Weighing the Military Option: The Effects of Wartime Conditions on Career Pathways*

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Abstract

Joining the military to obtain training and educational benefits is an important option available to young Americans at the start of their careers. In this paper, we show that making the military option less desirable has lasting consequences on career paths. Using internal military data, we find that county-level exposure to U.S. combat casualties during the Iraq and Afghanistan Wars decreases the supply of new soldiers in that county. Moreover, we find that casualties from a given county change the observable characteristics of soldiers who enlist in that county. Our identifying assumption is that the assignment of casualties to U.S. home of record counties is as-good-as random and that it does not impact military's local demand for soldiers, which is instead set at the national level. To investigate the schooling choices of youth as a function of wartime conditions, we use data from the American Community Survey. The findings indicate that exposure to casualties at a young age (17-18) increases the probability of dropping out from high school, and decreases the probability of attaining any college education. The results suggest that, at least for some youth, having the military option available motivates them to finish high school and serves as an important vehicle through which they can acquire post-secondary education.

* The views expressed in this article are those of the authors and do not necessarily reflect the official policy or positions of the DMDC, the USAF, the DoD, or the U.S. Government.

1. Introduction

Enlisting into military service is an important career path option for U.S. high school graduates. Military service offers youth with no previous labor market experience the opportunity to acquire valuable skills as well as access to subsidized post-graduate education (Lutz 2008; Patten and Parket 2011).[1] The military option is particularly important for individuals from low socioeconomic backgrounds who might not be able to enroll in college or obtain similar skills absent the military.[2] Although previous studies have found that Word War II and Vietnam veterans had higher educational outcomes because of their access to the GI Bill (Angrist 1990; Angrist 1993; Angrist and Krueger 1994; Angrist and Chen 2011), it is unclear how the option of voluntary military service impacts the career outcomes of young individuals.[3]

Wartime periods characterized by a high number of combat casualties may deter some individuals from joining the military, yet inspire others to enlist. A change in the desirability of military service can affect the educational outcomes for marginal candidates through two main channels. First, because high school graduation is one of the military's main recruiting criteria, ruling out military service can increase the probability of dropping out from high school and consequently reduce the probability of college education. Second, conditional on high school graduation, forgoing the military option can limit access to college education by increasing its cost. Both of these channels can subsequently impact the labor market outcomes of potential recruits.

[1] Historically, a large proportion of federal college aid grants were provided to veterans, increasing the lifetime benefits from military service (Deming and Dynarski 2009).

[2] According to data drawn from the Defense Manpower Data Center (DMDC), more than 2.6 million young men and women enlisted into the military between the years 1997-2013.

[3] Bound and Turner (2002) and Stanley (2003) estimate the effects of the GI Bill for World War II and the Korean veterans and find that it increased the schooling of veterans. Lemieux and Card (2001) found that part of the increase in schooling during the Vietnam War is due to draft avoidance behavior.

In this paper, we use monthly (and yearly) variation in U.S. combat casualties across counties (and states) during 1997-2013 to measure changes in the desirability of military service. During this time period there were 6,823 combat casualties that occurred during the Afghanistan and Iraq Wars. Our identifying assumption is that the assignment of casualties to local areas is as-good-as random and that it does not impact military's local demand for soldiers, which is instead set at the national level. Although the risk of military service is set at the national level, local-level casualties may have a differential impact on the decision to enlist in the military because affected communities may develop a different sentiment towards the wars and military service because of more in-depth media coverage of local-casualties, and because of exposure to funerals and affected families.

Using internal military data we first investigate the relationship between local casualties and enlistments decisions. The results suggest that an increase in the monthly number of casualties in a county increases the likelihood that a newly signed recruit from that county will choose to discharge from service prior to shipping off to basic training, confirming previous findings that local casualties decrease enlistments (Christensen 2015).[4] Importantly, we also find that the composition of new recruits change as a function of the local impact of the war. In particular, an increase in the number of casualties at the county level disproportionally decreases the enlistments of younger non-white men.

Second, we use data from the 2002-2013 American Community Survey (ACS) to study the relationship between exposure to combat casualties at a young age (15-20) and the probability of ever serving in the military, the probability of high school completion and the

[4] Applicants who sign an enlistment contract but never access into the military are labeled as discharged. See section 2.2 for more details.

probability of obtaining any college education. Our findings indicate that an increase of 100 casualties at ages 17-18 increases the probability of dropping out from high school by about 3 percent. This is an economically important result especially in states that experienced a large number of casualties during this time period. As expected, however, exposure to casualties at ages 19-20 has no effect on high school graduation. The results also suggest that an increase of 100 casualties at ages 17-18 and 19-20 decreases the probability of obtaining college education by about 1 and 0.6 percent, respectively. Exposure to casualties at ages 15-16 has no impact on either high school graduation or college education. We explore the heterogeneity of the results by racial and ethnic groups and by size of state population.

This is the first study to examine the role of the military option on schooling outcomes. Although previous studies have examined the effects of college aid to veterans, the role of the military as an incentive to graduate from high school and its role in improving access to college when service is voluntary has not been analyzed.

Our second contribution relates to the literature on the effects of college aid. Previous studies have shown that increasing college aid leads to an increase in the probability of college attendance (Dynarski 2003; Reyes 1995; Dynarski 2005). Consistent with these results, we also find that increasing the cost of college attendance (by not joining the military) impacts the probability of obtaining college education (Dynarski 2003; Reyes 1995; Dynarski 2005), but importantly it also increases the probability of dropping out of high school. . This is an important and novel finding because it highlights a potential unintended consequence of cuts to college aid programs.

Finally, studies examining the relationship between returns to schooling and educational outcomes have typically relied on demand-driven economic shocks to estimate the relationship between local labor market conditions and educational investments.[5] For example, Black et al. (2005a) found that high school enrollment rates decreased during the 1970s coal boom and increased during the coal bust in the 1980s. Atkin (2015) provides evidence that the growth of the export manufacturing industry in Mexico increases the rates of school dropout.[6] In contrast to these demand-driven shocks, estimating the effect of exposure to local casualties relies on an arguably random shock to the supply of soldiers.[7] This is an important contribution because demand shocks can generate migratory responses that are likely to equilibrate conditions across labor markets (Cadena and Kovak 2015). In addition, demand-driven shocks could potentially generate significant income effects that are likely to understate the impacts of local economic conditions on schooling (Blanchard and Katz 1992).

2. Background

2.1 Recruitment Process

The U.S. military plays a sizeable role in the U.S. labor market for young Americans. During 1997 to 2013, the five armed service branches of the U.S. military recruited

[5] Many studies have used demand-driven shocks to estimate impact on local economies in general and human capital accumulation in particular. For some examples see Topel (1986), Batrik (1991), Blanchard and Katz (1992), Black et al. (2005b), and Jacobsen and Parker (forthcoming).

[6] Other studies have used changes in local unemployment rates to estimate their impacts on schooling choices but variation in unemployment rates typically rely on transitory changes in economic conditions that potentially underestimate their true impact on the choices of young people (Rees and Mocan 1997 Black et al. 2005a). See also Corman (1983), Kane (1994) and Berger and Kostal (2002). The relationship between economic conditions and educational choices can also vary by gender, race, family background, degree level, and ability (Bedard and Herman 2006; Black and Sufi 2002; Boffy-Ramirez 2015).

[7] The state of the local economy has also been shown to scar the earnings profiles of college graduates who happen to graduate when unemployment rates are high (Kahn 2010; Oreopoulos et al. 2012). Genda et al. (2010) found persistent earnings effects of graduating in a bad economy in Japan.

approximately 166,875 active duty recruits per year..[8] This amounts to about 1.9 percent of qualified youth aged 17 to 24 who possess the necessary physical, educational, and aptitude levels required to join the military.[9]

Recruiting qualified youth is conducted by military production recruiters. Recruiters are assigned to thousands of recruiting units stationed across every state and can be found in malls and around high-traffic areas. For example, in 2011 the Army, Air Force, Navy, and Marine Corps had about 12,444 recruiters working for them nationwide.[10] The recruiting process is typically viewed as having three main stages: application, contract, and accession. The application process occurs when potential recruits show interest by contacting a local recruiting station at which stage they are recorded by the military as an *applicant*. Recruiters conduct initial entry standards reviews by checking an applicant's educational background, height and weight, completing fingerprint scans and conducting background checks.

The military's educational standards for enlisting are classified into two main tiers. Applicants in tier 1 have a high school diploma or at least 15 college credits. This group includes over 90 percent of applicants. Tier 2 includes applicants with a GED and other forms of high school education.[11] Thus, graduating from a high school is an important stepping stone for the vast majority of candidates who are considering military service. In addition to a high school

[8] These include the Army, the Marine Corps, the Air Force, the Navy, and the Coast Guard.

[9] This estimate was obtained from the U.S. Department of Defense Joint Advertising Marketing Research System (JAMRS) Recruit Management Information System (RMIS). Reasons for not meeting entry standards include: alcohol or drug abuse, medical or physical disqualification, dependents, or not meeting minimum education requirements or AFQT scores.

[10] This figure is obtained from the JAMRS RMIS.

[11] These include home study, Certificate of Attendance, Alternative/Continuation High School, Correspondence School Diplomas, and Occupational Program Certificate.

diploma, applicants take the Armed Services Vocational Aptitude Battery (ASVAB) test at a Military Entrance Processing Station (MEPS).[12] The ASVAB measures applicants' developed abilities and helps predict future occupational success and military job eligibility. Four of the 11 ASVAB sub-tests are used to determine an applicant's AFQT score.[13] AFQT scores are reported as percentiles ranging 1 to 99 and indicate the percentage of examinees in a reference group that scored at or below that particular score.[14]

Stage two occurs when applicants attend local MEPS to complete the enlistment process. MEPS are located in 65 locations across the U.S. and their sole purpose is to put applicants through final tests and examinations to ensure they meet all the entry standards to enlist. The tests and examinations include: physical and background examinations, drug and alcohol tests, as well as the ASVAB test. If applicants are deemed qualified for military service they meet with a service counselor to determine a best fit military job. Finally, applicants sign a contract and swear or affirm an oath of military service. It is only after these steps have been completed that an applicant is recorded as a *contract*.

Stage three occurs when a contract recruit is shipped to basic training and is recorded as an *accession*. However, there are normally two paths to accession. The first are "Direct Ship" recruits who report to basic training between two days and two months after completing MEPS testing requirements. The second, and more common path to accession into military service is

[12] See http://usmilitary.about.com/od/joiningthemilitary/a/enleducation.htm for more information on the military's enlistment standards.

[13] These include arithmetic reasoning, mathematics knowledge, paragraph comprehension, and word knowledge.

[14] The reference group is a sample of 18 to 23 year old youth who took the ASVAB as part of a national norming study conducted in both 1980 and again in 1997. An AFQT score of 50 indicates that the examinee scored as well as or better than 50 percent of the nationally-representative sample.

the "Delayed Entry Program" (DEP). Recruits who enter DEP commit to ship to basic training at an agreed upon date within one year, typically after completing high school

2.2 National Trends in Casualties, Enlistments, and Guaranteed Training Contracts

The enlistments data is from the DMDC from October 1, 1997 to September 30, 2013. The initial enlistment sample is limited to 2,529,455 applicants with no prior military service, a U.S. home state, who signed an enlistment contract from October 1, 1997 to October 31, 2012, and who accessed into military service (i.e, shipped to basic training) on or prior to September 30, 2013.[15] In addition to information on contract accession dates, the data includes home of record ZIP code, city, and state along with a host of demographic characteristics such as age and race.[16] Importantly, the data includes the AFQT score for each recruit who accessed into the military.

The data on combat casualties were drawn from the DMDC's Defense Casualty Analysis System (DCAS) for the same time period as the enlistments data. It contains the exact date of death, home of record city, county, and state, along with basic demographic variables such as gender, race, age, and service branch.

During this time period there were a total of 6,823 combat casualties. We are able to match 5,370 casualties to their respective U.S. Home counties available in the enlistment data set. Figure 1 depicts the monthly U.S. casualties for all services and by service branch, where the red vertical line identifies the start of the war in Afghanistan and the grey area identifies the

[15] The September 30, 2012 end date allows time for applicants who signed an enlistment contracts at the end of the sample period to access into military service. A small percentage of enlistments are excluded from the sample if (a) the date of accession is before the enlistment was signed [n=14,741]; (b) the applicant does not have a U.S. home state [n=22,047], (c) the applicants home county could not be matched to a U.S. county [n=12,036], the applicant's AFQT score is missing [n=3,213], or the applicant's education is missing [n=204].

[16] Over the entire period the data allows us to identify white and non-white applicants but we are unable to split the non-white category into more detailed racial and ethnic groups.

months spent in Iraq. As can be seen, the majority of the casualties were from service members in the Army (39%), the Navy (24%), and the Marines Corps (20%). Figure 1 also depicts the national trends in enlistments.. Notably, the overall trends do not suggest that there is a strong correlation between total enlistments and the number of war casualties at the national level. This suggests that events in the Iraq and Afghanistan wars did not prevent the U.S. military from hitting its national recruiting goals.

It is possible, however, that the composition of new recruits varied with the number of combat casualties. Table 1 reports descriptive statistics for the AFQT distribution during the sample period and by service. Category I (66-99) is the highest AFQT category while category IV-V (1-30) is the lowest. Figure 2 depicts the monthly number of casualties along with the monthly average AFQT score of new enlistees who accessed into the military. The figures provide some evidence suggesting that an increase in the number of casualties corresponds to a decline in the average AFQT score, particularly in the Army.

Not all new enlistees access into the military immediately after signing a contract. Many enlistees, particularly those recruited while in high school, enter the Delayed Entry Program (DEP) and access into military service up to one year after signing their enlistment contract. The DMDC data does not contain direct information on applicants who entered the military through the DEP or who discharged from DEP. To construct the DEP sample, the enlistment sample is first limited to applicants who signed their enlistment contract at least two months prior to being accessed into military service (i.e., those who entered the military through DEP). This sample is then expanded to include applicants who signed an enlistment contract prior to October 31, 2012, but were not accessed into military service as of September 30, 2013 (i.e., those discharged from DEP).

The share of discharged applicants in the sample is about 18% (Table 1) with some variation in this share by service. Figure 3 depicts the national percent of discharged enlistees, by year and service. Interestingly, the total proportion of enlistees discharged from DEP declines over time, although the trends reveal some heterogeneity by service. Although the overall trend of discharged enlistees is declining in the Army, there is some evidence of a deviation from this trend during years with high numbers of casualties. Other services show a slightly declining or flat trends in the proportion of discharged enlistees with no indication of deviations from the trend when the number of casualties was high.

Joining the military can be an attractive choice to many young individuals who seek to acquire marketable skills or pursue post-secondary schooling. The Army and Navy, for instance, use guaranteed training as a major selling point in their recruiting efforts while emphasizing the opportunity for acquiring skills without any prior experience.[17] The DMDC data records whether a contract includes training guarantees when an enlistee accesses into military service. This information is not available for applicants who discharged from DEP. According to Table 1, about 56% of Army enlistees and 83% of Navy enlistees are offered training guarantees during our sample period. The share of training guarantees in the remaining service branches is much smaller.

Figure 4 depicts the proportion of contracts with guaranteed training, by service and over time. It is worth noting that while guaranteed training contracts were offered to only about 25 percent of Army recruits in 1999, they became essentially universal by 2012. It is possible that the military adjusts its recruitment efforts to the increase in the number of casualties by offering

[17] The Army, for example, offers trainings in more than 150 specialties such as computers, aviation, the medical and veterinary fields, combat arms and communications. Depending on the specialty training could last from one month to more than one year. See https://www.youtube.com/watch?v=q1mmehRoaV8.

new enlistees better contracts. The trends in Figure 4, however, do not seem to consistently co-vary with the number of overall casualties or to the casualties within a service.

Table 1 provides other descriptive statistics highlighting the importance of the military option for young individuals. For example, about 62% of enlistees are 17-19 years old, 29.5% sign a contract while still in high school and 55.2% are high school graduates. The proportion of non-white applicants is about 34.2% while females share is only about 17% during our sample period.

3. Local Casualties and Enlistments

3.1 Empirical Framework

An increase in the number of U.S. combat casualties could deter some young individuals from service, yet inspire others to join. Analyzing the impact of changes in national level casualties on selection into the military would be problematic because we cannot rule out the possibility that other time-varying factors are deriving the relationship between the number of casualties and enlistments. Instead, we take advantage of county-level exposure to casualties to analyze its impact on total enlistments, discharges, and quality level of enlistees.

The identifying assumption is that controlling for county and time fixed effects, the assignment of casualties to counties in the U.S. is as-good-as random. Exposure to local casualties could have a separate effect on the decision to enlist from exposure to the nation-wide number of casualties for a number of reasons. For example, local communities may develop different sentiments towards the war specifically, or towards military service in general, if they experience a high number of casualties. Moreover, local newspapers or other media outlets likely give a more extensive exposure to local casualties by covering the funeral of diseased

soldiers and by providing more detailed biographies. Because of this and other factors, casualties among the local population may be particularly salient to young individuals weighing the military option.

To investigate this, we start by estimating the effect of U.S. combat casualties from a county on the number of enlistments from that county:

$$\begin{aligned} Enlistments_{cm} = {} & \pi_1\, CasualtiesBefore_{cm} + \pi_2\, Casualties_{cm} \\ & + \pi_3\, CasualtiesAfter_{cm} + \boldsymbol{UR_{cm}\delta} + \phi \ln\left(pop_{c[year]}\right) \\ & + \mu_c + \tau_m + \theta_{[state]} m + \varepsilon_{icm}, \end{aligned} \tag{1}$$

where $Enlistments_{cm}$ is the number of applicants in county *c* who accessed into military service after signing their enlistment contract in month *m*. $CasualtiesBefore_{cm}$, $Casualties_{cm}$, and $CasualtiesAfter_{cm}$ are the number of U.S. combat casualties, measured in tens of casualties, in the six months before month *m*, in month *m*, and in the six months after month *m*, respectively. We include casualties in the six months after a contract is signed because recruits who enter DEP can change their decision to access into service between the contract and accession dates. The vector $\boldsymbol{UR_{cm}}$ includes controls for the unemployment rate at the county month level, and $\ln\left(pop_{c[year]}\right)$ is the log of the annual county population. The regression also includes controls for county fixed effects (μ_c) month date fixed effects (τ_m), and state specific linear month trends ($\theta_{[state]} m$). Standard errors are clustered at the county level.

Local combat casualties could cause potential recruits to change their minds about signing an enlistment contract or, for those who have already signed a contract but have not yet accessed into military service, to discharge from DEP. To estimate the latter effect more directly, we estimate the following equation using the DEP sample:

$$Discharge_{icm} = \pi\, CasualtiesAfter_{cm} + \boldsymbol{X_{icm}\beta} + \boldsymbol{UR_{cm}\delta} + \phi \ln\left(pop_{c[year]}\right) + \mu_c + \tau_m + \theta_{[state]}m + \varepsilon_{icm}, \quad (2)$$

where $Discharge_{icm}$ is an indicator variable for whether applicant *i* in county *c* who signed a contract in month *m* was discharged from DEP. As before, $CasualtiesAfter_{cm}$ is the number of U.S. combat casualties, measured in tens, that are from the same county as the applicant in the six months after the enlistment contract was signed. The vector $\boldsymbol{X_{icm}}$ includes controls for four AFQT categories, six education categories, five age categories, race, gender, marital status and service. All other variables in Eq. (2) are defined as they are in Eq. (1).

Finally, local combat casualties could change the composition of those who enlist in military service. We investigate this by estimating versions of Eq. (1) for key demographic groups. In addition, we estimate the effect U.S. combat casualties have on the probability an enlistee will have a skill or training guarantee written in his or her enlistment contract with the equation:

$$Guarantee_{icm} = \pi\, CasualtiesBefore_{cm} + \boldsymbol{X_{icm}\beta} + \boldsymbol{UR_{cm}\delta} + \phi \ln\left(pop_{c[year]}\right) + \mu_c + \tau_m + \theta_{[state]}m + \varepsilon_{icm}, \quad (3)$$

where $Guarantee_{icm}$ is an indicator variable for whether applicant *i* in county *c* in month *m* was given a skill or training guarantee. As before, $CasualtiesBefore_{cm}$ is the number of U.S. combat casualties, measured in tens, that are from the same county as the applicant in the six months before the enlistment contract was signed. All other variables in Eq. (3) are defined as they are in Eq. (1).

3.2 Results

We start by presenting the results from estimating Eq. (1) in Table 2. The results suggest that an increase of 10 casualties in the six months before a contract is signed reduces the number of enlistees in that county by about 14. We obtain slightly smaller but similar results for the number of casualties in the month the contract was signed and in the 6 months after the contract was signed. It is also worth noting that the services impacted the most are the Army, Navy, and Marines, which are also the services that experienced the most casualties during both wars. This suggests that potential recruits may be taking into account the relative perception of each service when deciding to enlist or not. Also, notice that casualties in the 6 months after a contract is signed impact enlistments because, as we will show later, they impact the number of applicants who initially sign a contract, but then decide to discharge from DEP. The results in Table 2 also provide evidence that the decision to enlist is impacted by the economic conditions at the county level, consistent with the findings of Borgschulte and Martorell (2015).

There is evidence that the composition of enlisted recruits from a county is also affected by exposure to casualties. For example, Table 3 presents the results of estimating Eq. (1) by different sub-groups. Panel A of Table 3 shows that the decline in enlistments are largest for recruits with AFQT scores that fall into categories IIIA (50-64) and IIIB (31-49). Smaller declines are also observed for more qualified recruits in category II (65-92) while the enlistments of individuals in the highest or lowest AFQT categories slightly increase. As for racial composition, Panel B shows that the decline in overall enlistments is driven by whites versus non-whites. Panel C presents estimates by age categories. Notably, the largest declines in enlistments are observed among individuals who are 17 or 18 years old, exactly at the stage when they are making other important career decisions such as whether to graduate from high

school or whether to enroll in college. The estimates are smaller for 19 years old and continue to decline and become statistically insignificant for older age groups. Finally, Panel D shows that both male and female are less likely to enlist due to local casualties.

As we discussed earlier, exposure to casualties after signing a contract could change a recruit's decision to access into military service. In Table 4, we present results on the effects of local casualties after signing a contract on the probability of discharging from service (Eq. 2). Column 1 of Table 4 shows that, without controlling for AFQT scores, age, race, and gender, an increase of 10 local casualties increases the probability of discharging from service by 2.3 percentage points. Evaluated at the mean discharges from DEP, this implies about 12.7% increase in the probability of discharging. Moreover, controlling for AFQT score and other demographics in column 2 does not change this estimate. As discussed previously, it's not surprising the effect of casualties on enlistments, and in this case discharging from DEP, is driven primarily by the Army, Navy, and Marines whereas the effects of casualties are small and statistically insignificant for the Air Force and the Coast Guard.

The estimated relationship between other control variables and the probability of discharging reveals interesting patterns. In general, the probability of discharging decreases monotonically with AFQT scores. Recruits in the lowest AFQT category are 16.2 percentage points more likely to discharge. The probability of discharging also increases monotonically with age. Non-whites are less likely to discharge compared to whites and females are significantly more likely to discharge compared to men. As expected, higher unemployment rates reduce the probability of not accessing into military service.

Table 5 presents results from discharge regressions where the number of casualties is interacted with key demographic characteristics. The results in column 1 suggest that the impact of casualties does not vary by AFQT score, with the exception of those in the lowest AFQT categories for whom higher casualties reduces their probability of discharging by about a half. In contrast, while no differential effects are found for recruits aged 18-20, casualties have a larger effect on the probability of discharging for 17 year-olds, particularly in the Navy and Air Force. Non-whites are significantly more likely to discharge due to casualties where an increase of 10 local casualties is associated with an increase of 4.1 percentage points in the probability of discharging. These results are mostly consistent across services with the exception of the Marines, where 18 and 19 year old recruits are more likely to discharge compared to 17 year old recruits and where no racial differences appear.

Finally, in Table 6 we estimate results from estimating Eq. (3) where the dependent variable is an indicator for whether the signed contract included training guarantees. The overall effect of casualties in the 6 months before signing a contract is negative and statistically significant at the 10 percent level. It implies that an increase of 10 casualties decreases the probability of receiving training guarantees by about 3.2 percentage points, which is about a 7 percent reduction. This reduction is mainly driven by the Army and the likelihood of receiving contracts with training guarantees is not affected by the number of local casualties in any of the other services. It is not clear why, conditional on observables, the likelihood of contracts with training guarantees goes down. One possibility is that recruits who join the military despite the high number of casualties are less interested in acquiring skills during their service, and are more motivated by other factors such as patriotism or earning college benefits. In any case, Table 6

does not provide any evidence that military recruiters respond to local supply shocks by offering contracts with additional skill or training guarantees

4. Local Casualties and Educational Outcomes

4.1 Empirical Framework

We now turn to analyze the effect of exposure to combat casualties at young ages on educational outcomes. For this analysis, we draw data from the 2002-2013 American Community Survey and limit the sample to men who turned 17 during the period 1999-2010.[18] In addition, we retain individuals aged 20 and above to ensure that we can observe their high school and college outcomes. As a result, the sample contains men aged 20-31.[19] The ACS data identifies a person's state of birth, but not county of birth, and only identifies county of residence for large counties. As a result the ACS analysis is conducted at the state level. For each state, we aggregate the yearly number of combat casualties and merge them into the ACS data based on the year an individual turned 17 years old. We also merge state-level unemployment rates when a person turned 17. Table 7 contains descriptive statistics for the analysis sample.

We estimate the following regression with OLS:

$$Y_{ist} = \sum_{a=15}^{19} \beta\, Casualties_{is}^{a} + \boldsymbol{X_{ist}\pi_1} + \boldsymbol{Z_{s[a=17]}\pi_2} + \delta_a + \mu_s + \tau_t + \theta_a t + \varepsilon_{ist}, \qquad (4)$$

where Y_{ist} is the outcome of individual *i*, living in state *s* when we observe him in survey year *t*. $Casualties_{is}^{a}$ is the number of U.S. casualties in state *s*, measured in hundreds, that an individual was exposed to when he was 15-16, 17-18, and 19-20 years old. The vector X_{ist} includes

[18] We limit the sample to men because the majority of individuals who join the military are men (about 83% in our sample period).

[19] We exclude observations with allocated values.

unrestricted dummy variables for black, Hispanic, and other race/ethnicity (omitted category is white). The vector $Z_{s[a=17]}$ includes two indicators for state unemployment rates (4%-6% and above 6%) when a person turned 17 and the vector δ_a includes unrestricted age dummy variables. Since we take advantage of the temporal and geographic variation in combat casualties, the regression includes census year fixed effects τ_t and state fixed μ_s. $\theta_a t$ are a set of state-specific birth cohort linear time trends and ϵ_{ist} is the error term. We cluster the standard errors at the state level.

4.2 Enlistment and Educational Outcomes

Before estimating the effects of local casualties on schooling outcomes, it is useful to examine whether exposure to casualties impact the probability of ever serving in the military. Thus, the first outcome we examine using Eq. (4) takes a value of 1 if an individual reported to have ever served in the military and zero otherwise. The results are presented in column 1 of Table 8 and suggest that an increase of 100 casualties at ages 17-18 is associated with a reduction of about 0.3 percentage points in the probability of ever serving in the military, significant at the 5 percent level. Evaluated at the mean service rate of 6 percent, the results suggest that exposure to casualties reduces the probability of ever serving in the military by about 5 percent. This number is smaller but consistent with the findings reported in Tables 4 and 5 using internal military data. The coefficients on exposure to casualties at ages 15-16 and 19-20 are small and statistically insignificant.

Because high school diploma is required for enlisting for the vast majority of candidates, the decision not to enlist in the military could change the incentive of marginal candidates to graduate high school. Consequently, we can think about high school completion and military

service as complementary choices such that a decrease in the probability of service is likely to be accompanied by a decrease in the probability of high school graduation. We estimate the effects of exposure to casualties on the probability of dropping out from high school and report the results in column 2 of Table 8. The results indicate that an increase of 100 casualties at age 17-18 is associated with an increase of about 0.3 percentage points in the probability of dropping out from high school. Evaluated at the mean, this corresponds to an increase of about 3 percent in the probability of not graduating from high school. The coefficient on ages 15-16 is small and statistically insignificant. Importantly, the coefficient on ages 19-20 is also small and statistically insignificant. This adds to our confidence in the research design since we should not expect casualties at ages 19-20 to influence an outcome that is typically determined at a younger age.

Next, we estimate the effect on college education and report the results in column 3 of Table 8. The outcome is an indicator variable that takes 1 for attaining any post-secondary education and zero otherwise. Given the impacts on the high school graduation, we would expect the probability of college enrollment to decline for young men who would have joined the military absent the exposure to casualties. Moreover, the military, through the GI Bill, can be an important vehicle through which disadvantaged groups can access post-secondary education. Thus, conditional on high school graduation, exposure to casualties can limit access to college education by raising its cost.

The results suggest that an increase of 100 casualties at ages 17-18 decreases the probability of college education by about 0.69 percentage points or a decline of about 1 percent, significant at the 1 percent level. Exposure to casualties at ages 19-20 also reduces the probability of attaining college education but, as we would expect, the magnitude of the

coefficient is reduced by about a half. We find small, negative, but statistically insignificant effects of exposure at ages 15-16 on college education.

It is difficult to use the above estimates to gauge the overall role of the military option in shaping human capital investments. However, although combat casualties seem to have a relatively small effect on the desirability of military service, they are associated with detectable and significant impacts on human capital investments. These two results combined suggest that the military option, at the very least, is an important pathway to better career outcomes for many young Americans.

4.3 Heterogeneous Effects

Table 9 reports the effects of exposure to casualties by race and ethnic groups. The results in columns 1-3 suggest that the effect of casualties on high school completion at ages 17-18 is driven primarily by Hispanic men. The coefficient suggests that an increase of 100 casualties at ages 17-18 increases the probability of dropping out from high school by 0.65 percentage points. Consistent with the results in Table 8, this corresponds to a 3 percent increase in the probability of dropping out from high school.

In columns 4-6, we report the results for college education. The results indicate that exposure to 100 more combat casualties at ages 17-18 reduces to the probability of college education for white men by about 0.74 percentage points, significant at the 5 percent level. The results in this age range are small and statistically insignificant for Hispanic and black men. Exposure to 100 more casualties at ages 19-20, however, reduces the probability of college education for Hispanic men by about 0.81 percentage points, which is a decline of about 1.8 percent in the probability of having any college education.

Next, we analyze the outcomes by state population size in Table 10. We split the sample into 3 groups, each containing about one third of the overall U.S. population resulting in comparable sample sizes.[20] The results suggest that the effect of casualties on high school completion at ages 17-18 is largest in the most populous states (column 1), perhaps because they are also the states with the highest proportion of Hispanic men. In contrast, an increase of 100 casualties at ages 17-18 reduces the probability of college education by about 0.8-1 percentage point in large and medium size states and by about 3.6 percentage points in small states. These results suggest that conditional on high school graduation, removing the military option has a sizable effect on college access for young men.

Finally, we replace the number of combat casualties that a state experienced in equation (4) with the number of soldiers who were wounded in action (WIA), measured in thousands. The results of this exercise are reported in Table 11. As can be seen, the results using this alternative measure are consistent with the results reported in table 8. Specifically, an increase of 1,000 WIA soldiers at ages 17-18 decreases the probability of ever serving in the military by about 0.52 percentage points, increases the probability of dropping out from high school by 0.35 percentage points, and decreases the probability of college education by about 1 percentage point.

6. Conclusion

Economic opportunities that young people face have been shown to impact their human capital investments, altering in some cases their career outcomes (Black et al. 2005a; Kahn 2010). Enlisting in the military is an important option available to young men and women at the

[20] The large states sample includes: California, Florida, New York, and Texas. The medium states sample includes: Arizona, Georgia, Illinois, Indiana, Massachusetts, Michigan, North Carolina, New Jersey, Ohio, Pennsylvania, Tennessee, Virginia, and Washington. The remaining states are included in the small states sample.

start of their careers. In this paper, we show that reducing the desirability of joining the military impacts the decision of youth to enlist and their human capital investments.

Using internal military data, we show that exposure to combat casualties during the Afghanistan and Iraq Wars from a U.S. Home county decreases the supply of new soldiers in that county. The effect on enlistments varies across the AFQT distribution, by race and different ages. In particular, an increase in the number of casualties discourages youth with medium to high AFQT scores, whites, 17-20 year olds, and both genders from enlisting, while the enlistments of youth with low and very high AFQT scores and non-whites increases. Our identification relies on the assumption that the assignment of casualties to U.S. home of record counties is as-good-as random and that it does not impact the demand for soldiers at the local level, which is instead set nationally.

Focusing on a supply-driven shock has important advantages in estimating the effects of early-life conditions on human capital investments and on subsequent labor market outcomes. In contrast to demand-driven shocks that have been analyzed previously in the literature, an increase in a county's number of casualties is unlikely to trigger income effects, induce other demand shocks in related markets, or change the in- or out-migration patterns from the county (Cadena and Kovak 2015).

We also find evidence that exposure to combat casualties at a young age (17-18) increases the probability of dropping out from high school, and decreases the probability of attaining college education. The results suggest that, at least for some youth, the military option is advantageous to them and motivates them to finish high school and serves as an important vehicle through which they can have access to post-secondary education and acquire marketable skills.

We are unable to make definitive conclusions about the effects on longer-term labor market outcomes, such as earnings. This is because the relatively short span of years in which we observe youth after being exposed to casualties from the Iraq and Afghanistan Wars. Analyzing the effects on longer-term career outcomes is an importance avenue to pursue in future research.

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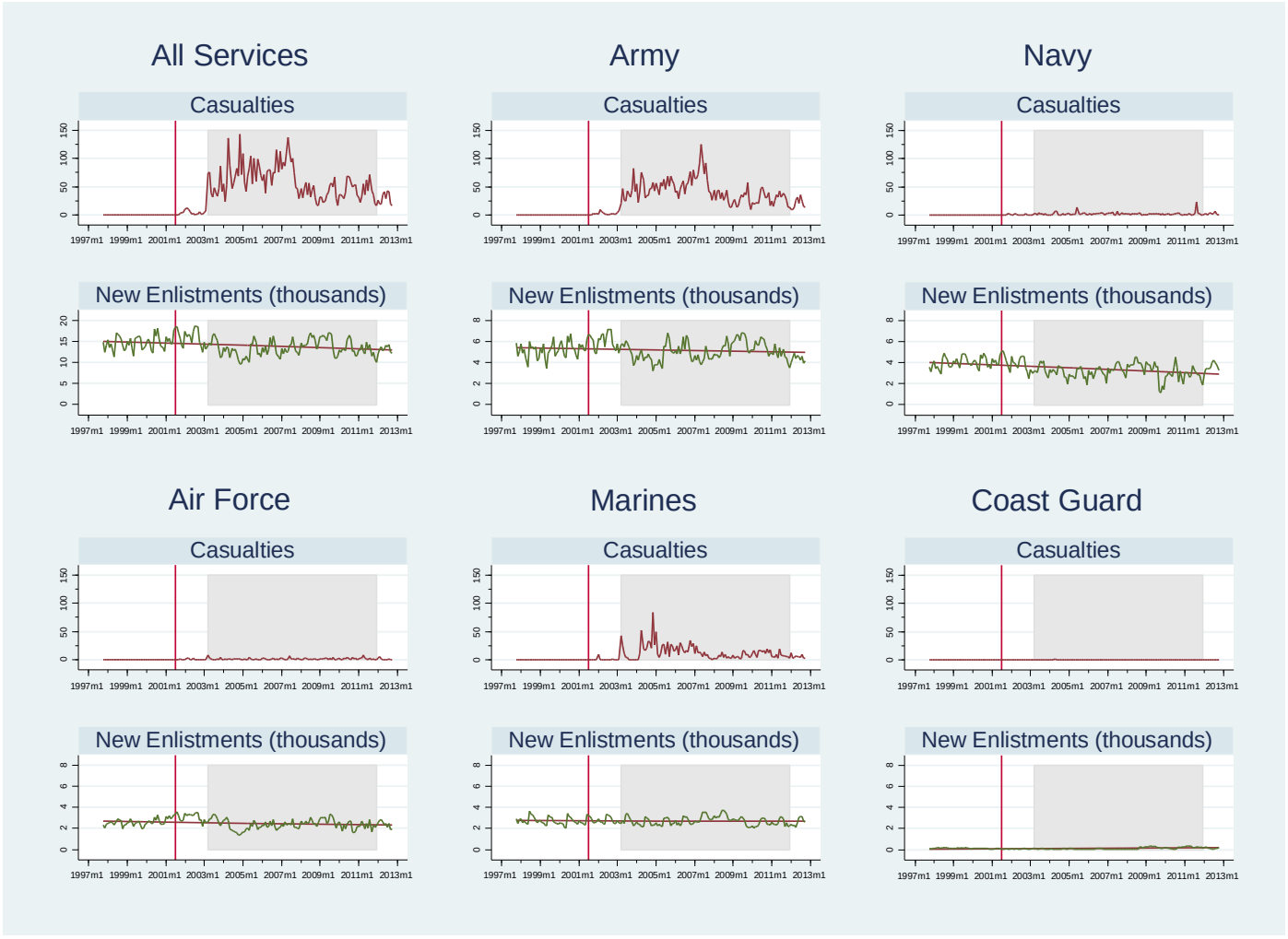
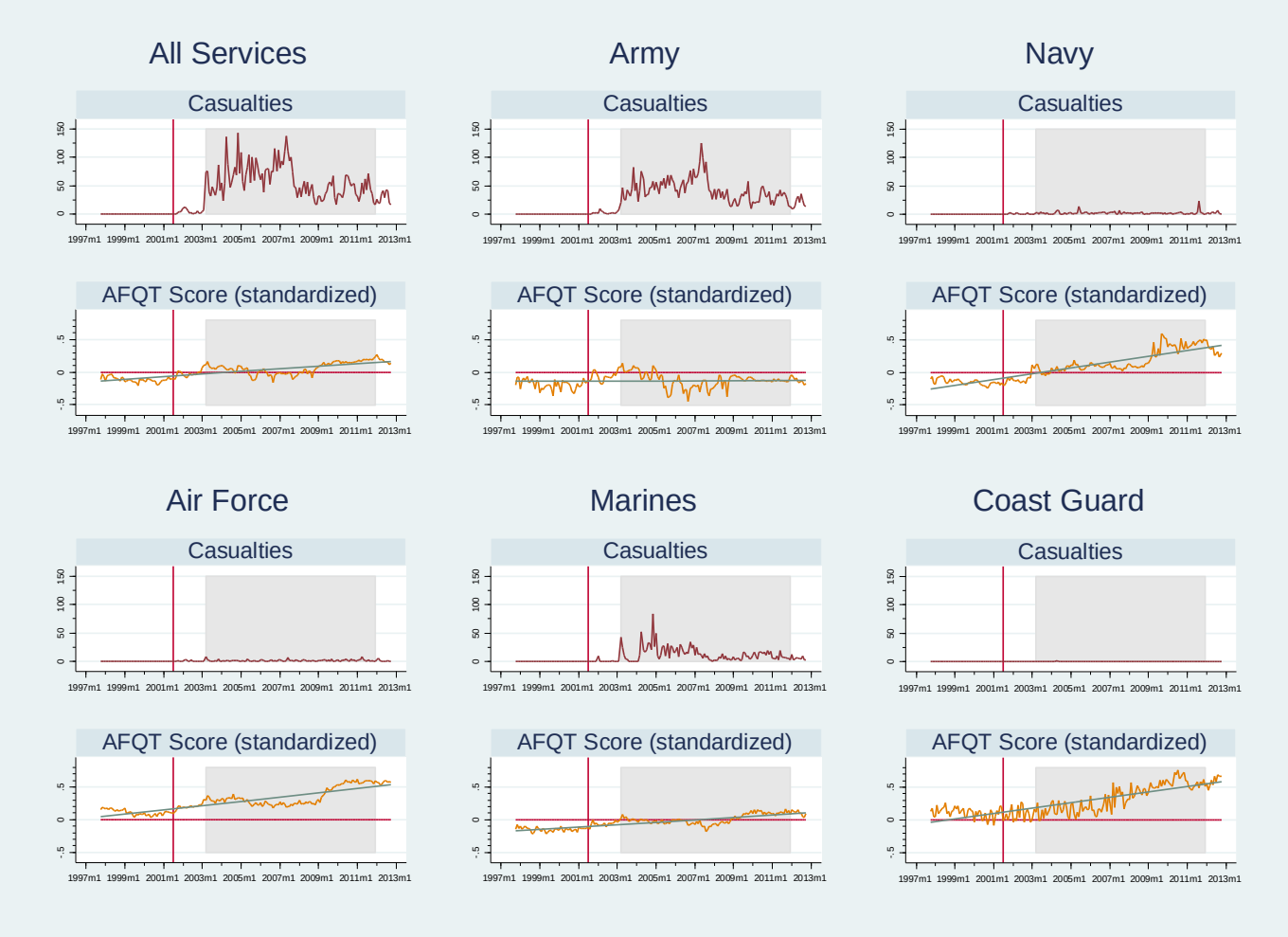
Figure 1: Monthly U.S. Combat Casualties and the Number of New U.S. Military Enlisted Recruits, by Service



Source: Defense Manpower Data Center (DMDC) from October 1, 1997 to October 31, 2012.
Notes: Month refers to the month the enlistment contract was signed. New enlistments include those with no prior military service, with a U.S. home state, and who accessed into military service after they signed their enlistment contract. The shaded area indicates the months when U.S. military forces were in Iraq. The vertical line indicates September 11, 2001.

Figure 2: Monthly U.S. Combat Casualties and AFQT Scores (standardized) for New U.S. Military Enlisted Recruits, by Service

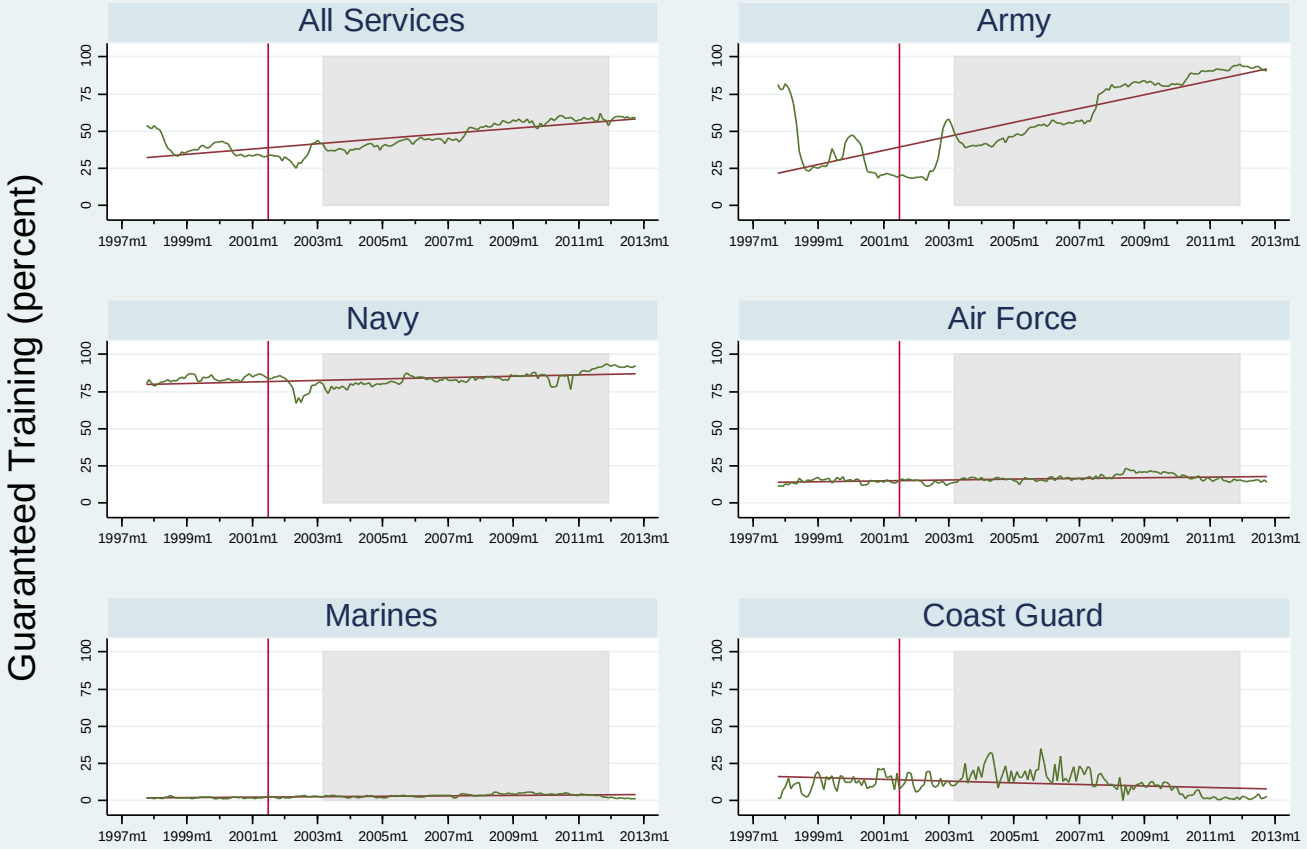


Source: Defense Manpower Data Center (DMDC) from October 1, 1997 to October 31, 2012.
Notes: Month refers to the month the enlistment contract was signed. The sample includes new enlistments with no prior military service, with a U.S. home state, and who accessed into military service after they signed their enlistment contract. The shaded area indicates the months when U.S. military forces were in Iraq. The vertical line indicates September 11, 2001.

Figure 3: Discharges (percent) from the Delayed Entry Program (DEP), by Service

Source: Defense Manpower Data Center (DMDC) from October 1, 1997 to October 31, 2012.
Notes: Month refers to the month the enlistment contract was signed. The sample includes applicants who signed an enlistment contract with no prior military service and with a U.S. home state. An applicant is considered to have been in the delayed entry program (DEP) if the enlistment contract was signed at least two months prior to that date the applicant accessed into military service. An applicant is considered to have discharged from DEP if the application was not accessed into military service as of October 31, 2013. The shaded area indicates the months when U.S. military forces were in Iraq. The vertical line indicates September 11, 2001.

Figure 4: Guaranteed Training (percent) for New U.S. Military Enlisted Recruits, by Service



Source: Defense Manpower Data Center (DMDC) from October 1, 1997 to October 31, 2012.
Notes: The sample includes new enlistments with no prior military service, with a U.S. home state, and who accessed into military service after they signed their enlistment contract. The shaded area indicates the months when U.S. military forces were in Iraq. The vertical line indicates September 11, 2001. Guaranteed training is a skill or training guarantee written in the enlistment contract.

Table 1: Descriptive Statistics

	All Services	Army	Navy	Air Force	Marines	Coast Guard
Discharged from DEP	18.1%	19.0	20.3	12.3	19.7	11.6
DEP sample size	2,129,348	641,018	579,153	437,708	460,171	11,298
Skill or Training Guarantee	45.0%	56.2	83.3	16.1	3.0	9.9
AFQT Category (base: Cat. I):						
Cat I (66-99)	5.8%	5.6	6.4	6.8	4.4	7.3
Cat. II (65-92)	37.4%	33.3	38.0	45.6	36.2	49.9
Cat. IIIA (50-64)	27.7%	27.0	27.6	29.8	27.4	28.6
Cat. IIIB (31-49)	28.2%	32.3	27.9	17.9	31.1	14.1
Cat. IV-V (0-30)	0.9%	1.8	0.1	0.1	0.9	0.01
Age at contract:						
17 years old	19.4%	15.4	19.0	17.1	29.9	8.0
18 years old	26.1%	22.4	26.6	28.0	31.0	24.5
19 years old	17.0%	16.6	17.1	18.9	15.7	17.9
20 years old	10.9%	11.3	10.9	12.4	8.7	12.5
20+ years old	26.7%	34.2	26.5	23.6	14.8	37.2
Education at contract:						
No High School	8.8%	15.0	8.4	2.0	4.0	4.1
In High School	29.5%	22.2	29.5	25.9	47.3	12.8
High School	55.2%	53.9	57.2	63.1	47.0	71.0
Some College	3.8%	4.6	2.5	6.8	1.2	4.7
College	2.7%	4.2	2.4	2.2	0.5	7.5
Non-white	34.2%	34.0	41.8	30.1	28.9	22.3
Female	17.0%	17.7	19.2	22.9	7.4	18.9
County unemployment rate	6.21	6.31	6.12	6.14	6.15	6.92
	(0.002)	(0.003)	(0.003)	(0.004)	(0.004)	(0.020)
ln(population)	(12.55)	(12.51)	(12.68)	(12.42)	(12.58)	(12.74)
	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.010)
Enlistment sample size	2,529,435	937,470	627,668	450,999	491,088	22,210

Source: Defense Manpower Data Center (DMDC) from October 1, 1997 to October 31, 2012.
Notes: Standard errors shown in parentheses.

Table 2: Effect of U.S. Combat Casualties from County on Number of New Enlistments from County, by Service

Casualties:	All Services	Army	Navy	Air Force	Marines	Coast Guard
6 months before contract	-14.28***	-5.51***	-3.21***	-0.37	-4.88***	-0.31***
	(4.47)	(1.88)	(0.74)	(0.45)	(1.51)	(0.11)
Month contract signed	-12.14***	-3.55***	-3.13***	-0.19	-4.83***	-0.45***
	(4.18)	(1.21)	(0.83)	(0.50)	(1.84)	(0.11)
6 months after contract	-11.31***	-2.77***	-2.30***	-0.72*	-5.15***	-0.37***
	(3.55)	(1.06)	(0.49)	(0.43)	(1.59)	(0.13)
ln(population)	4.19***	1.77***	0.87***	0.70***	0.79***	0.06***
	(0.54)	(0.22)	(0.11)	(0.09)	(0.19)	(0.02)
Unemployment rate (base: <4.0):						
4.0 to 6.0	0.45***	0.19***	0.07***	0.08***	0.11***	0.01***
	(0.05)	(0.02)	(0.01)	(0.01)	(0.02)	(0.00)
6.0+	0.70***	0.32***	0.10***	0.11***	0.15***	0.02***
	(0.07)	(0.03)	(0.01)	(0.01)	(0.02)	(0.001)
Sample Size	565,987	565,987	565,987	565,987	565,987	565,987

*Statistically significant at 10% level; **at 5% level; ***at 1% level.

Source: Defense Manpower Data Center (DMDC) from October 1, 1997 to October 31, 2012.

Notes: Standard errors clustered county level are shown in parentheses. The sample includes new enlistments with no prior military service, with a U.S. home state, and who accessed into military service after they signed their enlistment contract. Casualties is the number of U.S. combat casualties, measured in tens, from the same county as the applicant in the months before, during, and after the enlistment contract was signed. All regressions include controls county fixed effects, month date fixed effects, and state specific linear month date trends.

Table 3: Effect of U.S. Combat Casualties from County on Number of New Enlistments from County, by AFQT Category, Race, Age, and Gender

	Panel A: AFQT Category					*Panel B*: Race	
Casualties:	Cat. I (93-99)	Cat. II (65-92)	Cat. IIIA (50-64)	Cat. IIIB (31-49)	Cat. IV-V (0-30)	White	Non-White
6 months before contract	0.01	-3.83***	-5.43***	-5.63***	0.67***	-17.19***	2.91*
	(0.21)	(1.29)	(1.47)	(1.67)	(0.14)	(4.23)	(1.68)
Month contract signed	0.40***	-2.82**	-4.45***	-5.55***	0.41*	-16.20***	4.06***
	(0.14)	(1.26)	(1.18)	(1.68)	(0.22)	(4.18)	(1.55)
6 months after contract	0.50***	-2.65***	-4.60***	-4.95***	0.45***	-15.49***	4.18***
	(0.16)	(0.85)	(1.07)	(1.54)	(0.09)	(4.08)	(1.40)
	Panel C: Age at Enlistment Contract					*Panel D*: Gender	
Casualties:	17	18	19	20	21+	Male	Female
6 months before contract	-5.25***	-4.48***	-2.14***	-1.00**	-1.40	-11.26***	-3.01***
	(1.46)	(1.14)	(0.53)	(0.45)	(1.03)	(3.77)	(0.71)
Month contract signed	-4.98***	-3.89***	-1.66***	-0.88	-0.74	-9.54**	-2.61***
	(1.50)	(1.14)	(0.46)	(0.55)	(0.82)	(3.74)	(0.52)
6 months after contract	-4.01***	-3.57***	-1.82***	-0.94**	-0.96	-8.81***	-2.50***
	(1.04)	(0.91)	(0.47)	(0.38)	(0.87)	(3.11)	(0.46)
Sample Size	565,987	565,987	565,987	565,987	565,987	565,987	565,987

*Statistically significant at 10% level; **at 5% level; ***at 1% level.

Source: Defense Manpower Data Center (DMDC) from October 1, 1997 to October 31, 2012.

Notes: Standard errors clustered county level are shown in parentheses. The sample includes new enlistments with no prior military service, with a U.S. home state, and who accessed into military service after they signed their enlistment contract. Casualties is the number of U.S. combat casualties, measured in tens, from the same county as the applicant in the months before, during, and after the enlistment contract was signed. All regressions include controls county fixed effects, month date fixed effects, and state specific linear month date trends.

Table 4: Selected Coefficients from Discharged from Delayed Entry Program (DEP) Regressions

	All Services	All Services	Army	Navy	Air Force	Marines	Coast Guard
Casualties (in 6 mo. after contract)	.023***	.023***	.020***	.030***	.003	.031***	-.004
	(.005)	(.005)	(.005)	(.008)	(.004)	(.005)	(.041)
AFQT Category (base: Cat. I):							
Cat. II (65-92)		.017***	.029***	.007***	.018***	.018***	.020
		(.001)	(.002)	(.002)	(.002)	(.003)	(.012)
Cat. IIIA (50-64)		.028***	.041***	.021***	.024***	.032***	.027**
		(.002)	(.002)	(.003)	(.002)	(.003)	(.014)
Cat. IIIB (31-49)		.034***	.046***	.031***	.034***	.042***	.036**
		(.002)	(.002)	(.003)	(.002)	(.004)	(.016)
Cat. IV-V (0-30)		.162***	.127***	.316***	.177***	.104***	.380
		(.006)	(.008)	(.016)	(.035)	(.012)	(.365)
Age at contract (base: 17 year old):							
18 years old		.002**	.004***	.006***	-.011***	.007***	.018*
		(.001)	(.001)	(.002)	(.002)	(.002)	(.011)
19 years old		.020***	.021***	.022***	.008***	.028***	.063***
		(.001)	(.002)	(.002)	(.002)	(.002)	(.014)
20 years old		.031***	.032***	.035***	.015***	.042***	.067***
		(.001)	(.002)	(.003)	(.002)	(.003)	(.016)
20+ years old		.044***	.045***	.049***	.020***	.069***	.085***
		(.001)	(.002)	(.003)	(.002)	(.003)	(.014)
Non-white		-.003***	-.006***	.001	-.018***	.004**	.031***
		(.001)	(.001)	(.001)	(.001)	(.002)	(.008)
Female		.114***	.116***	.121***	.095***	.130***	.037***
		(.002)	(.002)	(.002)	(.002)	(.003)	(.010)
ln(population)	-.001	.002	-.011	.015	.006	-.035**	.154*
	(.008)	(.008)	(.013)	(.016)	(.013)	(.017)	(.079)
Unemployment rate (base: <4.0):							
4.0 to 6.0	-.008***	-.008***	-.005*	-.015***	-.005***	-.011***	-.007
	(.001)	(.001)	(.002)	(.002)	(.002)	(.003)	(.012)
6.0+	-.015***	-.015***	-.012***	-.021***	-.010***	-.019***	-.053***
	(.002)	(.002)	(.003)	(.003)	(.003)	(.004)	(.018)
Sample Size	2,129,348	2,129,348	641,018	579,153	437,708	460,171	11,298

*Statistically significant at 10% level; **at 5% level; ***at 1% level.

Source: Defense Manpower Data Center (DMDC) from October 1, 1997 to October 31, 2012.

Notes: Standard errors clustered county level are shown in parentheses. The sample includes applicants who signed an enlistment contract with no prior military service and with a U.S. home state. An applicant is considered to have been in the delayed entry program (DEP) if the enlistment contract was signed at least two months prior to that date the applicant accessed into military service. An applicant is considered to have discharged from DEP if the application was not accessed into military service as of October 31, 2013. Casualties is the number of U.S. combat casualties, measured in tens, from the same county as the applicant in the six months after the enlistment contract was signed. In addition to the controls listed above, all regressions include controls for six education categories, marital status, well as controls for county fixed effects, month date fixed effects, and state specific linear month date trends. The "all services" regression include service fixed effects.

Table 5: Coefficients on Selected Interaction Terms from Discharged from Delayed Entry Program (DEP) Regressions

	All Services	Army	Navy	Air Force	Marines	Coast Guard
Casualties (in 6 mo. after contract)	.018***	.015**	.028***	.002	.022***	-.017
	(.005)	(.007)	(.011)	(.006)	(.007)	(.049)
Casualties × AFQT Category (base: Cat. I):						
Cat. II (65-92)	.004	.026***	-.015*	.037***	-.002	.035
	(.004)	(.008)	(.009)	(.009)	(.012)	(.204)
Cat. IIIA (50-64)	-.012	.004	-.049***	.022	.012	.023
	(.008)	(.013)	(.015)	(.018)	(.012)	(.210)
Cat. IIIB (31-49)	-.004	.006	-.041***	.036**	-.001	-.052
	(.007)	(.014)	(.011)	(.015)	(.010)	(.093)
Cat. IV-V (0-30)	-.089***	-.087**	-.572***	-.102***	.317**	-
	(.019)	(.038)	(.020)	(.019)	(.135)	-
Casualties × Age at contract (base: 17):						
18 years old	-.005	.012	-.024**	-.047***	.030***	.031
	(.006)	(.024)	(.009)	(.005)	(.010)	(.177)
19 years old	-.011	.006	-.029***	-.026***	.032**	.046
	(.007)	(.025)	(.008)	(.005)	(.012)	(.180)
20 years old	.005	.004	.015	.008	-.018	-.126
	(.008)	(.033)	(.009)	(.012)	(.018)	(.164)
20+ years old	.018***	.012	.002	.010	.058***	.231
	(.002)	(.007)	(.006)	(.006)	(.010)	(.283)
Casualties × Non-white	.023***	.017*	.052***	-.010***	.001	-.038
	(.002)	(.010)	(.006)	(.004)	(.005)	(.056)
Casualties × Female	-.007	-.062***	.023***	-.016	-.005	-.244
	(.005)	(.016)	(.006)	(.010)	(.011)	(.162)
Sample Size	2,129,348	641,018	579,153	437,708	460,171	11,298

*Statistically significant at 10% level; **at 5% level; ***at 1% level.

Source: Defense Manpower Data Center (DMDC) from October 1, 1997 to October 31, 2012.

Notes: Standard errors clustered county level are shown in parentheses. The sample and regression specifications are identical to those in Table 4 with the addition of the listed interaction terms.

Table 6: Selected Coefficients from Garneted Training Regressions

	All Services	All Services	Army	Navy	Air Force	Marines	Coast Guard
Casualties (in 6 mo. before contract)	-.033*	-.032*	-.075**	-.010	.011	.000	-.033
	(.019)	(.019)	(.031)	(.032)	(.018)	(.005)	(.023)
AFQT Category (base: Cat. I):							
Cat. II (65-92)		.004***	.009***	-.002	-.014***	.001	-.001
		(.001)	(.002)	(.002)	(.002)	(.001)	(.007)
Cat. IIIA (50-64)		.002	.012***	-.019***	-.018***	.005***	-.021**
		(.002)	(.002)	(.003)	(.002)	(.001)	(.008)
Cat. IIIB (31-49)		.012***	.016***	-.069***	-.014***	.005***	-.062***
		(.003)	(.002)	(.006)	(.003)	(.001)	(.010)
Cat. IV-V (0-30)		.001	.024***	-.170***	-.015	-.004**	.481*
		(.004)	(.004)	(.022)	(.022)	(.002)	(.282)
Age at contract (base: 17 year old):							
18 years old		-.008***	-.013***	-.007***	-.007***	-.000	-.013
		(.001)	(.002)	(.002)	(.001)	(.001)	(.010)
19 years old		-.005***	-.011***	-.005**	-.008***	.000	-.019*
		(.001)	(.002)	(.002)	(.002)	(.001)	(.010)
20 years old		-.005***	-.014***	-.004*	-.008***	.000	-.009
		(.001)	(.002)	(.002)	(.002)	(.001)	(.011)
20+ years old		-.007***	-.020***	-.006***	-.007***	-.001	-.016
		(.001)	(.002)	(.002)	(.002)	(.001)	(.011)
Non-white		-.008***	.0002	-.003*	-.003***	.001	.001
		(.001)	(.002)	(.002)	(.001)	(.001)	(.005)
Female		-.016***	-.006***	-.006***	-.015***	.003***	-.009**
		(.001)	(.001)	(.001)	(.002)	(.001)	(.005)
ln(population)	-.025	-.024	-.105**	.003	.081*	.034*	-.051
	(.025)	(.025)	(.050)	(.039)	(.045)	(.019)	(.057)
Unemployment rate (base: <4.0):							
4.0 to 6.0	-.003	-.003	.001	-.004	.012**	-.000	-.021*
	(.003)	(.003)	(.006)	(.005)	(.005)	(.001)	(.011)
6.0+	-.001	-.001	.013	.003	.002	-.003	-.038***
	(.004)	(.004)	(.009)	(.006)	(.006)	(.002)	(.014)
Sample Size	2,529,435	2,529,435	937,470	627,668	450,999	491,088	22,210

*Statistically significant at 10% level; **at 5% level; ***at 1% level.

Source: Defense Manpower Data Center (DMDC) from October 1, 1997 to October 31, 2012.

Notes: Standard errors clustered county level are shown in parentheses. The sample includes new enlistments with no prior military service, with a U.S. home state, and who accessed into military service after they signed their enlistment contract. Guaranteed training is a skill or training guarantee written in the enlistment contract. Casualties is the number of U.S. combat casualties, measured in tens, from the same county as the applicant in the six months before the enlistment contract was signed. In addition to the controls listed above, all regressions include controls for six education categories, five age categories, marital status, well as controls for county fixed effects, month date fixed effects, and state specific linear month date trends. The "all services" regression include service fixed effects.

Table 7: Descriptive Statistics from American Community Survey

	All	White	Hispanic	Black
Ever Served	6.3%	6.8%	5.3%	5.3%
High School Dropout	11.2%	7.4%	22.2%	22.5%
College Enrollment	59.3%	63.8%	45.0%	43.3%
Age	23.8	23.8	23.6	23.7
State Unemployment Rate	5.22	5.1	5.5	5.3
White	68.3%			
Black	10.6%			
Hispanic	13.9%			
Sample size	927,228	633,017	128,544	98,013

Notes: The data is drawn from the American Community Survey 2002-2013.

Table 8: Effect of U.S. Combat Casualties on Military Service and Education

	(1) Ever Served	(2) High School Dropout	(3) College
Casualties at age:			
15-16	-0.0011	0.0013	-0.0038
	(0.002)	(0.002)	(0.006)
17-18	-0.0030**	0.0032**	-0.0069***
	(0.001)	(0.001)	(0.001)
19-20	-0.0005	0.0005	-0.0039**
	(0.002)	(0.001)	(0.002)
Sample Size	927,228	927,228	927,228

*Statistically significant at 10% level; **at 5% level; ***at 1% level.

Source: American Community Survey 2002-2013.

Notes: Standard errors clustered at the state of birth level are shown in parentheses. The sample includes men who turned 17 during 1999-2010. Casualties are the number of U.S. combat casualties, measured in hundreds, from an individual's state of birth experienced at ages 15-16 and 17-18, and 19-20. All regressions includes a black, Hispanic, and other dummy variables and control for unrestricted indicators for age, log of state population aged 16-40, two unemployment categories (2-6% and above 6%), as well as state fixed effects, year date fixed effects, and state specific linear cohort date trends.

Table 9: Effect of U.S. Combat Casualties on Education, by Race and Ethnicity

	(1)	(2)	(3)	(4)	(5)	(6)
	High School Dropout			College		
	White	Hispanic	Black	White	Hispanic	Black
Casualties at age:						
15-16	-0.0007	0.0042	-0.0105	-0.0064	-0.0022	-0.0062
	(0.003)	(0.003)	(0.008)	(0.007)	(0.004)	(0.020)
17-18	-0.0007	0.0065**	0.0010	-0.0074***	-0.0019	0.0008
	(0.001)	(0.003)	(0.006)	(0.003)	(0.003)	(0.011)
19-20	-0.0019	0.0042	-0.0128*	-0.0019	-0.0081***	0.0123
	(0.002)	(0.003)	(0.006)	(0.002)	(0.003)	(0.011)
Sample Size	633,017	128,544	98,013	633,017	128,544	98,013

*Statistically significant at 10% level; **at 5% level; ***at 1% level. For list of controls and other details, see notes to Table 8.

Table 10: Effect of U.S. Combat Casualties on Military Service and Education, by State Size Population

	(1)	(2)	(3)	(4)	(5)	(6)
	Large States		Medium States		Small States	
	High School Dropout	College	High School Dropout	College	High School Dropout	College
Casualties at age:						
15-16	0.006*	-0.000	-0.004	-0.032***	0.010	-0.060***
	(0.002)	(0.003)	(0.006)	(0.006)	(0.010)	(0.021)
17-18	0.007***	-0.008***	-0.001	-0.010*	0.006	-0.036**
	(0.001)	(0.001)	(0.003)	(0.005)	(0.013)	(0.017)
19-20	0.005	-0.006***	0.005	-0.018*	-0.011	-0.020
	(0.002)	(0.001)	(0.005)	(0.009)	(0.012)	(0.028)
Sample Size	302,237	302,237	342,222	342,222	282,769	282,769

*Statistically significant at 10% level; **at 5% level; ***at 1% level. For list of controls and other details, see notes to Table 8. The large states sample includes: California, Florida, New York, and Texas. The medium states sample includes: Arizona, Georgia, Illinois, Indiana, Massachusetts, Michigan, North Carolina, New Jersey, Ohio, Pennsylvania, Tennessee, Virginia, and Washington. The remaining states are included in the small states sample.

Table 11: Effect of U.S. Wounded in Action (WIA) Soldiers on Military Service and Education

	(1) Ever Served	(2) High School Dropout	(3) College
WIA at age:			
15-16	-0.0001	0.0024	-0.0035
	(0.002)	(0.002)	(0.007)
17-18	-0.0052***	0.0035**	-0.0108***
	(0.001)	(0.001)	(0.002)
19-20	0.0010	-0.0009	-0.0019
	(0.002)	(0.002)	(0.003)
Sample Size	927,228	927,228	927,228

*Statistically significant at 10% level; **at 5% level; ***at 1% level. WIA are the number of U.S. soldiers, who were wounded in action, measured in thousands, from an individual's state of birth experienced at ages 15-16 and 17-18, and 19-20. For list of controls and other details, see notes to Table 8.