemployment is likely to take longer than during periods of low unemployment.
- Unemployment is higher among veterans separated within the previous year than it is for veterans separated for more than one year (see Figure 2.7).
- The difference between veteran and non-veteran unemployment declines with months in sample in the CPS (see Table 2.3).

Also consistent with this hypothesis is the fact that the difference in unemployment between veterans and non-veterans is considerably smaller once one focuses in on individuals who were employed in the first month they appeared in the CPS sample. Table 3.4 reports the effect of veteran status estimated from a linear regression of unemployment on veteran status, age, race, month in sample, year, and month. The table shows that among those ages 18–24 in the 2000–2008 time period, the effect of veteran status on the unemployment rate is 2.7 percentage points. The estimated effect of veteran status, though, falls to a statistically insignificant -0.04 percentage points once the data are limited to the sample that is employed when first observed in the sample. An interpretation of these findings is that young veterans have relatively high unemployment rates upon separation, but that once they have found a civilian job, they are no more likely to be subsequently unemployed than are younger non-veterans. A similar pattern of results is evident for older veterans and during the 2009–2012 period, although veteran status is still positively correlated with unemployment in the sample employed in the

Table 3.4
Estimated Correlation Between Veteran Status and
Unemployment, by Initial Employment Status, Age, and Year

Age	All	Employed First Month in Sample
2000–2008		
18–24	2.71 (0.48)	–0.04 (0.24)
25–40	0.53 (0.10)	0.22 (0.06)
2009–2011		
18–24	8.21 (1.25)	1.67 (0.66)
25–40	1.41 (0.27)	0.31 (0.13)

SOURCE: Data from 2000–2012 monthly CPS.

NOTES: Sample restricted to male U.S. citizens who have earned at least a high school diploma or GED and who are not currently serving on active duty. Each cell reports the effect of veteran status on unemployment estimated from a separate regression of unemployment on veteran status, age, race/ethnicity, month in sample, year, and month. Standard errors (in parentheses) are clustered at the individual level.

first observed month in sample. Younger veterans are 1.7 percentage points more likely to be unemployed than non-veterans conditional on being employed in the first month in sample.

Admittedly, selection could also account for the findings reported in Table 3.4: Conditioning on initial employment might select a group of younger veterans who are inherently more employable. If this type of selection were in operation, though, one might expect to see more persistence in the gap between veteran and non-veteran unemployment with age.

Can Veteran Job Search Be Shortened?

The available evidence presented in the previous chapters is most consistent with the hypothesis that veterans are more likely to be unemployed than non-veterans because they are more likely to have recently separated from a job—namely, military service—and, therefore, are more likely to be in the process of finding a new job. The difference between veteran and non-veteran unemployment is substantially less among older veterans and slightly less among veterans separated from the military for more than one year. Longitudinal analyses show further that unemployment of veterans and non-veterans converges with months in sample in the CPS and that veterans and non-veterans who are initially employed in the CPS have similar rates of subsequent unemployment. If military service significantly disadvantaged veterans in the civilian labor market in the long run, one would expect the difference in veteran and non-veteran unemployment to be more persistent with age.

Moreover, specific hypotheses for chronically elevated levels of veteran unemployment do not have much support in the available data. Veterans are somewhat more likely to suffer a work-limiting health condition than non-veterans, but that fact explains little of the observed difference in unemployment between the two groups. Data also suggest that veterans compare favorably to non-veterans in terms of ability and health prior to military service. The employer discrimination and skills mismatch hypotheses have little direct support, although both hypotheses could be investigated further.

If this general line of argument is accepted, then it seems clear that policy should focus on reducing the amount of time it takes newly separated veterans to find a job that matches well with their existing skill set or begin investing in additional education and training that will prepare them for a civilian job suited to their innate ability. One way to categorize potential policies in this area is by whether they address demand- or supply-side barriers to employment.

Demand-side policies focus on stimulating employer demand for veterans. For example, a variety of federal agencies facilitate the job search process through job fairs, online job search services (e.g., DoL's CareerOneStop program), and facilitating connections between service members and employers prior to separation (e.g., Army Partnership for Youth Success [PaYS]). Explicit federal hiring preferences for disabled veterans and veterans of certain military operations as well as federal law barring discrimination against veterans (i.e., Uniformed Services Employment and Reemployment Rights Act) also operate on the demand side. The 2011 VOW to Hire Heroes Act includes a number of demand-side provisions, including tax credits for employers who hire veterans who have been unemployed for six months or more.

Supply-side policies aim to help veterans more effectively search for civilian employment immediately before and after separation. For example, the TAP, coordinated by the Veterans' Employment and Training Service within DoL, offers three-day workshops at selected mili-

tary installations nationwide providing guidance on job search strategy, career decisionmaking, resume preparation, and interviewing techniques. The VOW to Hire Heroes Act makes participation in TAP workshops mandatory. The Act also allows service members to apply for federal jobs before separating from military service.

There is little evidence that these types of demand- and supply-side policies have a significant effect on reducing job search duration among recently separated veterans. For example, a national evaluation of the TAP program found that veterans participating in TAP on average found jobs three weeks sooner than veterans who did not (U.S. Department of Labor, undated). However, that correlation between TAP participation and job search duration could very well reflect variation in unobserved characteristics of veterans that are correlated with job search. It could be that the most highly motivated veterans participate in TAP, leading to an overestimate of the effectiveness of the program; on the other hand, it could be that the program attracts only veterans who are having difficulty finding a job, leading to an underestimate of the effectiveness of the program. Without exogenous variation in program participation (perhaps accomplished via a random assignment program evaluation), one is unlikely to ever know whether TAP in fact improves short-run labor market outcomes.

Heaton (2012) finds that veteran hiring tax credits authorized by the Work Opportunity Tax Credit program enacted in 2007 and 2009 increased employment of targeted groups of disabled veterans by 2 percentage points. These employment effects were concentrated among disabled veterans 40 years and older, so whether the recent expansion of hiring tax credits authorized by the VOW to Hire Heroes Act will be as effective in reducing unemployment among non-disabled younger veterans is not known.

Perhaps one of the most significant policy influences on job search behavior is the military counterpart to the civilian unemployment insurance system, Unemployment Compensation for Ex-Servicemembers. Honorably discharged active component personnel and reserve component personnel completing a period of active-duty service of 90 or more days are eligible to receive UCX benefits regardless of whether their separation was voluntary in nature. UCX eligibility, benefit levels, and duration are otherwise determined by regulations governing the civilian unemployment insurance program. UCX benefits are typically available for up to 26 weeks, although, as under unemployment insurance, eligibility has been extended to as many as 99 weeks in recent years in response to persistently high unemployment.

Like unemployment insurance, UCX is intended to provide insurance against involuntary unemployment and supply financial assistance during the job search process. There is no evidence on the effect of UCX specifically on job search duration, but a number of studies have demonstrated that unemployment duration increases with unemployment benefits and weeks of potential unemployment insurance eligibility (see Nicholson and Needels, 2006, for a review of this literature). That unemployment insurance (and most likely UCX) would reduce incentives to find work should come as no surprise, since moral hazard is endemic to almost any insurance system.

It seems quite likely, then, that curtailing UCX benefits would result in shorter periods of unemployment following separation, and there is precedent for doing so. Between 1982 and 1991, eligible service members could not claim UCX until four weeks after separation, and then for only a period of 13 weeks. But since 1991, federal statute has stipulated that UCX abide, for the most part, by state laws governing unemployment insurance (Loughran and

Klerman, 2008), and it seems unlikely that Congress would pass legislation now to end this equivalent treatment of veterans and non-veterans.

More research on the effectiveness of existing demand- and supply-side policies is surely needed, but it might be that there is, in fact, little additional room for public policy to affect veteran unemployment. A job separation is very likely to result in a period of unemployment, and the very nature of military service means that veterans, especially younger veterans, are more likely to find themselves separated from a job. The length of that unemployment spell could likely be shortened by reducing financial support provided by UCX, but the net effect of reducing UCX benefits on state and federal expenditures is not immediately clear. It is possible, for example, that, in the absence of UCX benefits, more veterans would choose to use their Montgomery GI Bill benefits to go to school or obtain vocational training. Other veterans might accept jobs that are a poor match, reducing unemployment in the short run but increasing unemployment and unemployment insurance expenditures in the longer run.

Thus, it might be that relatively high veteran unemployment is an unavoidable cost of maintaining a volunteer military that relies so heavily on the services of the young. The public might take comfort, however, in the fact that the available evidence indicates that elevated levels of veteran unemployment are short-lived and that, on average, veterans in the longer run perform quite well in the civilian labor market relative to their peers.¹

¹ See, for example, Loughran et al. (2011), who find that military enlistees on average earn 11 percent more than comparable non-enlistees 14–18 years following application.

Bibliography

- Angrist, Joshua, "Estimating the Labor Market Impact of Voluntary Military Service Using Social Security Data on Military Applicants," *Econometrica*, Vol. 66, 1998, pp. 249–288.
- Angrist, Joshua, "Lifetime Earnings and the Vietnam Era Draft Lottery: Evidence from Social Security Administrative Records," *American Economic Review*, Vol. 80, 1990, pp. 313–335.
- Bertrand, Marianne, and Sendhil Mullainathan, "Are Emily and Greg More Employable Than Lakisha and Jamal? A Field Experiment on Labor Market Discrimination," *American Economic Review*, Vol. 94, No. 4, 2004, pp. 991–1013.
- Black, Dan, Amer Hasan, Parvati Krishnamurty, and Julia Lane, *The Labor Market Outcomes of Young Veterans*, Chicago, Ill.: NORC, 2008.
- Bureau of Labor Statistics, *How Long Before the Unemployed Find Jobs or Quit Looking?* Washington D.C., 2011.
- , "Employment Situation of Veterans—2011," 2012. As of March 12, 2014:
http://www.bls.gov/ted/2012/ted_20120323.htm
- , "Economic News Release: Employment Situation," 2013. As of March 13, 2014:
<http://www.bls.gov/news.release/empstoc.htm>
- Goldberg, Matthew S., and John T. Warner, "Military Experience, Civilian Experience, and the Earnings of Veterans," *Journal of Human Resources*, Vol. 22, No. 1, 1987, pp. 62–81.
- Heaton, Paul, *The Effects of Hiring Tax Credits on Employment of Disabled Veterans*, Santa Monica, Calif.: RAND Corporation, OP-366-OSD, 2012. As of April 28, 2014:
http://www.rand.org/pubs/occasional_papers/OP366.html
- Kleykamp, Meredith, "A Great Place to Start? The Effect of Prior Military Service on Hiring," *Armed Forces and Society*, Vol. 35, No. 2, 2009, pp. 266–285.
- Loughran, David S., Paco Martorell, Trey Miller, and Jacob A. Klerman, *The Effect of Military Enlistment on Earnings and Education*, Santa Monica, Calif.: RAND Corporation, TR-995-A, 2011. As of March 18, 2014:
http://www.rand.org/pubs/technical_reports/TR995.html
- Loughran, David S., and Jacob Alex Klerman, *Explaining the Increase in Unemployment Compensation for Ex-Servicemembers During the Global War on Terror*, Santa Monica, Calif.: RAND Corporation, TR-588-OSD, 2008. As of March 18, 2014:
http://www.rand.org/pubs/technical_reports/TR588.html
- Mangum, Stephen, and David Ball, "The Transferability of Military-Provided Occupational Training in the Post-Draft Era," *Industrial and Labor Relations Review*, Vol. 42, 1989, pp. 230–245.
- Nicholson, Walter, and Karen Needels, "Unemployment Insurance: Strengthening the Relationship Between Theory and Policy," *Journal of Economic Perspectives*, Vol. 20, No. 3, Summer 2006, pp. 47–70.
- Office of the Under Secretary of Defense for Personnel and Readiness, "Population Representation in the Military Services," 2011. As of March 14, 2014:
<http://prhome.defense.gov/RFM/MPP/AP/POPREP.aspx>

Oreopoulos, Philip, "Why Do Skilled Immigrants Struggle in the Labor Market? A Field Experiment with Thirteen Thousand Resumes," *American Economic Journal: Economic Policy*, Vol. 3, No. 4, 2011, pp. 148–171.

Simon, Curtis, Sebastian Negrusa, and John Warner, "Educational Benefits and Military Service: An Analysis of Enlistment, Reenlistment, and Veterans' Benefit Usage 1991–2005," *Economic Inquiry*, Vol. 48, No. 4, 2009, pp. 1008–1031.

U.S. Census Bureau, American Community Survey (ACS), various dates. As of March 13, 2014:
http://www.census.gov/acs/www/methodology/methodology_main/

———, Current Population Survey (CPS), various dates. As of March 12, 2014:
<http://www.census.gov/cps/>

U.S. Department of Labor, Veterans' Employments and Training Service, "VETS Fact Sheet 1: Program Highlights," undated. As of March 14, 2014:
http://www.dol.gov/vets/programs/tap/tap_fs.htm

U.S. Federal Reserve, "Economic Projections of Federal Reserve Board Members and Federal Reserve Bank Presidents," December 2012. As of March 12, 2014:
<http://www.federalreserve.gov/monetarypolicy/files/fomcprojtabl20121212.pdf>

Zoroya, Gregg, "Veterans' Jobless Rate Falls but Remains High," *USA Today*, January 6, 2013.