The long-term consequences of Vietnam-era conscription have been extensively studied but are still changing. Estimates from the 2000 census, reported in Joshua D. Angrist and Stacey H. Chen (2011), suggest the large civilian earnings losses documented by Angrist (1990) for the 1970s and early 1980s had faded by 1999. At the same time, researchers have noted sharp recent growth in the number of Vietnam-era veterans receiving federal disability transfers (e.g., Mark Duggan, Robert Rosenheck, and Perry Singleton 2006). David H. Autor and Duggan (2008) and Angrist, Chen, and Brigham R. Frandsen (2010) argue that this growth is due to the increasing attractiveness of Veterans Disability Compensation (VDC) for low-skilled men.

This note reports new estimates of the long-term impact of Vietnam-era service on veterans. As in earlier work on the consequences of Vietnam-era conscription, we use the draft lottery to identify causal effects free of selection bias. The results reported here make a number of contributions. First, we take advantage of newly available Social Security Administration (SSA) data to trace the effects of military service on earnings through 2007, a year in which the oldest members of the main draft lottery cohorts turned 57. We also use SSA data to construct estimates for new outcomes: employment (as measured by an indicator for positive earnings) and disability status (as measured by an indicator for Social Security Disability Insurance (SSDI) or Supplemental Security Income (SSI) application).

Finally, we exploit the fact that SSA administrative records now contain improved information about workers’ military service, at least for some periods of service. In the absence of reliable veteran status information in the mid 1980s, Angrist (1990) used a two-sample IV estimator (Angrist and Alan B. Krueger 1992). The lack of reliable veteran status information also precluded the calculation of OLS estimates. Today we can use SSA administrative records to compute and compare conventional two-stage least squares (2SLS) and ordinary least squares (OLS) estimates, potentially saying something about the extent of selection bias in the latter.

I. Data and Empirical Framework

A. Data

Our primary data source is the SSA’s Continuous Work History Sample (CWHS), described in Constantijn Panis et al. (2000). Briefly, the CWHS includes data on earnings and basic demographic characteristics for a one percent sample of Social Security numbers (SSNs).

The most reliable and longest-running earnings series in the CWHS is FICA taxable earnings, which captures total Social Security–covered earnings for each year, including wages from all employers and earnings from self-employment. The FICA variable records a zero for those who are either not working or have no...
earnings in covered employment. FICA earnings are censored at the taxable maximum for each year (those with more than one employer can have earnings above the taxable maximum). For more on coverage and censoring in the CWHS, see Angrist (1990).

For the purposes of this project, we augmented the regular CWHS active file (a file that omits those who have never worked) with information on whether workers were granted additional earnings credits for military service between 1968–1975. Our veteran status variable is an indicator for the presence of these credits for any year from 1968–1975. We also constructed a dummy indicating those who applied for either SSDI or SSI. This information comes from SSA’s 831 disability file, Master Beneficiary Record, and Supplemental Security Record, which record decisions made by SSA’s Disability Determination Services. Our disability status variable indicates workers who applied for SSDI or SSI at any time between 1974–2007.

Table 1 shows descriptive statistics for samples of men born 1950–1952 in SSA’s CWHS and, for purposes of comparison, the 2000 census. The SSA labor market variables are reported for calendar year 1999 to match the census. The census extract is similar to that used by Angrist, Chen, and Frandsen (2010) except that here we code Hispanics as nonwhite to better match the SSA race and ethnicity variable. The SSA sample includes CWHS men born 1950–1952, excluding men who reported earnings only after 1983 or who died before 1967. The SSA earnings sample includes men with positive FICA earnings in the relevant year, while the SSA employment and disability variables were coded in each year for men alive in that year.

Approximately 38 percent of men born 1950–1952 were draft eligible, a fraction that differs little by race or dataset. Roughly a quarter of white men in these cohorts served in the Vietnam era; the corresponding estimates for nonwhites are lower. The proportion veteran comes out higher when estimated using SSA data than when using the census. Three-quarters of whites and two-thirds of nonwhites had positive FICA earnings in 1999. The fraction with positive earnings is higher in the census than in the CWHS, while the CWHS earnings mean for whites is 72 percent of the corresponding census mean, a difference that probably reflects SSA coverage limitations and censoring at the taxable maximum.

### B. 2SLS Strategy

Causal effects of Vietnam-era military service are estimated using the model:

\[
Y_{it} = X_i’\gamma_t + \beta_t VET_t + \epsilon_{it},
\]

where the vector of covariates \(X_i\) includes controls for year of birth (YOB) and month of birth (MOB), and \(VET_t\) indicates Vietnam-era veteran status. The dependent variables \(Y_{it}\) are, for each year indexed by \(t\), the log of annual FICA taxable earnings, employment status, and disability status, as defined above.

Our 2SLS estimates use randomly assigned draft eligibility as an instrument for veteran status. The first draft lottery, held in December 1969, affected men born 1944–1950 who were at risk of conscription in 1970, while subsequent draft lotteries involved 19-year-olds only. Men born in 1951 were at risk of conscription in 1971, and men born in 1952 were at risk of conscription...
in 1972. Although men as old as 26 could have been drafted as a result of the 1970 lottery, the risk of conscription for all cohorts affected by a lottery was limited to the lottery year. In each draft lottery, numbers from 1-366, known as random sequence numbers (RSNs), were randomly assigned to dates of birth. Each lottery was associated with a draft-eligibility ceiling or cutoff. Men with an RSN below the ceiling were draft eligible, while men with an RSN above the ceiling were draft exempt. Ceilings were 195 in the 1970 lottery, 125 in the 1971 lottery, and 95 in the 1972 lottery. Draft eligibility is highly correlated with Vietnam-era veteran status, but the link is far from deterministic. Some men with draft lottery numbers below the ceiling were able to avoid conscription through an occupational or educational deferment, or because of poor health or low test scores, while many with lottery numbers above the ceiling volunteered for service. Throughout the Vietnam era (1964–1975), most soldiers were volunteers.

The draft lottery first stage is:

\[ VET_i = X_i'\pi_0 + \pi_1 ELIG_i + \eta_i, \]

where \( ELIG_i \) is the draft-eligibility instrument and \( \pi_1 \) is the first-stage effect (which is not time-varying). The first-stage estimates, reported in Table 2, show that draft-eligible white men born 1950–1952 were about 18 percentage points more likely to have served in the Vietnam era than eligibles, while the first-stage estimate for nonwhites is about half as large. Angrist (1991) argues that the diminished draft-eligibility first stage for nonwhites reflects a relatively high valuation of military service in comparison to available civilian alternatives. As a practical matter, the low first stage for nonwhites leads us to focus on whites. The analysis here is also limited to men aged 19 in the year they were at risk of conscription.

II. OLS and 2SLS Estimates

Table 3 reports estimates constructed from a version of equation (1) that pools the years in each decade, generating four average effects covering the 1970s through the 2000s. The pooled models include a full set of year-by-cohort effects and month-of-birth effects. Standard errors in Table 3 are clustered on individual SSNs.

2SLS estimates for the 1970s show earnings losses of about 16.5 percent (15.3 log points) in the 1970s and about 10.5 percent (10 log points) in the 1980s. These results are consistent with the estimates for 1970–1984 reported in Angrist (1990), though attenuated somewhat relative to the earlier findings by the larger SSA first stage. Table 3 also shows small and insignificant 2SLS earnings effects in the
1990s, with larger though still insignificant effects in the 2000s. This fadeout is consistent with the loss-of-experience interpretation of the veteran earnings penalty proposed by Angrist (1990) and with the estimates for 1999 earnings reported in Angrist and Chen (2011).

The 2SLS estimates in Table 3 suggest Vietnam-era service had little effect on veterans’ subsequent employment rates. This implies that we lose little by analyzing treatment effects on outcomes such as log earnings that are defined for workers only. Perhaps surprisingly, for three out of four decades, the OLS and 2SLS estimates of log earnings effects shown in columns 2 and 3 seem broadly consistent. On the other hand, the OLS estimates of employment effects in column 5 contrast sharply with the 2SLS estimates in column 6: the former show markedly higher employment rates for veterans in every decade, but the 2SLS estimates suggest this is not a causal effect.

Figure 1 plots the yearly time series of 2SLS log earnings estimates, along with the associated confidence bands. The figure documents a surprisingly rapid fadeout of the veteran earnings penalty. Estimated earnings losses decline to zero in 1990 and are not significantly different from zero thereafter. The more modest recent estimates contrast with larger estimated earnings losses for the 1980s, many of which are individually significant and reasonably precise when pooled, as documented in Table 3.

Extrapolating a quadratic earnings profile, Angrist (1990) estimated a veteran overtaking age of about 50, but Figure 1 shows convergence by about age 40.

Ongoing concerns about the health of Vietnam veterans notwithstanding, Figure 2 shows no evidence that Vietnam-era conscription boosted disability application rates. This echoes the small census-based 2SLS estimates of veteran effects on disability status reported by Angrist, Chen, and Frandsen (2010). On the other hand, census data also show that less-educated Vietnam veterans are significantly more likely to receive a Social Security disability payment than are other low-skill men. Unfortunately, the CWHS does not lend itself to a similarly fine-grained analysis.

### III. Concluding Comments

The results reported here replicate a number of earlier findings and include some new ones. By way of replication, we find large earnings losses for white Vietnam-era conscripts in the 1970s and 1980s. We also reproduce earlier draft lottery estimates showing little evidence of an impact on overall disability rates, where here

1 Angrist (1990) estimated an initial earnings loss of $-0.189$, closing by $0.006$ for each year of potential experience.
disability is measured by application for SSA’s disability insurance programs.

New findings for more recent years show surprisingly rapid convergence in veteran and nonveteran earnings: by the early 1990s, there was no longer a substantial Vietnam-era conscription penalty. This result is broadly consistent with the loss-of-experience interpretation of service-related earnings losses detailed in Angrist (1990), but convergence has emerged more quickly than predicted by extrapolating earlier data on FICA earnings profiles.

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