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Abstract

Disabled veterans are less likely to work today than in the past; between 1995 and 2014, the percent of veterans who were working while receiving disability compensation from the Department of Veterans Affairs (VA) dropped from 62 percent to 49 percent. This drop has led the VA – which liberalized the list of health conditions that qualify veterans for benefits in the early 2000s – to face the same concern as the Social Security Administration: that the proportion of individuals receiving disability income who could work, but do not, has grown. Using the *Current Population Survey's Veterans Supplement*, this paper finds that employment and labor force participation rates have fallen for disabled veterans only modestly more than for non-disabled veterans. Adjusting for the rapid aging of the disabled veteran population reduces the gap in labor market activity between disabled and non-disabled veterans by 40-70 percent. Although the share of veterans with disability ratings of 50 percent or greater (indicating severe disability) has increased, the most-disabled veterans have not reduced their labor market activity – if anything, their labor supply has actually increased. The results suggest that the decline in employment and labor force participation of disabled veterans is largely a function of age and the increased prevalence of severe disability and not a changing propensity for work. This finding should alleviate concerns that the Veteran's Administration disability system is discouraging employment any differently than in the past.

Introduction

The Veterans Benefits Administration (VBA), part of the U.S. Department of Veterans Affairs (VA), paid out nearly $50 billion in disability compensation benefits to 3.7 million veterans with service-connected health conditions in fiscal year 2013 (VBA 2014). To qualify for benefits, a veteran must be assigned a "disability rating" by the VBA, ranging from 0 (least disabled) to 100, which is meant to capture how much their earnings potential has been reduced by their service-connected condition.

Despite bipartisan support, the VA system has come under criticism both in the popular press (Zarembo 2014) and by government auditors (GAO 2015) for insufficient consideration of employability in awarding disability benefits. Some of these critiques echo concerns about Social Security Disability Insurance (SSDI) and Supplemental Security Income (SSI) – mainly, that some individuals capable of working are receiving disability compensation instead. In the case of VA benefits, work and disability receipt are not meant to be mutually exclusive as they effectively are for SSDI. Much as research suggests that SSDI applications respond to economic conditions as well as deteriorating health (see Autor and Duggan 2006 for a review), studies of the VA system have found that low-skilled workers are particularly sensitive to macroeconomic conditions and liberalization of qualifying health conditions (Angrist, Chen, and Frandsen 2010; Coile, Duggan, and Guo 2015).

While the growth in expenditures for SSDI and SSI have received a great deal of attention, VA disability compensation expenditures have grown even faster: 158 percent from 2000 to 2013 (adjusting for inflation), compared to 37 percent for SSI and 91 percent for SSDI.[1] This rapid growth occurred largely because of a liberalization in the list of health conditions that qualify veterans for disability benefits, including the addition of post-traumatic stress disorder and health conditions associated with exposure to Agent Orange (Autor et al. 2014). These facts raise two questions: 1) are today's disabled veterans less likely to work than in the past, and 2) if so, why?

[1] Authors' calculations using totals from the VBA (2014) and SSA (2014a, 2014b). Expenditure totals are adjusted using the Consumer Price Index for all urban workers. The number of VA disability recipients has grown by 63 percent in 2000, situating the VA program between the 77 percent growth in SSDI beneficiaries and 36 percent growth in SSI. Coile, Duggan, and Guo (2015) explain that the faster growth in expenditures than in the number of recipients is due to increases in benefits for veterans already receiving compensation when rules were liberalized.

To answer these questions, this project uses the *Current Population Survey* (CPS) *Veterans Supplement* to investigate the relationship between labor supply and a veteran's level of disability over the 1995-2014 period. These data, in isolation and without controls for the characteristics of the veteran population, indicate that disabled veterans are, indeed, working less than in the past; in 1995, 62 percent of veterans with a disability rating were employed, but in 2014, just 49 percent worked.[2] At face value, a fall in labor market activity is concerning, especially considering recent improvements in the work environment for individuals with health conditions: advancements in healthcare, a reduction in the physicality of employment, and the expansion of employers' legal obligation to accommodate employees' disabilities after the Americans with Disabilities Act. In this simple context, it is unclear why such a large drop would occur.

In a broader context, the fall in employment and labor force participation among disabled veterans is less concerning. The decline looks very similar to the declines in these measures for non-disabled veterans, and much of this pattern has a simple explanation: the population is aging. In fact, the veteran population has aged even faster than the general population, and the disabled veteran population faster still; the plurality of current veterans served during the Vietnam era and are at least 60 years old, when they would be starting to exit the labor force anyway. After controlling for aging and other personal characteristics, disabled veterans' employment and labor force participation rates have fallen only slightly – though statistically significantly – faster than among non-disabled veterans. However, even this faster relative decline has an age-related explanation: as disabled veterans age, their disability tends to worsen (as reflected by increased disability ratings), further limiting their work. In other words, the population of disabled veterans has become both relatively older and relatively more disabled than it was in the mid-1990s, entirely explaining the observed decline. In fact, the most-disabled veterans – those with ratings between 50 and 100 percent, a group that has ballooned since the early 2000s – have actually *increased* their labor supply relative to non-disabled veterans. In other words, disabled veterans today are not reacting to the system any differently than they have since the mid-1990s.

This paper is organized as follows. Section 2 provides background on the VA disability compensation program and reviews the literature on employment among its recipients. Section 3 describes the CPS *Veterans Supplement* data and the methodology used in this analysis. Section

[2] This decrease in the employment rate is statistically significant at the 99 percent confidence level.

4 presents descriptive figures and regression estimates comparing employment and labor force participation rates between non-disabled and disabled veterans, or between non-disabled veterans and disabled veterans with high or low disability ratings. Section 5 concludes that the decline in labor market activity among disabled veterans nearly parallels the decline in non-disabled veterans as both groups age toward retirement. This study also suggests that while the VA may respond to fiscal pressure and efficiency concerns by tying its disability evaluations more closely to employability, as recommended by reformers, the results show little evidence of disproportionate reductions in labor supply among the growing number of disabled veterans over the last two decades.

Background

Although the U.S. government has been paying veterans for service-connected health conditions since the American Revolution, the modern disability rating – the VA Schedule for Rating Disabilities (VASRD) – was created in 1919 following World War I and revised following World War II. The VASRD assigns veterans a number between 0 and 100 percent (in 10-percentage-point increments) based on the nature and severity of injuries or illnesses that they suffered as a result of their military service. The disability rating is a rule-based system in which a veteran's diagnosis leads to a particular rating, and multiple conditions increase the payment (though at a diminishing rate). For example, hearing impairment with frequent vertigo is assigned a disability rating of 100 percent, whereas hearing impairment with infrequent vertigo a rating of 30 percent. The end purpose of these rules is to capture the damage done to a veteran's ability to work due to a service-connected disability. For this reason, a veteran's disability rating is related to the amount of disability compensation he can receive. A 10-percent rating pays $133 per month in 2015; at 50 percent, $836; and at 100 percent, the veteran receives $2,907. Benefits are increased annually with the Consumer Price Index, and veterans with spouses, children and dependent parents receive larger monthly checks; for example, a 50-percent-rated disabled veteran with a spouse and one child receives $976 per month.

Interestingly, though the rating is supposed to take into account the extent to which the service-connected health condition impedes work, VA benefits are not earnings-tested. The 50-percent-rated veteran with a spouse and one child receives that $976 payment each month no matter how much he earns from employment. The lack of an earnings test stands in stark

contrast to SSDI, where earning over the Substantial Gainful Activity ceases payment after a trial work period, and SSI, where each dollar of earnings (above a small threshold) reduces benefits by 50 cents. SSDI and SSI beneficiaries have work disincentives from both the income effect – the receipt of non-labor income increases the demand for leisure – and the substitution effect – earnings may reduce the benefit, making work expensive. In contrast, as Autor and Duggan (2007) point out, VA disability recipients' work decision does not encounter the substitution effect because they keep their full dollar of extra earnings; if veterans' benefits do decrease their labor supply, it is only through the income effect. And while the income effect may reduce work effort, the analysis below indicates that many VA disability recipients – even those with ratings of 50 percent or higher – choose to work.[3] The question in this paper is whether, despite this lack of work disincentives, they have become less likely to work over time and what this means for the VBA disability program.

While the VASRD has evaluated disability in nearly the same way since World War II (Spotwood 2012), enrollment in the disability compensation program has risen rapidly since 2000 due to the expansion of health conditions considered to be service-related. In particular, veterans with documented cases of post-traumatic stress disorder or one of the many health conditions associated with exposure to chemicals (e.g., Agent Orange) in Southeast Asia or the Persian Gulf region now qualify for benefits, even if the effects of these conditions emerge only decades later. A number of studies, mostly conducted by Mark Duggan and coauthors, have used this liberalization of qualifying health conditions to estimate the effect of VA benefits on labor force participation and employment. These studies find that Vietnam-era veterans, who benefited most from the expanded list of conditions, have lower labor force participation rates than non-veterans (Autor and Duggan 2007; Autor, Duggan, and Lyle 2011; Coile, Duggan, and Guo 2015). Angrist, Chen, and Frandsen (2010) also compare veterans and non-veterans from this cohort, using the Vietnam draft lottery as an instrument; they find that military service had no effect on labor force participation overall, but that less-educated white male veterans – the group most likely to take advantage of less stringent disability screening – were less likely to be in the labor force than similar non-veterans. But these studies are focused almost entirely on the

[3] Wilmoth, Heflin, and London (2013) point out that, because the VA disability system does not directly discourage work, a substantial portion of recipients are employed, thereby reducing their probability of allowance in SSDI and SSI. The lower probability of success likely reduces their probability of applying.

Vietnam cohort and require either strict assumptions about the differences between non-veterans and veterans or instruments like the draft lottery that are not available for subsequent cohorts.

This study takes a different approach and limits the analysis to veterans, comparing employment outcomes of disabled veterans to a logical control group: non-disabled veterans. Limiting the analysis in this way makes sense because individuals who serve in the military may differ from those who opt not to serve in many ways that may influence their labor market outcomes over the life cycle. Other studies have also compared veterans to each other, but only within the Vietnam era. Duggan, Rosenheck, and Singleton (2010) find little difference in labor force participation between "boots on the ground" veterans who saw combat in Vietnam, Cambodia, or Laos and other veterans from the same era deployed elsewhere. Autor, Duggan, Greenberg, and Lyle (2014), using more detailed administrative data from the U.S. Army, find that a substantial share of new beneficiaries dropped out of the labor force upon becoming eligible, even if they were already receiving benefits.

To our knowledge, this study is the first to compare labor market outcomes for disabled and non-disabled veterans who served in any period from World War II to Iraq and Afghanistan. Including veterans from more than a half-century of military service allows us to analyze how labor market outcomes change with age, and how the aging pattern changes over time, providing evidence for whether veterans in all cohorts have become more responsive to benefit availability.

Data and Methodology

In addition to its monthly collection of information about labor market activity, the CPS periodically surveys veterans in its monthly sample about issues pertaining to their military service and subsequent experience, in particular their interactions with public programs for veterans. The CPS *Veterans Supplement*, a joint effort of the Departments of Labor and Veterans Affairs and the U.S. Census Bureau, were conducted biennially from 1995-2009, and annually from 2010-2014.[4]

This study's key variables are based on the information in the *Veterans Supplement* about the receipt of VA disability benefits. The respondent is asked whether the VA or Department of Defense has determined that he or she has a service-connected disability, defined in the

[4] The monthly CPS also includes veterans, but lacks information on whether the veterans have a service-connected disability. Only about 15 percent of veterans lack information from the *Veterans Supplement*.

questionnaire as "a health condition or impairment caused or made worse by military service." A follow-up question asks for their assigned disability rating, from 0 percent to 100 percent in deciles. Different years of the public-use version of the supplement categorize the rating information differently, so we use the finest categorization that is consistent across years: 0 percent, 1-29 percent, 30-49 percent, and 50-100 percent.[5] The supplement also includes information on when the veteran served, categorized by era and, in some cases, the conflict: Vietnam, Persian Gulf, or Afghanistan/Iraq.

The outcome variables of interest – whether the individual is employed or participating in the labor force – derive from the monthly CPS from the same month as the supplement. The analysis also includes other characteristics from the monthly CPS questionnaire as control variables: age at the time of the survey, gender, race, and educational attainment.[6]

Table 1 delineates how the analysis sample was constructed. After excluding individuals under 18 or over 70 and those without valid answers to the service-connected disability question, the sample includes just over 85,000 veterans, among whom almost 12,000 report a service-connected disability.

Most of the analysis is descriptive, with figures that plot the trends over time in employment and labor force participation among non-disabled and disabled veterans, with the disabled group sometimes disaggregated by disability rating category. This study also includes regression analysis that examines how employment and labor force participation has changed over time for the disabled and non-disabled, controlling for the age, gender, race, and education of the veteran sample. The regression is specified as a probit, where the dependent variable is an indicator equal to one if the veteran is either employed or participating in the labor force:

$$Y_{it} = \Phi(\alpha D_{it} + \beta Year_t + \delta D_{it} Year_t + \gamma X_{it} + \varepsilon_{it}) \qquad (1)$$

[5] Among veterans reporting that they have a service-connected disability, 7 percent then report that this rating is zero percent. Disability ratings of zero percent mean that the veteran has a condition that satisfies the definition of "service-connected" but is not severe enough to impede employability. Veterans with a zero-percent rating may receive special compensation, but the main advantage is making the re-evaluation process more streamlined if the veteran's health condition worsens.

[6] Appendix Table A1 provides summary statistics for the variables in the analysis.

where Φ represents the standard normal cumulative distribution function; D_{it} is an indicator equal to one if individual *i* reports having a service-connected disability in survey year *t*; $Year_t$ is a linear time trend; and X_{it} is a vector of personal characteristics: age, gender, and categorical variables for race and educational attainment. Because the regression is specified as a probit, we report marginal effects (i.e., the mean derivative of Y with respect to each variable).[7]

The coefficients of interest are α, the estimate of the average difference in employment or labor force participation between disabled and non-disabled veterans, all else equal; β, the average year-over-year change in employment or participation for non-disabled veterans; and δ, the difference between disabled and non-disabled veterans in the average year-over-year change in employment or participation, controlling for personal characteristics. The interaction effect δ provides an evaluation of how the work capacity of disabled veterans has changed over time; if disabled veterans are falling further behind non-disabled veterans in their labor market activity, δ would be negative and significant both substantively and statistically.

In other specifications, D is replaced by two indicators equal to one if the disability rating is 1) 0-49 percent or 2) 50-100 percent, with the non-disabled as the control group. These specifications also include interactions between the rating categorical variables and the time trend to examine whether the trends in employment and participation among less- and more-disabled veterans differ from the trend among non-disabled veterans.

Results

The results are presented in three steps: 1) simple comparisons of disabled and non-disabled veterans, 2) an analysis of the employment and participation for disabled veterans by their disability rating, and 3) regression analysis which combines information gleamed from the first two steps.

Employment and Participation for Disabled and Non-Disabled Veterans

Figure 1 plots the proportion of veterans employed, separately by whether the veteran reports a service-connected disability. The concern for policymakers is represented by the downward trend in the red line – from 1995 to 2014, the proportion of disabled veterans working

[7] The marginal effects, and in particular the interaction effect, account for the probit regression's nonlinearity in Y (Ai and Norton 2003). Standard errors are calculated using the Delta Method.

fell from 62 percent to 49 percent, a decrease of 13 percentage points, and the decline was nearly monotonic from 2000 onward. Over the same period, however, the employment rate for non-disabled veterans also fell, from 72 percent in 1995 to 63 percent by 2014, or 9 percentage points. Not surprisingly, disabled veterans are less likely to be employed throughout.

Figure 2 shows that the labor force participation rate for both groups also fell, from 65 percent in 1995 to 52 percent in 2014 for disabled veterans, and from 75 percent to 67 percent for non-disabled veterans. Until 2010, the employment and labor force participation rates among non-disabled veterans were each consistently about 11 percentage points higher than disabled veterans, but in 2011-2014 both gaps widened slightly to 14 percentage points. The difference in the rates of decline between non-disabled and disabled veterans is statistically significant (at the 95 percent confidence level) but small: non-disabled veterans saw their employment rate fall by 0.6 percentage points per year on average, while the employment rate among disabled veterans fell by 0.8 percentage points annually.[8]

These two figures indicate that disabled veterans are less likely to participate in the labor force or be employed in recent years than they were two decades earlier. But non-disabled veterans exhibit the same pattern, albeit at a somewhat slower rate of decline. Therefore, declining participation and employment rates are not solely a concern for veterans receiving benefit income due to a service-connected disability.

Instead, the decline in participation and employment rates for both groups of veterans may simply be a consequence of the aging of the veteran population. Figures 3a and 3b display the distribution of disabled and non-disabled veterans, respectively, by age category. The proportion of veterans under 45 has been relatively constant for both groups (22-28 percent for the non-disabled, and 22-31 percent for the disabled), but the three oldest categories demonstrate how the veteran population has aged.

The peaks in Figures 3a and 3b – first in the age 45-54 line, then 55-61, then 62 and older – correspond to the Vietnam-era cohort, the largest cohort by service period in our sample.[9] As a result, the plurality of veterans in the late 1990s was between 45 and 54. By the mid-2000s,

[8] The analogous declines in labor force participation are 0.4 percentage points among non-disabled veterans and 0.7 percentage points among disabled veterans.

[9] Vietnam-era veterans – those who explicitly report serving in Vietnam, serving during 1964-1975, or having been born between 1946 and 1953 – make up 39 percent of our sample. About 18 percent served before 1964, 21 percent served from 1975-1990, 16 percent in 1990-2001, and 6 percent in 2001 or later.

veterans in their late-50s had become the most populous age group. By 2009, the aging of the Vietnam cohort meant that the plurality of veterans was 62 or older – eligible for Social Security and pension benefits, and not surprisingly winding down their careers. The peaks are especially large among the disabled (Figure 3a): Vietnam-era veterans represent an even greater proportion of disabled veterans than of all veterans.

Figures 4 and 5 plot the age-adjusted employment and labor force participation rates for disabled and non-disabled veterans.[10] When age is held constant, the declining trends previously demonstrated for employment and labor force participation flatten out: the age-adjusted employment rate fell by only 7 percentage points for disabled veterans and 6 percentage points for non-disabled veterans; these decreases compare with declines of 13 percentage points and 9 percentage points, respectively, when there is no age adjustment. Labor force participation flattens even more, declining by only 4 and 3 percentage points, respectively. The aging of the overall veteran population, therefore, explains about 40 percent of the decline in employment and about 70 percent of the decline in labor force participation.

Employment and Participation by Disability Rating

A remaining concern for policymakers is that, even conditional on age, the employment rate and labor force participation rate have declined more steeply for disabled veterans than among non-disabled veterans. But as Figure 6 shows, the disabled group is changing too – by becoming more disabled. The share of veterans with disability ratings of 50 percent or greater rose to the plurality (among these disability rating categories) of disabled veterans in 2010 and continues to climb, reaching 45 percent in 2014. Meanwhile, the share with a 1-29-percent disability rating has fallen from nearly half of disabled veterans in 1995 to just a third at the end of our sample window. Another potential explanation for the declines in labor force participation and employment for disabled veterans, therefore, is a compositional effect: as the average disabled veteran becomes more disabled, the pool is less able to participate in the labor force or work, even if the relationship between disability rating and employment has remained constant.

[10] To adjust for age, we estimate a probit regression for indicators for employment or labor force participation on age, year dummies, and a constant, then calculate a predicted value for each year assuming the age is constant at the 1995 average: 50 for disabled veterans, and 51 for non-disabled veterans.

Figures 7 and 8, which plot the share employed and participating in the labor force, suggest that the shifting composition of disabled veterans toward higher ratings provides much of the remaining explanation for the decline in labor market activity. As expected, veterans with a 50-100 percent disability rating are about half as likely to work (Figure 7) and participate in the labor force (Figure 8) as non-disabled veterans. But even as non-disabled veterans are working and participating in the labor force less, the most-disabled group of veterans has seen almost no change in employment or participation over the past two decades. The slight increase in labor market activity for the 50-100 percent group suggests that the compositional shift toward them would have explained even more of the gap between non-disabled and disabled veterans if not for their improved labor outcomes.

Meanwhile, the employment and labor force participation rates of disabled veterans with ratings below 50 percent are almost indistinguishable – both in their levels and in their downward trends over 1995-2013 – from non-disabled veterans. The less-disabled group's similarity to the non-disabled and the fact that they are becoming a lower proportion of the disabled veteran population together reduce this group's importance in explaining the gap between the disabled and non-disabled.

Besides the expansion of medical conditions that are service-connected, the shift in disability ratings may be in part another byproduct of the aging of the U.S. population, and in particular of the veteran population, due to the preponderance of Vietnam-era veterans in the sample. The CPS veterans' supplement lacks information on the disability rating when the veteran first entered the program, but the cross-sectional disability rating distribution in Figure 9 indicates that the share of the disabled with ratings of 50-100 percent increased long after their service was likely completed. Autor et al. (2014) point out an "escalator effect:" VA disability beneficiaries can apply for re-evaluation to earn greater benefits at a higher rating level. The proportions in Figure 9 with ratings of 50-100 percent suggest that benefits escalate quickly as veterans get older.[11]

[11] On the other hand, controlling for age, veterans who served post-2001 are statistically significantly greater to have a disability rating of 50-100 than any other period of service. This result is consistent with recent veterans being given higher ratings due to the liberalization of health conditions qualifying as service-connected. But it may also reflect disabled veterans from older cohorts having died off, either from a battlefield injury that is less likely to kill more recent service personnel because of better medical care, or because more-disabled veterans are less likely to live – post-service – to the survey year than less-disabled veterans.

Regression Results

Table 2 displays the marginal effects (and their associated standard errors) from probit regressions of employment on either a disability indicator or separate indicators for disability ratings of 0-49 percent and 50-100 percent, a linear time trend and, in some specifications, interactions between the disability indicator(s) and the time trend. The regressions also control for the veteran's age, gender, educational attainment, and race.

As seen in the figures, disabled veterans are less likely to work than non-disabled veterans, by 14 percentage points. Veterans with a 50-100 percent rating are 32-33 percentage points less likely to work than non-disabled veterans, as expected. The difference in employment between non-disabled veterans and veterans with a 0-49 percent rating is small (5 percentage points) but statistically significant, as was seen in Figure 7.

The negative and statistically significant marginal effect for the time trend corroborates that employment rates have fallen for non-disabled veterans by a statistically significant 0.3 percentage points per year, even after accounting for age and other personal characteristics. Employment rates for disabled veterans have fallen by an extra 0.2 percentage points; the difference with non-disabled veterans is statistically significant, but ultimately quite small.

Interestingly, when we separate the disabled by their ratings, the employment rates for neither the 0-49 percent nor the 50-100 percent groups have fallen by more than the employment rate for the non-disabled. The interaction effect for the 0-49 percent group is a positive but minuscule and statistically insignificant 0.04 percentage points, seemingly confirming the result from Figure 7 that the employment trend for this group is essentially no different than for the non-disabled. For veterans with a 50-100 percent rating, the interaction effect is actually positive and statistically significant, and offsets the marginal effect on the un-interacted time trend variable almost exactly (though their sum is statistically insignificant). That is, the regression-adjusted employment rate for the most-disabled veterans has been essentially flat from 1995 to 2013, and we can rule out with 95 percent confidence that this group has seen a greater decline in employment than their non-disabled counterparts.

The other estimates in Table 2 are consistent with expectations. Employment falls slightly with the veteran's age. Male veterans are about 16 percentage points more likely to work at any given age than female veterans, blacks and other non-white races are slightly less likely to work than whites, and employment rates increase strongly with education.

Table 3 repeats the analysis with labor force participation, and the results are quite similar. Compared to non-disabled veterans, labor force participation rates are 14-15 percentage points lower for disabled veterans, or 33-34 percentage points lower for veterans with a 50-100 percent disability rating and only slightly lower for ratings of 0-49 percent. The trend in participation among non-disabled veterans is only slightly downward-sloping after controlling for age, gender, race, and education, but the negative slope is statistically significant. As in Table 2, disabled veterans' participation rates have a greater negative slope by a statistically significant but small margin, but the difference between the non-disabled and the 50-100 percent group is again positive and statistically significant. As with employment rates, labor supply among the most-disabled is almost certainly not falling, and it may even be rising.[12]

Conclusion

This paper documents the decline in employment and labor force participation rates among disabled veterans. At face value, the significant declines are consistent with concerns that VA disability recipients are less likely to be in the labor force and employed than previous cohorts, especially after the liberalization around 2000 of health conditions that qualify as service-connected, and echoing concerns about work effort among SSDI and SSI beneficiaries. But the analysis finds that employment and labor force participation among non-disabled veterans has declined by almost the same amount; after accounting for age and other personal characteristics, the difference between disabled and non-disabled veterans in the rate of decrease is statistically significant but small. Furthermore, much of the remaining difference can be explained by a simple fact: as disabled veterans age their disabilities worsen and they become even less likely to work. Indeed, among the most-disabled veterans with ratings of 50 percent or greater, employment and labor force participation actually increased relative to non-disabled veterans (and are flat overall). The fact that disabled veterans have shown a steeper trend towards not working than non-disabled veterans reflects the fact that they are aging faster than non-veterans, and their disabilities have worsened as they have aged.

These results provide little evidence that recent cohorts of disabled veterans are exhibiting substantially less effort to work, given the same disability rating, relative to non-

[12] The sum of the time trend and 50-100 rating-time trend interaction is positive and statistically significant at the 90 percent confidence level.

disabled veterans than past cohorts subject to more stringent disability evaluations. The VA may still feel pressure to reassess their disability screening process, including tying awards more closely to earnings losses (GAO 1997) and providing better information, including earnings histories and medical records, more consistently to its disability examiners (GAO 2015). While these efforts may be necessary and are underway (Spotwood 2012), the analysis in this paper suggests they should not be seen as a response to the declining propensity to work of disabled veterans.

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Table 1. *Sample Refinement*

Criterion	Remaining sample	
In monthly CPS during the month of the *Veterans Supplement*, 1995-2013	1,961,206	
Ages 18-69 at survey	1,145,141	
Report being a veteran in monthly CPS	98,637	
Non-missing answer for service-connected disability question in CPS *Veterans Supplement*	85,223	
Disabled		11,903
Non-disabled		73,320
Non-missing answer for disability rating question	84,234	
With disability rating		10,914
Non-disabled		73,320

Source: *Current Population Survey Veterans Supplement*, 1995-2014.

Table 2. *Probit Regression Estimates for Employment*

	(1)	(2)	(3)	(4)
Disabled (0/1)	-0.137***	-0.135***		
	(0.005)	(0.006)		
0-49 rating			-0.045***	-0.045***
			(0.005)	(0.008)
50-100 rating			-0.318***	-0.331***
			(0.008)	(0.012)
Time trend	-0.003***	-0.003***	-0.003***	-0.003***
	(0.000)	(0.000)	(0.000)	(0.000)
Disabled × time trend		-0.002**		
		(0.001)		
0-49 × time trend				0.0004
				(0.0009)
50-100 × time trend				0.004***
				(0.001)
Age	-0.015***	-0.015***	-0.015***	-0.015***
	(0.000)	(0.000)	(0.000)	(0.000)
Male	0.164***	0.164***	0.163***	0.163***
	(0.006)	(0.006)	(0.006)	(0.006)
HS only	0.106***	0.105***	0.103***	0.103***
	(0.006)	(0.006)	(0.006)	(0.006)
Some college	0.145***	0.145***	0.141***	0.141***
	(0.006)	(0.006)	(0.006)	(0.006)
College or more	0.206***	0.206***	0.200***	0.200***
	(0.006)	(0.006)	(0.006)	(0.006)
Black	-0.063***	-0.063***	-0.060***	-0.060***
	(0.005)	(0.005)	(0.006)	(0.006)
Asian	-0.005	-0.006	-0.010	-0.010
	(0.014)	(0.014)	(0.014)	(0.014)
Other race	-0.046***	-0.046***	-0.043***	-0.043***
	(0.009)	(0.009)	(0.009)	(0.009)
Sample size	85,223	85,223	84,234	84,234
Pseudo-R^2	0.142	0.142	0.150	0.150

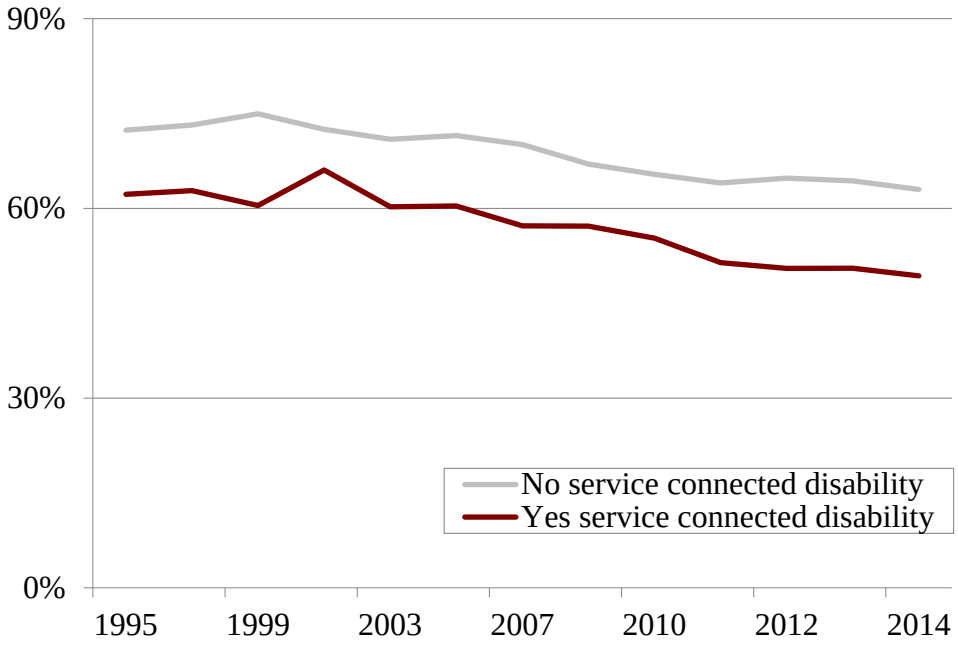
Note: *** p<0.001.
Source: *Current Population Survey Veterans Supplement*, 1995-2014.

Table 3. *Probit Regression Estimates for Labor Force Participation*

	(1)	(2)	(3)	(4)
Disabled (0/1)	-0.147***	-0.144***		
	(0.005)	(0.006)		
0-49 rating			-0.049***	-0.049***
			(0.005)	(0.007)
50-100 rating			-0.329***	-0.341***
			(0.008)	(0.011)
Time trend	-0.002***	-0.002***	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)
Disabled × time trend		-0.002***		
		(0.001)		
0-49 × time trend				0.000
				(0.001)
50-100 × time trend				0.004***
				(0.001)
Male	0.180***	0.180***	0.179***	0.179***
	(0.006)	(0.006)	(0.006)	(0.006)
HS only	0.093***	0.093***	0.090***	0.090***
	(0.006)	(0.006)	(0.006)	(0.006)
Some college	0.129***	0.129***	0.124***	0.125***
	(0.006)	(0.006)	(0.006)	(0.006)
College or more	0.186***	0.185***	0.180***	0.180***
	(0.005)	(0.005)	(0.005)	(0.005)
Black	-0.042***	-0.042***	-0.038***	-0.038***
	(0.005)	(0.005)	(0.005)	(0.005)
Asian	-0.010	-0.010	-0.014	-0.014
	(0.013)	(0.013)	(0.013)	(0.013)
Other race	-0.036***	-0.036***	-0.032***	-0.033***
	(0.009)	(0.009)	(0.009)	(0.009)
Age	-0.016***	-0.016***	-0.016***	-0.016***
	(0.000)	(0.000)	(0.000)	(0.000)
Sample size	85,223	85,223	84,234	84,234
Pseudo-R^2	0.182	0.182	0.192	0.192

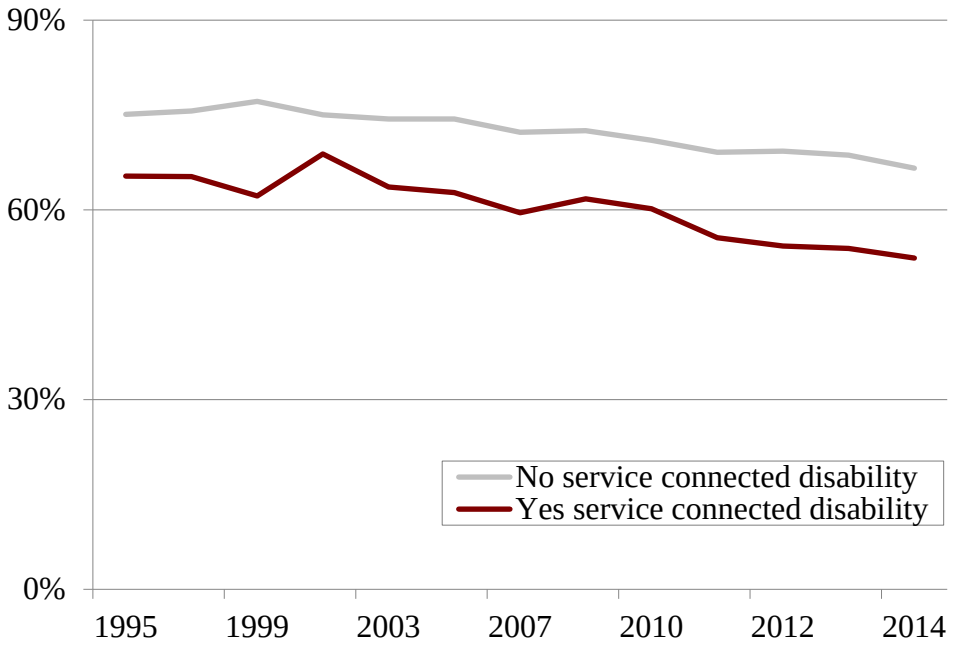
Note: *** p<0.001.
Source: *Current Population Survey Veterans Supplement*, 1995-2014.

Figure 1. *Employment Rate by Disability Status*



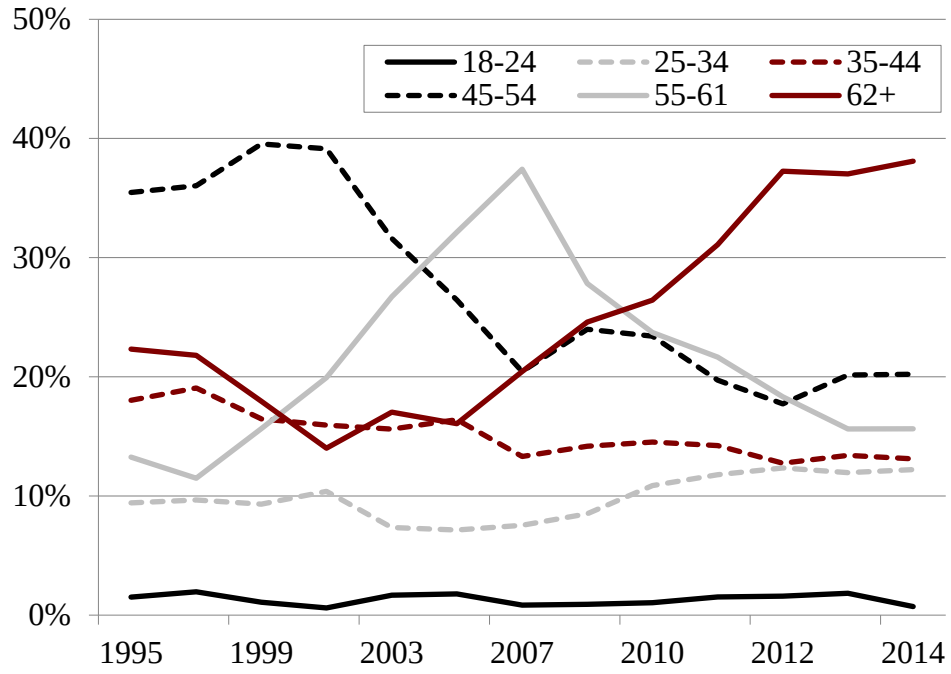
Source: *Current Population Survey Veterans Supplement,* 1995-2014.

Figure 2. *Labor Force Participation Rate by Disability Status*



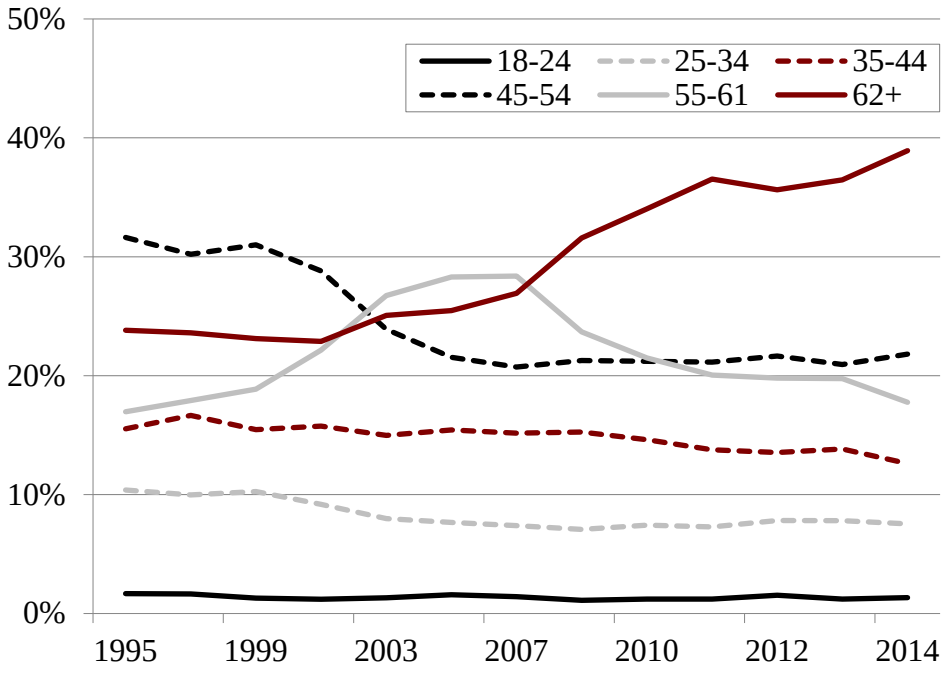
Source: *Current Population Survey Veterans Supplement,* 1995-2014.

Figure 3a. *Age Distribution of Disabled Veterans*



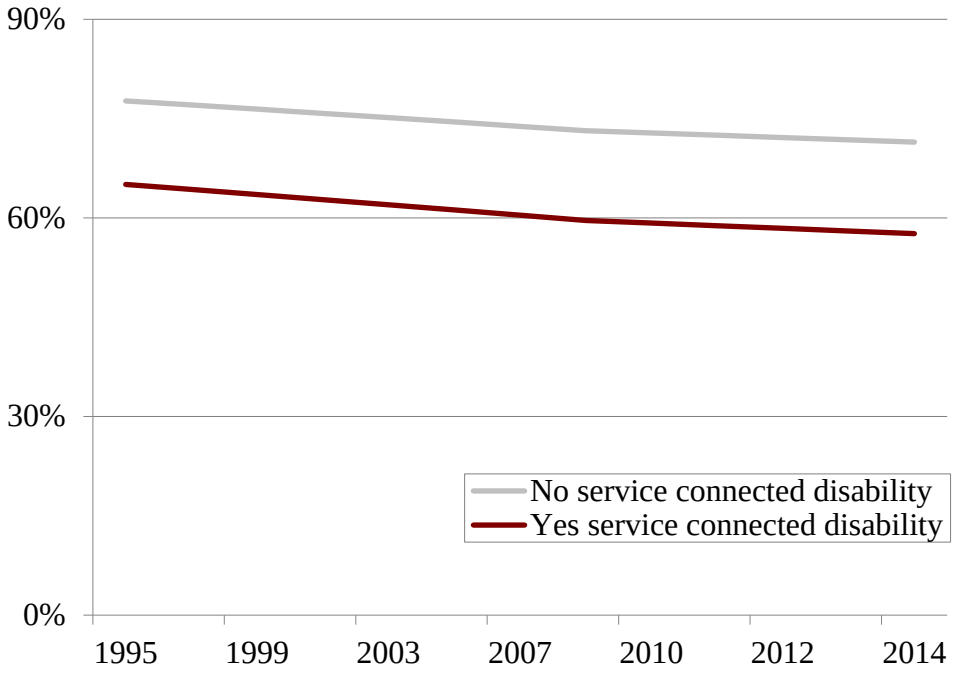
Source: *Current Population Survey Veterans Supplement*, 1995-2014.

Figure 3b. *Age Distribution of Non-Disabled Veterans*



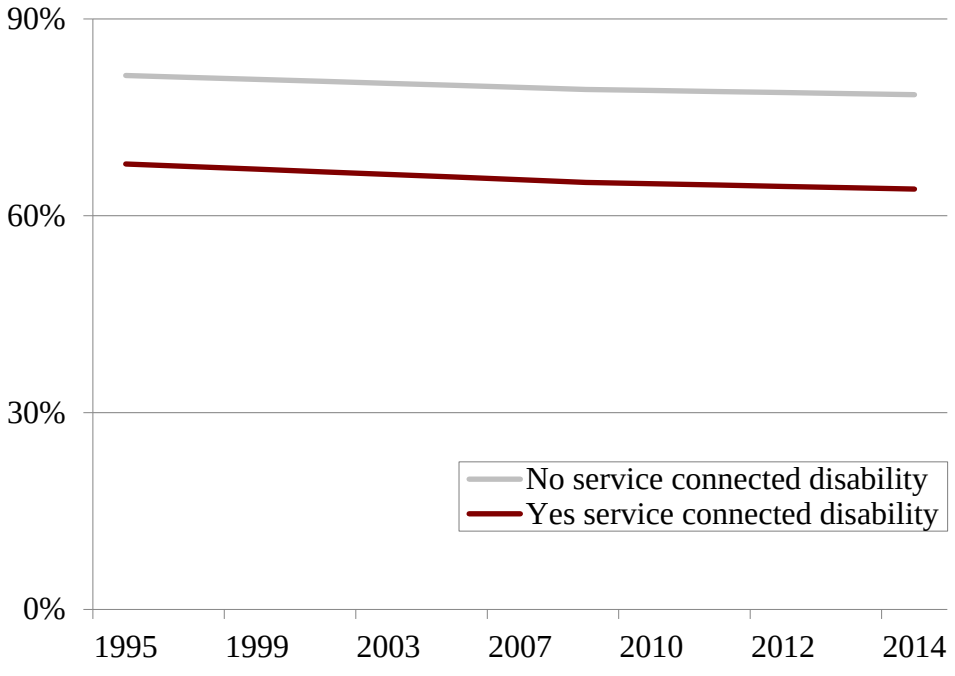
Source: *Current Population Survey Veterans Supplement*, 1995-2014.

Figure 4. *Age-Adjusted Employment Rate, by Disability Status*



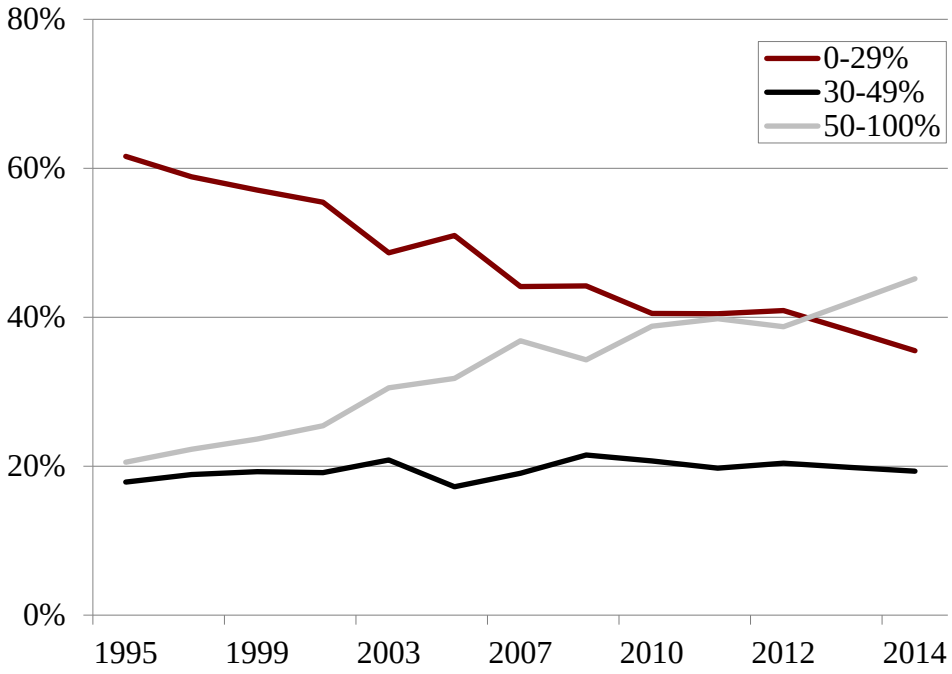
Source: *Current Population Survey Veterans Supplement*, 1995-2014.

Figure 5. *Age-Adjusted Labor Force Participation Rate, by Disability Status*



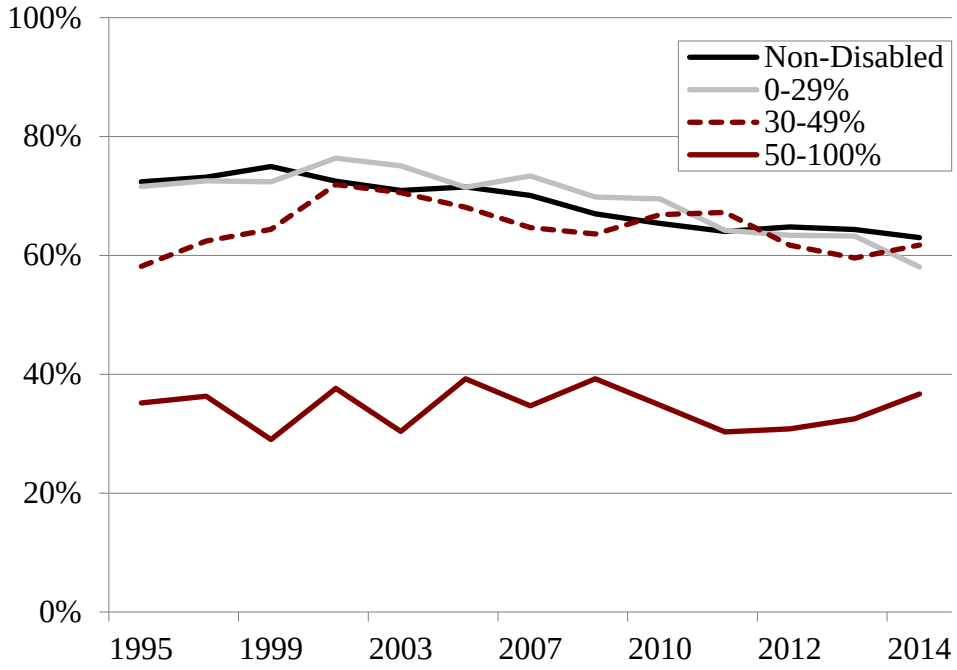
Source: *Current Population Survey Veterans Supplement*, 1995-2014.

Figure 6. *Distribution of Disabled Veterans by Disability Rating*



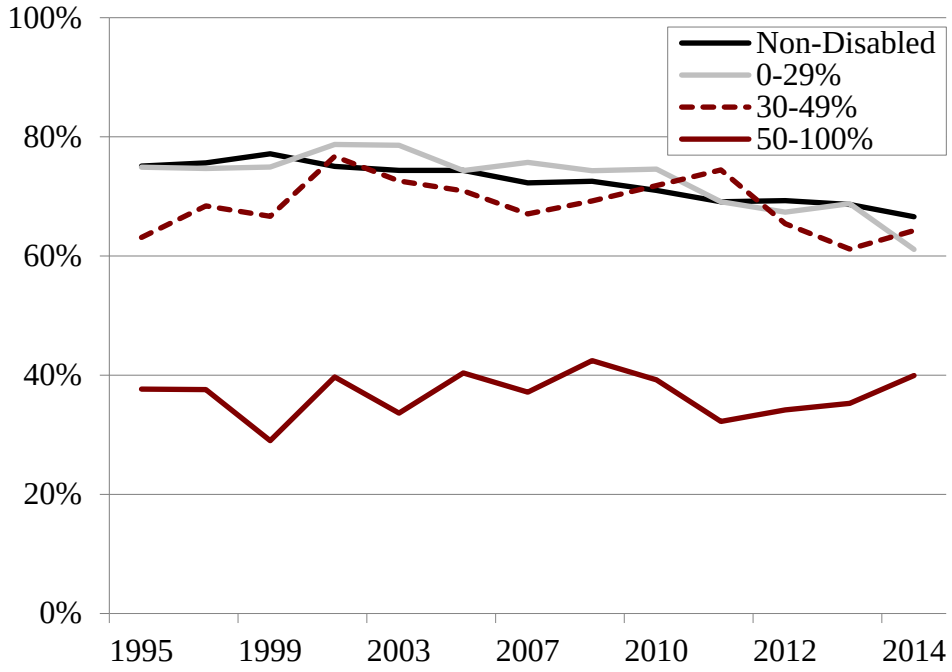
Source: *Current Population Survey Veterans Supplement*, 1995-2014.

Figure 7. *Employment Rate by Disability Rating*



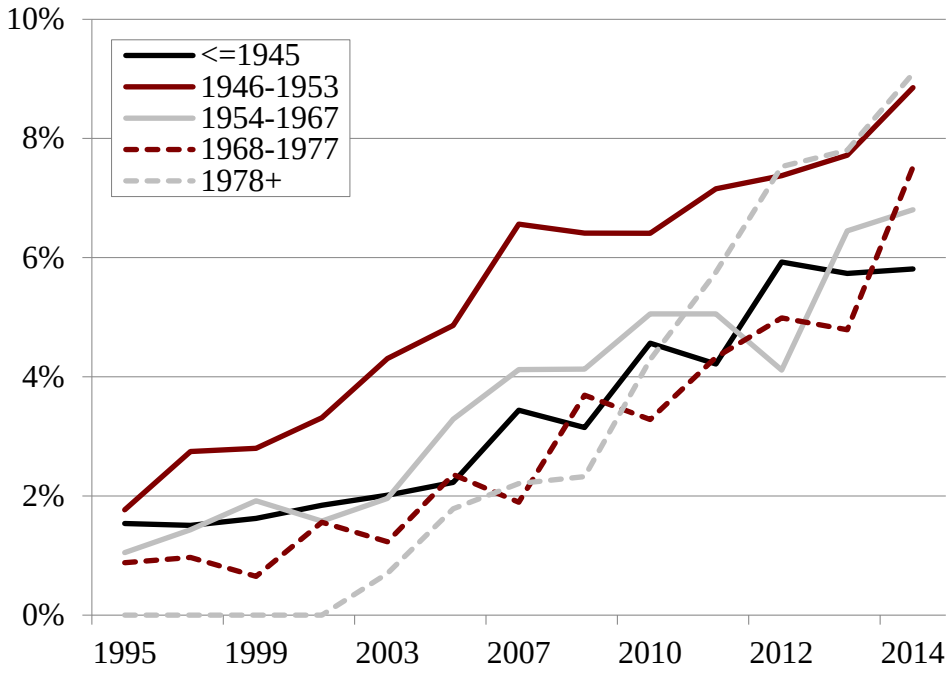
Source: *Current Population Survey Veterans Supplement*, 1995-2014.

Figure 8. *Labor Force Participation Rate by Disability Rating*



Source: *Current Population Survey Veterans Supplement*, 1995-2014.

Figure 9. *Share of Veterans with 50-100 Percent Disability Rating*



Source: *Current Population Survey Veterans Supplement*, 1995-2014.

Table A1. *Summary Statistics*

	Mean	S.D.
Employed	0.679	0.467
In labor force	0.713	0.452
Disabled (0/1)	0.140	0.347
0-49 percent disability rating	0.086	0.280
50-100 percent disability rating	0.044	0.205
Age	52.4	11.9
Male	0.929	0.257
Less than HS	0.054	0.227
HS only	0.334	0.472
Some college	0.355	0.479
College or more	0.257	0.437
White	0.874	0.332
Black	0.087	0.281
Asian	0.012	0.110
Other race	0.027	0.163
Number of observations	85,223	

Source: *Current Population Survey Veterans Supplement*, 1995-2014.

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