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Where have all the GI Bill dollars gone? Veteran usage and expenditure of the Post-9/11 GI Bill

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STATEMENT OF INDEPENDENCE

Michael S. Kofoed is an Associate Professor of Economics at the United States Military Academy and an employee of the Department of Defense and the Department of the Army. This work uses administrative data from the United States Army. This work was reviewed by the Office of Economic and Manpower Analysis (OEMA) that houses the administrative data used in this paper. The views expressed herein are those solely of the author and do not reflect the position of the United States Military Academy, Office of Economic and Manpower Analysis, the Department of the Army, or the Department of Defense. Other than the aforementioned, the author did not receive financial support from any firm or person for this article or from any firm or person with a financial or political interest in this article. He is currently not an officer, director, or board member of any organization with an interest in this article.

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ABSTRACT

The Post 9/11 GI Bill (PGIB) was one of the largest expansions of financial aid for veterans and their families. However, how veterans use these benefits and the institutions they attend are not well documented. In addition, there is concern about the role of for-profit colleges and whether veterans are getting an adequate return on their educational investment. In this study, I use Army administrative data matched with data from the National Student Clearinghouse to provide descriptive evidence of PGIB usage. I find that women and minorities are much more likely to use the GI Bill; while veterans in combat occupations are less likely. I also find that veterans disproportionately attend for-profit colleges; albeit this trend is decreasing. Using regression analysis, I find that veterans who attend a for-profit college are 9.19 percentage points less likely to graduate with any credential compared to public colleges. Addition of veteran demographics and military experience (particularly AFQT scores) narrows this gap by 10 percent but cannot explain a graduation differential of 8.76 percentage points. This evidence suggests that for-profit colleges receive a disproportionate amount of PGIB dollars while graduating less veterans.

1 Introduction

The Post 9/11 GI Bill (and the updated version called the "Forever GI Bill") is one of the largest expansions of federal financial aid since the original introduction of the GI Bill following World War II and the Pell Grant in 1965. The Post 9/11 GI Bill (PGIB) greatly increased both the number of veterans that could collect the benefit and the generosity of the program. For example, housing benefits became a large boon to veterans that were not included in the Montgomery GI Bill (the previous iteration that Congress passed in 1984) as well as the removal of a requirement for veterans to pay into the program while they were active duty. In addition, spouses and dependents could also receive the bill if the service-member had no desire to attend post-secondary education and agreed to additional time in service. However, policymakers and researchers know very little about how this program works, what benefits to which service-members are entitled, and where veterans use their benefits.

While research on the PGIB has been limited, the passage and structure of the PGIB provides excellent opportunities for natural experiments to study the response of veterans (demand side) and colleges and universities (supply side) to this increase in veteran's benefits. For example, Barr (2015) shows that the introduction of the PGIB increased college going amongst veterans and Barr (2019) uses geographic variation in the generosity of PGIB benefits to show that the introduction of PGIB increased degree attainment. Zhang (2018) finds that the PGIB did increase enrollment of veterans; particularly younger, less educated veterans compared to similar civilians. Castleman et al. (2019) examine the new provision in the PGIB that allowed service-members to transfer benefits to spouses and children. The authors find that more senior ranked service-members were more likely to transfer their benefits to their dependents; perhaps limiting the inter-generational mobility of military service.

Given the limited research on the PGIB, this paper hopes to contribute to this literature by providing by documenting which veterans use their benefits and at which institutions they enroll. I will use administrative data from the United States Army. These data contain information for veterans who served in the U.S. Army since the 1990s and thus cover the entire time period of the

PGIB. These data are also linked to data from the National Student Clearinghouse and the Veteran's Administration that document where the student attended college and institutional details about the college. Thus, these unique, administrative data allow this study to better inform future policymakers and researchers what reforms could be helpful to ensure that our country's veterans realize their full educational potential and transition to the civilian labor market.

One major concern of the PGIB benefits is the role of for-profit universities. For-profit universities have marketed their courses to active duty military and veterans as a more flexible alternative to traditional community colleges or universities. However, the return to for-profit education for the general population is questionable (Cellini and Turner (2019), Deming et al. (2016); Deming et al. (2012), Darolia et al. (2015)). Baird et al. (2019) find that for-profit universities also change their "sticker price" tuition rates in response to changes in the generosity of the PGIB; thus price discriminating away some of the consumer surplus of the PGIB. In 2010, the Senate Health, Education, Labor, and Pensions (HELP) committee found that in the first year of the PGIB existence, that veteran students at for-profit colleges claimed nearly 36.5 percent of all PGIB benefits while enrolling 23.3 percent of PGIB beneficiaries (Health, Education, Labor and Pensions Committee, 2010). The report also found that veterans enroll at for-profit colleges at a rate double that of the civilian population.

One reason why for-profit colleges recruit veterans is an exception in the "90/10" rule policy. The "90/10" policy constrains the revenues of for-profit institutions to be only 90 percent federal dollars. However, one loophole in this rule is that Department of Defense and Veterans' Administration benefits are exempted. Thus, a for-profit college that was in violation of the "90/10" rule could potentially bring itself into compliance by recruiting more veterans. This exemption creates an incentive for for-profit colleges to recruit veterans and there is concern that veterans could not be capturing their entire "return on investment" of their military service (Cellini and Koedel (2017)). This paper hopes to contribute to this debate by documenting GI Bill usage at for-profit colleges over time and what veteran characteristics are correlated with attendance at a for-profit college.

This study will proceed as follows. In Section II, I will provide some institutional background for the PGIB and compare it to various other iterations of the GI Bill. In Section III, I will describe the data, provide summary statistics, and discuss the veteran characteristics of GI bill users versus those who do not use the benefit. Section IV will provide details on the types of colleges and universities that veterans attend including trends over time, expenditures by the VA, and some short-run outcomes. Section V will describe the role of for-profit universities and their role in the market for veterans' education. Finally, Section VI concludes.

2 History and Background of the GI Bill

2.1 History of the G.I. Bill

When Congress passed the original "Servicemen's Readjustment Act of 1944", the bill was considered the largest expansion of financial aid in American history. President Franklin Delano Roosevelt, while initially reluctant, pushed for the GI Bill as a way to ensure that veterans from World War II could quickly re-assimilate back into American society at the end of the conflict. At the end of the previous World War, federal programs that promised bonuses, employment assistance, and health care were bogged down by government red-tape and negligence. In response, many veterans joined a movement called the "Bonus Army" that made its way to Washington, D.C. from around the country. Veterans and their families joined the march as it passed through their towns and in the late-spring and early-summer of 1932, this group encamped directly south of the White House. At the height of the demonstration, around 10,000 people had camped together as a group demanding payment.

In response, General Douglas MacArthur ordered federal troops to cross the Potomac from Northern Virginia and evict these protesters. His personal aide, then Major Dwight Eisenhower, advised General MacArthur to either leave the crowd alone or let lower-ranked officers disperse the crowd. MacArthur refused and he, along with George Patton, lead a force of infantry, tanks, and tear gas and evicted nearly 2,000 veterans in addition to their families from

the encampment; burning their shelters and possessions. These scenes of the Army attacking their fellow comrades was arguably the final straw that turned the electoral tide against the Hoover administration (Dickson and Allen, 2003).

Hoping to avoid a similar fate at the end of WWII, Roosevelt decided to push for a more tangible benefit: money for college. He argued that financial aid for higher education would be cheaper than expensive bonuses, retrain veterans for the civilian workforce, and give them a financial shelter during a time of economic transition. Unlike many New Deal programs, the GI Bill garnered popular support from both parties; albeit with strict requirements and restrictions. For example, veterans over the age of 25 were limited to only one year of aid Olson (1973). However, with heavy pressure, Congress lifted many of these restrictions eight months later.

The original bill contained many forms of assistance to transition to civilian life including worker training programs and access to medical care. Many policymakers were surprised by the popularity of the college benefit since college going was mostly concentrated amongst the upper class of American society. At the height of the post-war era, nearly 70 percent of all male college students were veterans. College enrollments increased dramatically and around one in eight veterans took advantage of the education benefit (Bound and Turner, 2002; Olson, 1974; Stanley, 2003). Turner and Bound (2003) find the World War II G.I. Bill led to significant increases in educational attainment for white men and black men living outside of the South. Interestingly, they find that black men saw little gains to the G.I. Bill because of limits to possible college-going.

After World War II, however, it was not clear whether these benefits would apply to veterans who served in future conflicts or if the G.I. Bill only applied those from the World II era. This confusion combined with accusations of fraud motivated Congress to re-authorized the program with the "Veterans' Readjustment Assistance Act of 1952" or the Korean GI Bill. While this bill allowed for veterans from the Korean War Era to receive education benefits, the law clamped down on some benefits. For example, Congress felt that veterans should on assistance as opposed to boosting opportunity, and that veterans should be compensated for education lost during the war and "the educational and training status which they might normally have aspired to

and obtained had they not served their country." Congress now paid benefits directly to the veteran and cut payments for tuition from fully-funded to at most $160 for 36 months (Altshuler and Blumin, 2009).

Congress passed the next version of the G.I. Bill as the "Veteran's Readjustment Benefits Act of 1966". This bill extended benefits to Vietnam veterans and to those who served during peacetime. The implications of the peacetime provision is important because it now allowed the military to use the GI Bill as a recruiting tool; particularly as the military moved away from the draft. Without the draft to increase manpower needs for future conflicts, the Department of Defense transitioned to health[1] and education benefits as the main driver of recruitment and retention.

2.2 Comparisons of Modern Iterations of the GI Bill

In recent years, the Montgomery GI Bill (MGIB), the Post 9/11 GI Bill, and the Forever GI Bill are all examples of modern adjustments to the GI Bill program. These three bills cover most college-age and future veterans. However, the distinctions are among the three (especially the MGIB and the PGIB) are important for policymakers. Representative G.V. "Sonny" Montgomery of Mississippi proposed the Montgomery GI Bill of 1984 to ensure that the GI Bill would continue into the future as conflicts became smaller and involved fewer soldiers. Thus this bill transitioned the GI Bill from being a "wartime" benefit that Congress needed to renew after or during a major conflict to a benefit that applied generally without regard to combat experience. This change institutionalized using educational benefits as a recruiting tool going forward.

However, the MGIB has many limitations and restrictions. First, the MGIB is an opt-in program meaning that a service-member must indicate that she wants to receive the benefit. After opting in, the service-member must pay $100 per month for twelve months before she can qualify for the MGIB. The MGIB also pays education benefits directly to the veterans as opposed to the

[1] Kofoed and Frasier (2019) show that the dependent mandate in the Affordable Care Act reduced re-enlistment among first enlistment contact soldiers; evidence that health benefits are important for recruitment and retention.

institution. Under the MGIB, veterans do not receive housing or cost of living stipends. To qualify for the MGIB, a veteran must have completed two years of active duty service since 1985. However, once an individual leaves military service, she has ten years to use her benefits are they will be forfeited.

The large increase of veterans from the wars in Iraq and Afghanistan motivated Congress to re-think and reform the G.I. Bill. In 2008, Congress passed the "Post-9/11 Veterans Educational Assistance Act of 2008." which laid the foundation for the Post 9/11 GI Bill (PGIB). This bill retroactively offered benefits to veterans who have served since September 11, 2001. Instead of the two year active duty status requirement under MGIB, the PGIB offered a sliding-scale of benefits for time served. The required amount of service for each level of benefits are displayed in Table 1. Congress passed the PGIB in 2008, but retroactively offered these benefits to any veteran who had actively served after September 11, 2001 as long as they had not used their MGIB benefits.

The PGIB also made some important changes to the MGIB. First, the PGIB automatically opts-in all service-members and no longer requires them to buy into the program. The PGIB now pays institutions directly and will pay the entire tuition bill at an in-state public college. In the original bill, if the veteran wants to attend a private or for-profit institution, then the PGIB will pay up to the most expensive, public program in the state. This policy created wide variation in how much the PGIB was worth outside of public institutions. In 2010, however, Congress switched to one, flat fee for all veterans regardless of state. The original amount was $17,500; a value that adjusts for inflation. Veterans receive these benefits for 36 months that do not necessarily need to be consecutive. In addition to an increase in tuition benefits, the PGIB now provides a housing allowance, money for books, and moving costs. In the original PGIB program, veterans needed to use their benefits within 15 years after separating from military service. For veterans who already had attended college or did not wish to attend college, the PGIB allowed them to transfer these benefits to a spouse or children with additional service time.

Congress passed the Harry W. Colmery Veterans Educational Assistance Act of 2017; as

of this writing the latest iteration of the GI Bill. The Forever GI Bill made some important changes to the PGIB. First, the Forever GI Bill did away with the requirement that veterans use their fifteen years (hence the "Forever" part of the name). Also, Congress adjusted the fraction of benefits that a veteran receives given their active duty service time. Table 2 outlines these changes to the PGIB. The Forever GI Bill also extended full GI Bill benefits to all Purple Heart (an award to those veterans who were wounded in combat) recipients regardless of service time. The Forever GI Bill also provided assistance to those veterans whose colleges were closed and extended Yellow Ribbon availability.

2.3 Data and Summary Statistics

I use Army Administrative Data to examine demographic differences in which veterans use the GI Bill and the types of institutions receiving GI Bill dollars. My sample uses calendar-year cohorts of veterans separating in 2008 to 2016; covering years that the Post 9/11 GI Bill was available to veterans as opposed to only the Montgomery GI Bill. Table 3 displays summary statistics of demographic characteristics for my sample; both the full sample and conditioned on using the Post 9/11 GI Bill. These summary statistics describe individuals on the day of separation and thus do not describe the Army as a whole, but rather those leaving the Army in a given year.[2] Column (1) shows the overall sample. In my sample, seventeen percent of veterans are female, twenty percent are black, and eleven percent are Hispanic. Martial status is also important for GI Bill usage because in the PGIB, veterans can transfer benefits to a spouse or children.

Educationally, Army veterans are a prime population for college attendance after military service. Sixty-nine percent of my sample only holds a high school diploma, and a large fraction of these enlist directly out of high school. Only two percent of veterans in my sample hold associate degrees, and six percent have attended some college but not graduated. A Bachelor's degree is the main requirement to become an officer, thus eight percent of my sample hold a four-year degree and one percent hold a graduate degree. Since nine percent of the Army are

[2]Variables such as military rank, occupation, and education level represent the veteran at the point of separation.

officers, education seems to be the main divide between the officer and enlisted corps.

There is also great variation in the region that the Army recruits. The Army administrative data records of the state where the recruit resided before joining the Army. The largest home of record region in my sample is the South with around forty-three percent. After the South, twenty percent of veterans hail from a Western state and 19 percent come from the Midwest. The least number of veterans come from the Northeast with only thirteen percent. Finally, all enlisted veterans must take the Armed Forces Qualification Test (AFQT) before joining the Army. Generally, a qualifying score is a Category 3B or higher (a score above the 31th percentile); however the Army does provide some exceptions during war-time or other times of need. As with most standardized test scores, the bulk of the distribution lies around the mean (or a Category 3A score) with only four percent in the 93rd percentile (Category 1), and two percent of enlistees were accepted despite a score below the admission threshold (Category 4). These summary statistics show why the PGIB is such an important recruitment tool for the Army and a potential vehicle for upward social mobility.

Columns (2) and (3) shows summary statistics for veterans conditional on using the PGIB. These raw summary statistics serve to anticipate possible findings in the graphical and regression analysis. These columns show that female, black, and Hispanic veterans are more likely to use their PGIB benefits. Martial status also seems to drive the enrollment decision with single veterans being less likely to attend a college or university. I also find that veterans that are high school graduates or have attended some college are more likely to enroll in college than those who dropped out of high school or already have a four year degree. I also find that a veteran whose home of record in a western or northeastern state are more likely to use the GI-Bill. AFQT score also seems to be correlated with PGIB usage with those from high groups (i.e. Categories 1 and 2 as opposed to 3B or 4) are more likely to enroll. Finally, it appears that junior non commissioned officers of rank (E5-E6) are more likely to enroll than junior enlisted or officers. Officers are required to have a four-year degree which may be driving this result.

Table 4 displays summary statistics conditional on the type of institution that a veteran

attends (i.e. for-profit, public, or private non-profit). Column (1) is again the full sample for the convenience of the reader. I find some interesting differences between the higher education sectors. First, I find that women are more likely to select private universities while under-represented minorities are more likely to sort into for-profit colleges. Married veterans, those with no higher education background, and veterans from the South are also more likely to attend a for-profit college. I also find that veterans high a higher AFQT score (Categories 1 or 2) are also more likely to attend a private or public institution. However, veterans with lower AFQT scores (Categories 3A/3B and 4) are increasingly likely to attend a for-profit college. These results show that veterans with either lower AFQT, increased family commitments, or less experience with higher education are more likely to choose a for-profit college than a traditional public or private university.

3 Who uses the Post 9/11 GI Bill?

3.1 Post 9/11 GI Bill Usage

Given that the Army consists of young adults that belong to the prime college attendance population, it is important to understand differences in the types of veterans who use the PGIB. As noted earlier, one key difference between the PGIB and the previous Montgomery GI Bill is that veterans who served post 2008 were automatically opted into the PGIB, while those under the Montgomery GI Bill had to opt in at the beginning of their enlistment. Thus all the veterans in my sample had the opportunity to use the PGIB. Understanding demographic trends in usage of the PIGB is useful in future policy making since unused education benefits should be a great concern to policymakers.

3.1.1 Veteran Demographics

Overall, around 40.67 percent of Army veterans use their PGIB benefits. However, these usage rates can vary by important demographic and military characteristics. First, I examine differences

in PGIB usage by sex. Figure 1 shows trends by sex for PGIB usage from 2008 to 2016. As with most of the trends in this chapter, PGIB grows over time and then begins to plateau in 2012. This trend could be explained by an improving economy (see Betts and McFarland (1995)) that tends to pull potentially older students out of college and into the labor force and growing familiatry with the PGIB. Also, soldiers in the first couple years may have already bought into the Montgomery GI Bill and thus would be coded as a zero in this sample. However, when considering differences in sex, it appears that Army veterans follow similar trends as the general college student population. Female veterans take up the PGIB at much higher rates than males. At the peak around 2012, more than sixty percent of female veterans used their GI Bill compared to around 53 percent of male students. In the time-frame of my sample, there is no instance where male veterans outpaced female veterans, and the female-male gap seemed relatively consistent around ten percent.

Next, I examine PIGB use by race and ethnicity. Figure 2 shows how PGIB usage differs by race. One interesting finding is that in all sample years, white veterans use their education benefits at a lower rate than other races and ethnicities. By 2009, thirty-three percent of white veterans used the PGIB, a percentage that increased to fifty percent by 2012. Hispanic veterans used their PGIB benefits at similar rates as whites at the beginning of the sample period, but steadily increased to forty-two percent by 2012. Black veterans started at a forty percent take-up rate in 2009, and increased to a rate above fifty percent in 2012, and then declined to around fifty-five percent by 2016. The other racial category (which includes Asian veterans) increased from thirty-five percent in 2009 to forty-five percent in 2013.

I also examine how the veterans' home region may correlate with uptake of PGIB benefits. Figure 3 shows trends for U.S. census region and PGIB completion. There is some variation in each region over time. Veterans from Southern and Midwestern states tend to use PGIB less over time; a trend that is concerning given that soldiers tend to overwhelmingly come from the South. However, those fewer veterans from the Northeastern and Western states tend to use benefits at higher rates. These trends may reflect regional preferences for higher education and a desire to

serve in the military to afford college. However, policymakers should be concerned that Southern veterans tend to only use their benefits around forty percent of the time, when the South supplies the Army with nearly half of its recruits.

Next, I examine how AFQT may correlate with PGIB uptake. Each potential enlistee must take the AFQT and score, with some exceptions, a 31 out of a possible 99 points to join the Army.[3] AFQT scores equal to or less than 30 are a Level IV, a score of 31 to 79 is a Category IIIb, a score of 50 to 64 is a Level IIIa, a score of 65 to 92 is a Level II, and a score of 93 to 99 is a Level I.

Since the AFQT is considered a measure of a potential enlistee's academic aptitude, the AFQT could be an important determinate to whether a veteran uses the PGIB. Figure 4 shows how PGIB takeup may differ based on a veteran's AFQT score. Since commissioned officers do not take the AFQT, I limit my sample in this figure to veterans who were enlisted. Not surprisingly, veterans with an AFQT score considered Level I use the GI Bill at the highest rate; starting from sixty-five percent in 2009 to fifty-five percent in 2013. Each subsequent level has a lower rate of PGIB usage. However, those with a Level IV score have an increasing usage rate over time. In 2008, Level IV veterans used the PGIB at a fifty percent rate which increased to above sixty percent in 2012 and then declined. This result may be because Level IV category veterans sorted themselves into certificate or for-profit programs or the Army was the main, viable path to post-secondary education.

Military rank and structure also seems to correlate with whether a veteran uses their PGIB benefits. Figure 5 describes how officers, enlisted personal, and warrant officers use the GI Bill differently. Officers must hold a bachelor's degree and a commission from either the Reserve Officers' Training Corps (ROTC), the United States Military Academy at West Point, or Officer Candidate School (OCS). OCS is a six-week program that offers military training for a potential

[3]Minimum AFQT scores vary by service. The Army requires a 31, while the Navy requires 35, the Air Force a 36, Coast Guard a 40, and the Marine Corps a 32. However, there are exceptions to these minimum requirements especially during war-time and increased need for a specific occupational specialty. Department of Defense policy states that only four percent of service-members may have an AFQT score below the minimum. These scores map to national percentiles of math and reading ability among 18-23 year olds in the United States.

officer who has already graduated from college. Officers probably have lower rates of GI Bill usage since they would either enroll in graduate school or a second undergraduate degree. However, one change in the PGIB as opposed to the Montgomery GI Bill is the option to transfer benefits to a spouse or dependent. The Army requires those who enlist to have at least a high school diploma, and the vast majority of enlisted personal have not completed college. Warrant Officers are a special type of classification for those personal with special skills or management needs. Warrant officers outrank enlisted personal, but not commissioned officers.

As expected, Figure 5 shows that formerly enlisted soldiers use their PGIB at the highest rate. In 2009, around thirty-five percent of former enlisted personnel used the PGIB. This rate increased steadily until it peaked at around forty-five percent in 2013. About twenty percent of former officers used their PGIB in 2098, this number increases to thirty percent in 2014. The lower number of officers may be a result of postponing using these benefits by transferring them to spouses and children. In 2009, separating warrant officers used their PGIB at twenty percent; a number that increased to around twenty percent.

Since former enlisted seem to use their benefits at rates higher than officers, I next investigate whether final attained rank is correlated with GI Bill usage. Figure 6 shows differences in PGIB over time by enlisted rank. Interestingly, junior non-commissioned officers (NCOs) drive the usage of PGIB in the United States Army. These veterans have attained the rank of sergeant (E-5) or staff sergeant (E-6). Junior NCOs tend to be at the end of the first or the beginning of the second enlistment contract. Attaining the rank of E-5 requires a larger increase of leadership or management responsibilities. Thus the Army may have observed an increased measure of talent that is also correlated with enrollment in post-secondary education. The next highest group are veterans who were junior enlisted soldiers, those of the rank of private (E-1) to specialist (E-4). They may not use their PGIB benefits at the same rate as junior NCOs for a variety of reasons (not having enough service time, dishonorable discharge, or lack of interest). However, the trend of junior enlisted soldiers follows the same path as junior NCOs but on a different level by increasing until around 2014 and then slightly tapering off. The last group in

Figure 6 are senior NCOs. Senior NCOs hold the rank of sergeant first class (E7) to sergeant major (E9). These non-commissioned officers have generally completed multiple enlistment contracts and are close to being eligible for retirement with pension.[4]

Finally, PGIB usage may also be correlated with the type of job within the Army. I use the Army's occupational branch groupings[5] to see if there are any differential trends. The groups are Combat Arms (including air defense artillery, armor, aviation, engineer, field artillery, and infantry), Combat Support (including chemical corps, military intelligence, military policy, and signal), and Combat Service Support (including adjutant general, finance, medical services, ordnance, quartermaster, and transportation). Figure 7 shows differences in PGIB usage and occupational branch. The most important trend for policymakers is the low uptake of combat arms branches compared to other occupation lanes. These veterans tend to have higher amounts of health care need and a tougher transition to the civilian labor force (Ceasur et al., 2013). Thus the lower amounts of PGIB usage may be of primary consideration for helping these veterans enroll in post-secondary education. In 2009, only thirty percent of combat arms veterans use their PGIB benefits. This fraction increases to around forty-five percent in 2013, and then begins to tamper off. This trend is interesting because the other two occupation groups start at a higher level (around thirty-five percent) and combat support occupations peak at around fifity-seven percent in 2013. Thus the disparities among veterans most likely to be exposed to combat are significant and should be of policy importance.

4 Where Do Veterans Attend?

One issue of great concern for policymakers regarding the Post 9/11 GI Bill is where veterans attend college. While many researchers have investigated college going and outcomes for

[4]Military members of eligible for a pension after twenty years of active duty service. The traditional pension is half of the average salary for their last three years of service. The military now offers a blended retirement that provides a smaller percentage but the DoD provides a 401k style defined contribution plan.

[5]Recently, the Army has updated these groupings to include Operations, Operations Support, Force Sustainment, and Information Dominance as categories. However, I use the previous designations because these categories were in effect during my sample period. (Kofoed and mcGovney, 2019; Jones and Kofoed, 2020)

veterans with the expansion of the PGIB. Few studies have examined where veterans attend college and how much these programs cost. Barr et al. (2020) show that PGIB recipients may have seen a decrease their post-Army wages because of higher enrollments in for-profit colleges. Baird et al. (2019) show that for-profit colleges respond strategically to changes in the generosity of the PGIB by increasing prices but not increasing enrollment. Knowing where veterans attend college is important to ensure that veterans are getting the most from their education and can transfer their skills to the civilian labor markets. Given the increased costs of attending a for-profit college across the general student population (Kofoed, 2015)), it is important to also understand the return on investment for veterans given evidence that benefits of for-profit education is less than or equal to traditional public, community colleges (Cellini and Koedel, 2017; Darolia et al., 2015; Deming et al., 2016; Lang and Weinstein, 2013)

4.1 College Going Data

The data for this section include PGIB expenditure data from the Department of Veterans' Affairs and attendance data from the National Student Clearinghouse. These linked data allow us to see where veterans attended college, how much the VA paid these colleges on the veterans' behalf, and whether a veteran graduated from this institution. These data are helpful in understanding the investment quality of the PGIB and help to understand where public policy can help to ensure veterans are well served by the education sector.

4.2 Institution Type

Where veterans use the Post 9/11 GI Bill is incredibly important for policy making. First, I consider the type of institution, whether it is a public, private non-profit, or private for-profit university. Figure 8 shows the percentage of veterans that enroll in each respective sector. First, the range of veterans that attend a public university is somewhat stable and fluctuates around forty to fifty percent; especially in later years. The movement of veterans towards public universities is

probably a result of the yellow-ribbon program[6] and the closure of several for-profit universities by the Obama administration around 2014 (Cellini et al., ming).

There are two areas of potential concern to policymakers in Figure 8. The first is the very low level of veterans who attend private, non-profit institutions. These colleges are generally more selective than public institutions. At the beginning of our sample period, only around twenty percent of veterans attended a private institution. From 2009 to 2013, this fraction dipped down to around fifteen percent and then increased to around 18 percent in 2016. This finding is of concern because veterans are either not applying to elite institutions or cannot afford to attend because tuition may be higher than the maximum GI Bill rate.

The point of most concern in the concentration of veterans at for-profit institutions. In 2008, around 35 percent of veterans attend a for-profit college, this fraction increased to nearly forty percent by 2012. After the 2012 peak, however, veterans began shifting away from for-profit colleges and towards public institutions. This change may be a result of the Obama administration crack-down and gainful employment regulations, but further causal research is needed to confirm this point. By 2016, however, the fraction of veterans attending for-profit colleges was around thirty percent.

The largest education sector for veterans is public colleges. At the beginning of the PGIB period, around half of all veterans attended a public college. The fraction of veterans dipped a bit from 2010 to 2014, but then increased to around 55 percent in 2016. This uptick in public college attendance appears to come at the expense of the for-profit sector. Additional causal evidence regarding whether veterans are actually substituting between for-profit and public institutions would be helpful, but the results from these descriptive graphs are suggestive.

Program level (i.e. four-year, two-year, or less than two-year) is also important for labor market transition and future civilian wage growth. Figure 9 shows the fraction of veterans that enrolled in each level. First, four-year degrees are the most popular. During my sample period,

[6]The Yellow Ribbon program allows universities to contribute institutional aid to a veteran's education, up and beyond the PGIB. This aid is particularly helpful for out of state students and private universities whose tuition may be greater than the PGIB maximum. The VA will match the institutional aid offered by the university to help cover the need gap.

this fraction averaged around sixty percent. However, the number of veterans attending a four-year institution declined to fifty percent. Two-year programs enrolled around thirty percent of veterans during my time frame. Less than two year or certificate programs did see some enrollment gains during the first eight years of the PGIB. In 2008, ten percent of veterans attended a certificate program, but this fraction increased to 18 percent in 2016. This result may be because of booming construction or manufacturing sectors during this period that may be more attractive than a four-year college.

Finally, I consider the selectivity of the institutions where veterans enroll using the Barron's selectivity measures contained in the NSC. Figure 10 shows results for each level of selectivity. Strikingly, the largest group of institutions that veterans attend are not contained in the Barron's selectivity measures. These schools include community colleges, many for-profit colleges, and technical colleges. In my sample period, "Not Rated" schools enroll around fifty percent of all veterans, a fraction that grew to nearly seventy percent by 2016. The next largest group of veterans attend institutions that are considered "Moderately Selective". These are colleges that accept fewer than sixty percent of all applicants and the average combined ACT or SAT score is 25 or 1210 respectively. These schools are usually flagship or regional public schools like the University of Maryland or SUNY-Buffalo or middle-tier private universities like Seton Hall University. I find that less than twenty percent of veterans attend a college that is moderately selective in 2008 and this trend declines to fifteen percent in 2016. Schools that are rated "Non-Selective", "Moderately Selective", or "Non-Selective" comprise about five percent each per year. The least common group is "Most Selective" including Ivy League institutions and elite liberal arts colleges.

4.3 PGIB Expenditures

One important aspect for policymakers regarding the PGIB how veterans spend their benefits. In the original iteration of the PGIB, the VA fully paid tuition at any in-state public university. If a veteran wanted to attend a private non-profit, private for-profit, or out of state college, then the VA

would only reimburse up to the most expensive public program in the veteran's state of residence. This policy created wide variation across the states. However, 2011, the Congress switched to one nationwide amount that increases with inflation (Baird et al., 2019). For the 2019-2020 school year, this maximum reimbursement rate was $24,476.79. Thus veterans must make up any difference with personal funds or with support from the Yellow Ribbon Program. Figure 11 shows the percentage of PGIB dollars used in a particular sector of higher education for Army veterans in a given year. These statistics follow patterns similar to Figure 8. In 2008, at the beginning of the program, public colleges received around 45 percent of all PGIB dollars, this number declined in large part to the rise of for-profit enrollment until 2012, and then increased again to around 50 percent in 2016.

Most striking in this graph is the growth and moderate decline of the for-profit sector during this time frame. In 2008, for-profit colleges received 36 percent of PGIB dollars. This share increased to around forty percent in 2012. After 2012, this share declined to around 30 percent in 2016 (and probably has continued a downward trend). Crackdowns across the for-profit sector by the Obama administration seems to have caused this shift. As the for-profit sector declined, it seems that the share of veterans shifted towards public colleges with a small amount to private, non-profit colleges.

Finally, it appears that few PGIB dollars flow to private, non-profit colleges. This fact may be that many "sticker-price" tuition rates at private colleges could exceed the PGIB limits, thus motivating a veteran to choose a public college that is fully funded. In 2008, 22 percent of PGIB dollars went to private universities. This percentage dipped to fifteen percent around 2012, but then increased to around fifteen percent in 2016. This increase may have been caused by the decline of for-profit colleges during closures from the Obama administration.

4.4 Major Choice of PGIB Users

One outcome of interest to help veterans transition to the civilian labor market is major choice. Data from the National Student Clearinghouse record major choice, however the coverage is not

universal. In my sample, around 206,000 out of 285,552 Post 9/11 GI Bill users have a recorded six-digit CIP code for major and separated from the Army between the years 2007 and 2016.. Since the six-digit major is very specific, I use the first two digits to group veterans in related fields of study. For brevity, I list the top five majors for each sub-sample.

Table 5 displays the top five majors by institutional type and military occupation type. In all of my sub-samples, there types of majors are the same, but the rankings are different. The five most popular majors for PGIB recipients are Business Administration (22.97 percent overall), Liberal Arts/Generals (12.82 percent overall), Information Technology (9.62 percent overall), Criminal Justice (9.52 percent overall), and Health Professions (9.05 percent overall). These majors are probably not surprising because they are arguably the most logical for a veteran interesting in transferring skills from military service to the civilian labor market. These majors are generally high earning majors (with the exception of liberal arts and general studies). The second panel of Table 5 shows the top five majors overall for veterans at for-profit colleges. Business Administration is still first at 31.09 percent while informational technology is second (12.54 percent), Criminal Justice (12.09 percent), Health Profession (9.30 percent), and Liberal Arts/Generals at fifth (8.29 percent). Interestingly, for-profit universities seem to tailor their programs to ”military skill” majors and are majors that are quite high paying. Many for-profits are deliberate in advertising that their programs are more flexible for changing market needs (Gilpin et al., 2015).

The next panel shows major choices for public and private universities. The rankings among these institutions are similar with the exception that the highest ranking major choice at a public university is Liberal Arts/General at 17.12 percent. This major may reflect many veterans enrolling in public community colleges with the hope to transfer to a four-year college later. At private colleges, Business Administration is the highest ranking major at 30.77 percent with Information Technology as second at 9.16 percent.

The last group of sub-samples looks at the correlation between occupational grouping and major choice. In all three groups, Business Administration is the first choice. However, Liberal

Arts and Criminal Justice rank higher for combat arms veterans, but information technology ranks higher for combat support or combat service support. These results make sense because IT, logistics, and computing are key military occupation specialities for the non-combat arms. Also there are higher concentrations of non-combat arms in health professions representing medical services in those groups.

5 The Role of For-Profit Universities

5.1 The "90/10 Rule" and the PGIB

One policy concern for the role of for-profit colleges and veterans' benefits is the "90/10" rule. This regulation states that at most 90 percent of a for-profit college's regulations can come from federal sources and 10 percent must come from private dollars. Congress first formalized this rule in the 1992 Higher Education Act. However, this first iteration was an 85/15 rule. In 1998, Congress passed a new higher education re-authorization that updated the law to the modern 90/10 format (Deming et al., 2012).

One loophole in the regulation, however, is the treatment of education benefits sponsored by the Departments of Defense and Veteran's Affairs; including the PGIB. This loophole allows for-profit colleges the ability to count the PGIB as if it were "private" dollars. This behavior allows a for-profit college to receive increased federal aid in exchange for also recruiting veterans. However, there is little, well-identified causal research regarding the costs and benefits of for-profit education for veterans. In this section, I will show some descriptive evidence of how is more likely to attend a for-profit college and discuss some outcomes for veterans who attend a for-profit college.

5.2 Who Attends a For-Profit College?

It is important to understand the demographic characteristics of veterans who attend a for-profit college. Military service is considered a vehicle for upward mobility; particularly for low income or underrepresented minorities. However, this is also the population that for-profit colleges tend to recruit. Using the same data as before, I regress whether a veteran attended a for-profit college on a host of descriptive characteristics. I consider whether a veteran was enlisted, an officer, or a warrant officer because of the differences between these three groups; particularly since officers already have a degree when commissioned. Table 6 shows which veteran characteristics are correlated with attending a for-profit college. In all estimates, I condition on attending some form of post-secondary education.

The first column of Table 6 shows results for enlisted personnel. I find that females are 2.80 percentage points less likely to attend a for-profit college than males. I also find that black veterans are 8.29 percentage points more likely to enroll at for-profit than whites. It also appears that marital status seems to matter with married veterans being 6.56 percentage points more likely to attend a for-profit college than single veterans. This finding shows that veterans with dependents may value the flexibility that for-profit colleges claim to offer. Regarding previous college experience, I find that veterans with no post-secondary education experience before joining the military are more likely to attend a for-profit college. Another interesting dimension is AFQT scores. I this model, I use the highest AFQT category as the base for comparison. My findings show that as an enlisted soldier's AFQT score declines then they are more likely to attend a for-profit college. Finally, serving in a combat arms occupation is negatively correlated with attending a for-profit college. These findings seem to indicate evidence of negative selection of veterans into a for-profit college; meaning that those least experienced with higher education and least likely to attend traditional colleges and are more likely to enroll in a for-profit college.

In this model, I

The trends for commissioned and warrant officers are not as stark as enlisted. This result is probably because commissioned officers generally need a bachelor's degree and warrant officers have either a bachelor's degree or robust technical training. Column 2 of Table 6 shows

results for former commissioned officers. I find that female veterans who were once officers are 1.65 percentage points more likely to enroll in a for-profit college. Black and Hispanic officers are 14.85 and 4.29 percentage points more likely to enroll respectively in a for-profit college as well. Marital status also seems to matter for officers as well with married veterans being 5.65 percentage points more likely to attend a for-profit college. Officers who served in combat arms branches are less likely to attend a for-profit college.

Finally, Column 3 of Table 6 shows results for warrant officers. I find similar effects for warrant officers as enlisted personnel when it comes to attending for-profit colleges; albeit most of the results are statistically insignificant given the lower numbers of warrant officers. I find that women are less likely to attend a for-profit college, while black warrant officers are 8.58 percentage points more likely to enroll. Also married warrant officers are more likely to enroll, however the result for black warrant officers is the only statistically significant result.

I extend these results for enlisted personnel by estimating a mulitnomial logit model with options of enrolling in a for-profit, public, or private college. In this model, I focus on former enlisted soldiers since they make up the largest segment of interest and I use public enrollment as the base outcome so results are interpretable as the log odds compared to enrolling at a public institution. The first column shows how enrollment at a for-profit colleges is different than a public college. Table 7 shows results from this model. I find that female veterans are female veterans are less likely to attend a for-profit college, while black, Hispanic, and married veterans are more likely to enroll at a for-profit college. I also find that those veterans with some college experience as less likely to attend a for-profit college as opposed to those veterans than have either attended some college or hold a bachelor's degree. I also find that as a veteran's AFQT score decreases, the propensity to attend a for-profit college increases. These results confirm those from the OLS regression discussed earlier and shows that students who are under-served by higher education markets are more likely to attend a for-profit college. For policymakers, this result is concerning because these students could benefit the most from PGIB benefits but are

attending colleges that cost more and result in lower labor market outcomes.[7]

The second column shows results for characteristics that describe enrollment in private colleges compared to public colleges. Here we find some characteristics that are the same as for-profit colleges: black and Hispanic veterans are more likely to attend and those without a bachelor's degree are less likely to attend a private college. However there are some key variables that are opposite of our results for what drives students to a for-profit college. We find that veterans who attend a private university tend to be female, black, and Hispanic. However, we find that the lower the AFQT score, the less likely a veteran enrolls in a private college. These results show that there seems to be positive selection into private colleges and negative selection into for-profit colleges; a trend that is similar to the overall student population, but concerning given the generosity of the PGIB bill and the opportunity for income mobility of veterans.

5.3 For-Profit College Outcomes

One key indicator in assessing the 90/10 rule is whether for-profit colleges improve veteran outcomes. For-profit colleges argue that they enroll students that are under-served by the traditional higher education market and there is some evidence that they are more flexible in offering fields that have high labor demand (Gilpin et al., 2015; Gilpin and Stoddard, 2017). Thus an increase in cost may be justified if the gains to underrepresented students are sufficiently high. While employment and wage data would be helpful in answering this question, I do observe whether a student graduates with some form of credential in data from the National Student Clearinghouse.

First, I conditioned my data on veterans who were formally enlisted because commissioned officers require a bachelor's degree. Next, I pool veterans who separated from the Army and enrolled at a post-secondary institution in the calendar years of 2009 to 2013. Using these data, I calculate the percentage of students who graduated with *any* credential within six

[7] See Cellini and Turner (2019), Lang and Weinstein (2013), Darolia et al. (2015), and Deming et al. (2016) that show evidence that graduates of for-profit colleges earn lower incomes and are less likely to be employed

years of enrollment. Figure 12 displays these results by whether the veteran attended a public, private, or for-profit college. Panel A shows results from the overall sample. I find that around twenty-eight percent of veterans at public institutions graduate within six years, while around forty percent of veterans at private colleges graduate. However, around nineteen percent of veterans at for-profit colleges earn any type of credential within six years of enrollment.

Next, I show these results broken out by AFQT category. The highest AFQT category is "1", and the veteran's raw AFQT score decreases while the categorical number increases. Panel B shows a decreasing trend as the AFQT category increases; which makes sense if the AFQT is supposed to measure cognitive ability. Another interesting trend is in each category, veterans are more likely to earn a credential if they attend a public or private institution rather than a for-profit college. For example, regarding veterans with the highest AFQT scores, forty and sixty percent of veterans who attend a public or private institution respectively complete their program of study, but only twenty percent do so if they enroll at for-profit college. This trend is prevalent across the AFQT spectrum.

Panel C shows results by sex. As with previous findings, women are much more likely to graduate with any form of credential than men. I find that twenty-eight percent of males graduate with a credential if enrolled at a public college. I also find that forty percent of males graduate at private colleges. However, only eighteen percent of male veterans graduate when they attend a for-profit college. Female veterans are more likely to graduate in all sectors, but the gap between traditional public/private institutions and for-profit colleges is still present.

Panel D shows results by race. Black veterans graduate at the same rates from public and private institutions as Hispanic and white veterans (around thirty percent for public colleges and forty percent for private). However, the gap between traditional schools and for-profit colleges is significant; with the exception of black veterans where the graduation rate is twenty-eight percent at public colleges and around twenty-four percent for for-profit colleges. The gap between public and for-profit graduation rates is around ten percentage points for Hispanic, white, and other racial veterans. The gap between private and for-profit colleges is around twenty percentage

points for similar groups. All four panels show a significant drop in completion for veterans at for-profit colleges.

Finally, 13 displays the completion results by institutional level (e.g. four year, two year, less than two year) and sector. The difference in graduation rates between four-year colleges and then rest is stark and consistent across sectors. I find that veterans are much more likely to graduate if they matriculate to a four-year college.[8] I find that veterans graduate at a rate of 46 percent if they attend a private, non-profit, 29 percent if they attend a for-profit, and 53 percent if they attend a public four-year college. However, if veterans attend a two-year institution, then the graduation rates drop to nine percent for private, seven percent for for-profit, and 18 percent for public. This drop is significant; particularly because, conditional on attending a for-profit, more veterans attend two-year and less than two-year programs than the other two sectors.

5.4 Regression Analysis of Graduation Given Veteran and Institution Characteristics

Given the differences in raw averages of graduation in the previous section, it is helpful to understand what characteristics can explain this differential. One argument in favor of the for-profit colleges is that they are simply serving veterans who are less prepared for college and thus left behind in the higher education market. Thus student characteristics can explain the graduation differential between for-profit and traditional colleges. Deming et al. (2012) and Deming et al. (2013) conduct a similar analysis with data from civilian students and find that controlling for student characteristics does account for around fifty percent of the gap but does not close it. I conduct a similar analysis using my sample of Army veterans.

Table 8 shows results from the regression analysis. Column (1) shows a regression of graduating with any credential within six years of enrollment on institutional control dummies. The coefficients from this model should match the differentials in the summary stats in the

[8]Goodman et al. (2017) use a regression discontinuity and find similar results for Georgia students who barely miss an admissions cutoffs and attend a two-year program. They find that the marginal four-year student is much more likely to graduate.

previous section. Here, I find that enrolling in a private college increases the probability of graduation by 13.96 percentage points, but attending a for-profit college reduces the probability of graduation by 9.19 percentage points.

In the following columns, I control for other veteran and military characteristics to see if these variables can explain the gap in graduation at for-profit colleges. In Column (2), I add veteran demographic controls such as gender, race, and martial status. These variables slightly increase the differential between for-profit and public colleges to a reduction of graduation by 9.59 percentage points. Next, I add dummies for AFQT categories as a proxy for academic ability. The omitted category in this regression is a Category 1 (highest) AFQT; explaining the negative coefficients for the other dummy variables. Adding AFQT dummies does reduce the differential between for-profit and public colleges by 1.03 percentage points or 10.74 percent. Not quite the fifty percent in previous studies using non-veteran data, but a significant reduction. However, a 8.56 percentage point reduction remains. In Column (4), I add some characteristics from the veteran's military career: rank at time of separation and military occupation grouping. In this specification, I find that veterans from combat arms branches are 1.93 percentage points less likely to graduate and combat support veterans are 1.38 percentage points more likely to graduate than combat support service veterans. I also find that veterans who separated at higher ranks are more likely to graduate than junior enlisted. However, the differential between for-profit and public colleges does not seem to close with the addition of these variables. This analysis shows that there does appear to be some negative selection of lower ability veterans into for-profit colleges, but this differential cannot explain the graduation gap between for-profit and public colleges.

6 Conclusion

The Post 9/11 GI Bill (PGIB) is one of the largest expansions of financial aid within the 21st Century and arguably solved a number of issues surrounding the Montgomery GI Bill. The bill increased the benefits for veterans in the form of tuition payments, housing, and living expenses.

The policy change also abolished the requirement for a service-member to "opt-in" to the GI Bill and also pay dues into the system. The GI Bill provides benefits for up to 36 months; putting the focus on either baccalaureate or graduate education. The PGIB also allows service-members the opportunity to transfer the benefits to a child or spouse; albeit with an additional four years of service. Finally, the Forever GI Bill adjustments no longer requires a veteran to use their benefits within a certain time frame or risk losing them.

Using Army administrative data, this study shows trends on GI Bill usage for both veterans and where they attend. I find that female veterans are much more likely to use the PGIB than male veterans, but minorities are more likely to attend than whites. I also find that PGIB usage is positively correlated with results Armed Forces Qualifying Test (AFQT); such that veterans with a higher AFQT score are much more likely to attend college. I also find that enlisted personnel are more likely to use the PGIB than commissioned officers; which may be a result of commissioned officers already having a bachelor's degree. Of these enlisted veterans, junior Non-Commissioned Officers (NCO) (those of rank E5-E6) are much more likely to attend college than those of lower ranks. These characteristics show that many veterans do not use their GI Bill benefits and those who do may be positively selecting into higher education. Thus policies that would encourage those less likely to attend four-year college, community college, or technical education would be very beneficial to helping veterans transition to the labor market. Of those veterans who qualify for the PGIB, roughly half use these benefits for any form of post-secondary education. The under-usage should be concerning for future policy-makers; particularly given the size and generosity of the benefits and the clear evidence that potential enlistees do value the PGIB. I also find that veterans do appear to choose majors that have higher earnings potential (e.g. Business Administration) or fields that allow veterans to transfer skills acquired from their military service to civilian labor markets.

Next, I examine where attend college using their PGIB benefits. I find that veterans enroll at for-profit colleges at a rate much greater than the general student population; dwarfing private schools and second to publics. At their peak, for-profit colleges accounted for around 35 percent

of veteran enrollments and around forty percent of all PGIB dollars. I also find that veterans that enroll at for-profit colleges are more likely to be male, black, Hispanic, and have a lower AFQT score. I also find that completion rates at these programs lag considerably behind public and private institutions (at a gap of nearly ten and twenty percentage points for public and private colleges, respectively). One main reason that for-profit colleges recruit veterans is that the PGIB and other Department of Defense tuition assistance programs are not counted as federal dollars under the 90/10 rule. While the evidence I present here is not causal, it does call into question the benefits of a for-profit education for veterans given these program's increased price.

Finally, I estimate regression specifications to understand how much of the graduation differential between for-profit and public colleges is explained by veteran characteristics or military experience. I estimate that there is a 9.19 percentage point gap in the graduation rate between for-profit and public colleges. The only characteristics that seem to explain a portion of this gap are AFQT categories. The addition of these variables narrows the gap by a little more than ten percent. However, a graduation differential of 8.76 percentage points cannot be explain by veteran demographics or military experience.

Veteran's education benefits are an important (and under-studied) component of national student financial aid policy. Updates to how and where GI Bill funding is spent are important in ensuring that veterans make the best choices for post-secondary education and effectively transition to civilian life and labor force. As the wars in Iraq and Afghanistan begin to wind down, higher education will be an important key to the future success of many veterans for years to come.

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Table 1: PGIB Benefit Schedule Given Days Active Duty

Days of Service	PGIB Benefit
90 days to 6 months	40 percent
6 to 12 months	50 percent
12 to 18 months	60 percent
18 to 24 months	70 percent
24 to 30 months	80 percent
30 to 36 months	90 percent
Greater than 36 months	100 percent
30 or more days with Disability Discharge	100 percent

Notes: This table shows what percentage of the Post 9/11 GI Bill benefit a veterans receives given the number of days served on active duty.

Table 2: Forever GI Bill Benefit Schedule Given Days Active Duty

Days of Service	Forever GI Benefit
90 days to 6 months	50 percent
6 to 18 months	60 percent
18 to 24 months	70 percent
24 to 30 months	80 percent
30 to 36 months	90 percent
Greater than 36 months	100 percent
30 or more days with Disability Discharge	100 percent

Notes: This table shows what percentage of the Post 9/11 GI Bill benefit a veterans receives given the number of days served on active duty.

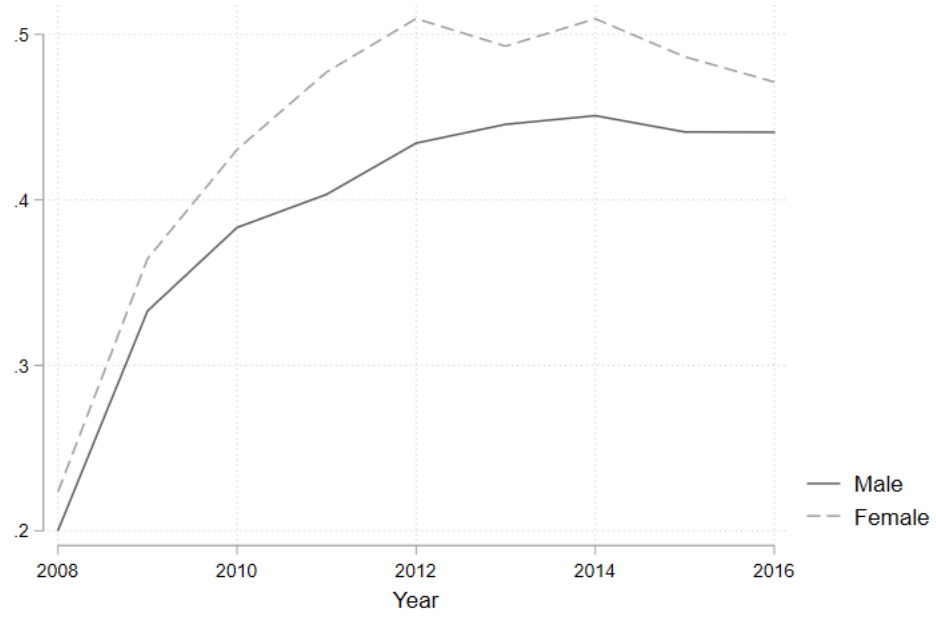
Table 3: Demographic Characteristics of Veterans who separated from 2008 to 2016 by PGIB Usage.

	(1) Total	(2) PGIB	(3) No PGIB
PGIB Use	0.410	1.000	0
	(0.491)	()	()
Female	0.154	0.167	0.144
	(0.361)	(0.373)	(0.351)
Black	0.185	0.202	0.173
	(0.388)	(0.402)	(0.379)
Hispanic	0.108	0.122	0.0977
	(0.310)	(0.328)	(0.297)
Married	0.528	0.556	0.508
	(0.499)	(0.497)	(0.500)
Divorced	0.0594	0.0712	0.0512
	(0.236)	(0.257)	(0.220)
Educ: H.S. Dropout	0.00565	0.00484	0.00620
	(0.0749)	(0.0694)	(0.0785)
GED	0.109	0.104	0.113
	(0.312)	(0.305)	(0.317)
H.S. Grad	0.691	0.727	0.665
	(0.462)	(0.445)	(0.472)
2-Year Degree	0.0163	0.0187	0.0147
	(0.127)	(0.136)	(0.120)
Some College	0.0634	0.0695	0.0591
	(0.244)	(0.254)	(0.236)
4-Year Degree	0.0803	0.0579	0.0957
	(0.272)	(0.234)	(0.294)
Graduate Degree	0.0117	0.00420	0.0168
	(0.107)	(0.0647)	(0.129)
Home Region: Northeast	0.125	0.126	0.124
	(0.331)	(0.332)	(0.330)
South	0.429	0.420	0.435
	(0.495)	(0.493)	(0.496)
Midwest	0.195	0.187	0.200
	(0.396)	(0.390)	(0.400)
West	0.205	0.228	0.189
	(0.404)	(0.419)	(0.392)
AFQT: Group 1	0.0427	0.0515	0.0367
	(0.202)	(0.221)	(0.188)
Group 2	0.284	0.316	0.263
	(0.451)	(0.465)	(0.440)
Group 3A	0.236	0.241	0.232
	(0.424)	(0.428)	(0.422)
Group 3B	0.314	0.306	0.319
	(0.464)	(0.461)	(0.466)
Group 4	0.0231	0.0235	0.0228
	(0.150)	(0.151)	(0.149)
Rank: Jr. Enlisted (E1-E4)	0.608	0.587	0.622
	(0.488)	(0.492)	(0.485)
Jr. NCO (E5-E6)	0.221	0.296	0.170
	(0.415)	(0.457)	(0.376)
Sr. NCO (E7-E9)	0.0793	0.0627	0.0907
	(0.270)	(0.242)	(0.287)
Lieutenant (O1-O2)	0.00849	0.00687	0.00961
	(0.0918)	(0.0826)	(0.0975)
Captain (O3)	0.0322	0.0270	0.0358
	(0.177)	(0.162)	(0.186)
Major (O4)	0.0130	0.00577	0.0180
	(0.113)	(0.0758)	(0.133)
Lt. Colonel (O5)	0.0141	0.00375	0.0212
	(0.118)	(0.0611)	(0.144)
Colonel (O6)	0.009	0.001	0.014
	(0.0944)	(0.0332)	(0.119)
General Officer (O7-O10)	0.000	0.000	0.000
	(0.0243)	(0.00700)	(0.0310)
Observations	701,611	285,552	416,059

Table 4: Demographic Characteristics of Veterans who separated from 2008 to 2016 by Institution Type.

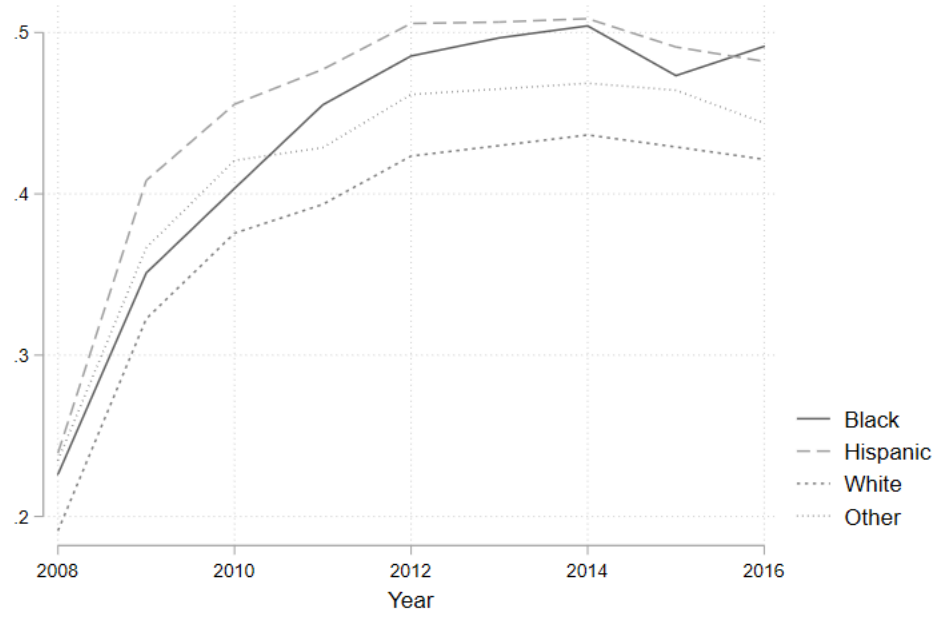
	(1) Full Sample	(2) For-Profit	(3) Public	(4) Private
Female	0.168	0.172	0.154	0.202
	(0.374)	(0.378)	(0.361)	(0.401)
Black	0.198	0.263	0.152	0.205
	(0.398)	(0.440)	(0.359)	(0.403)
Hispanic	0.120	0.126	0.117	0.116
	(0.325)	(0.332)	(0.321)	(0.320)
Married	0.560	0.619	0.513	0.585
	(0.496)	(0.486)	(0.500)	(0.493)
Divorced	0.0703	0.0761	0.0639	0.0784
	(0.256)	(0.265)	(0.245)	(0.269)
Educ: H.S. Dropout	0.00486	0.00604	0.00443	0.00378
	(0.0696)	(0.0775)	(0.0664)	(0.0613)
GED	0.107	0.127	0.104	0.0722
	(0.309)	(0.333)	(0.306)	(0.259)
H.S. Grad	0.719	0.739	0.733	0.635
	(0.450)	(0.439)	(0.442)	(0.481)
2-Year Degree	0.0182	0.0164	0.0177	0.0232
	(0.134)	(0.127)	(0.132)	(0.151)
Some College	0.0682	0.0583	0.0669	0.0920
	(0.252)	(0.234)	(0.250)	(0.289)
4-Year Degree	0.0628	0.0350	0.0570	0.137
	(0.243)	(0.184)	(0.232)	(0.344)
Graduate Degree	0.00488	0.00280	0.00410	0.0115
	(0.0697)	(0.0529)	(0.0639)	(0.106)
Home Region: Northeast	0.127	0.118	0.122	0.161
	(0.333)	(0.322)	(0.327)	(0.368)
South	0.421	0.443	0.414	0.399
	(0.494)	(0.497)	(0.493)	(0.490)
Midwest	0.188	0.172	0.196	0.198
	(0.391)	(0.378)	(0.397)	(0.399)
West	0.222	0.224	0.235	0.180
	(0.416)	(0.417)	(0.424)	(0.384)
AFQT: Group 1	0.0513	0.0239	0.0651	0.0652
	(0.221)	(0.153)	(0.247)	(0.247)
Group 2	0.312	0.249	0.353	0.315
	(0.463)	(0.432)	(0.478)	(0.464)
Group 3A	0.241	0.260	0.238	0.208
	(0.427)	(0.439)	(0.426)	(0.406)
Group 3B	0.303	0.387	0.269	0.238
	(0.460)	(0.487)	(0.443)	(0.426)
Group 4	0.0245	0.0359	0.0184	0.0202
	(0.155)	(0.186)	(0.134)	(0.141)
Rank: Jr. Enlisted (E1-E4)	0.579	0.593	0.613	0.447
	(0.494)	(0.491)	(0.487)	(0.497)
Jr. NCO (E6-E6)	0.292	0.289	0.290	0.308
	(0.455)	(0.453)	(0.454)	(0.462)
Sr. NCO (E7-E9)	0.0686	0.0843	0.0478	0.100
	(0.253)	(0.278)	(0.213)	(0.301)
Lieutenant (O1-O2)	0.00726	0.00353	0.00699	0.0157
	(0.0849)	(0.0593)	(0.0833)	(0.124)
Captain (O3)	0.0288	0.0105	0.0258	0.0749
	(0.167)	(0.102)	(0.159)	(0.263)
Major (O4)	0.00667	0.00428	0.00511	0.0163
	(0.0814)	(0.0653)	(0.0713)	(0.126)
Lt. Colonel (O5)	0.00486	0.00339	0.00369	0.0114
	(0.0695)	(0.0581)	(0.0606)	(0.106)
Colonel (O6)	0.00157	0.00111	0.00112	0.00390
	(0.0396)	(0.0333)	(0.0334)	(0.0623)
General Officer (O7-O10)	0.000	0.000	0.000	0.000
	(0.00785)	(0.00593)	(0.00541)	(0.0146)
Observations	340850	113783	170937	56130

Figure 1: Post 9-11 GI Bill Usage by Sex



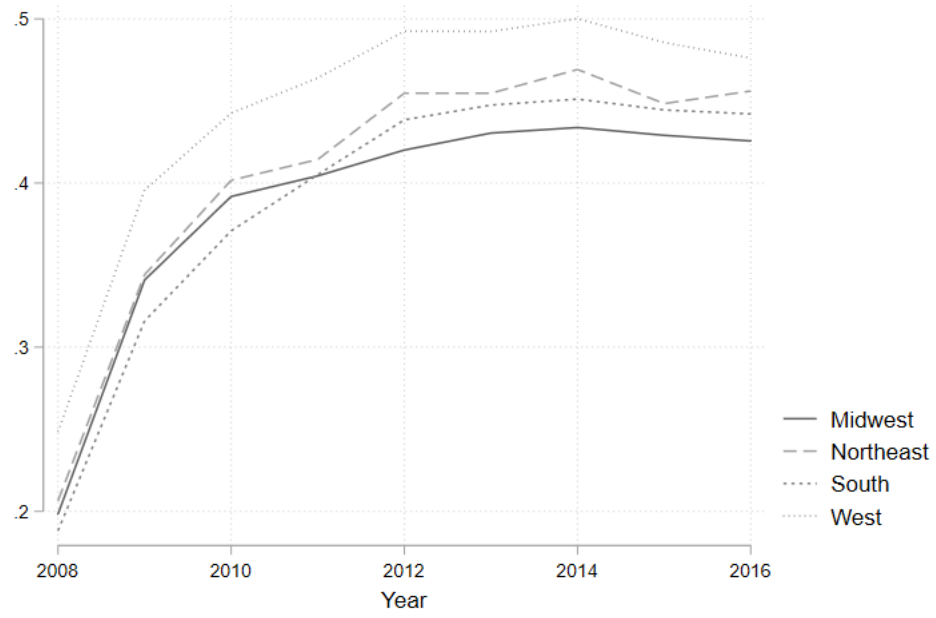
Notes: This figure presents data for PGIB eligible veterans who separated from the Army during the calendar years of 2008 to 2016. The vertical axis represents the percentage of a calendar year cohort who used the PGIB benefits at any time since their separation from the Army.

Figure 2: Post 9-11 GI Bill Usage by Race



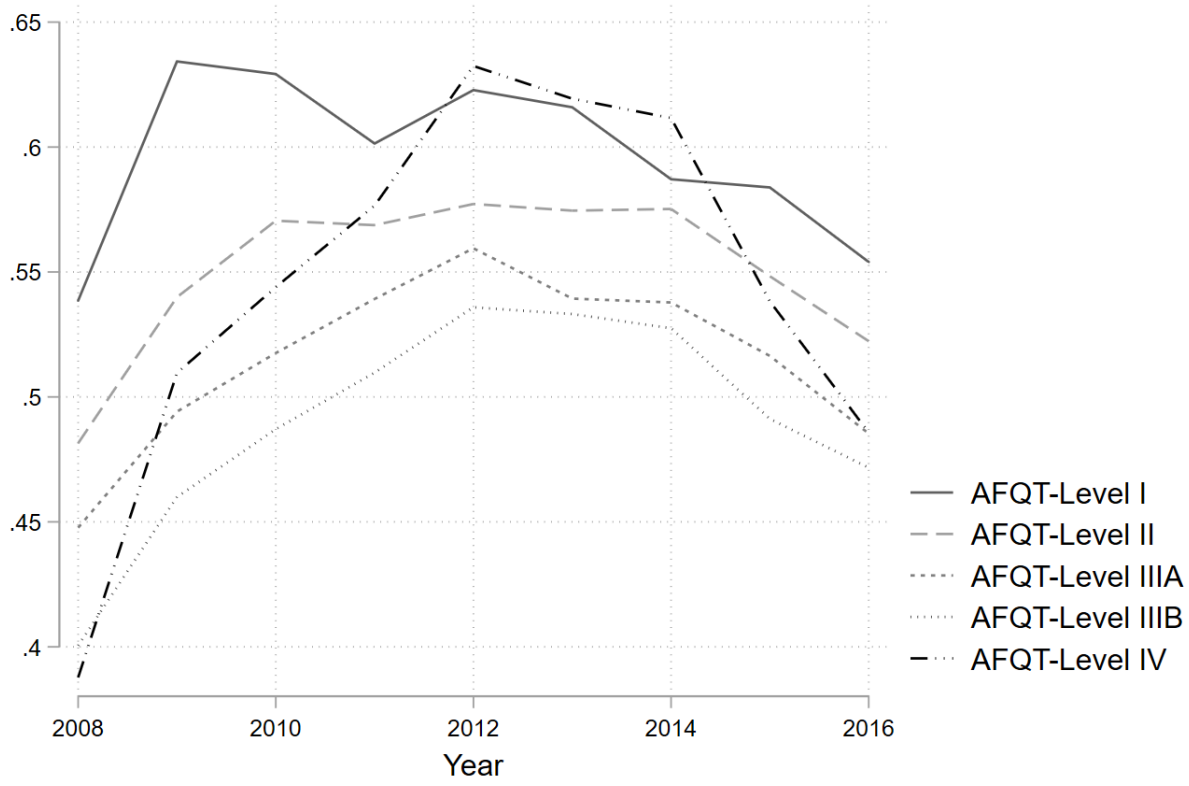
Notes: This figure presents data for PGIB eligible veterans who separated from the Army during the calendar years of 2008 to 2016. The vertical axis represents the percentage of a calendar year cohort who used the PGIB benefits at any time since their separation from the Army.

Figure 3: Post 9-11 GI Bill Usage by U.S Census Region



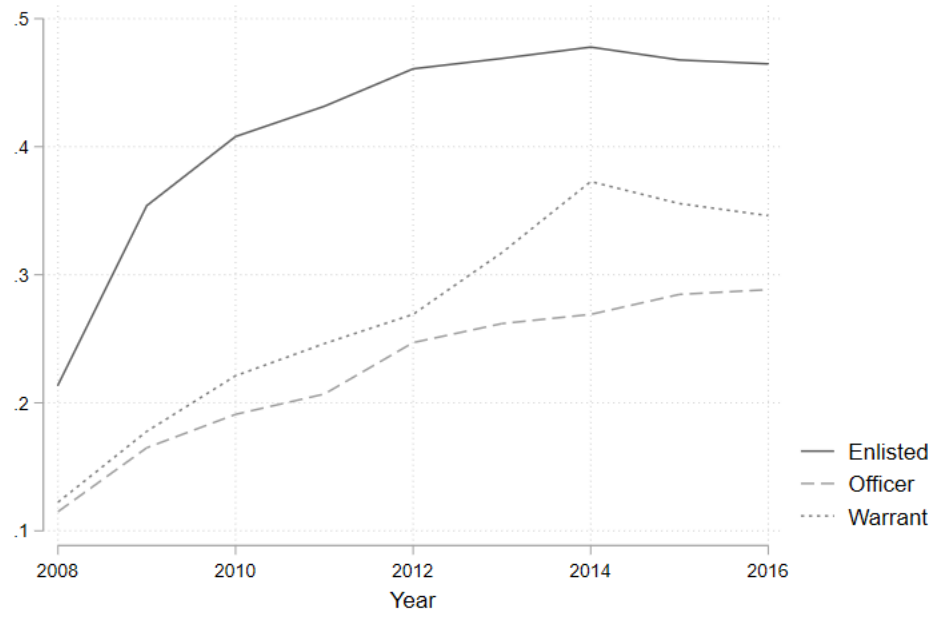
Notes: This figure presents data for PGIB eligible veterans who separated from the Army during the calendar years of 2008 to 2016. The vertical axis represents the percentage of a calendar year cohort who used the PGIB benefits at any time since their separation from the Army.

Figure 4: Post 9-11 GI Bill Usage by AFQT Category



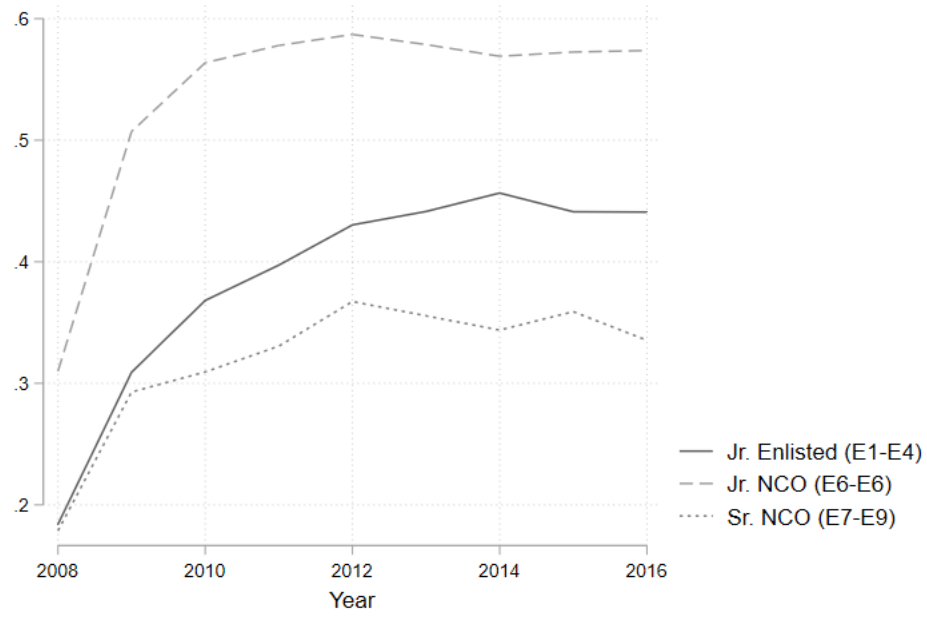
Notes: This figure presents data for PGIB eligible veterans who separated from the Army during the calendar years of 2008 to 2016. The vertical axis represents the percentage of a calendar year cohort who used the PGIB benefits at any time since their separation from the Army.

Figure 5: Post 9-11 GI Bill Usage by Officer, Enlisted, and Warrant Officer Status



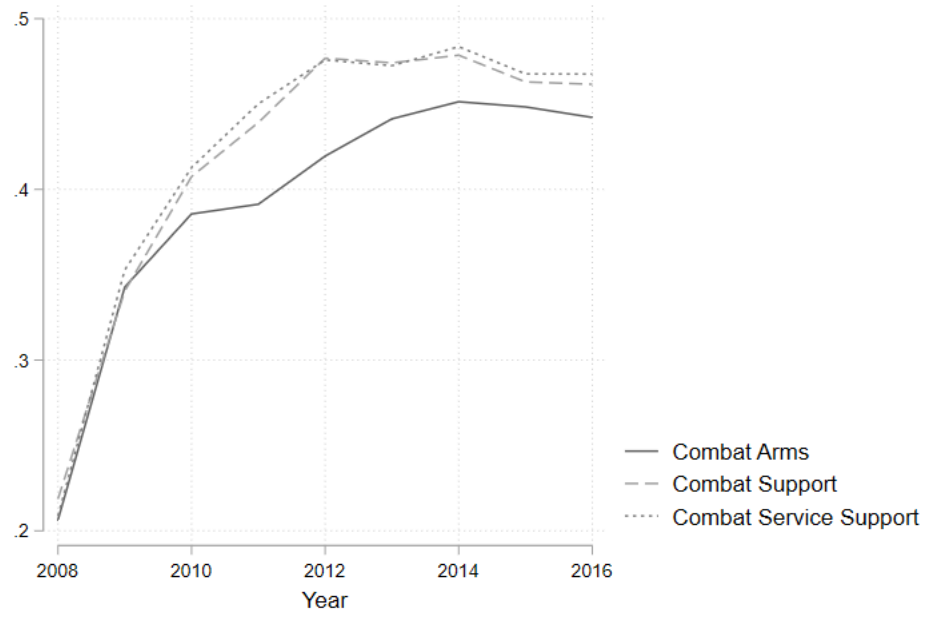
Notes: This figure presents data for PGIB eligible veterans who separated from the Army during the calendar years of 2008 to 2016. The vertical axis represents the percentage of a calendar year cohort who used the PGIB benefits at any time since their separation from the Army.

Figure 6: Post 9-11 GI Bill Usage by Enlisted Rank



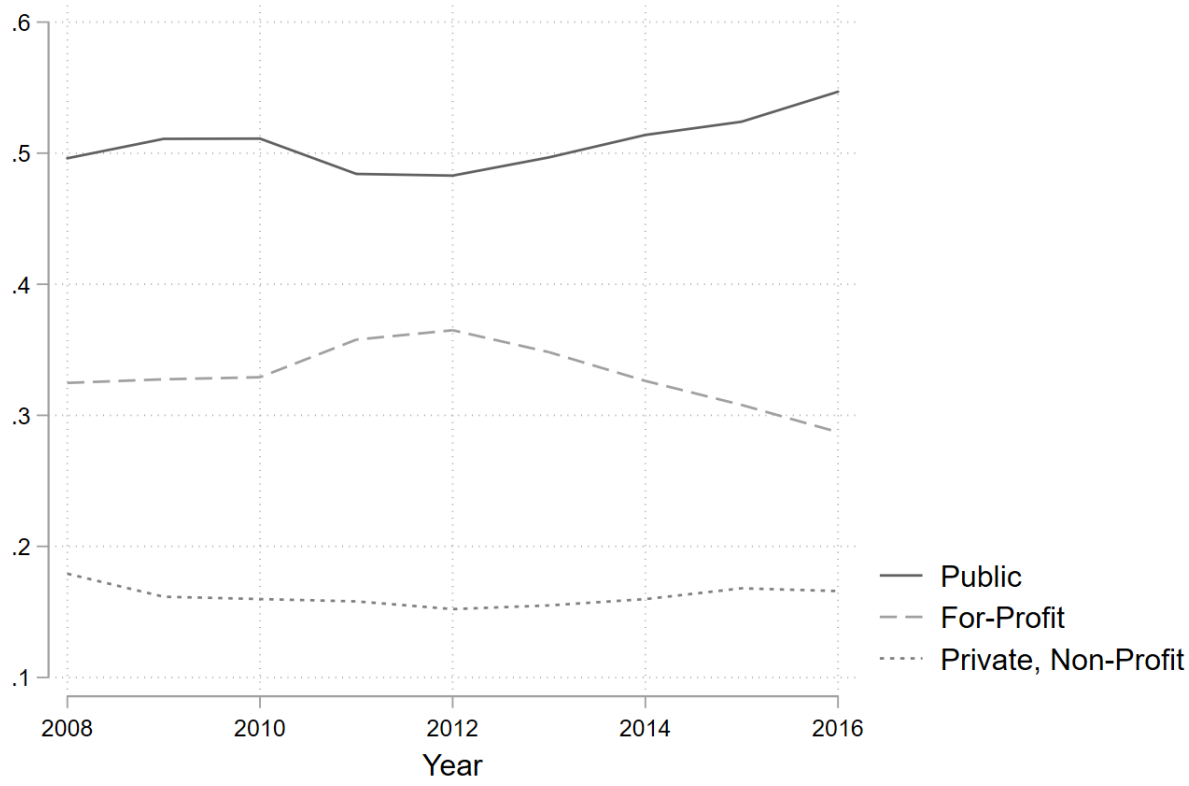
Notes: This figure presents data for PGIB eligible veterans who separated from the Army during the calendar years of 2008 to 2016. The vertical axis represents the percentage of a calendar year cohort who used the PGIB benefits at any time since their separation from the Army.

Figure 7: Post 9-11 GI Bill Usage by Occupational Branch



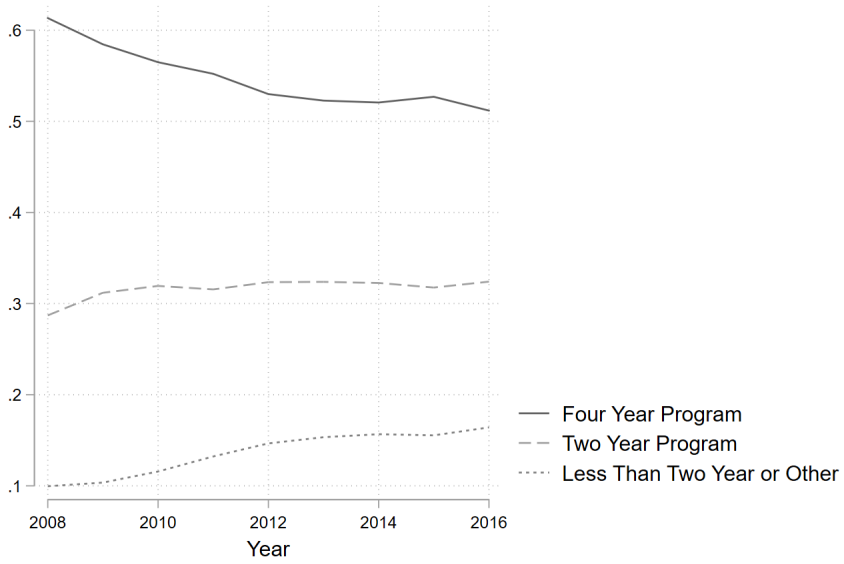
Notes: This figure presents data for PGIB eligible veterans who separated from the Army during the calendar years of 2008 to 2016. The vertical axis represents the percentage of a calendar year cohort who used the PGIB benefits at any time since their separation from the Army.

Figure 8: Post 9-11 GI Bill Enrollments by Sector



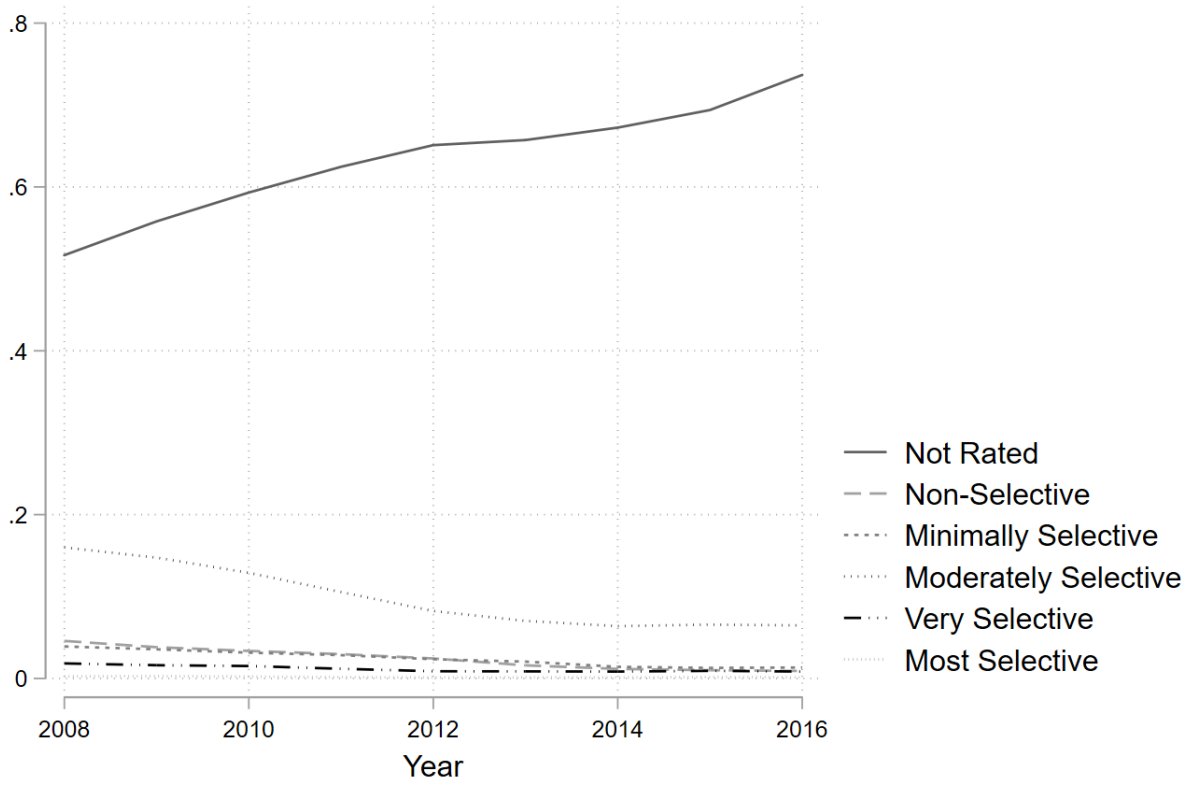
Notes: This figure presents data for PGIB eligible veterans who separated from the Army during the calendar years of 2008 to 2016 and used their PGIB benefits. The vertical axis represents the percentage of a calendar year cohort who enrolled in either a public, for-profit, or private, non-profit institution.

Figure 9: Post 9-11 GI Bill Usage by Program Level



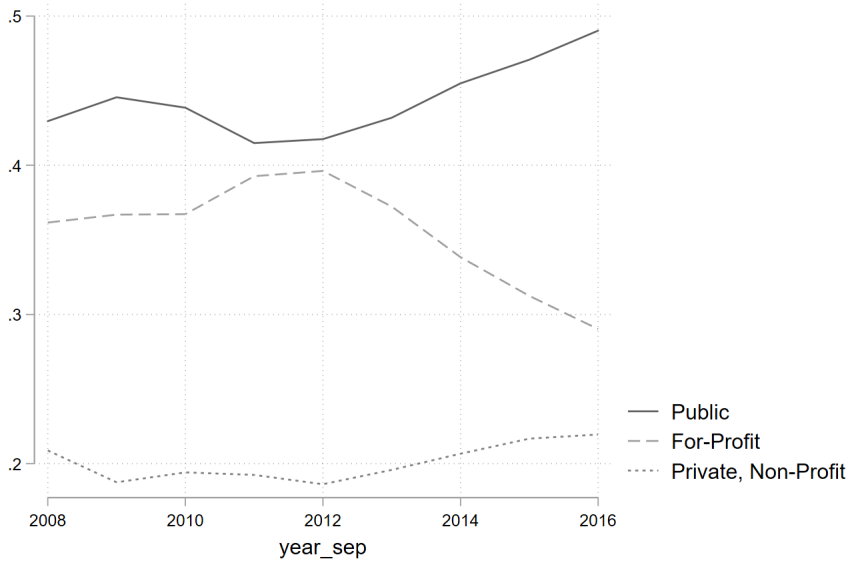
Notes: This figure presents data for PGIB eligible veterans who separated from the Army during the calendar years of 2008 to 2016 and used their PGIB benefits. The vertical axis represents the percentage of a calendar year cohort who enrolled in either a four-year, two-year, or less than two-year program.

Figure 10: Post 9-11 GI Bill Usage by Selectivity



Notes: This figure presents data for PGIB eligible veterans who separated from the Army during the calendar years of 2008 to 2016 and used their PGIB. The vertical axis represents the percentage of a calendar year cohort who enrolled in institutions that were either not rated by Barron's or were rated as either "Non-Selective", "Minimally Selective", "Moderately Selective", "Very Selective", or "Most Selective".

Figure 11: Percentage of Post 9-11 GI Bill Expenditures by Sector



Notes: This figure presents data for PGIB eligible veterans who separated from the Army during the calendar years of 2008 to 2016 and used their PGIB benefits. The vertical axis represents the percentage of PGIB funds that flowed to either a public, for-profit, or private non-profit institution.

Table 5: Percent Major Choice by Institution Type

Overall Sample		For-Profit	
Major Choice	Percent	Major Choice	Percent
Business Admin	22.97	Business Admin	31.09
Liberal Arts/General	12.82	Information Technology	12.54
Information Technology	9.62	Criminal Justice	12.09
Criminal Justice	9.52	Health Profession	9.30
Health Profession	9.05	Liberal Arts/General	8.29
Public		**Private**	
Major Choice	Percent	Major Choice	Percent
Liberal Arts/General	17.12	Business Admin	30.77
Business Admin	16.34	Information Technology	9.16
Health Profession	8.82	Health Profession	8.73
Criminal Justice	8.81	Criminal Justice	7.35
Information Technology	8.35	Liberal Arts/General	6.43
Combat Arms		**Combat Support**	
Major Choice	Percent	Major Choice	Percent
Business Admin	21.04	Business Admin	19.75
Liberal Arts/General	13.90	Information Technology	19.35
Criminal Justice	11.59	Liberal Arts/Humanities	10.82
Information Technology	8.05	Criminal Justice	10.11
Health Profession	5.85	Health Profession	6.04

Combat Service Support	
Major Choice	Percent
Business Admin	19.75
Information Technology	19.35
Liberal Arts/General	10.82
Criminal Justice	10.11
Health Profession	6.04

Notes: This table shows what percentage of the Post 9/11 GI Bill beneficiaries chose a specific major given institutional type and military occupation grouping.

Table 6: Descriptive Characteristics of For-Profit College Attendance

	(1)	(2)	(3)
	For-Profit	For-Profit	For-Profit
	Enlisted	Officers	Warrant
Female	-0.0280***	0.0165***	-0.0382**
	(0.0017)	(0.0055)	(0.0193)
Black	0.0829***	0.1485***	0.0701***
	(0.0017)	(0.0062)	(0.0152)
Hispanic	0.0004	0.0429***	0.0041
	(0.0020)	(0.0091)	(0.0237)
Married	0.0656***	0.0565***	0.0124
	(0.0013)	(0.0048)	(0.0224)
Divorced	0.0589***	0.0834***	0.0035
	(0.0027)	(0.0091)	(0.0270)
H.S. Dropout	0.1036***	-0.2139*	-0.3037
	(0.0097)	(0.1269)	(0.3314)
GED	0.0886***		0.3480
	(0.0039)		(0.2707)
H.S. Grad	0.0350***	-0.0399***	-0.0475
	(0.0034)	(0.0113)	(0.0464)
2-Year Degree	0.0230***	-0.0007	-0.0489
	(0.0058)	(0.0261)	(0.0426)
Some College	0.0181***	-0.0080	-0.0092
	(0.0043)	(0.0074)	(0.0124)
Home Region: South	-0.0004	-0.0044	-0.0130
	(0.0019)	(0.0056)	(0.0137)
Home Region: Midwest	-0.0089***	-0.0104	0.0140
	(0.0022)	(0.0068)	(0.0201)
Home Region: West	0.0180***	-0.0030	-0.0143
	(0.0021)	(0.0070)	(0.0188)
AFQT: Category 2	0.0832***		
	(0.0031)		
AFQT: Category 3A	0.1525***		
	(0.0032)		
AFQT: Category 3B	0.2017***		
	(0.0032)		
AFQT: Category 4	0.2492***		
	(0.0050)		
Combat Arms	-0.0259***	-0.0360***	-0.0388***
	(0.0014)	(0.0048)	(0.0128)
Constant	0.0968***	0.1071***	0.3347***
	(0.0043)	(0.0060)	(0.0261)
Observations	517836	27534	6366
R^2	0.037	0.037	0.008

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

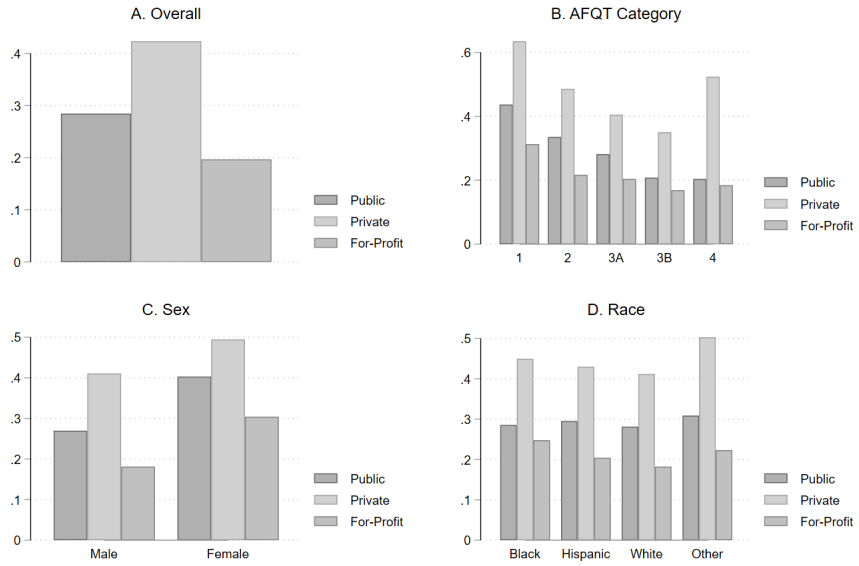
Table 7: Mulitnomial Logit- Veteran Institution Choice

	(1)	(2)
	For-Profit	Private
Female	-0.0999***	0.1701***
	(0.0088)	(0.0110)
Black	0.4780***	0.3420***
	(0.0086)	(0.0113)
Hispanic	0.0263***	0.0932***
	(0.0102)	(0.0133)
Married	0.4153***	0.3477***
	(0.0068)	(0.0089)
Divorced	0.3829***	0.3604***
	(0.0139)	(0.0175)
H.S. Dropout	0.3093***	-0.6131***
	(0.0487)	(0.0654)
GED	0.1953***	-0.8182 ***
	(0.0214)	(0.0236)
H.S. Grad	-0.0243**	-0.6636***
	(0.00193)	(0.0187)
2-Year Degree	0.0093	-0.3111***
	(0.031)	(0.03300)
Some College	-0.0454**	-0.4049***
	(0.0234)	(0.0239)
Home Region: South	-0.0923***	-0.3806***
	(0.009)	(0.0118)
Home Region: Midwest	-0.0988***	-0.2180***
	(0.0114)	(0.0136)
Home Region: West	-0.0171	-0.5014***
	(0.0107)	(0.0136)
AFQT: Category 2	0.5649***	-0.0414**
	(0.0187)	(0.0176)
AFQT: Category 3A	0.9192***	-0.0830***
	(0.0190)	(0.0186)
AFQT: Category 3B	1.1487***	-0.1232***
	(0.0190)	(0.0187)
AFQT: Category 4	1.4039***	0.09553**
	(0.0269)	(0.0325)
Combat Arms	-0.1630***	-0.1652***
	(0.0072)	(0.0094)
Constant	-1.5579***	-0.4662***
	(0.0253)	(0.0237)
Observations	493,650	493,650
$PseudoR^2$	0.0299	0.0299

Standard errors in parentheses

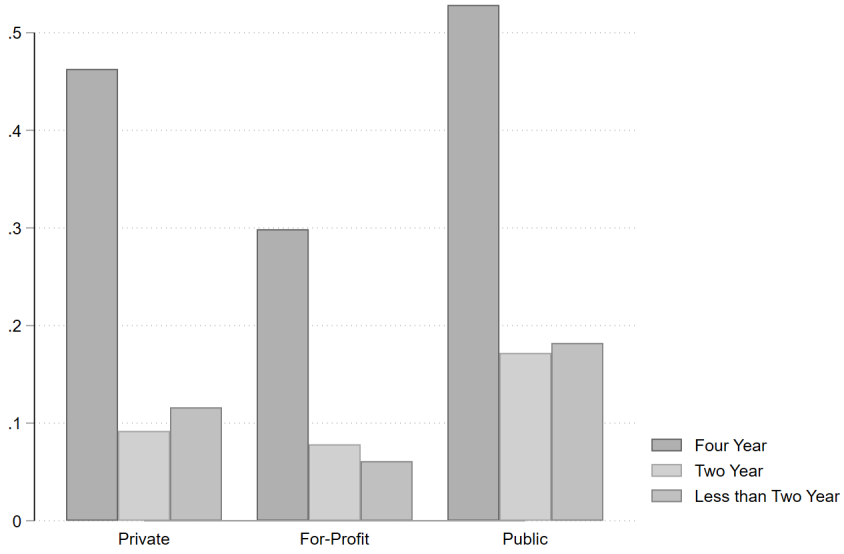
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Figure 12: Graduation Percentage of Formerly Enlisted Veterans Students using the Post 9/11 GI



Notes: This figure presents completion rates for PGIB eligible veterans who separated from the Army and enrolled in a post-secondary institution during the calendar years of 2009 to 2013. The sample also contains only former enlisted personnel who entered the Army with only a high school diploma or GED. The vertical axis represents the percentage of veterans who graduated with any credential after six years of enrollment. Panel A shows graduation rates by institution control for the overall sample. Panel B shows results by AFQT category. Panel C shows results by sex. Panel D shows results by race.

Figure 13: Graduation Percentage of Formerly Enlisted Veterans Students using the Post 9/11 GI



Notes: This figure presents completion rates for PGIB eligible veterans who separated from the Army and enrolled in a post-secondary institution during the calendar years of 2009 to 2013. The sample also contains only former enlisted personnel who entered the Army with only a high school diploma or GED. The vertical axis represents the percentage of veterans who graduated with any credential after six years of enrollment.

Table 8: Regression of Graduation on Institution and Veteran Characteristics

	(1) Graduated	(2) Graduated	(3) Graduated	(4) Graduated
For-Profit	-0.0919***	-0.0959***	-0.0856***	-0.0876***
	(0.0053)	(0.0052)	(0.0052)	(0.0051)
Private	0.1396***	0.1311***	0.1304***	0.1032***
	(0.0093)	(0.0093)	(0.0092)	(0.0090)
Female		0.1229***	0.1307***	0.1454***
		(0.0085)	(0.0085)	(0.0086)
Black		0.0203**	0.0433***	0.0195**
		(0.0081)	(0.0081)	(0.0079)
Hispanic		0.0146*	0.0356***	0.0325***
		(0.0083)	(0.0083)	(0.0082)
Married		0.0056	0.0098*	-0.0309***
		(0.0052)	(0.0052)	(0.0052)
Divorced		0.0495***	0.0499***	-0.0144
		(0.0129)	(0.0128)	(0.0127)
AFQT: Category 2			-0.1233***	-0.1029***
			(0.0197)	(0.0195)
AFQT: Category 3A			-0.1758***	-0.1520***
			(0.0196)	(0.0194)
AFQT: Category 3B			-0.2379***	-0.2018***
			(0.0197)	(0.0195)
AFQT: Category 4			-0.2090***	-0.2175***
			(0.0396)	(0.0376)
Combat Arms				-0.0193***
				(0.0056)
Combat Support				0.0138*
				(0.0080)
Jr. NCO (E5-E6)				0.1281***
				(0.0065)
Sr. NCO (E7-E9)				0.4044***
				(0.0148)
Constant	0.2963***	0.2764***	0.4398***	0.4077***
	(0.0037)	(0.0054)	(0.0196)	(0.0198)
Observations	30221	30221	30221	30221
R^2	0.026	0.036	0.048	0.085

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Notes: This figure presents completion rates for PGIB eligible veterans who separated from the Army and enrolled in a post-secondary institution during the calendar years of 2009 to 2013. The sample also contains only former enlisted personnel who entered the Army with only a high school diploma or GED.

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