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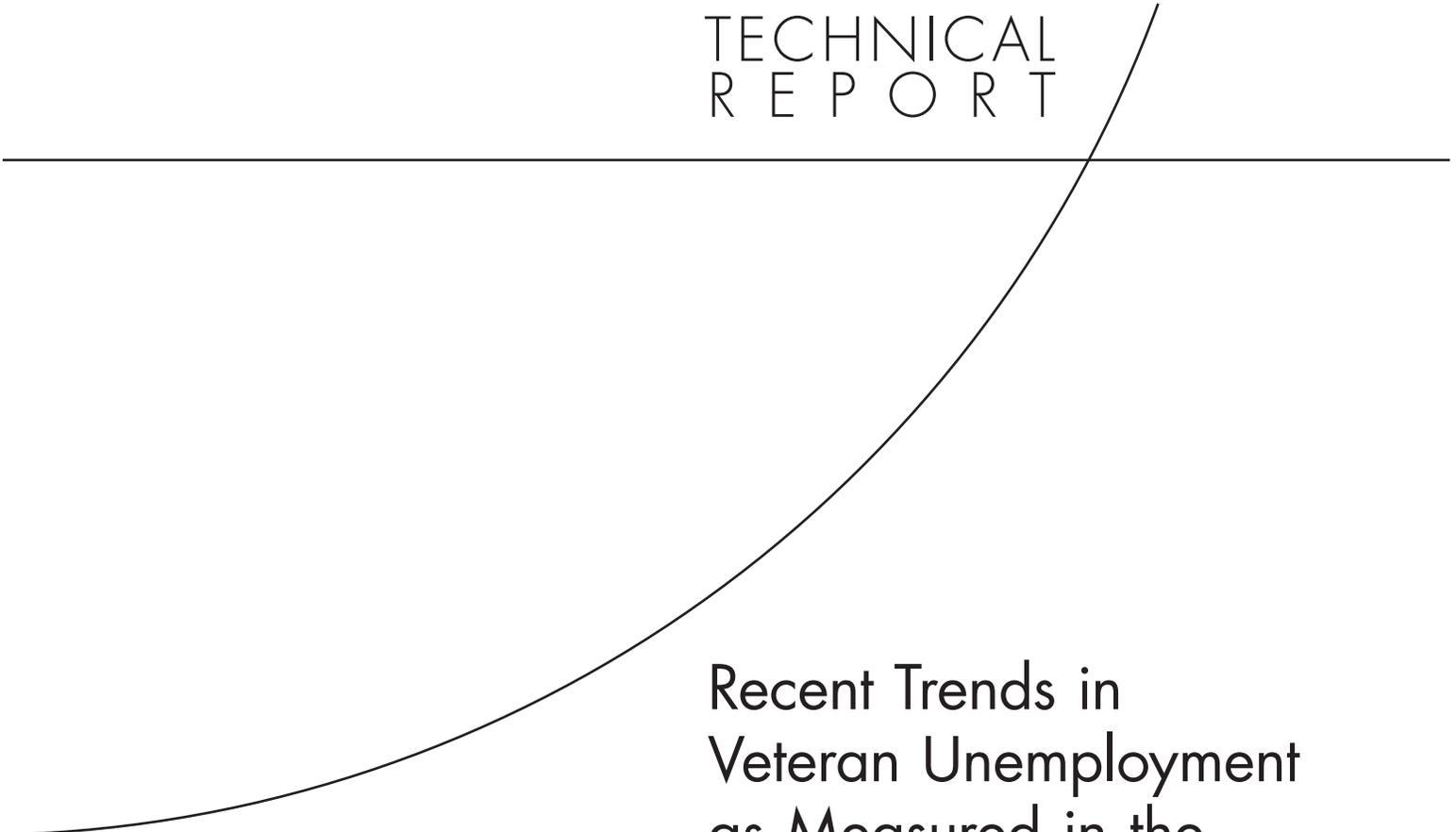
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R E P O R T

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Recent Trends in  
Veteran Unemployment  
as Measured in the  
Current Population Survey  
and the American  
Community Survey

Bogdan Savych, Jacob Alex Klerman,  
David S. Loughran

Prepared for the Office of the Secretary of Defense

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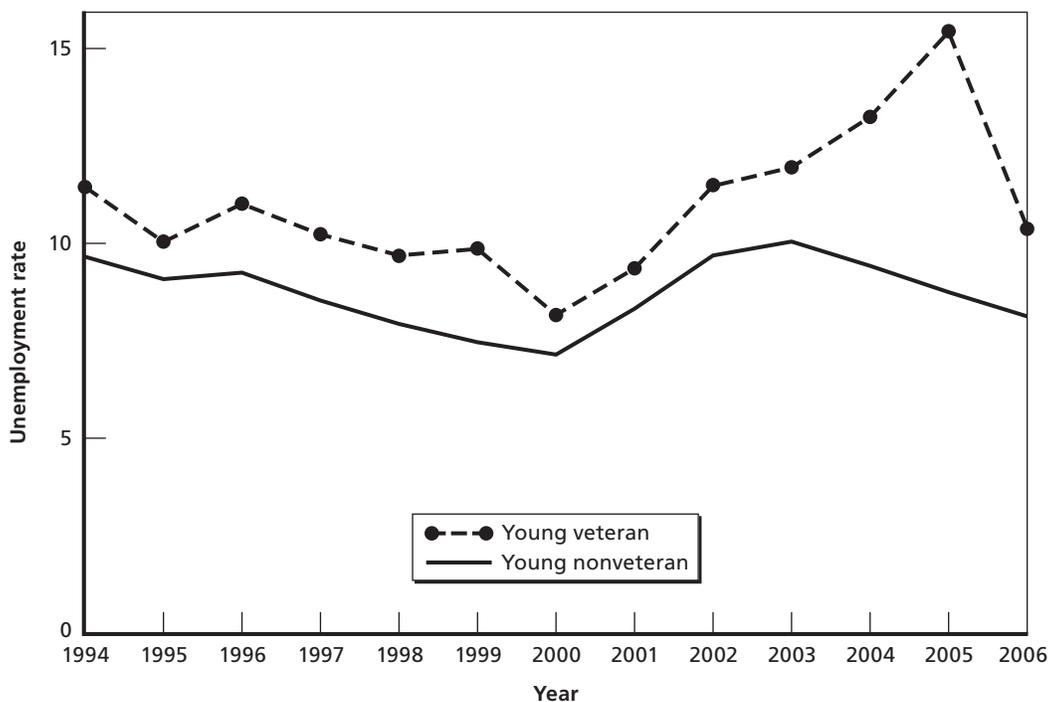
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## Summary

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Official Bureau of Labor Statistics tabulations from the CPS show that the unemployment rate of young veterans ages 20–24 increased from 11.0 percent in 2003 to 15.6 percent in 2005. The increase in unemployment among veteran youth was particularly worrisome to policymakers since, between those same years, the overall youth unemployment rate declined (see Figure S.1). In 2006, however, official statistics show that the unemployment rate of veteran youth returned to a level more consistent with long-run historic norms (10.4 percent in 2006).

**Figure S.1**  
**Youth Unemployment Rate, by Veteran Status**



SOURCE: Authors' computations based on 1994–2006 monthly CPS data.  
NOTE: Sample restricted to youth ages 20–24 in the labor force.

RAND TR485-S.1

This increase in veteran youth unemployment between 2003 and 2005 is worrisome since it raises the possibility that young veterans are having difficulty transitioning to civilian jobs following deployment to Iraq or Afghanistan. On the other hand, the decrease in veteran youth unemployment between 2005 and 2006 is seen by some as a sign that veteran transition programs are helping veterans successfully transition to the civilian labor market.

While these are reasonable hypotheses, there is also an alternative explanation. In this report, we explore whether the increase in unemployment among veteran youth between 2003 and 2005, and then its decrease in 2006, can be attributed to sampling variation alone. We do this by computing unemployment rates in the CPS and in the much larger ACS and formally testing whether the variation in veteran and nonveteran unemployment rates is statistically significant.

### Veteran Unemployment in the CPS

The CPS's sample size of approximately 50,000 households makes it among the largest regular surveys in the world. However, young veterans are relatively rare in the overall population. On average, about 115 young veterans take part in each monthly CPS, about 96 of whom are in the labor force. The small number of young veterans surveyed in the CPS means that unemployment statistics for that group are likely to vary considerably from month to month because of sampling variability (i.e., which dwelling units happen to be selected for the sample) alone.

Figure S.1 illustrates that between 2003 and 2005, the unemployment rate of young veterans included in the CPS increased by 4.6 percentage points, whereas the unemployment rate of nonveteran youth decreased by 1.9 percentage points. However, between 2005 and 2006, the veteran youth unemployment rate decreased by 5.2 percentage points, whereas the nonveteran youth unemployment rate decreased by only 0.6 percentage points. Thus, the gap between veteran and nonveteran unemployment rates increased sharply between 2003 and 2005 and then decreased sharply between 2005 and 2006.

Are the wide swings in the unemployment rate of veteran youth indicated by the CPS real or simply the result of sampling variation? To investigate the possibility that sampling variation is the cause of these swings in veteran youth unemployment, we computed standard errors on the annual point estimates of the veteran and nonveteran youth unemployment rates, accounting for the CPS's sampling design and the fact that CPS respondents are surveyed multiple times per year.

We then formally tested two hypotheses. The first hypothesis is that the changes in unemployment rates between 2003 and 2005 of veteran and nonveteran youth are equivalent:

$$H_1 : \Delta_1 = \left[ U_{05}^V - U_{03}^V \right] - \left[ U_{05}^{NV} - U_{03}^{NV} \right] = 0$$

where  $U_t^V$  is the unemployment rate of veteran youth in year  $t$  and  $U_t^{NV}$  is the unemployment rate of nonveteran youth in year  $t$ . Thus,  $\Delta_1$  is the difference between the change in veteran youth unemployment between 2003 and 2005 and the change in nonveteran youth unemployment between 2003 and 2005, which is 4.8 percentage points. We estimate a standard error of

2.4 percentage points on  $\Delta_1$ .<sup>1</sup> Thus,  $\Delta_1$  is statistically significant at the 95-percent confidence level, and so we can reject the hypothesis that the changes in unemployment rates between 2003 and 2005 of veterans and nonveteran youth are equivalent.

The second hypothesis is that the changes in unemployment rates between 2005 and 2006 of veteran and nonveteran youth are equivalent:

$$H_2 : \Delta_2 = \left[ U_{06}^V - U_{05}^V \right] - \left[ U_{06}^{NV} - U_{05}^{NV} \right] = 0$$

So,  $\Delta_2$  is the difference between the change in veteran youth unemployment between 2006 and 2005 and the change in nonveteran youth unemployment between 2006 and 2005, which is  $-4.5$  percentage points. We estimate a standard error of 2.3 percentage points on  $\Delta_2$ .<sup>2</sup> The p-value for  $\Delta_2$  is 0.052, which means that  $\Delta_2$  is on the margin of statistical significance at the 95-percent confidence level.

To summarize, while estimated changes in the veteran youth unemployment rate between 2003 and 2006 are large, so are the standard errors associated with those estimates. Nonetheless, the CPS data show that veteran youth unemployment increased by more than nonveteran youth unemployment between 2003 and 2005 and that this relative increase is statistically significant at the 95-percent confidence level. The relative decline in veteran youth unemployment between 2005 and 2006 is statistically significant at the 94-percent confidence level. We note, however, that we most likely underestimate standard errors in both cases since we have insufficient information to fully account for the sampling structure of the CPS. If these standard errors are in fact underestimated, then it is likely that we would fail to reject either hypothesis at the 95-percent confidence level and perhaps even at the 90-percent confidence level.

## Veteran Unemployment in the ACS

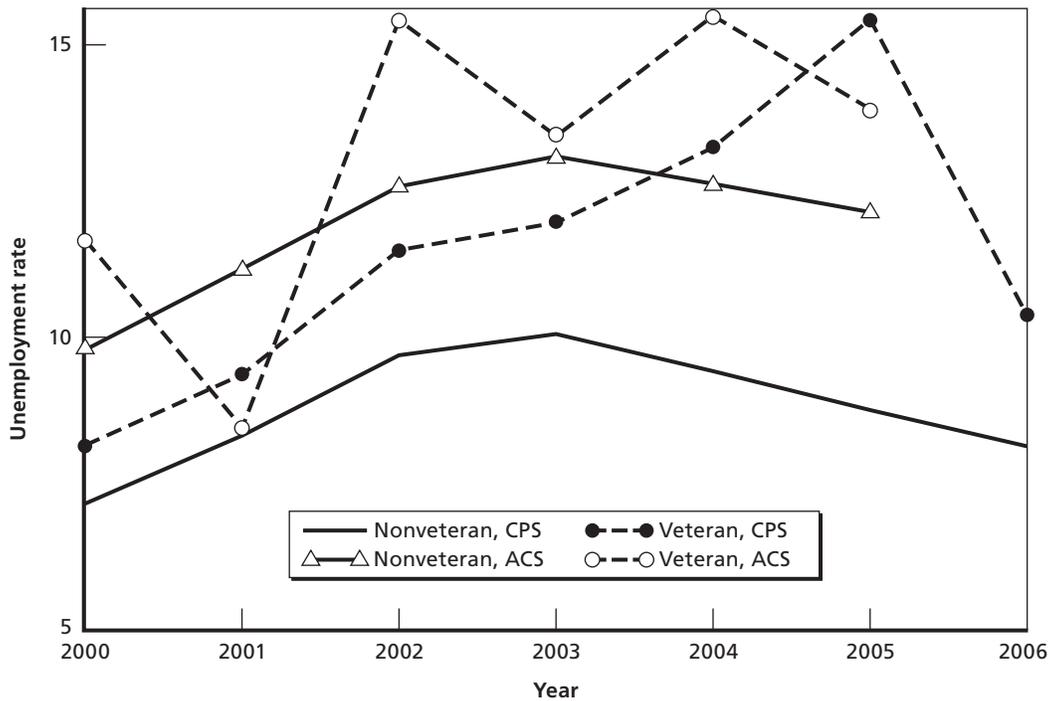
The ACS contains a much larger sample of veteran youth than does the CPS. In 2005, the ACS contained more than 2,300 young veterans. Furthermore, unlike the CPS, the ACS interviews a new sample each month; the fact that these 2,300 observations are independent from one another improves our ability to make inferences from this sample relative to the CPS sample.

Figure S.2 plots annual unemployment rates for veteran and nonveteran youth between 2000 and 2005 in the CPS and ACS. The time-series in unemployment for nonveteran youth in the ACS is similar to what we observe in the CPS, but the time-series in unemployment for veteran youth is somewhat different. In particular, while veteran youth unemployment increases between 2003 and 2004, as in the CPS, it falls back to its 2003 level in 2005.

<sup>1</sup> We computed the difference and its standard errors using the “lincom” command in Stata. The standard errors take into account the structure of the CPS as described in the text above. The 95-percent confidence interval for  $\Delta_1$  is (0.2, 9.4) percentage points.

<sup>2</sup> The 95-percent confidence interval on  $\Delta_2$  is  $(-8.9, 0.04)$  percentage points.

**Figure S.2**  
**CPS and ACS Unemployment Rate, by Veteran Status and Year: Youth Age 20–24**



SOURCE: Authors' computations based on 1994–2006 monthly CPS data and 2000–2005 PUMS ACS.  
 RAND TR485-S.2

As we did with the CPS, using ACS data, we tested whether the unemployment rate of veteran youth trends differently than the unemployment rate of nonveteran youth. To test this hypothesis, we computed the following differences and estimated their standard errors:

$$\Delta_1 = [U_{04}^V - U_{03}^V] - [U_{04}^{NV} - U_{03}^{NV}] \text{ and } \Delta_2 = [U_{05}^V - U_{03}^V] - [U_{05}^{NV} - U_{03}^{NV}]$$

We estimate  $\Delta_1$  to be 2.5 percentage points with a standard error of 1.7 and  $\Delta_2$  to be 1.4 percentage points with a standard error of 1.7.<sup>3</sup> Neither difference is statistically significant at the 95-percent confidence level. Thus, we conclude that, unlike in the CPS, the ACS provides no evidence that unemployment of veteran youth increased relative to nonveteran youth between 2003 and 2005.

<sup>3</sup> The 95-percent confidence interval on  $\Delta_1$  is (-1.4, 6.4), and the confidence interval on  $\Delta_2$  is (-1.9, 4.7).

## Discussion

Our analysis of CPS data, the official source for unemployment statistics in the United States, indicates that veteran youth unemployment increased relative to nonveteran youth unemployment between 2003 and 2005 and that this relative increase is statistically significant. The CPS data also show that veteran youth unemployment decreased between 2005 and 2006.

The seesaw pattern in veteran unemployment between 2003 and 2006 is difficult to understand in light of current events. It seems possible that veteran youth unemployment could have increased between 2003 and 2005 as large numbers of active-component and reserve personnel returned to the civilian labor market following lengthy deployments to Iraq or Afghanistan. But why would veteran youth unemployment then fall between 2005 and 2006? It is difficult to believe that economic conditions in general could have such widely differing impacts on the civilian labor market outcomes of veterans and nonveterans. It also seems unlikely that the availability of transition-assistance programs for veterans could account for this large relative decline in unemployment.

In order to argue that the decline in veteran youth unemployment between 2005 and 2006 was attributable to transition-assistance programs offered by the U.S. Department of Defense, the U.S. Department of Labor, and the U.S. Department of Veteran Affairs, one would need to argue both that these programs have a large positive effect on military-civilian transitions in general and that they were substantially more effective in late 2005 and early 2006 than they had been in the previous three years. On the first issue, evidence from random assignment studies suggests that the effects of employment-assistance programs in general are likely to be small.<sup>4</sup> On the second issue, we are unaware of any major changes in these transition programs that would lead to substantially larger program effects in 2006 than in previous years.<sup>5</sup>

Our analysis of ACS unemployment data also draws into question whether veteran youth unemployment, in fact, increased relative to nonveteran youth unemployment between 2003 and 2005. While veteran youth unemployment did increase in the ACS data between 2003 and 2004, it fell between 2004 and 2005, and none of those changes in unemployment rates relative to changes in nonveteran youth unemployment rates is statistically significant.

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<sup>4</sup> See, for example, Greenberg et al. (2005, 2001).

<sup>5</sup> Strengthening the argument that the drop in veteran youth unemployment is unlikely to be due to transition-assistance programs, young veterans sampled by the CPS in 2006 could have separated in any number of years before that date. Consequently, veterans in this sample would have received their transition assistance in a number of different years and so we would expect even major improvements in transition programs to have only modest effects on unemployment in this overall sample of veterans.