Population Representation in the Military Services:

Fiscal Year 2016 Summary Report

Introduction

Since 1974, this annual Department of Defense (DOD) report has described the characteristics of U.S. military personnel. The *Population Representation in the Military Services* (*PopRep*) report's purpose is to provide the most comprehensive, reliable, and consistent data tabulations on military personnel for policymakers, the media, and the general public.[1] Figure 1 shows how the size of the active component (AC) has changed since fiscal year 1973 (FY73). At the end of the draft era (FY73), the U.S. AC military stood at 2.2 million men and women; in FY16, AC endstrength was just under 1.3 million.

Figure 1. AC endstrength by service, FY73–FY16
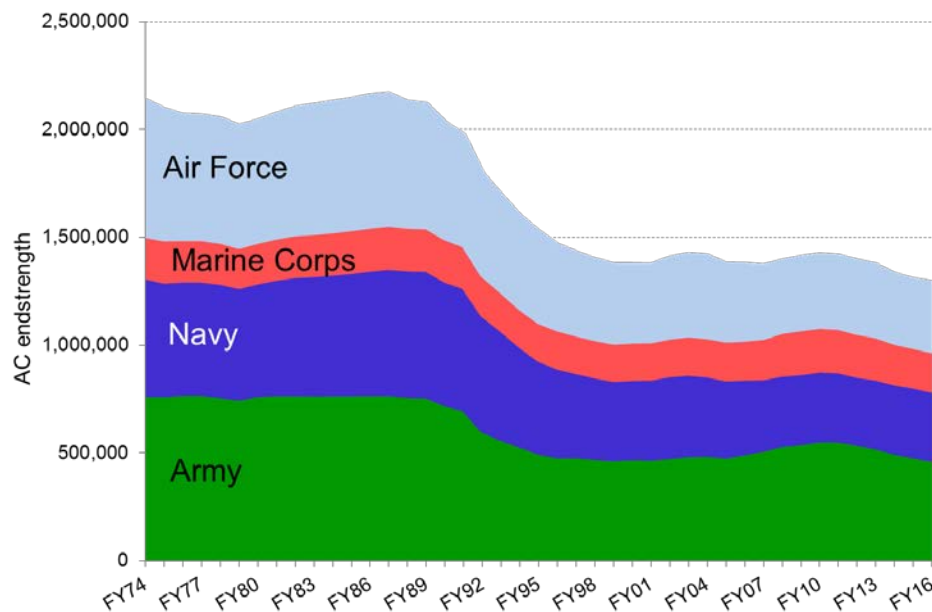
Source: Table D-39.

During the Great Recession of the late 2000s, the U.S. military experienced a favorable recruiting environment, resulting in the services bringing in high numbers of high-quality accessions. As the U.S. economy and civilian labor market continues to improve, recruiting is becoming more difficult.[2] Other U.S. population patterns add to recruiting

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[1] Summaries and appendixes (for FY97 through FY15) of the Pop Rep report are available online at https://www.cna.org/research/pop-rep.

[2] During the 2008-2010 period, the average monthly unemployment rate for 16- to 24-year-olds was 16.3 percent; for the 2011-2015 period, it was 14.8 percent, and in 2016 it was 10.4 percent (see https://fred.stlouisfed.org/series/LNS14024887).

challenges, such as the fact that high school graduates are more likely to enroll in college immediately and, thus, be unavailable for military service.[3]

Accession Policy, in the Office of the Under Secretary of Defense (OUSD-AP), sponsored a study to estimate the "qualified military available," or QMA.[4] The QMA is an estimate of the proportion of the 17- to 24-year-old U.S. youth population that would qualify without needing an enlistment waiver and be available to enlist in the AC military. The 2013 QMA report estimates this to be 17 percent. In practice, however, the services typically deny enlistment to youth who score in the bottom 30 percentiles (i.e., categories IV and V) on the Armed Forces Qualification Test (AFQT).[5] Incorporating this criterion, the 2013 QMA report estimates that only 13 percent of youth would qualify for military service without a waiver, be available, and score above the 30th percentile on the AFQT. Many youth have more than one disqualifying factor. In fact, 31 percent of all youth are predicted to be disqualified from military enlistment for more than one reason. The most common multiple disqualifiers include: medical/physical issues, being overweight or obese, and prior drug use.

There are, some encouraging signs, however. The recruitment and retention of women has become a hot topic throughout DOD, and several services already have taken steps to attract more female recruits. For example, in January 2016, the Secretary of Defense announced the doubling (from 6 to 12 weeks) of maternity leave for servicewomen.[6] The services also made other policy changes to encourage female military participation. For example, the Army increased the number of women it trained for recruiting duty, in the hope that these soldiers will be more successful in attracting female recruits.[7] West Point also took steps to increase the number of female cadets,[8] and the Marine Corps is looking to high school sports teams to find more female recruits.[9] Finally, the Secretary

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[3] The immediate college enrollment rate (the year after high school or a General Educational Development (GED) award) was 60 percent for students who graduated in 1990 and 70 percent for those who graduated in 2016. See https://nces.ed.gov/programs/coe/indicator_cpa.asp.

[4] See The Lewin Group, Inc., *Qualified Military Available (QMA) Final Technical Report,* Oct. 10, 2013.

[5] The AFQT score is computed from several Armed Services Vocational Aptitude Battery (ASVAB) subtests.

[6] See http://www.defense.gov/News/Article/Article/645958/carter-announces-12-weeks-paid-military-maternity-leave-other-benefits/.

[7] See http://www.usatoday.com/story/news/nation/2015/10/14/army-recruiting-women-combat/73885956/.

[8] See http://www.afba.com/newsroom/articles/article/article/west-point-officials-take-steps-to-increase-number-of-female-cadets/.

[9] See http://www.bigstory.ap.org/article/286be7fd7ec643f984c7bc581d8e479f/marines-looks-few-more-good-women-recruiting-drive/.

of Defense's January 2016 decision to open all military occupations to women without exception may increase interest in military service among young women.[10]

This summary report highlights recent and historical personnel trends in the DOD services (the Army, Navy, Marine Corps, and Air Force) and the U.S. Coast Guard, which is part of the Department of Homeland Security. It examines both the active component (AC) and the reserve component (RC) in all services. It describes demographic and socioeconomic characteristics of applicants, accessions, enlisted personnel, and officers, referencing data from the tables in the technical appendices, as well as from previous *PopRep* reports.[11]

The FY16 technical appendices (A through E), located on this website, provide FY16 data on the demographics—including education and aptitude—of new recruits, enlisted personnel, and officers of the AC and RC, as well as historical data on their selected demographic and service-related characteristics. Except where otherwise noted, data are provided by the Defense Manpower Data Center (DMDC), and all data are derived from the technical appendices. In this document, table references starting with letters refer to tables in the technical appendices (e.g., Table A-1 refers to a table in Appendix A), while table references without letters refer to tables within the summary document.

The rest of this report is organized as follows: In Section I, we present an overall summary of the armed services. Section II covers DOD's AC, focusing primarily on AC non-prior-service accessions. Section III addresses AC diversity and other characteristics of the AC force. Section IV describes DOD's RC. In section V, we discuss the U.S. Coast Guard. Section VI presents concluding highlights.

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[10] See https://www.defense.gov/News/Article/Article/632536/carter-opens-all-military-occupations-positions-to-women/.

[11] See https://www.cna.org/research/pop-rep. DOD AC enlisted accession data are presented in Appendix A; DOD AC accessions, gains, and member data are presented in Appendix B; DOD RC data are presented in Appendix C; historical DOD data are presented in Appendix D; and U.S. Coast Guard data are presented in Appendix E.

Section I: Summary Statistics

Each year, Congress sets authorized endstrength—the maximum number of servicemembers allowed—for each service. Actual endstrength may differ from authorized endstrength, however, in that the former refers to the number of servicemembers as of September 30th in a given FY. To meet authorized endstrength, each service balances retention (those remaining in the service) with accessions (those entering the service). In this report, the word *endstrength* refers to *actual* endstrength. In Table 1, we show individual service total endstrength—the sum of enlisted members, commissioned officers, and warrant officers—for the past three FYs. The table also shows FY16 endstrength by personnel type.

Table 1. Actual endstrength, by service and personnel type, FY14–FY16

	Endstrength			FY16 endstrength, by personnel type		
	FY14	FY15	FY16	Enlisted	Commissioned Officers	Warrant Officers
Component						
Active (AC)						
Army	504,330	487,366	471,271	378,835	77,861	14,575
Navy	321,599	323,334	320,101	265,716	52,719	1,666
Marine Corps	187,891	183,417	183,501	162,828	18,633	2,040
Air Force	312,453	307,326	313,723	252,762	60,961	0
DOD Total	**1,326,273**	**1,301,443**	**1,288,596**	**1,060,141**	**210,174**	**18,281**
Reserve (RC)						
ARNG	354,072	350,023	341,589	296,061	36,961	8,567
USAR	195,438	198,552	198,395	161,048	33,938	3,409
USNR	59,254	57,359	57,980	43,683	14,213	84
USMCR	39,450	38,906	38,517	34,199	4,085	233
ANG	106,380	105,728	105,887	90,655	15,232	0
USAFR	69,784	68,494	69,364	55,451	13,913	0
DOD Total	**824,378**	**819,062**	**811,732**	**681,097**	**118,342**	**12,293**
U.S. Coast Guard						
AC	39,454	39,090	39,597	31,324	6,527	1,746
RC	7,614	7,044	6,573	5,463	983	127
Total	**47,068**	**46,134**	**46,170**	**36,787**	**7,510**	**1,873**

Source: Tables B-17, B-23, B-34, D-20, D-21, D-41, E-13, E-16, E-19, E-24, E-26, and E-19.
Notes:
1. The RC consists of the Army National Guard (ARNG), the U.S. Army Reserve (USAR), the U.S. Navy Reserve (USNR), the U.S. Marine Corps Reserve (USMCR), the Air National Guard (ANG), and the U.S. Air Force Reserve (USAFR).
2. The Air Force does not have warrant officers.

FY16 DOD AC endstrength totaled 1.29 million servicemembers, almost 13,000 fewer than in FY15 and 38,000 fewer than in FY14. In FY16, the AC was almost 3 percent smaller than it was in FY14, with the Army's endstrength falling the most rapidly in the last two years. AC Army endstrength, however, was still 2.6 times the size of the Marine

Corps and about 47 percent larger than the Navy and 50 percent larger than the Air Force.[12] The overall reductions in AC endstrength since FY14, however, mask somewhat different patterns among the services' ACs: Army endstrength declined each FY, Navy endstrength grew between FY14 and FY15 and shrank in FY16, and Marine Corps and Air Force endstrengths shrank between FY14 and FY15 and grew in FY16.

At 811,732 members in FY16, the RC was 63 percent the size of the AC. The RC has two National Guard elements—the Army National Guard (ARNG) and the Air National Guard (ANG)—and four reserve elements—the U.S. Army Reserve (USAR), the U.S. Navy Reserve (USNR), the U.S. Marine Corps Reserve (USMCR), and the U.S. Air Force Reserve (USAFR). In terms of size, the Army dominates the RC; its guard and reserve forces made up 67 percent of reserve endstrength in FY16. In recent years, RC endstrength declines have been proportionally less than those in the AC.

Enlisted personnel make up the bulk of total endstrength, accessions, and gains for all DOD services (AC and RC). In FY16, enlisted personnel made up between 80 percent (Army and Air Force) and 89 percent (Marine Corps) of AC endstrength. This follows the historical pattern of the Air Force having the richest mix of officers and the Marine Corps having the leanest.

Most officers are commissioned officers. Across DOD, warrant officers accounted for almost 9 percent of AC officer strength. There are no warrant officers in the Air Force,[13] but warrant officers made up 16 percent of Army, 11 percent of Marine Corps, and 5 percent of Navy AC officer strength in FY16. In the RC, warrant officers averaged 7 percent of the officer corps, except in the ARNG, where the percentage was almost 16 percent. Warrant officers are generally technical leaders and specialists, and most are prior-service (PS) enlisted, although the Army does have a direct accession program for helicopter pilots.[14]

Table 2 shows the number of accessions and gains for the past three FYs by component and service.[15] For enlisted personnel, we include non-prior-service (NPS) and prior-

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[12] We discuss the Coast Guard in a later section. It is small, about one-fifth the size of the Marine Corps, making it the smallest AC service.

[13] The Air Force stopped accessing warrant officers in 1958 when the services expanded enlisted paygrades to include E8s and E9s. The last warrant officer retired from the Air Force in 1984.

[14] In the remainder of this report, we focus almost exclusively on enlisted personnel and commissioned officers.

[15] Our DMDC data track "accessions" for AC enlisted personnel and "gains" for officers and all reservists. Gains data count officers and RC members who exit one component and enter another. We follow the definitions from the Office of the Secretary of Defense for accessions and gains:

- *Accessions:* Number associated with recruiters' productivity and used in reporting the achievements of the services' recruiting commands (and other accessioning agencies).

service (PS) accessions.[16] For officers, we include commissioned and warrant officer gains. (The gain percentages for PS and warrant officers are shown in parentheses below the numerical gains.)

AC enlisted accessions have grown each year between FY14 and FY16. FY16 AC enlisted accessions were 10-percent larger than FY14 AC enlisted accessions. All the services, except for the Navy, experienced increases in AC enlisted accessions between FY15 and FY16.

PS accessions for the AC are small, only 2.7 percent of FY16 accessions. In sharp contrast to AC enlisted accessions, PS personnel represent more than 40 percent of yearly reserve force enlisted gains, and these percentages vary considerably by element. The largest reserve element, the ARNG, recruits the smallest percentage of PS and the largest percentage of NPS recruits each year relative to the other reserve elements.

AC officer gains experienced little change between FY15 and FY16 overall. However, changes in DOD AC officer gains mask the patterns among the individual services. Between FY15 and FY16, AC officer gains grew slightly for the Army, Navy, and Marine Corps, but AC officer gains shrank for the Air Force.

Table 2. Number of accessions and gains, by service and personnel type, FY14–FY16

	Enlisted (% PS)			Officers (% Warrants)		
	FY14	**FY15**	**FY16**	**FY14**	**FY15**	**FY16**
Active						
Army	56,926	59,010	62,362	6,517	6,553	6,619
	(3.1)	(3.4)	(5.9)	(15.2)	(13.8)	(15.7)
Navy	33,707	34,973	30,624	4,217	4,189	4,241
	(0.2)	(0.3)	(0.5)	(5.0)	(4.3)	(4.8)
Marine Corps	26,059	29,483	30,378	1,632	1,775	1,817
	(0.3)	(0.3)	(0.3)	(15.7)	(10.8)	(10.8)
Air Force	24,252	24,234	32,279	4,182	4,318	4,188
	(0.5)	(0.9)	(1.1)	(0.0)	(0.0)	(0.0)
DOD Total	**140,944**	**147,700**	**155,643**	**16,548**	**16,835**	**16,865**
	(1.4)	**(1.6)**	**(2.7)**	**(8.8)**	**(7.6)**	**(8.5)**
Reserve						
ARNG	49,832	44,995	41,608	4,328	4,018	3,895
	(23.0)	(23.4)	(29.4)	(16.4)	(14.4)	(15.9)
USAR	27,049	26,615	26,337	4,897	5,125	4,953
	(53.2)	(51.0)	(46.6)	(6.0)	(6.3)	(7.2)
USNR	9,980	8,325	10,690	2,097	1,985	1,670
	(70.6)	(85.1)	(89.0)	(0.6)	(0.8)	(0.7)

- *Gains:* Number associated with transactions in a database that reflects the addition of a Social Security Number (SSN) that was not in the previous file.

[16] We use each service's definition for AC PS and NPS accessions. In the Army, Navy, and Air Force, PS accessions are those that served previously in any of the four services. In the Marine Corps, PS accessions are only those who served previously in the Marine Corps.

	Enlisted (% PS)			Officers (% Warrants)		
	FY14	**FY15**	**FY16**	**FY14**	**FY15**	**FY16**
USMCR	8,661 (34.3)	8,411 (36.1)	8,617 (37.3)	909 (3.9)	938 (2.9)	997 (3.3)
ANG	9,166 (42.0)	8,538 (47.1)	8,268 (43.0)	1,455 (0.0)	1,299 (0.0)	1,308 (0.0)
USAFR	7,399 (68.6)	7,131 (66.5)	7,552 (63.1)	1,420 (0.0)	1,770 (0.0)	1,493 (0.0)
DOD Total	**112,087 (40.0)**	**104,015 (41.3)**	**103,072 (44.2)**	**15,106 (7.0)**	**15,135 (6.2)**	**14,316 (7.1)**

Source: Tables B-14, C-3, C-10, C-18, C-28, D-16, D-38, and D-40.

Notes

1. Enlisted accessions for all components include both non-prior-service (NPS) and prior-service (PS) accessions.

2. The RC consists of the Army National Guard (ARNG), the U.S. Army Reserve (USAR), the U.S. Navy Reserve (USNR), the U.S. Marine Corps Reserve (USMCR), the Air National Guard (ANG), and the U.S. Air Force Reserve (USAFR).

3. The Air Force has no warrant officers.

Section II: DOD Active Component (AC)

In this section, we focus on the AC, beginning with a historical analysis of trends in the size of the enlisted force and the commissioned officer corps. We then focus on non-prior-service enlisted accessions and applicants for the enlisted force. After discussing trends, we provide descriptive statistics on the quality, age, geographic background, and neighborhood median household income of enlisted NPS recruits. We then turn to a section on gender, racial and ethnic diversity, and citizenship status for AC personnel, also examining marital patterns for AC personnel. After that, we look at separation and continuation rates for enlisted personnel and how continuation rates translate into different retirement probabilities for each service. We conclude by comparing trends in years of completed service for AC enlisted personnel and commissioned officers.

Endstrength over time

After examining patterns in enlisted and commissioned officer endstrength, we review how the enlisted-to-officer ratio has changed over time.

Enlisted endstrength

The AC's enlisted endstrength was 1,060,141 in FY16, accounting for 82 percent of total AC endstrength for the year. Figure 2 shows AC enlisted endstrength by service over the past 43 years.

At the beginning of the All-Volunteer Force (AVF) in FY73, 1.9 million servicemembers were in the enlisted force. The end of the Cold War in the early 1990s led to a significant drop in force size and, from FY97 to FY16, the enlisted force fluctuated between 1.1 million and 1.2 million servicemembers. The wars in Iraq and Afghanistan increased the size of the Army and the Marine Corps, but this increase was offset, at least partly, by decreases in the size of the Air Force and the Navy. Reflecting reduced operational commitments in recent years, the Army and Marine Corps have been drawing down their forces.

The Marine Corps has been the smallest of the DOD services for the past 50 years. But, although all the services shrank in the 1990s, the Marine Corps decreased the least and, by FY08, its enlisted force was back to the size it had been at the beginning of the AVF. By FY16, the Marine Corps' enlisted force was 96 percent of its FY74 size. In contrast, the enlisted Air Force, Navy, and Army were 48, 56, and 56 percent of their respective sizes in FY74.

**Figure 2. AC enlisted endstrength, by service, FY74–FY16**
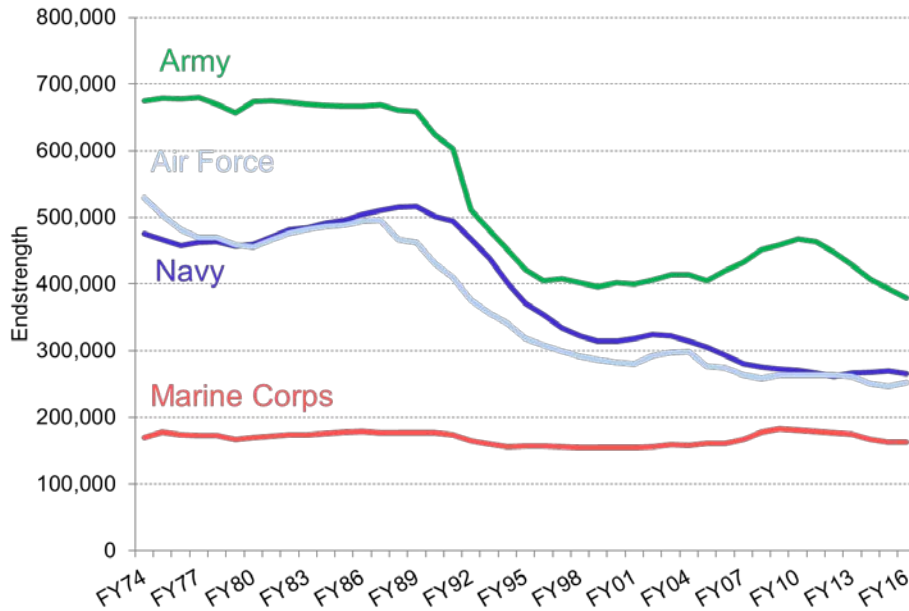
Source: Table D-11.

Commissioned officer corps

Figure 3 shows AC commissioned officer endstrength by service over the past 43 years. Starting from a high of 300,000 at the start of the AVF, the commissioned officer corps fell to 260,000 by FY80, grew to 292,000 by FY86, fell to 201,000 by FY01, and grew to 219,000 by FY12. By FY16, the commissioned officer corps was back to its FY01 size of about 201,000 (see appendix Table D-16). Commissioned officer gains followed similar patterns. In percentage terms, officer gains have fallen more than officer corps endstrength since the start of the AVF, resulting in a more experienced commissioned officer corps.

We saw earlier that, since the advent of the AVF, the Army has had the highest number of AC enlisted personnel. For commissioned officers, however, the Air Force had the highest number until FY07 when the Army overtook it. In FY16, AC Army commissioned officer endstrength was almost 15,000 larger than AC Air Force commissioned officer endstrength.

**Figure 3. AC commissioned officer endstrength, by service, FY74–FY16**
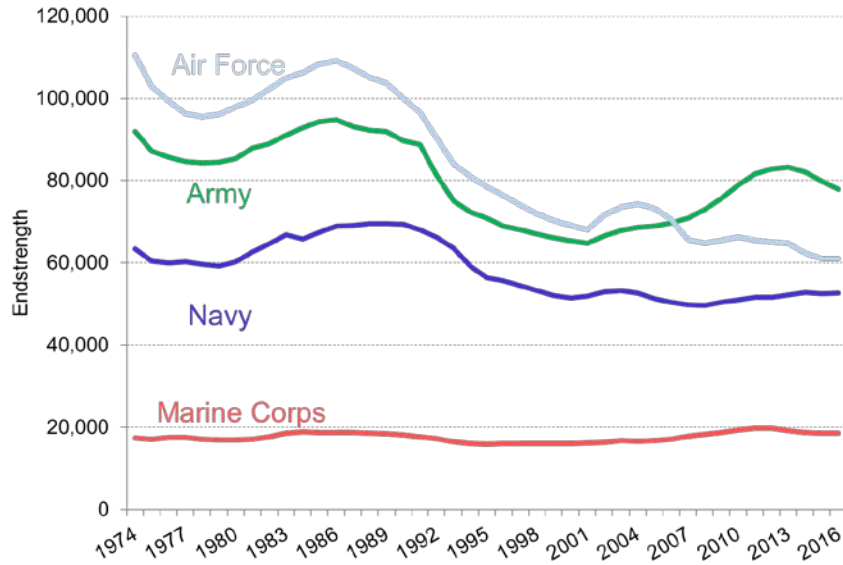
Source: Table D-16.

Ratio of enlisted to commissioned officers

Although Congress sets authorized endstrength, each service determines its own enlisted and officer mix. Figure 4 illustrates how the ratio of enlisted to commissioned officers for each service has changed over time.

Figure 4. Ratio of AC enlisted to commissioned officers, by service, FY74–FY16
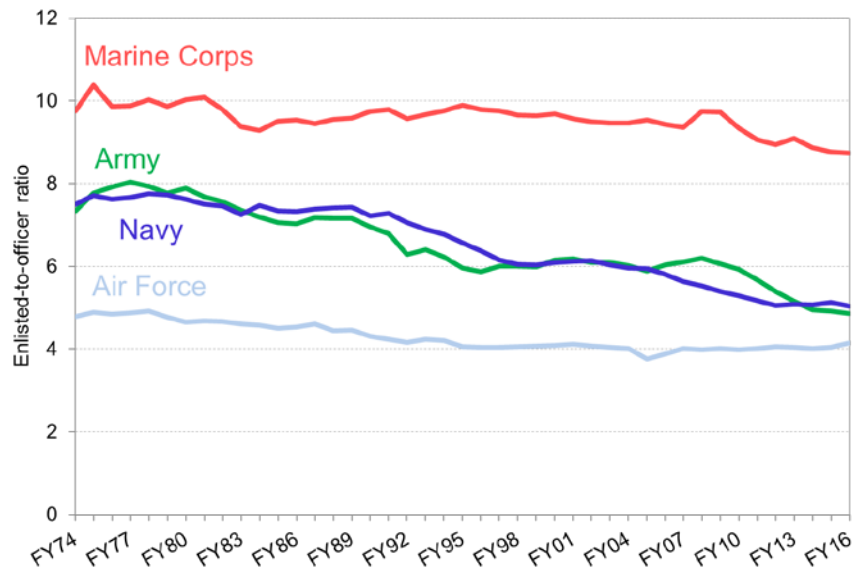
Source: Tables D-11 and D-16.

The Marine Corps has had the highest enlisted-to-commissioned officer ratio, ranging from 10.4 to 8.8 over 42 years. The Air Force is at the other end of the spectrum; in FY73, there were 5.0 enlisted personnel for every commissioned officer, and, between FY95 and FY15, that ratio averaged about 4.0; in FY16, there were 4.3 enlisted personnel for every commissioned officer in the Air Force The Army and Navy have similar historical trends; both had highs of 8.0 enlisted personnel per commissioned officer in the late 1970s, but their ratios fell steadily over time, and, in FY16, their ratios were 5.1 and 5.3, respectively. Over the 43 years of the AVF, in all services, enlisted forces have been reduced more than the commissioned officer corps. With warrant officers included, the Marine Corps still had the most—and the Air Force the fewest—enlisted personnel per officer in FY16.[17]

Enlisted accessions over time

Additions to the enlisted force come entirely from accessions; there is minimal lateral entry. As mentioned earlier, virtually all enlisted accessions are NPS. It was NPS accessions who were subject to the draft prior to the AVF. Figure 5 shows the number of NPS enlisted accessions from FY74 to FY16. Similar to enlisted endstrength, overall accessions declined between FY74 and FY16; however, unlike enlisted endstrength, which declined sharply during the 1990s, accessions fell more steadily between the late 1970s and early 1990s.

In FY16, Army, Air Force, and Navy NPS accessions were about one-third of their FY74 levels,[18] while enlisted endstrengths for the three services were generally a larger proportion of their pre-AVF levels. Fewer accessions for a given endstrength contribute to a more senior enlisted force, especially in the Army, Air Force, and Navy. Marine Corps accessions fell by smaller percentages, and, in recent years, Marine Corps accessions have been approximately equal to those of the Navy and Air Force despite the Marine Corps' smaller size. By design, the Marine Corps has opted for a more junior force.

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[17] If we include warrant officers, the ratios of enlisted to commissioned officers in FY16 change as follows: the Marine Corps' ratio of 8.9 goes to 8.0, the Army's ratio of 5.1 goes to 4.3, the Navy's ratio of 5.3 goes to 5.2, and the Air Force's ratio of 4.3 remains the same.

[18] They were 33, 44, and 34 percent, respectively.

**Figure 5. NPS AC enlisted accessions, by service, FY74–FY16**
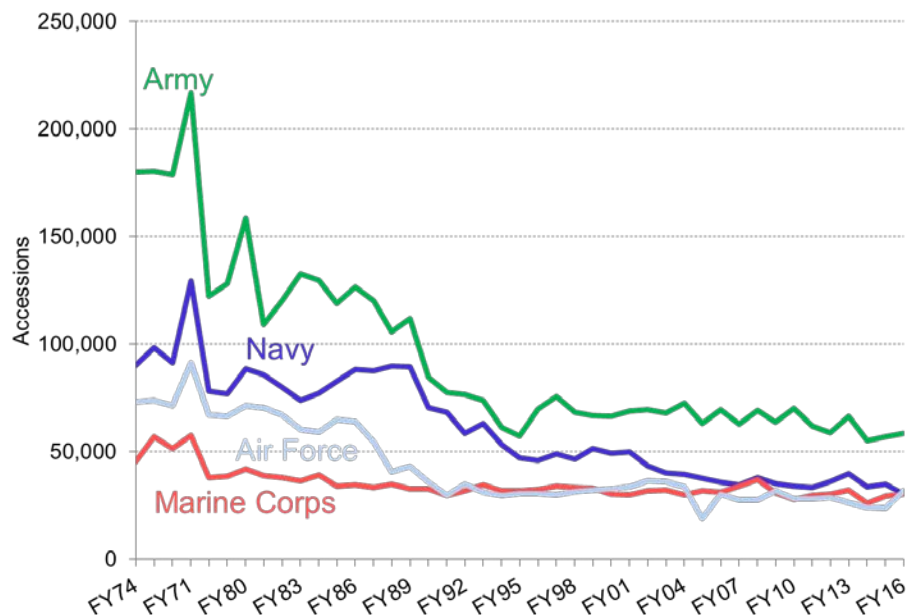
Note: The data point for FY77 is unusually high because of an extra "transition quarter" when the end of the fiscal year was changed from June 30 to September 30.

Applicants and NPS accessions

We now turn to enlisted applicants and NPS accessions across all DOD services for the FY81–FY16 period. Both the number of applicants and the number of accessions have fallen, although, over the past few years, there were small increases in the number of applicants and accessions.[19] The percentage of enlisted applicants accessed grew, albeit with much fluctuation, from 38 percent in FY81 to 66 percent in FY13 and shrank to 59 percent in FY16. In FY16, the Military Entrance Processing Stations (MEPSs) processed 245,649 applicants, and 151,390 (62 percent) were accessed as NPS accessions into the four services (see Figure 6).

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[19] DMDC applicant data come from the MEPS. Applicants cannot go directly to the MEPS; they must be sent by recruiters. Given the paperwork associated with sending applicants to the MEPS, not all those who want to enlist will be sent and counted as applicants. In fact, when recruiting is relatively easy, if the recruiter believes the applicant is marginally qualified, he or she will probably decide not to put together an applicant package and, instead, look for more qualified applicants. In tough recruiting environments, however, the recruiter is willing to put in the time, on the chance that the marginally qualified applicant will qualify for service. This behavior leads to the phenomenon shown in Figure 6: more applicants in FY07-FY08 when recruiting was tougher and fewer since FY09 when recruiting became easier.

Figure 6. AC enlisted applicants, NPS enlisted accessions, and the percentage of applicants accessed, FY81–FY16
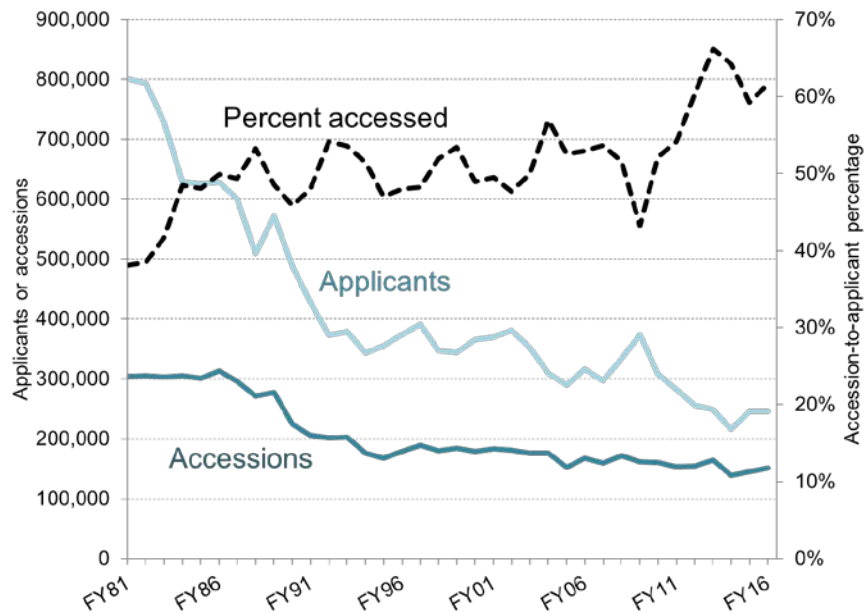
Source: Table D-3.
Note: Enlisted accessions include only NPS enlisted personnel.

There are a number of reasons why an applicant for enlisted service may not be accessed, including having a low aptitude-test score, disqualifying medical or physical conditions, too many dependents, disqualifying tattoos, a history of criminal activity, or testing positive or having a history of use for disqualifying drugs. Some of these people may be allowed to serve if they are granted an enlistment waiver. In addition, many applicants simply change their minds and decide not to enter military service.

Characteristics of enlisted NPS accessions

Next, we describe the characteristics of enlisted applicants and NPS accessions in the AC enlisted force.[20] Specifically, we describe the quality of enlisted applicants and NPS accessions and the relationship between quality accessions and the health of the U.S. civilian labor market. We include a discussion of age and the neighborhood household income distributions for NPS accessions. Then we turn to a special section on their geographic backgrounds.

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[20] We focus this discussion entirely on AC NPS (vice prior-service (PS)) accessions. In FY16, AC PS accessions represented only 2.7 percent of AC accessions (see tables B-12 through B-14 for information on AC PS accessions).

Quality of enlisted applicants and NPS accessions

DOD sets quality benchmarks for the aptitude and educational credentials of recruits. The Armed Forces Qualification Test (AFQT)—a nationally normed aptitude test of math and verbal skills—is used to predict training success and on-the-job performance. The DOD benchmark requires that 60 percent of accessions score at the 50th percentile or higher on the AFQT. In FY16, 73 percent of AC NPS accessions did so.

In Figure 7, we show the percentage of FY16 applicants and enlisted accessions who scored at or above the 50th percentile on the AFQT. In every service, a higher percentage of accessions (dark-colored bars) than applicants (light-colored bars) scored above the 50th percentile. Both applicants and accessions scored considerably higher on the AFQT than did the 18-to 23-year-old civilian population (represented by the red dotted line).

Figure 7. Percentages of AC NPS enlisted applicants and accessions scoring at or above the 50th percentile on the AFQT, by service, FY16
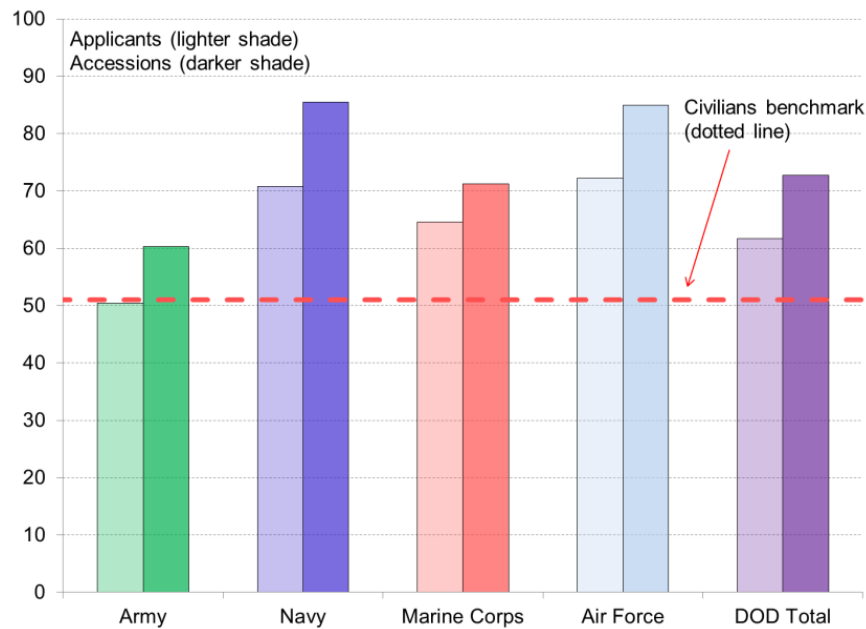
Source: Tables A-4 and B-4.
Note: Civilian benchmark is from 1997 Profile of American Youth Study (see http://official-asvab.com/PAY97_res.htm).

The Air Force has a high percentages of applicants and accessions scoring at the 50th percentile or above (72 and 85 percent) on the AFQT, as does the Navy (71 and 85 percent), followed by the Marine Corps (65 and 71 percent) and the Army (50 and 60 percent). Overall, 73 percent of FY16 NPS AC accessions had AFQT scores at or above the 50th percentile—well above the DOD 60-percent benchmark and the civilian 50-percent benchmark observed in the population. With the exception of the Marine Corps, across the DOD services, a slightly higher proportion of male than female accessions

scored in the AFQT's 50th percentile or above (see Table B-4). In the civilian population, 52 percent of men and 50 percent of women scored at or above the 50th percentile.

In addition to AFQT requirements, DOD requires that at least 90 percent of recruits be classified as Tier 1. Tier 1 recruits are primarily high school *diploma* graduates, but they also include people with educational backgrounds beyond high school, as well as those who have earned adult education diplomas, those with one semester of college, home schoolers, and those who have attended virtual or distance learning and adult or alternative schools. Other educational backgrounds include Tier 2 recruits (those with alternative high school credentials, primarily GED certificates) and Tier 3 recruits (no secondary school credentials). Tier 1 recruits are sought after by the services because high school diploma graduates have been shown to be more likely than recruits with other credentials to complete their first terms of service. Recruits who have Tier 1 education credentials and AFQT scores in the top 50th percentiles are classified as high quality.

All services try to access as many high-quality recruits as possible. Because 98 percent of DOD NPS FY16 accessions had Tier 1 educational credentials, the main delineation for becoming a high-quality applicant or accession is the AFQT score. When comparing the percentage of high-quality accessions since the beginning of the AVF, we observe some sharp quality changes, as well as an overall trend toward increasing percentages of high-quality recruits (see Figure 8).

Figure 8. Percentages of high-quality AC NPS enlisted accessions, by service, FY74–FY16
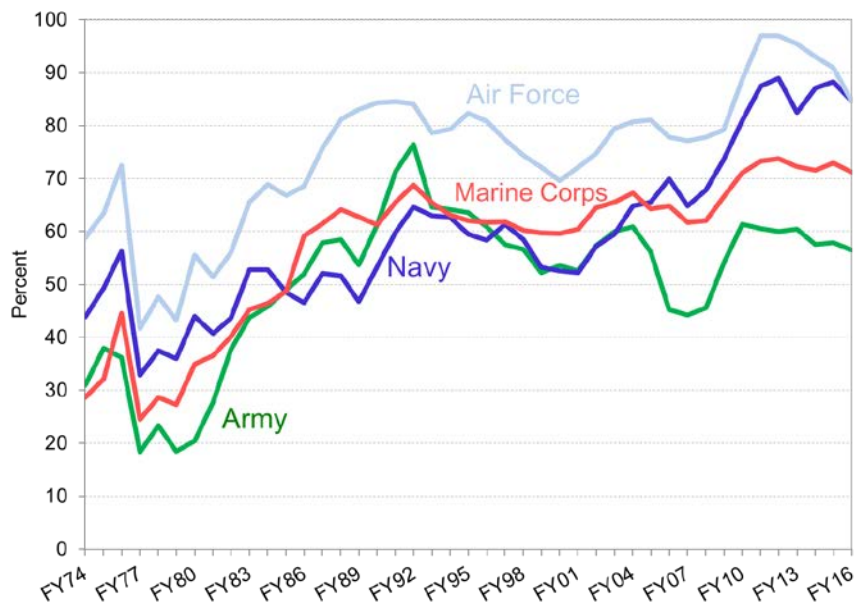
Source: Table D-9.

There is a difference between actual and contemporaneously reported AFQT scores for the FY77–FY81 period because of a "misnorming" of the AFQT. Figure 8 reflects the actual percentages of high-quality accessions. Because it took several years to realize that the test scores were incorrect, in the late 1970s, the services were reporting higher percentages of high-quality accessions than is shown in Figure 8. The misnorming led to erroneous enlistment of many low-scoring recruits. After correcting the misnorming and increasing recruiting budgets, the percentage of high-quality recruits increased (between 20 and 30 percentage points in all services).

In the 1990s, we observe stability and, despite unfortunate fluctuations in recruiting budgets resulting in short-term setbacks in recruit quality (particularly in the Army), the quality of accessions in all services increased in the mid 2000s. However, in recent years, recruit quality declined for all the services, likely because of improvements in the U.S. civilian labor market. Given the fluctuations in recruit quality over time, in all years of the AVF, the Air Force has had the highest percentage of high-quality recruits.

In FY16, the services continued to have success accessing high-quality personnel. The percentage of high-quality recruits was 85 percent in the Air Force and Navy, 71 percent in the Marine Corps, and 56 percent in the Army.

Relationship between accessions and the civilian labor market

Recruiting is generally more difficult when the economy is robust, civilian unemployment is low, and young people find it easier to secure civilian employment. During the last recession, when the unemployment rate was very high and jobs were difficult to find, recruiting was easier. Figure 9 shows this historical relationship between the civilian unemployment rate and AC high-quality accessions, with larger proportions of high-quality accessions associated with higher levels of civilian unemployment. In the past couple of years, and particularly in FY16, however, the unemployment rate has been essentially at the pre-recession levels identified with difficult recruiting, but recruit quality has remained at historic levels associated with easier recruiting. What is the explanation?

In general, it is no longer believed that the unemployment rate accurately measures the overall state of the labor market.[21] In recent years, the number of discouraged workers reached historic levels.[22] Economists at the Bureau of Labor Statistics (BLS) now look to broader measures for the health of the labor market. The most broadly defined measure of the state of the labor market, U-6, includes unemployed people, plus people who are "marginally attached" to the labor force, plus people who work part time for economic reasons. The marginally attached are neither working nor looking for work, but they are

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[21] One indication might be very low interest rates, indicating little demand for the new investment associated with high employment levels and robust economies.

[22] See http://www.bls.gov/opub/ted/2015/unemployment-rate-and-u-6-measure-in-january-2015.htm.

available for a job and have looked for work sometime in the past 12 months. Although the overall unemployment rate was 5.0 percent in September 2016, the U-6 was 9.7 percent.[23]

Figure 9. The young-adult unemployment rate and high-quality AC NPS recruits, FY87–FY16
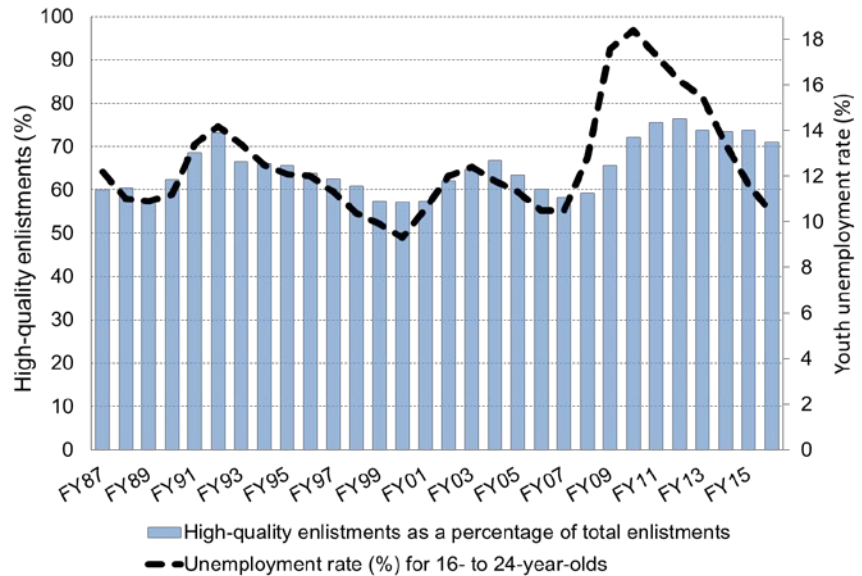

Source: Tables D-2 and D9.

Age of AC NPS enlisted accessions

We observe significant differences across the services in the age distributions of AC NPS enlisted accessions. Figure 10 presents the age distribution of NPS enlisted accessions for the four services. Marine Corps accessions are much younger than those in the other services. Almost half of Marine Corps accessions are in the 17-to-18-year-old age group; virtually all of them are age 18.[24] Those who are age 20 and younger made up 83 percent of Marine Corps NPS accessions, 65 percent in the Air Force and the Army, and 64 percent in the Navy. About 2 percent of Army accessions are in the oldest age group (31 to 42 years old).

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[23] See https://www.bls.gov/webapps/legacy/cpsatab15.htm.

[24] Accessions cannot be younger than 17. Even then, a 17-year-old accession must have parental consent to enter military service. In Table B-1, we see that 3.0 percent of accessions were 17 years old. DOD sets the maximum age for NPS accessions at age 42. The Army briefly raised it maximum age limit to 42 but, in 2011, it reverted to age 35. In 2014, the Air Force raised its maximum age from 27 to 39. The Navy has a maximum age limit of 34 years for NPS accessions, and the Marine Corps sets age 28 as its maximum age.

Figure 10. AC NPS enlisted accessions, by age group, FY16
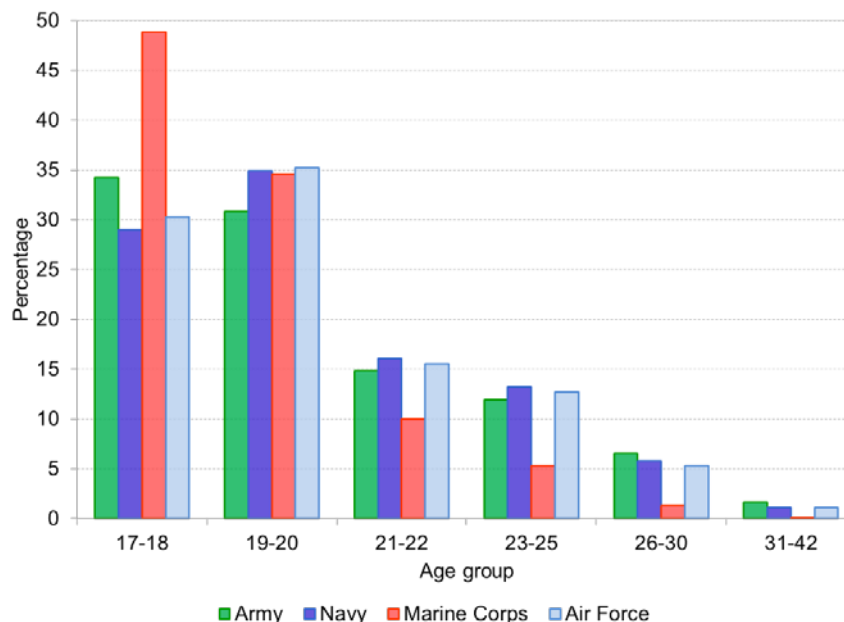
Source: Table B-1.

Neighborhood median income of AC NPS enlisted accessions

At the advent of the AVF, there was concern about the representation of the force, particularly socioeconomic representation. Researchers found that, for the most part, accessions in the early years of the AVF were representative of the U.S. population in terms of their socioeconomic backgrounds.[25] More recent studies report similar findings on socioeconomic characteristics, such as neighborhood income, for the 1990s and early years of this century.[26]

Because information on household or family income is not collected from recruits, these studies must identify a proxy for household income of recruits. In a 2012 study, Lien, Lawler, and Shuford used the median income for recruits' census tracts as a proxy for recruit household income.[27] In short, they measured "neighborhood affluence" or how well-off (i.e., well-to-do) recruits' neighborhoods were. Each neighborhood is synonymous with a census tract.

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[25] See, for example, Richard N. Cooper, *Military Manpower and the All-Volunteer Force*, RAND Publication R-1450-ARPA, 1977.

[26] See, for example, Shanea J. Watkins and James Sherk, *Who Serves in the U.S. Military? Demographic Characteristics of Enlisted Troops and Officers*, Heritage Foundation Center for Data Analysis Report CDA 08-05, Aug. 21, 2008.

[27] Diana S. Lien, Kletus Lawler, and Robert Shuford, *An Investigation of FY10 and FY11 Enlisted Accessions' Socioeconomic Characteristics*, CNA Research Memorandum DRM-2012-U-001362-Final, Aug. 2012.

We updated the 2012 Lien, Lawler, and Shuford study for FY16 AC NPS accessions, mapping each accession to his or her home-of-record census tract and computing neighborhood affluence (median household income) for each tract. We then divided neighborhood affluence income measures into income quintiles.[28] Figure 11 shows FY16 AC NPS enlisted accessions by the median income quintile of their home-of-record census tracts.[29] The 20-percent line defines each income quintile based on civilian census-tract-level median household income data.

Figure 11. Neighborhood affluence (median census tract household income) for FY16 AC NPS enlisted accessions
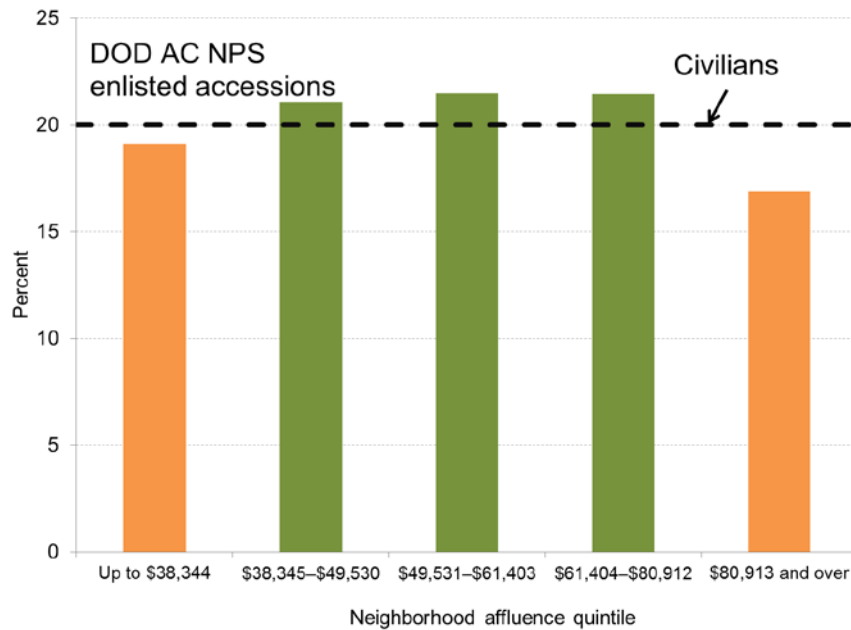
Source: Table B-41.
Note: These quintiles were constructed using 2012-2016 American Community Survey (ACS) data at the census tract level. FY16 NPS home-of-record accession data from DMDC were used to link NPS accessions with the census tract data.

Relative to all households, FY16 NPS accessions are underrepresented in census tracts with the lowest and the highest median incomes, while those in the middle three quintiles are overrepresented. Lower income neighborhoods tend to have fewer people qualified to serve. In FY16, for example, virtually all NPS accessions were high school diploma graduates, and high school dropout rates are higher in low-income

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[28] In comparison to quintiles constructed from household income, quintiles constructed from median census tract income will be biased toward the mean of household income.

[29] The quintile ranges are based on all households in census tracts with non-missing median household incomes. FY16 AC NPS enlisted accession data were provided by DMDC and linked by census tract to median household income data from the Census Bureau's 2009-2013 American Community Survey.

neighborhoods. For the highest neighborhood median income quintile, the lower representation is probably due to higher college attendance rates among youth in these census tracts.[30]

The findings depicted in Figure 11 are important because they dispel the myth that the military obtains the majority of its recruits from the lower socioeconomic classes—those neighborhoods with the lowest income levels. Quite the opposite is true. The military actually gets the largest proportion of its recruits from the middle three quintiles.

Geographic characteristics of AC NPS enlisted accessions

The Census Bureau divides the country into four regions:

- Northeast—includes New England and Middle Atlantic division states
- Midwest—includes East North Central and West North Central division states
- South—includes South Atlantic, East South Central, and West South Central division states
- West—includes Mountain and Pacific division states[31]

Figure 12 shows the geographic distribution of AC NPS enlisted accessions since FY73.[32] We observe differences in the regional distribution of AC NPS enlisted accessions before and after FY85. Until about FY85, roughly 35 percent of AC NPS enlisted accessions came from the South and 25 percent from the Midwest, while the remaining 40 percent of accessions came from the West and the Northeast. After FY85, accessions were increasingly drawn more heavily from the South and the West and less so from the Northeast and Midwest. This partly reflects general population trends because the "Sunbelt" states in the South and West regions made up an increasingly larger share of the U.S. population. In FY16, the Northeast had 12.7 percent, the Midwest had 18.1 percent, the South had 44.0 percent, and the West had 24.0 percent of the 18-to-24-year-old civilian population. As recruiting commands determine where to place recruiters across the country, they account for geographic shifts in the population as well as the propensity to serve in each region.

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[30] See http://www.huffingtonpost.com/2011/10/04/children-low-income-neighborhoods-high-school_n_994580.html and http://nces.ed.gov/fastfacts/display.asp?id=51.

[31] For completeness, accessions from U.S. territories, possessions, or "unknown" regions are grouped together in the "other" category.

[32] We do not include data on the geographic representation of officer gains. Officers are primarily recruited from colleges and universities; geographic location would reflect the location of these universities and not necessarily the region in which the officers grew up.

Figure 12. Geographic distribution of NPS enlisted AC accessions, FY74–FY16
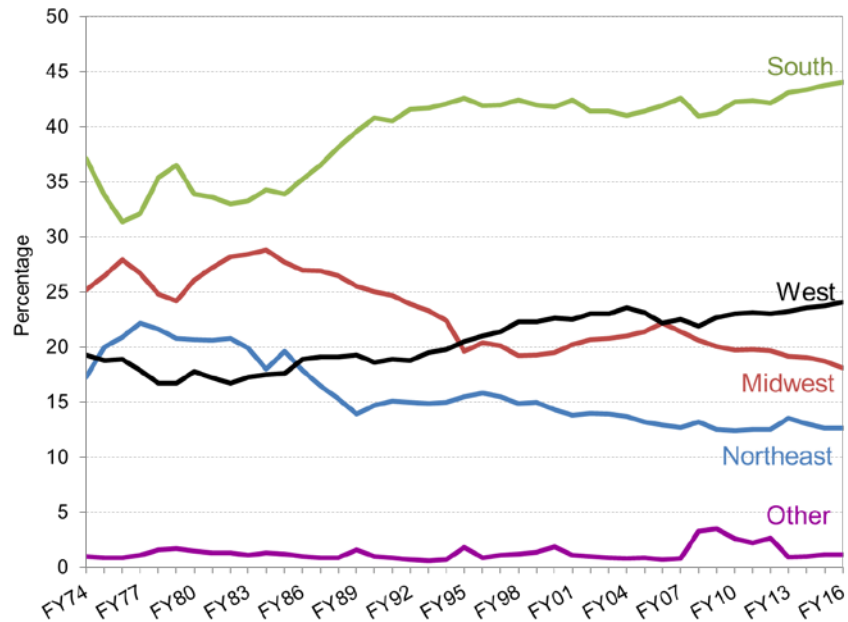
Source: Table D-10.

Enlisted NPS accessions by state: numbers, accession shares, and high-quality percentages

Figure 13 details the number of FY16 AC NPS enlisted accessions by state. Although the largest number of NPS accessions is drawn from the big states of California and Texas, smaller states, such as Georgia, Florida, and North Carolina, also contribute large numbers of NPS accessions. Clearly, not just population but also the propensity to join the military plays a role.

Figure 13: AC NPS enlisted accessions, by state, FY16

State	Number
California	17729
Texas	16139
Florida	11552
Georgia	6758
New York	6378
North Carolina	5453
Ohio	5368
Illinois	5261
Pennsylvania	4924
Virginia	4900
Arizona	3947
Michigan	3800
Washington	3347
Tennessee	3239
South Carolina	3014
Missouri	2948
Indiana	2922
Alabama	2915
New Jersey	2901
Maryland	2841
Colorado	2774
Louisiana	2099
Wisconsin	2033
Oklahoma	1977
Oregon	1928
Massachusetts	1913
Kentucky	1750
Nevada	1614
Minnesota	1609
Mississippi	1428
Arkansas	1370
Connecticut	1347
Kansas	1202
New Mexico	1058
Utah	1051
Iowa	996
Hawaii	892
Idaho	876
West Virginia	767
Nebraska	766
New Hampshire	624
Maine	562
Alaska	460
Montana	454
Delaware	372
South Dakota	318
Rhode Island	316
Wyoming	278
North Dakota	203
Vermont	184
District of Columbia	99

Source: Table B-46.

Figure 14 integrates the recruitable geographic population data with the geographic distribution of recruits. More precisely, it shows the ratio of a state's accession share to the state's share of the U.S. 18-to-24-year-old population. [33] We call that the state's representation ratio. Although California and Texas were the top two states in the percentage of the 18-to-24-year-old population, they are number 35 and number 12, respectively, in the states' relative representation ratios shown in Figure 14.

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[33] In previous Pop Rep reports, we have identified the 18–to-24-year old civilian population as the recruitable population. These recruitable population figures do not account for the qualified population, which could differ significantly by region or state.

Figure 14: Enlisted NPS accession-share to civilian-share ratios, by state, FY16

State	Ratio
Hawaii	1.51
South Carolina	1.48
Georgia	1.39
Virginia	1.34
Florida	1.34
Alaska	1.32
Alabama	1.25
Nevada	1.23
Arizona	1.23
Colorado	1.22
Maine	1.21
Texas	1.19
North Carolina	1.17
Idaho	1.17
Oklahoma	1.15
Missouri	1.15
Tennessee	1.11
New Hampshire	1.09
Oregon	1.07
Maryland	1.07
Arkansas	1.07
New Mexico	1.05
Wyoming	1.05
Washington	1.05
Ohio	1.02
Mississippi	0.98
Indiana	0.97
West Virginia	0.96
Kansas	0.96
Montana	0.95
Delaware	0.95
Kentucky	0.94
Louisiana	0.91
Connecticut	0.90
California	0.89
Nebraska	0.89
Illinois	0.86
South Dakota	0.83
Pennsylvania	0.80
Michigan	0.79
Wisconsin	0.75
Minnesota	0.74
New Jersey	0.73
Iowa	0.69
Utah	0.67
Vermont	0.66
New York	0.65
Rhode Island	0.64
Massachusetts	0.59
North Dakota	0.49
District of Columbia	0.29

Ratio

Source: Table B-46.
Note: The representation ratio is calculated by dividing a given state's FY16 NPS accession share by the state's 18- to 24-year-old population share.

When viewing Figure 14, these points should be kept in mind:

- A ratio of 1 implies that the state's share of DOD accessions was equal to its share of 18- to 24-year-olds.
- A ratio greater than 1 implies that the state's share of DOD accessions was larger than its share of the 18-to-24-year-old population,
- A ratio of less than 1 implies that the state's share of DOD accessions was smaller than its share of the 18-to-24-year-old population.

The FY16 ratios ranged from 0.29 to 1.51. New Hampshire, Delaware, Indiana, Maryland, and Ohio all had ratios close to 1—meaning their share of AC NPS enlisted accessions almost matched their share of the 18-to-24-year-old population. About half of the states can be considered overrepresented in accessions (ratios greater than 1), and about half of the states and the District of Columbia could be considered underrepresented (ratios less than 1). Hawaii and South Carolina had the highest ratios, and the District of Columbia contributed the fewest accessions relative to its 18-to-24-year-old population. These ratios reflect differences in qualification rates, propensities, and recruiting resources.

The eight states with the largest DOD representation ratios represent states with high (3 percent or more), medium (between 1 and 3 percent), and low (1 percent or less) representation among the U.S. 18-to-24-year-old population. Specifically, these eight states are:

- Georgia and Florida each have at least 3 percent of the 18-to-24-year-old population
- South Carolina, Virginia, and Alabama each have between 1 and 3 percent of the 18-to-24-year-old population
- Hawaii, Nevada, and Alaska have less than 1 percent of the 18-to-24-year-old population

Given that regional population percentages discussed earlier are not equal (with the South at 37.1 percent and the Northeast at 17.7 percent of the total U.S. 18-to-24-year-old population), we need to know how a region's accession share compares with its share of the U.S. 18-to-24-year-old population. As is clear from Figure 15, relative to its population of 18- to 24-year-olds, the South is still overrepresented in NPS accessions and the Northeast is underrepresented. Given the desire for geographic diversity in our military forces, the services may want to consider increasing, or at least maintaining, recruiting efforts in the Northeast to help increase diversity.

Figure 15: AC NPS enlisted accession-share to civilian-share ratios, by region, FY16
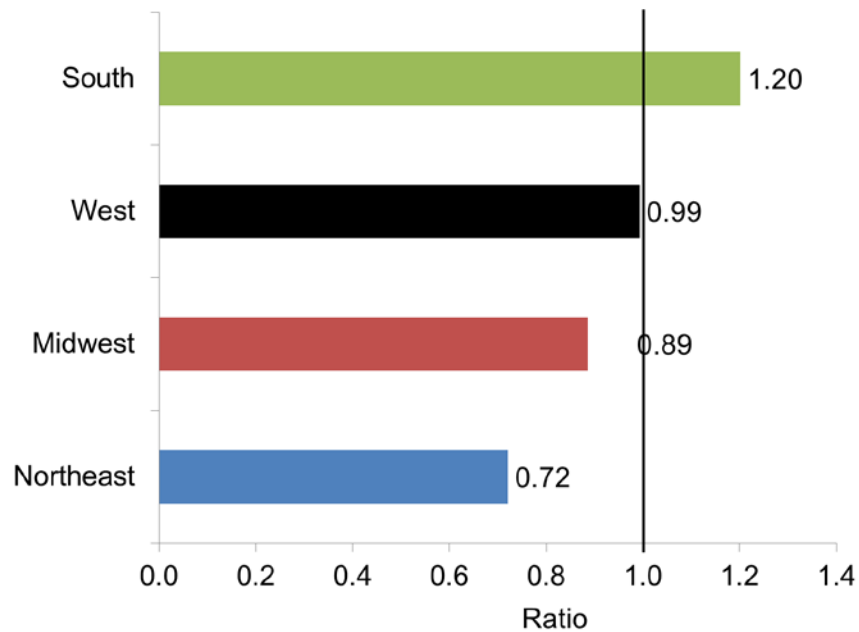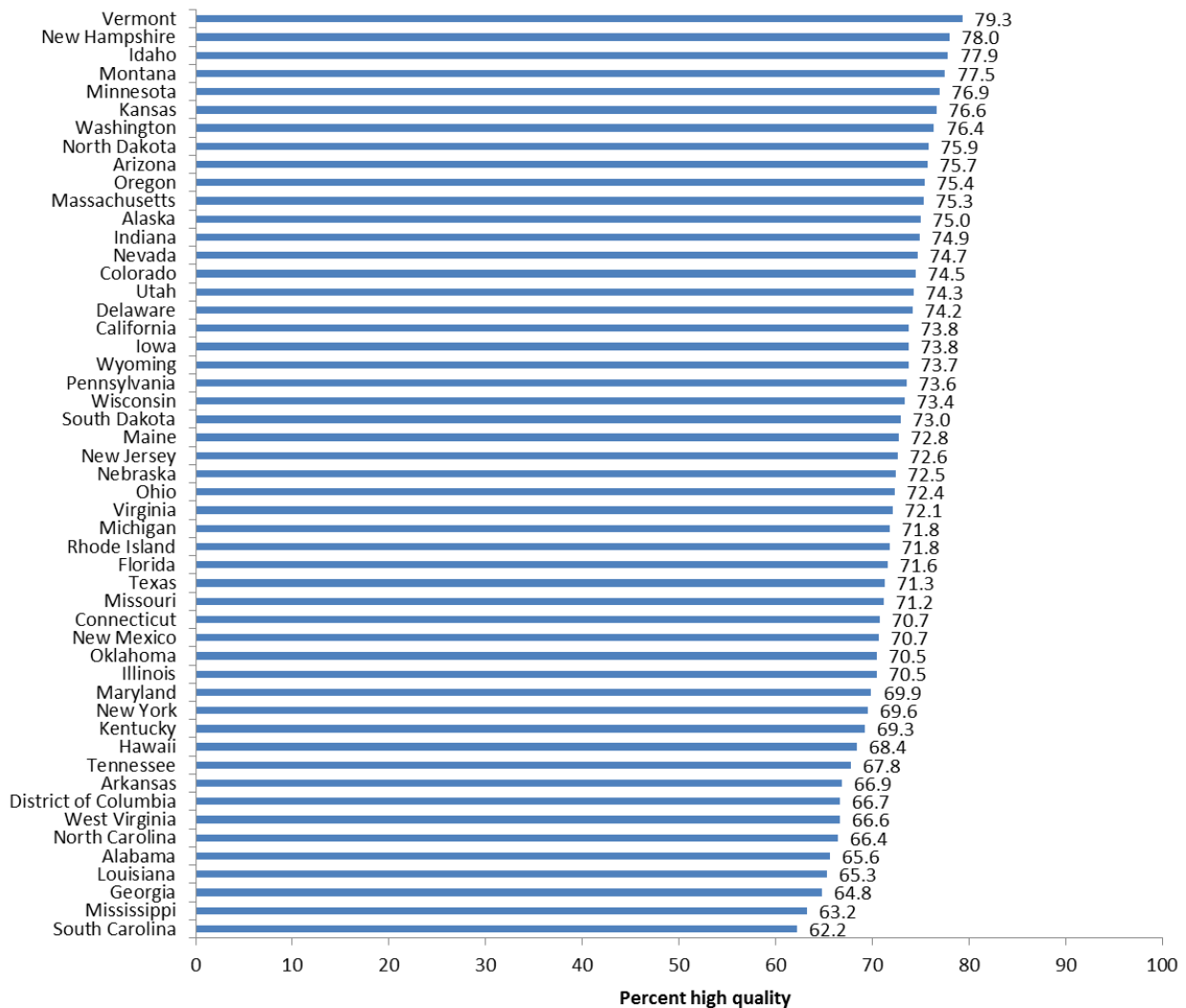

Source: Table B-46.
Note: The representation ratio is calculated by dividing each region's FY16 NPS accession share by the region's 18-to-24-year-old population share.

High-quality accessions are those with a Tier 1 education credential who score in the 50th percentile or above on the AFQT. In FY16, 71.4 percent of AC NPS accessions were high quality. The state percentiles for high-quality accessions are shown in Figure 16. Vermont had the highest percentage of high-quality AC enlisted accessions in FY16 and South Carolina had the lowest; Vermont and South Carolina had under- and over-representation among DOD AC enlisted accessions, respectively.

Figure 16. Percentage of FY16 high-quality AC NPS enlisted accessions by state

State	Percent high quality
Vermont	79.3
New Hampshire	78.0
Idaho	77.9
Montana	77.5
Minnesota	76.9
Kansas	76.6
Washington	76.4
North Dakota	75.9
Arizona	75.7
Oregon	75.4
Massachusetts	75.3
Alaska	75.0
Indiana	74.9
Nevada	74.7
Colorado	74.5
Utah	74.3
Delaware	74.2
California	73.8
Iowa	73.8
Wyoming	73.7
Pennsylvania	73.6
Wisconsin	73.4
South Dakota	73.0
Maine	72.8
New Jersey	72.6
Nebraska	72.5
Ohio	72.4
Virginia	72.1
Michigan	71.8
Rhode Island	71.8
Florida	71.6
Texas	71.3
Missouri	71.2
Connecticut	70.7
New Mexico	70.7
Oklahoma	70.5
Illinois	70.5
Maryland	69.9
New York	69.6
Kentucky	69.3
Hawaii	68.4
Tennessee	67.8
Arkansas	66.9
District of Columbia	66.7
West Virginia	66.6
North Carolina	66.4
Alabama	65.6
Louisiana	65.3
Georgia	64.8
Mississippi	63.2
South Carolina	62.2

Source: Table B-46.

Overall geographic concentrations

Table 3 shows representation ratios and population percentages for the 10 states with 3 or more percent of the 18-to-24-year-old civilian population. States with representation ratios less than 1, indicating their underrepresentation in NPS accessions relative to their populations, are shown in red. Note that 5 of these 10 states are underrepresented in DOD NPS accessions. However, even though they are underrepresented relative to their recruitable populations, these large states still represent substantial accession percentages. For example, accessions from California are underrepresented relative to their population share, but still over 10 percent of DOD NPS accessions in each service

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come from California.[34] Focusing on DOD's overall representation ratio, however, glosses over some interesting differences across the services. For example, the Air Force recruits proportionally more than the other services from Pennsylvania and Ohio but less from California and New York.

Table 3. The relationships between states' 18-to-24-year-old civilian populations and FY16 NPS accessions

State	Percentage of 18- to 24-year-old civilian population	Representation ratio				
		DOD	Army	Navy	Marine Corps	Air Force
States with largest proportions of 18- to 24-year-olds						
California	13.3%	0.89	0.87	1.03	0.90	0.79
Texas	9.1%	1.19	1.27	1.25	1.01	1.13
New York	6.5%	0.65	0.62	0.67	0.79	0.55
Florida	5.8%	1.34	1.46	1.36	1.08	1.34
Pennsylvania	4.1%	0.80	0.71	0.80	0.82	0.92
Illinois	4.1%	0.86	0.79	0.93	1.03	0.78
Ohio	3.5%	1.02	0.93	0.93	1.14	1.14
Georgia	3.3%	1.39	1.58	1.40	1.25	1.17
Michigan	3.2%	0.79	0.67	0.83	1.00	0.79
North Carolina	3.1%	1.17	1.37	0.99	1.07	1.10
States with large representation ratios and small populations						
Nevada	0.9%	1.23	1.31	1.16	1.00	1.37
Idaho	0.5%	1.17	1.02	1.41	1.00	1.38
Hawaii	0.4%	1.51	1.63	1.42	1.18	1.67
Maine	0.3%	1.21	1.29	1.05	1.31	1.14
Alaska	0.2%	1.32	1.44	1.22	1.01	1.49

Source: Table B-49.
Note: The representation ratio is the percentage of accessions from a state divided by the percentage of U.S. 18-to-24-year-old civilians in the state.

Table 3 also illustrates states with small 18-to-24-year-old populations that are overrepresented in accessions. All the services recruit heavily from Nevada and Hawaii despite their small populations.

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[34] The NPS accession percentage is the population percentage times the representation ratio. Thus, the NPS accession percentages from California are 11.6 percent for the Army, 13.6 percent for the Navy, 12.0 percent for the Marine Corps, and 10.5 percent for the Air Force.

Black geographic concentrations

We now take a closer look at the geographic location of the nation's 18-to24-year-old black civilian population. There are 15 states with at least 3 percent of the black 18-to-24-year-old population; in the top portion of Table 4, we focus on the 8 states with the largest percentages of this population. The bottom portion of the table shows states that have relatively small black populations but relatively large numbers of black accessions, given the states' sizes.[35]

Table 4: The relationships between states' black 18-to-24-year-old populations and FY16 black NPS accessions

State	Percentage of 18- to 24-year-old civilian population	Representation ratio				
		DOD	Army	Navy	Marine Corps	Air Force
States with largest proportions of 18- to 24-year-olds						
New York	8.6%	0.62	0.52	0.82	0.97	0.49
Florida	8.5%	1.24	1.38	1.16	1.20	1.02
Georgia	8.2%	1.44	1.54	1.36	1.40	1.28
Texas	8.1%	1.22	1.20	1.47	0.84	1.22
California	6.1%	0.83	0.79	1.07	0.67	0.78
North Carolina	4.8%	1.33	1.56	0.93	1.31	1.20
Illinois	4.5%	0.82	0.69	1.21	0.80	0.73
Pennsylvania	4.0%	0.52	0.46	0.52	0.72	0.56
Louisiana	3.8%	0.74	0.75	0.64	0.73	0.80
Virginia	3.7%	1.55	1.69	1.53	1.11	1.46
States with large representation ratios and small populations						
Arizona	0.7%	1.36	1.53	1.24	1.19	1.18
Nevada	0.6%	1.06	1.23	0.68	0.72	1.24
Washington	0.5%	1.37	1.27	1.04	1.07	2.10
Colorado	0.5%	1.41	1.23	1.74	1.38	1.55
Oregon	0.2%	1.23	0.90	1.25	2.21	1.47

Source: Table B-49.
Note: The representation ratio is the percentage of black accessions from a state divided by the percentage of U.S. 18-to-24-year-old black civilians in the state.

Although New York has the largest share of the 18-to-24-year-old civilian black population, the Marine Corps is the only service with an accession share that closely

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[35] We omit states with virtually no black population but large representation ratios (e.g., New Hampshire, Idaho, Maine, North Dakota, Alaska, and Hawaii).

reflects New York's black population; the Army, Navy, and Air Force have black accession shares that are substantially lower than New York's black youth population share. Florida and Georgia are states with large black youth populations that are overrepresented among black accessions for each service.[36] With the exception of the Marine Corps in Texas and the Navy in North Carolina, the services tend to highly recruit from these states. In states with small percentages of the U.S. black population, the services accessed heavily from Arkansas, Arizona, and Washington.

Asian geographic concentrations

Table 5 shows the eight states with the largest populations of 18-to-24-year-old Asians. We find that, with the exceptions of all services in Hawaii and Texas and the Navy in California, the services recruited disproportionally fewer Asians from the states with the largest Asian populations. Instead, as the bottom panel of the table indicates, the services are disproportionately recruiting Asian NPS accessions from states with relatively few 18-to-24-year-old Asians. [37]

Table 5: The relationships between states' Asian 18-to-24-year-old populations and NPS accessions, FY16

State	Percentage of 18- to 24-year-old civilian population	Representation ratio				
		DOD	Army	Navy	Marine Corps	Air Force
States with largest proportions of 18- to 24-year-olds						
California	35.1%	0.95	0.83	1.49	0.73	0.80
New York	11.3%	0.63	0.70	0.53	0.93	0.42
Texas	6.3%	1.17	1.38	0.87	0.87	1.20
New Jersey	3.7%	0.55	0.53	0.43	0.62	0.66
Massachusetts	3.6%	0.31	0.39	0.21	0.38	0.22
Illinois	3.4%	0.65	0.51	0.77	0.72	0.82
Georgia	3.1%	0.63	0.81	0.35	0.91	0.37
Washington	2.8%	1.49	1.49	1.43	1.51	1.51
Florida	2.6%	1.43	1.10	1.37	1.49	2.16
Hawaii	2.3%	2.60	3.35	1.31	2.65	2.23
States with large representation ratios and small populations						
Colorado	0.9%	1.99	1.91	1.22	2.62	2.55

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[36] For example, the Army's representation ratio in Florida is 1.24 and Florida has 8.48 percent of the black 18-to-24-year-old civilian population. That means that 10.5 percent of the Army's black accessions come from Florida (1.24 * 8.48=10.5).

[37] We omit states with virtually no Asian population but large representation ratios (e.g., Maine and New Mexico).

Minnesota	0.7%	2.01	1.43	1.43	6.05	1.50
Oklahoma	0.3%	2.70	3.85	1.06	1.36	2.60
South Carolina	0.2%	2.34	1.70	1.70	2.33	4.33
Tennessee	0.2%	4.08	3.56	5.34	4.27	3.84

Source: Table B-49.

Note: The representation ratio is the percentage of Asian accessions from a state divided by the percentage of U.S. 18-to-24-year-old Asian civilians in the state.

Hispanic geographic concentrations

Table 6 shows the eight states with the largest populations of 18-to-24-year-old Hispanics. We find that the services recruit Hispanics less heavily in California, New York, and Pennsylvania given these states' proportions of U.S. Hispanics, while the services recruit Hispanics more heavily in Texas and Florida. With the exceptions of the Army in Nebraska, Hawaii, and Alaska and the Marine Corps in Alaska, the services tend to disproportionally recruit Hispanics from states with relatively few 18-to-24-year-old Hispanics. [38]

Table 6: The relationships between states' Hispanic 18-to-24-year-old populations and FY15 NPS Hispanic accessions

State	Percentage of 18- to 24-year-old civilian population	Representation ratio				
		DOD	Army	Navy	Marine Corps	Air Force
States with largest proportions of 18- to 24-year-olds						
California	27.6%	0.95	1.00	0.93	0.98	0.82
Texas	18.8%	1.13	1.20	1.23	0.97	1.13
Florida	7.5%	1.35	1.41	1.37	1.12	1.59
New York	5.7%	0.90	0.83	0.89	1.11	0.73
Arizona	4.6%	1.01	1.24	0.97	0.77	0.98
Illinois	3.8%	0.85	0.71	0.83	1.17	0.67
New Jersey	2.4%	1.19	1.03	1.19	1.44	1.11
Colorado	2.3%	0.88	0.84	0.95	0.93	0.82
Georgia	1.9%	0.86	0.72	0.90	1.00	0.87
Pennsylvania	1.9%	0.75	0.74	0.53	0.84	0.82
States with large representation ratios and small populations						
Connecticut	0.9%	1.24	1.40	0.87	1.16	1.38
Ohio	0.6%	1.39	1.30	1.35	1.28	1.74
South Carolina	0.4%	1.34	1.29	0.96	1.61	1.39

[38] We omit states with virtually no Hispanic population but large representation ratios (e.g., New Hampshire, Montana, Alaska, and Mississippi).

Alabama	0.4%	1.15	1.27	0.86	1.07	1.31
Kentucky	0.2%	1.27	1.19	1.32	1.12	1.60

Source: Table B-49.

Note: The representation ratio is the percentage of Hispanic accessions from a state divided by the percentage of U.S. 18-to-24-year-old Hispanic civilians in the state.

Summary: Geographic characteristics of AC NPS enlisted accessions

Southern states are overrepresented in AC NPS enlisted accessions, while states in the North are underrepresented. Still, AC NPS accessions are geographically diverse relative to the country's geographic diversity. At the state level, neither the recruitable population of 18- to 24-year-olds nor AC NPS enlisted accessions are evenly distributed. Relative to the size of its recruitable population, Georgia has the largest overall share of AC NPS enlisted recruits. When we compare concentrations of the black, Asian, and Hispanic 18--to-24-year-old populations to DOD services' concentrations, we find that the services tend to disproportionately recruit these from states with relatively few 18- to 24-year-olds in these demographic groups.

Section III: Diversity and Other Characteristics of the AC

In this section, we focus on gender, racial, and ethnic diversity in the AC. In addition, we analyze married rates, as well as paygrade and occupational distributions. This section also includes a special subsection on servicemembers' citizenship status. Where possible, we compare the AC military with civilian benchmarks.

Female shares of AC personnel

The next subsections show changes in female representation among enlisted members and commissioned officers, respectively. Differences in female representation across the DOD services are functions of women's propensity to service (which is generally less than that for men), how the services mission their recruiters (e.g., with gender-specific missions), and differences in men and women's attrition rates.

Enlisted

Figure 17 shows the changes in the percentage of female enlisted AC NPS accessions for each service and across DOD. At the advent of the AVF, women represented less than 10 percent of DOD AC NPS enlisted accessions; female representation increased among DOD AC NPS enlisted accessions through FY00, peaking at 18.8 percent, before steadily declining to 15.5 percent in FY05. Since the mid 2000s, the female representation among DOD AC NPS enlisted accessions steadily increased, reaching 18.3 percent in FY16.

Figure 17. Female percentage, AC NPS enlisted accessions, FY74–FY16
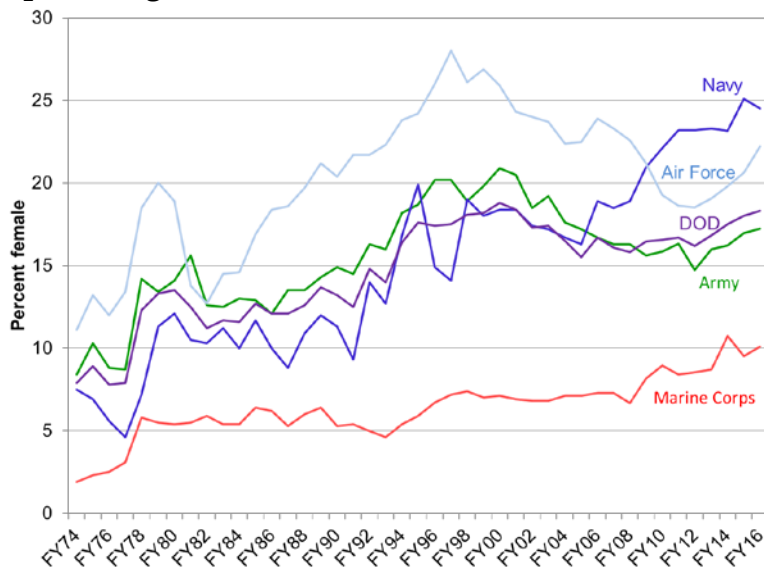
Source: Table D-5.

Figure 18 shows the changes in the percent of female AC enlisted members by service and across DOD. Female representation among enlisted members followed a similar trend as female representation among AC NPS enlisted accessions. At the advent of the AVF, women represented roughly 3 percent of AC enlisted members, and female representation steadily grew until FY03, peaking at 15 percent. Between FY03 and FY10, female representation in the AC enlisted force declined to 14 percent. Since FY10, female representation steadily increased in the AC enlisted force, reaching 15.5 percent in FY16.

Figure 18. Female percentage, AC enlisted members, FY74–FY16
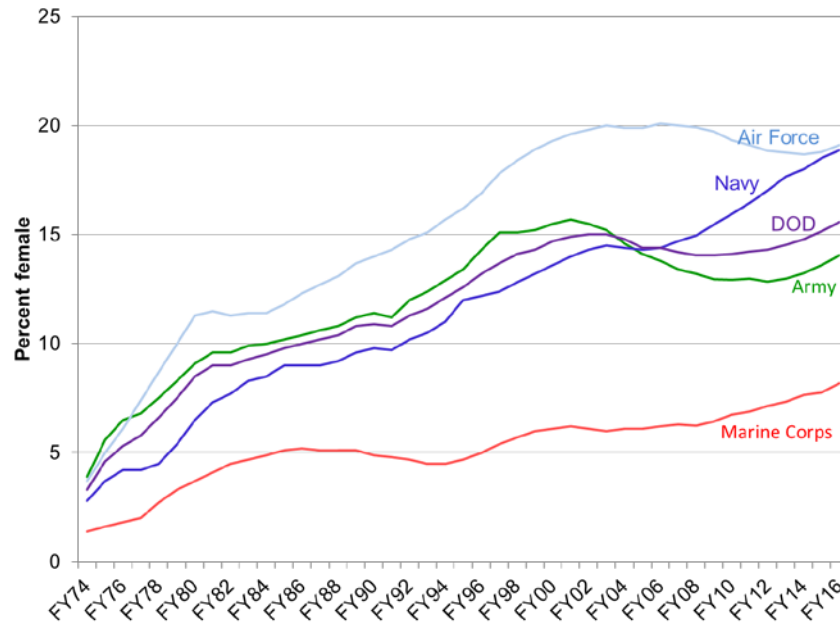
Source: Table D-13.

As we found with NPS enlisted accessions, female representation trends for Air Force and Army AC enlisted members tend to mirror DOD's trends. Historically, the Air Force has had the highest enlisted female representation rates of the services, but, in FY16, female representation in the Navy was only 0.2 percentage point under that of the Air Force. This is different from the Air Force and the Army, which experienced periods of decreasing female representation from the early and mid 2000s through the early 2010s. During this same period, the Navy experienced continued growth in female representation among its enlisted members, mirroring the increases in the female representation among its NPS enlisted accessions. Since FY93, the female representation among enlisted Marines has steadily increased, also mirroring the increase in female representation among Marine Corps AC NPS enlisted accessions. In FY16, female representation among AC NPS enlisted accessions was highest in the Air Force (19.1 percent), followed by the Navy (18.9 percent), the Army (14.1 percent), and the Marine Corps (8.2 percent).

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Commissioned officers

Figure 19 shows changes in female representation among AC commissioned officer gains for each of the services and DOD overall. Female representation among AC officer gains has steadily increased since the advent of the AVF from 10.5 percent in FY74 to 22.9 percent in FY16. Each of the services generally follow this same trend, with the exception of the Marine Corps, which had relatively steady female representation among AC officer gains from FY74 to FY 1992 and increasing female representation after FY 1992. In FY16, the Air Force had the highest female representation among AC officer gains at 27.2 percent, followed by the Navy (24.7 percent), the Army (22.2 percent), and the Marine Corps (9.8 percent).

Figure 19. Female percentage, AC officer gains, FY74–FY16
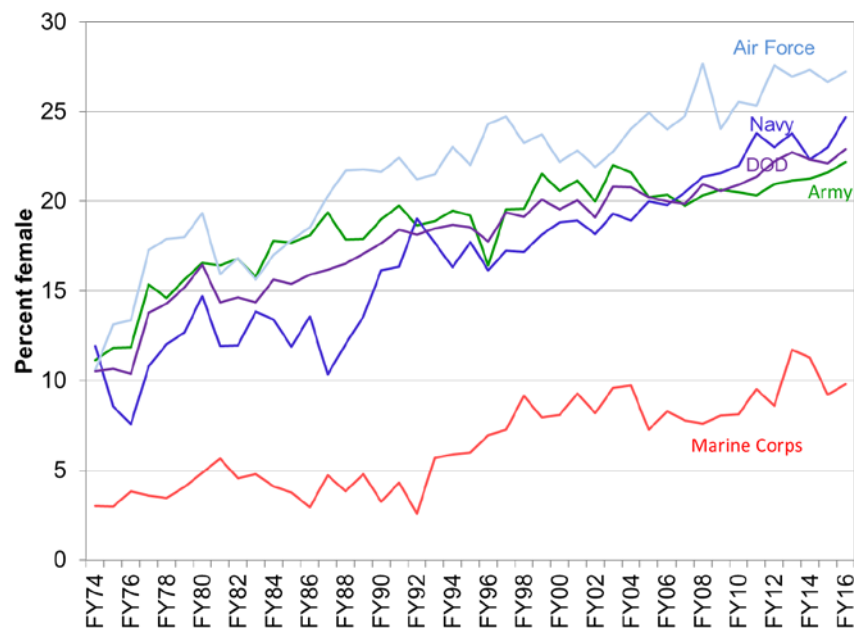
Source: Table D-19.

Female representation in the services' AC officer corps follows patterns similar to those among AC officer gains: female representation has been increasing over time, the Air Force has the highest female representation and the Marine Corps has the lowest (see Figure 20). This suggests that changes in female representation are driven primarily by changes in the representation among officer gains as opposed to changes in female retention rates. In FY16, female representation in the officer corps was highest for the Air Force at 20.6 percent, followed by the Army and the Navy each at 18.4 percent and the Marine Corps at 7.5 percent.

Figure 20. Female percentage, AC officer gains, FY74–FY16
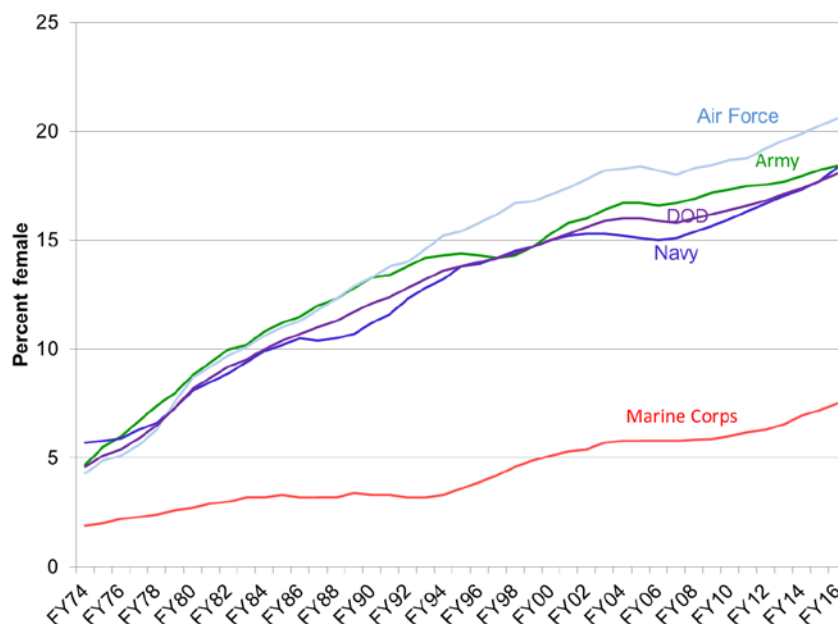
Source: Table D-19.

Relative to their enlisted forces, female representation in the services' officer corps are roughly similar. The Army has the largest differential between its percentages of women in its enlisted and officer corps (14.0 versus 18.4 percent) followed by the Air Force (19.1 versus 20.6 percent), the Marine Corps (8.2 versus 7.5 percent), and the Army (18.9 versus 18.4 percent).

Racial and ethnic diversity in NPS enlisted accessions

Before FY03, self-identified race and ethnicity were reported in combined categories (e.g., non-Hispanic white or non-Hispanic black). Since FY03, race and ethnicity have been officially reported separately. Although Hispanic accessions can be of any race, the vast majority self-identify as white.

Black accessions over time

In the early years of the AVF and until the first Gulf War, the percentage of non-Hispanic blacks was considerably larger among DOD accessions than in the comparably aged civilian population. There was a decline in non-Hispanic black accessions after the first Gulf War in 1990 and again in the mid 2000s, but the percentage of black accessions has since increased. Blacks now account for 18.8 percent of AC NPS enlisted accessions—a greater percentage than in the 18-to-24-year-old civilian population (15.3 percent).

There are substantial differences *by service* in the percentage of non-Hispanic black enlisted accessions; this was particularly true in the early years of the AVF (see Figure 21). At the start of the AVF, percentages in the Army and the Marine Corps considerably exceeded civilian percentages. In the mid 1980s, however, percentages in the Navy began to rise, while they began to fall in the Marine Corps and the Air Force. In FY16, in all services except the Marine Corps, the percentage of black enlisted accessions significantly exceeded comparable civilian percentages, with the Army having the highest percentage and the Marine Corps having the lowest percentage. In the Army, black accessions represent 23 percent of all AC NPS accessions.

Figure 21. Percentages of black AC NPS enlisted accessions, by service, FY74–FY16
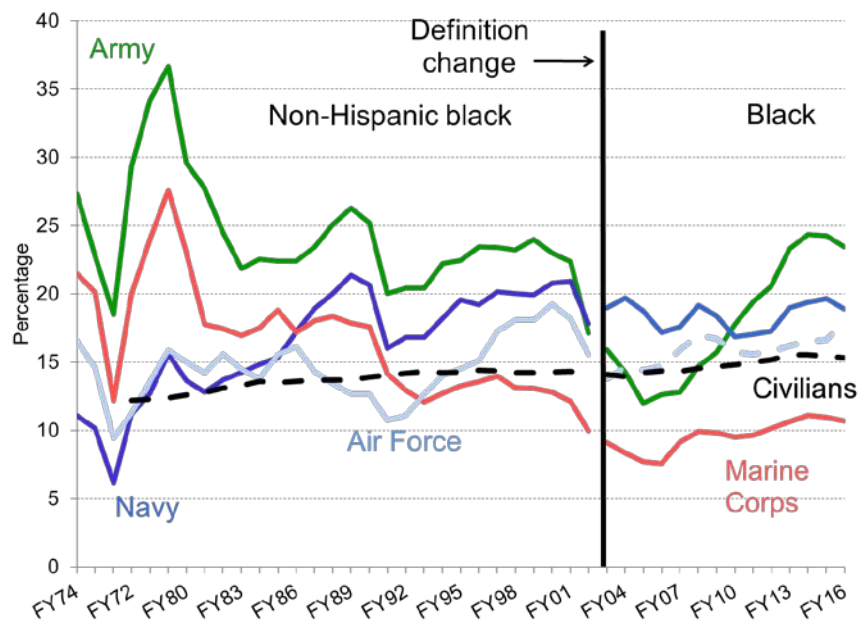
Source: Tables D-23 and D-26.

Racial diversity in FY16

Since 1997, the Office of Management and Budget (OMB) has required that federal agencies use a minimum of five racial categories (white, black or African American, American Indian or Alaska Native, Asian, and Native Hawaiian or Other Pacific Islander) when categorizing a person's race. DOD uses these five self-identified racial categories—separately and in combination—as codes to characterize recruits' racial backgrounds. Those in the last four racial categories (or those choosing more than one racial category) can be termed racially diverse. We focus on racial diversity, rather than each of the separate racial groups. Asians are the fastest growing racial group in the United States, but they are still too small a percentage in the military to analyze separately.

Recruits from racially diverse backgrounds constituted 27.7 percent of DOD AC NPS accessions in FY16.[39] In comparison, racially diverse people represented 26.5 percent of the civilian benchmark population—the 18-to-24-year-old civilian non-institutional population. Thus, AC NPS accessions were only slightly more racially diverse than the benchmark population. DOD's overall statistic, however, hides interesting differences by service and gender. The Army and the Navy are the most racially diverse, while the Marine Corps is the least racially diverse. As shown in Figure 22, however, in every service, male accessions (represented by the darkly shaded left bar for each service) are less racially diverse than female accessions (represented by the lightly shaded right bar for each service). For example, racially diverse women represented 43.4 percent of female Army accessions in FY16, while racially diverse men represented 27.7 percent of male Army accessions. These service findings are in contrast to the civilian benchmark, which shows only small gender differences (27.0 percent female and 26.0 percent male).

Figure 22. FY16 AC NPS racially diverse accessions: Percentages of minority races, by gender, service, and civilian benchmark
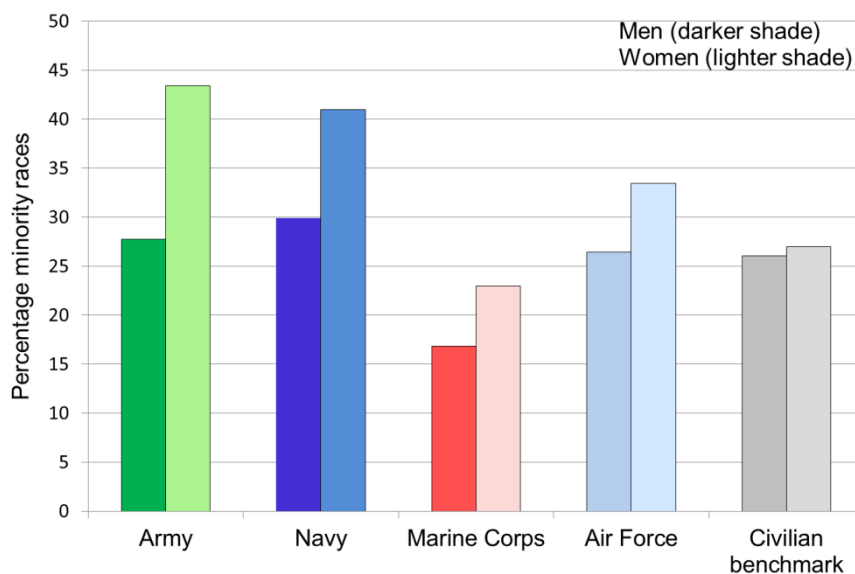
Source: Table B-10.
Note: The civilian benchmark is the 18-to-24-year-old population. Those of unknown race are distributed as knowns.

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[39] To explore diversity in the enlisted force, we adjusted for the small number of those of unknown race. We assume that the distribution of recruits with unknown race followed their service's racial distribution. In the Army, Marine Corps, and Air Force, less than 1 percent of AC NPS accessions have an unknown racial background (5.3 percent in the Navy). The percentage of enlisted recruits selecting two or more races is highest in the Navy (5.1 percent), followed by the Air Force (3.4 percent), the Marine Corps (2.5 percent), and the Army (0.2 percent).

Ethnic diversity in FY16

OMB requires federal agencies to use two ethnic categories: (1) Hispanic or Latino and (2) Not Hispanic or Latino. Because ethnicity and race are separate Census fields, a single person can be defined as a minority in both fields. Realizing that there is some overlap, it is still interesting to examine gender differences in the ethnic identifications for AC NPS accessions in each service. Although we observe that the percentage of Hispanics represents a larger proportion of female accessions than male accessions in each service, the differences—except in the Marine Corps—are not large (see Figure 23).

Figure 23. FY16 AC NPS accessions: Percentages of Hispanics by gender, service, and civilian benchmark
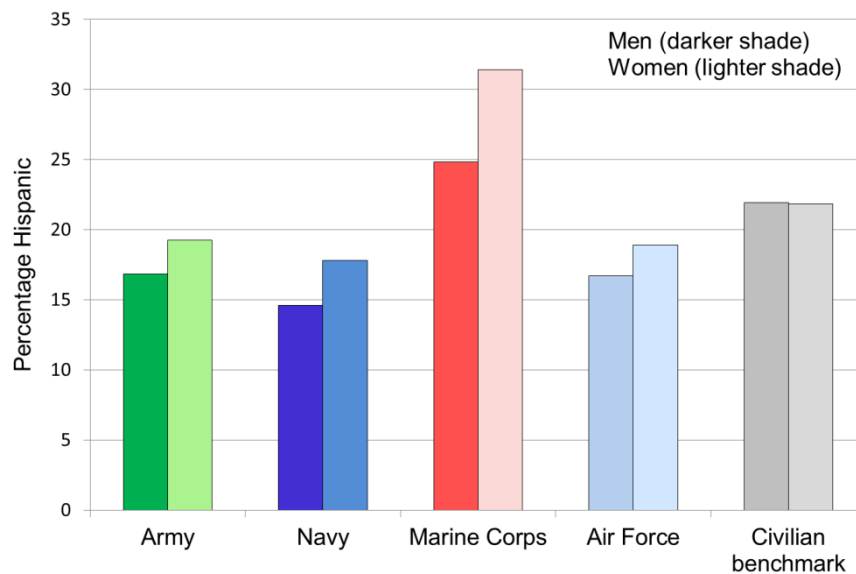
Source: Table B-10.
Note: The civilian benchmark is the 18-to-24-year-old population. Those of unknown ethnicity are distributed as knowns.

Racial and ethnic minorities in FY16

As suggested earlier, a Hispanic black man is both a racial and an ethnic minority. In FY16, the overlap between the racial and ethnic minority categories for NPS AC accessions was 10 percent, with about half of the overlap being black recruits who also identify as being Hispanic. However, we can calculate what percentage of FY16 AC NPS military accessions were minority (whether a Hispanic minority, a racial minority,

or a Hispanic and racial minority) without double-counting. This is the context in which the term is often used in the popular press. We show this in Figure 24.[40]

Figure 24. FY16 AC NPS accessions: Percentages of Hispanics or racial minorities by gender, service, and civilian benchmark
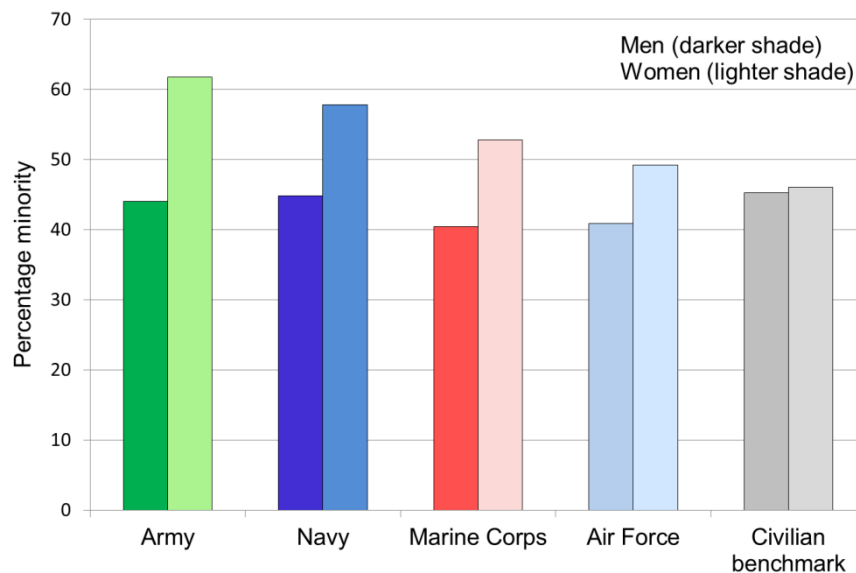
Source: Table B-10.
Note: The civilian benchmark is the 18-to-24-year-old population. Those of unknown race or ethnicity are distributed as knowns.

It is interesting to examine gender representation in the 18-to-24-year-old population (the civilian benchmark) for these different definitions of diversity. Although the civilian benchmark for racial diversity in Figure 22 showed a slightly higher percentage of racial minority women than men, the same benchmark for ethnic diversity in Figure 23 showed a slightly higher percentage of ethnic minority men than women. However, the civilian benchmark for our definition of minority representation for AC NPS accessions that includes both racial and ethnic diversity is about 45 percent for both men and women, with a slightly higher percentage among women (see Figure 24).

The percentage of minority AC NPS accessions is higher for women than men in all services. For DOD as a whole, 43 percent of male NPS AC accessions and 56 percent of female AC NPS accessions are either Hispanic or racial minorities. Thus, for racial and ethnic diversity, male NPS accessions are less diverse than the civilian population and female NPS accessions are more diverse. This finding is due entirely to the racial

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[40] See Table B-10. We summed the number of racial minorities and added the number of white Hispanics to that total. As explained earlier, we assumed that missing data are distributed similarly to known data.

diversity of female military accessions. Both male and female AC NPS accessions are less likely to be Hispanic than those in the civilian benchmark population.

Special section: Citizenship of NPS accessions

The citizenship of NPS enlisted accessions is a special section for the FY16 *PopRep* report. Figure 25 shows the percentage of NPS enlisted accessions who were non-U.S. citizens by service. Overall, 3.5 percent of NPS enlisted accessions were non-citizens. The Army had the highest percentage of non-citizen accessions (4.8 percent) followed by the Navy (3.5 percent), the Marine Corps (2.5 percent), and the Air Force (2 percent).

Figure 25. Percentage of non-U.S. citizen NPS enlisted accessions, by service, FY16
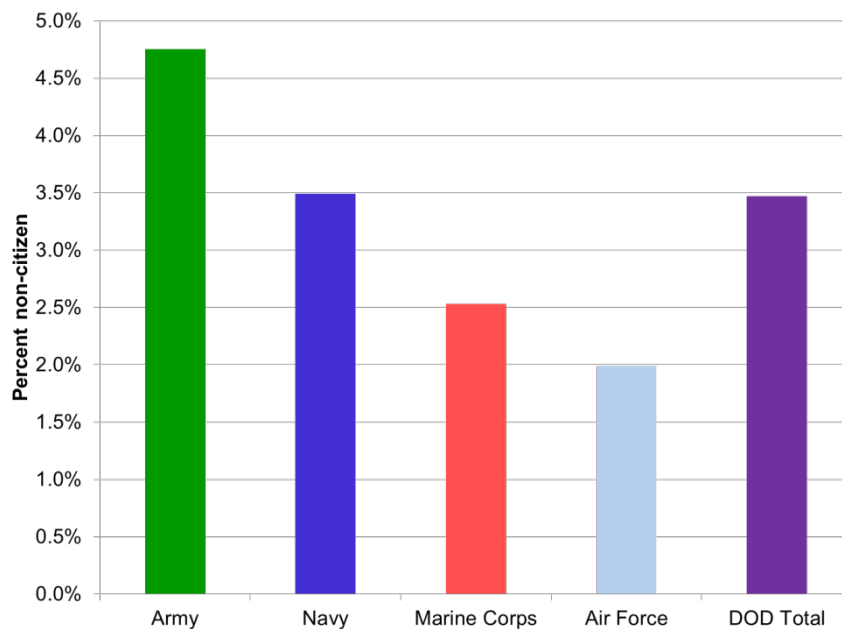
Source: DMDC data on FY16 NPS enlisted accessions.

Table 7 compares the age, gender, race/ethnic diversity, and quality of citizen and non-citizen NPS accessions in FY16.

Table 7. Age, gender, racial/ethnic diversity, and quality of NPS citizen and non-citizen accessions, FY16

	Army		Navy		Marine Corps		Air Force	
	Citizen	Non-citizen	Citizen	Non-citizen	Citizen	Non-citizen	Citizen	Non-citizen
Number of NPS accessions	55904	2789	29421	1064	29516	767	31294	635
Average age (years)	20.2	24.4	20.3	23.5	19.1	20.1	20.3	23.0
% Female	17.1%	19.4%	24.4%	28.3%	10.0%	13.3%	22.1%	26.1%
% Racially diverse	28.1%	77.9%	30.8%	84.2%	16.7%	46.5%	27.2%	69.0%
% Hispanic	17.3%	15.5%	15.5%	12.8%	24.9%	47.5%	17.0%	74.5%
% Tier I education	93.4%	95.9%	95.8%	95.9%	96.8%	97.9%	91.3%	88.0%
% CAT I-IIIA AFQT	59.9%	69.0%	85.7%	79.2%	71.6%	57.8%	85.0%	82.2%
% High-quality	54.3%	66.1%	82.0%	75.7%	69.4%	56.7%	77.5%	72.8%

Source: DMDC data on FY16 NPS enlisted accessions.

Across the services, non-citizen NPS accessions are more likely to be women and older than citizen NPS accessions. Non-citizens also are generally more likely to be racially and ethnically diverse, except for those in the Air Force and the Navy, who are less ethnically diverse than their citizen peers.

In terms of their quality, the majority of non-citizen NPS accessions are high-quality recruits, with Tier 1 education credentials and an AFQT score in the top 50 percentiles. The Navy has the highest percentage of high-quality non-citizen recruits (75 percent), followed by the Air Force (73 percent), the Army (66 percent), and the Marine Corps (57 percent). A higher percentage of non-citizen accessions in the Army were high quality compared to citizen accessions (66 percent versus 54 percent); for the other services, high-quality recruits have lower representation among non-citizen than citizen accessions. Overall, 68 percent of citizen and 67 percent of non-citizen NPS accessions were high quality in FY16.

Racial and ethnic diversity in the enlisted force

The next two subsections present the racial and ethnic diversity, respectively, of AC enlisted members.

Racial diversity in FY16

Racial minorities make up 23.3 percent of the civilian benchmark population but 30.6 percent of DOD's FY16 enlisted forces.[41] There are gender differences in the racial representation in the civilian labor force, with 21.7 percent of men and 25.2 percent of women categorized as racial minorities. Figure 26 shows these percentages by service.

Figure 26. FY16 AC enlisted: Percentages of minority races, by gender and service, and civilian benchmark
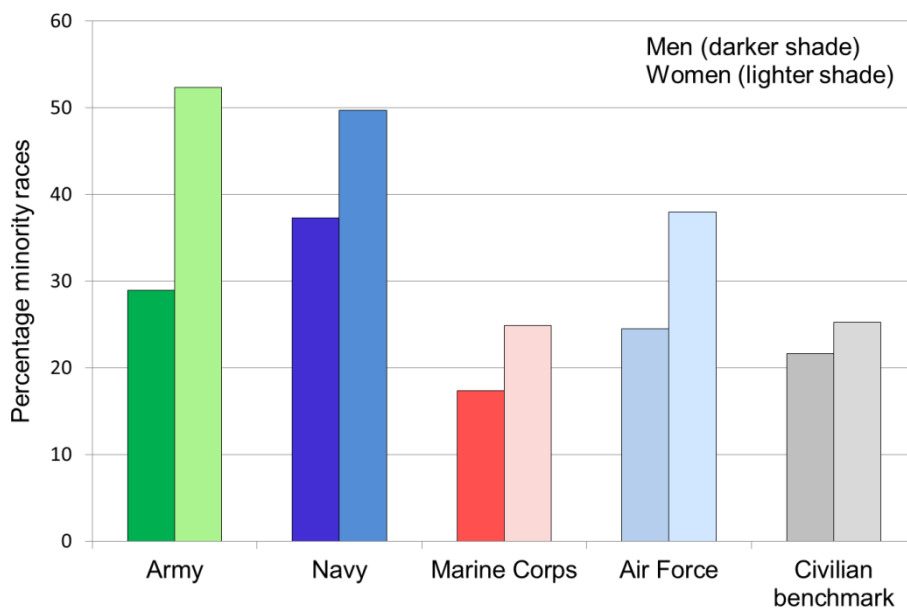
Source: Table B-17.
Note: The civilian benchmark is the 18-to-44-year-old civilian labor force. Those of unknown race are distributed as knowns.

Gender differences in the civilian labor market are small, however, relative to racial differences in representation in the AC enlisted force. In each service, the percentage of female racial minorities is larger than the percentage of male racial minorities. This is

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[41] As before, we assume that the distribution of servicemembers with unknown race follows their service's racial distribution, and we assign those selecting two or more racial groups to the minority category. Servicemembers with unknown race represent 3 to 4 percent of enlisted endstrength in each service. Servicemembers selecting two or more races represent substantial percentages in the Navy (9 percent) and Air Force (4 percent).

especially true in the Army, where the percentage of enlisted racial minority women is almost double the percentage of enlisted racial minority men. The overrepresentation of racial minority women in the enlisted force is related to their higher representation in AC NPS accessions discussed earlier, as well as higher minority female retention rates.

In summary, women in the AC enlisted force are considerably more racially diverse than their male counterparts.

Ethnic diversity in FY16

Servicewomen were considerably more likely to be racial minorities than servicemen, and the same pattern holds for Hispanic representation, though gender differences are smaller than those for racial minorities. However, the civilian benchmark for the enlisted force—the 18-to-44-year-old labor force—shows the opposite pattern: Hispanic men are a larger proportion of the male civilian benchmark population than Hispanic women are of the female civilian benchmark population. Assuming that any missing ethnic observations follow each service's overall distribution, we find that Hispanics make up the following percentages of the FY16 DOD enlisted and civilian labor forces:

- 16.2 percent of male enlisted force versus 20.4 percent of civilian labor force
- 18.8 percent of female enlisted force versus 17.4 percent of civilian labor force

The Marine Corps has the highest Hispanic representation; Hispanics constitute 20.2 percent of the male enlisted force and 28.5 percent of the female enlisted force. Thus, relative to the civilian benchmark, Hispanic women are overrepresented in the Marine Corps' enlisted force. Overall, however, Hispanics are underrepresented in the AC enlisted force, just as they were in FY16 NPS enlisted accessions.

Racial and ethnic diversity in commissioned officer gains

The next two subsections present the racial and ethnic diversity, respectively, of AC commissioned officer gains.

Racial diversity in FY16

The civilian benchmark for AC commissioned officer gains is the 21-to-39-year-old college graduate population, in which 25.1 percent of men and 25.6 percent of women are racial minorities.[42] Although women in the civilian population are slightly more likely than men to be racial minorities, female commissioned officer gains in each of the services are much more likely to be racial minorities (see Figure 27).[43] And, although

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[42] Women in these age groups are slightly more likely than men to be college graduates.

[43] We use the same methodology for commissioned officers that we used for enlisted personnel. We assume any missing information for a service is distributed in the same way as the non-missing

racial minorities are somewhat underrepresented in commissioned officer gains, this underrepresentation is due entirely to the minority underrepresentation of men. In fact, female commissioned officer gains in the Navy are overrepresented in terms of their minority racial distribution relative to the civilian benchmark.

Figure 27. FY16 AC commissioned officer gains: Percentages of minority races, by gender, service, and civilian benchmark
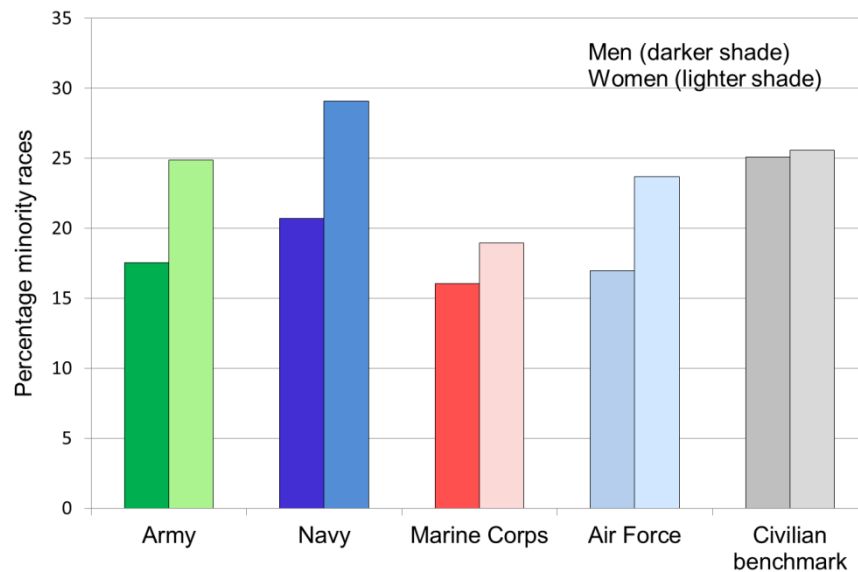
Source: Table B-25.
Note: The civilian benchmark is the 21-to-39-year-old college graduate population. Those of unknown race are distributed as knowns.

Ethnic diversity in FY16

Following the patterns that we found in the enlisted force, female commissioned officer gains are more likely to be Hispanic than are male commissioned officer gains, though the gender differences generally are smaller than those for racial minorities. The Hispanic percentages for FY16 AC commissioned officer gains follow:

- 7.9 percent of DOD's male commissioned officer gains versus 10.2 percent of the civilian labor force
- 8.7 percent of DOD's female commissioned officer gains versus 10.1 percent of the civilian labor force.

information, and we treat those who selected two or more racial categories as racial minorities. For both men and women, the largest racial minority in the college-educated benchmark population is Asians.

Racial and ethnic diversity in commissioned officer corps

The next two subsections present the racial and ethnic diversity, respectively, of AC commissioned officers.

Racial diversity in FY16

Figure 28 shows the racial minority percentages for AC commissioned officers in each of the services. The civilian benchmark, the 21-to-49-year-old college graduate civilian labor force, has a slightly larger proportion of racially diverse women than men. These differences in the civilian labor force, however, are tiny relative to the racial minority gender differences for commissioned officers in each of the four services. In the Army, male racially diverse commissioned officers represent 17.0 percent of the men in the officer corps, whereas female racially diverse commissioned officers represent 32.6 percent of the women in the officer corps.

Figure 28. FY16 AC commissioned officer corps: Percentages of minority races, by gender, service, and civilian benchmark
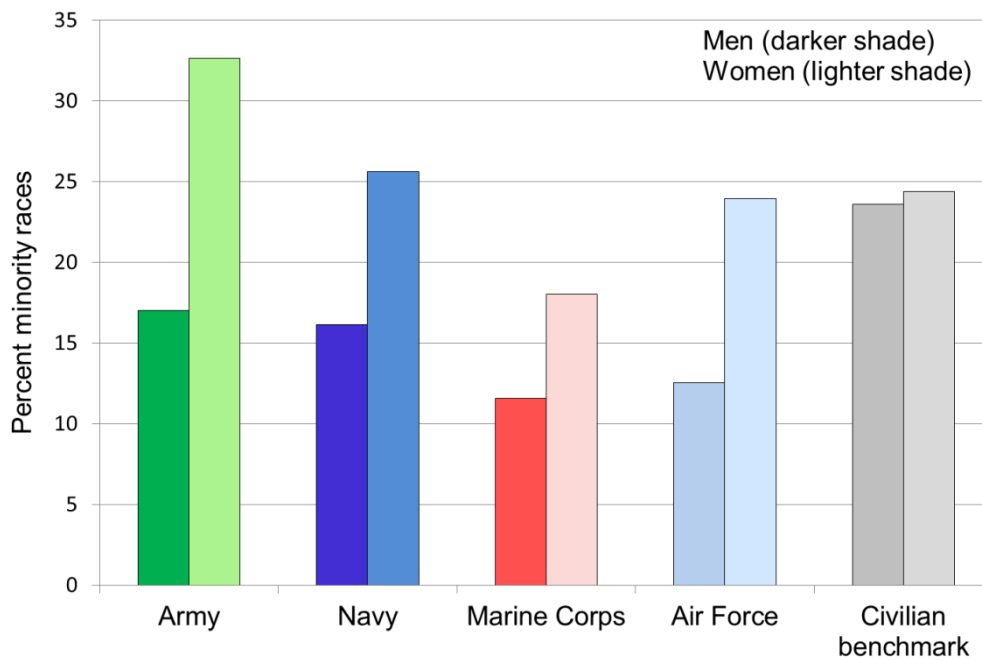
Source: Table B-25.
Note: The civilian benchmark is the 21-to-49-year-old college graduate labor force. Those of unknown race are distributed as knowns.

Minority male college graduates are underrepresented in all four services relative to their representation in the civilian labor market. In contrast, female minority college

graduates are overrepresented in the Army and well represented in the Navy and Air Force relative to their representation in the civilian labor force.

Ethnic diversity in FY16

Figure 29 shows Hispanic representation in the commissioned officer corps for each service. The patterns are somewhat different from those found for commissioned officers who are racial minorities. That is, Hispanic women in the Marine Corps are overrepresented relative to the civilian benchmark, the 21-to-49-year-old college graduate labor force. In contrast, Hispanic men in all services are underrepresented relative to the civilian benchmark.

Figure 29. FY16 AC commissioned officer corps: Percentages of Hispanics, by gender, service, and civilian benchmark
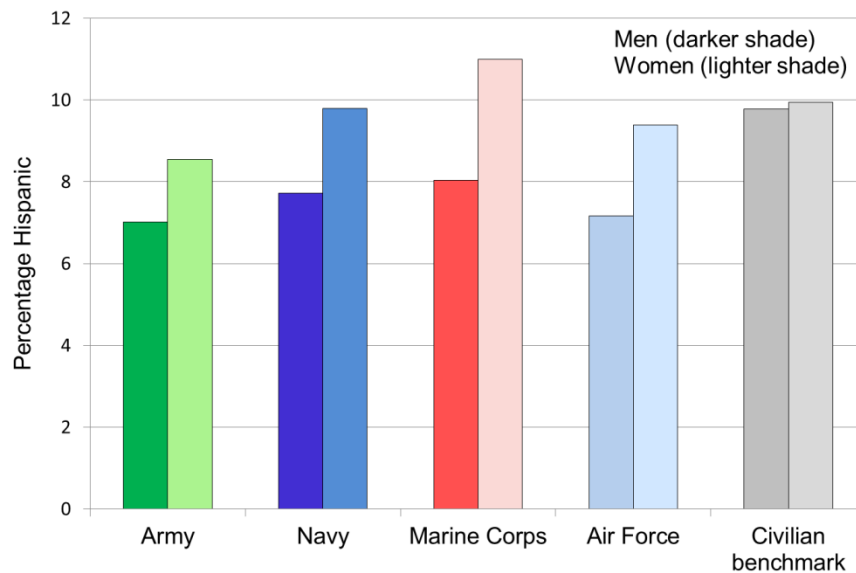
Source: Table B-25.
Note: The civilian benchmark is the 21-to-49-year-old college graduate labor force. Those of unknown race are distributed as knowns.

Marital patterns

By age and gender

There are some interesting differences in married rates by age for enlisted personnel versus commissioned officers. Reasons for these differences stem from the following:

- Both officers and enlisted personnel are predominately single when they enter military service.

- Officers are generally older when they enter the military because a college degree is required.

- Married percentages increase sharply with age.

Thus, comparing FY16 married rates by age for 25-, 30-, and 35-year-old servicemen, we find:

- 50, 74, and 84 percent of enlisted men are married.

- 33, 69, and 82 percent of male commissioned officers are married.

In short, until their mid thirties, AC male enlisted personnel are more likely to be married than AC male commissioned officers. The percentages for AC women follow similar patterns, particularly regarding the larger percentages of enlisted women than commissioned officers married by age 25.

Gender comparisons with civilian married rates

In FY16, 7.5 percent of male AC NPS accessions and 11.1 percent of female AC NPS accessions were married when they entered service. Given the age distribution of NPS accessions and married rates in the benchmark civilian labor force, NPS accessions are only slightly more likely to be married than their civilian counterparts.[44]

During the course of their military careers, however, enlisted servicemembers marry and very quickly are more likely to be married than are their civilian counterparts.[45] Figure 30 shows male and female married rates for enlisted servicemembers, and Figure 31 shows the same information for commissioned officers. Men in the AC force are more likely to be married than their civilian counterparts. These differences often exceed 20 percentage points, particularly in the enlisted force. The patterns for AC women are more complicated, but, until about age 30, AC enlisted women are more likely to be married than women in the civilian labor force. For commissioned officers and for enlisted women over the age of 30, married rates for AC women and their civilian counterparts are similar.

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[44] Using Table B-2, we calculate what the married rate of accessions would have been if they had entered the military with the marital patterns of the civilian labor force. In short, we take the distribution of AC NPS accessions by age and, using that age distribution, calculate what the civilian married rate would be. (We ignore PS accessions because they are such a small proportion of accessions.)

[45] One theory is that military benefits incentivize marriage; another is that those who value marriage are more likely to join the military.
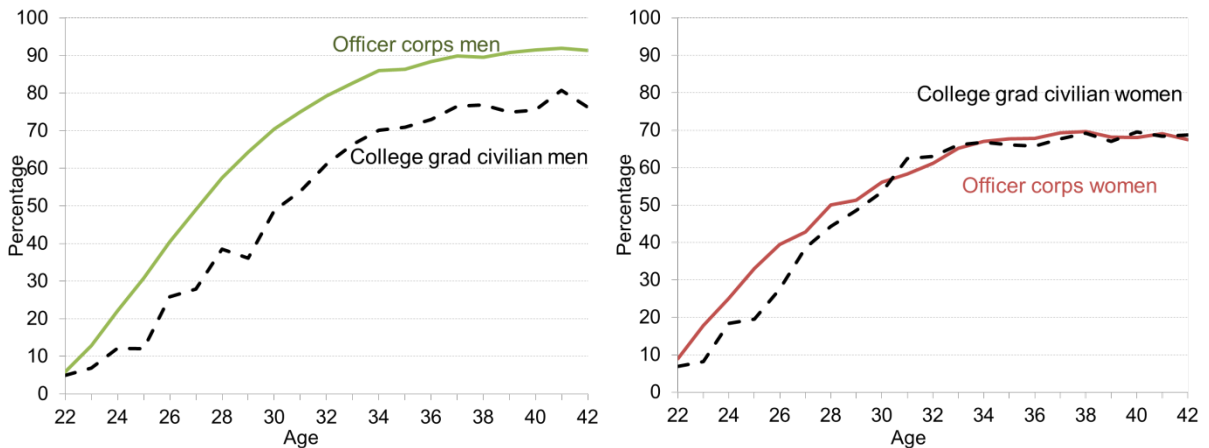
Figure 30. FY16 married rates of AC enlisted personnel and civilian comparison groups, by gender and age
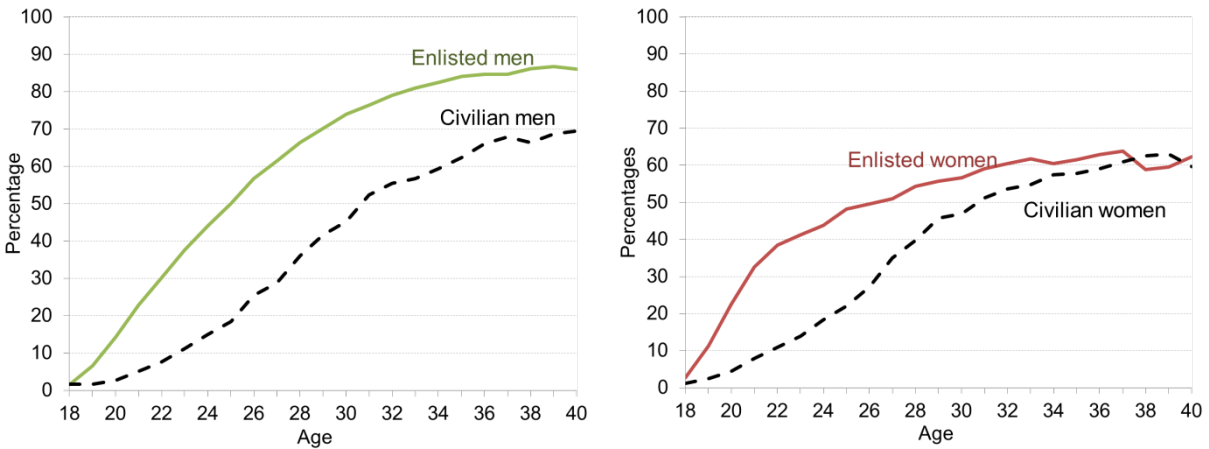
Source: Table B-16.
Note: Civilian comparison group is the civilian labor force.

Figure 31. FY16 married rates of AC commissioned officers and civilian comparison groups, by gender and age

Source: Table B-24.
Note: Civilian comparison group is the civilian college-educated labor force.

Gender and race/ethnicity comparisons with civilian married rates

Next, we examine married rates by gender and race/ethnicity for those in the military and those in the civilian labor market. Probably the easiest way to look at this is by single years of age at two points—age 25 and age 35.

The married rates for 25-year-old men follow:

- In the AC enlisted force—53.5 percent for Hispanics, 51.7 percent for whites, and 47.8 percent for blacks
- In the civilian labor force—21.4 percent for Hispanics, 20.4 percent for whites, and 11.7 percent for blacks.

The married rates for 35-year-old men follow:

- In the AC enlisted force—86.0 percent for Hispanics, 85.7 percent for whites, and 78.0 percent for blacks
- In the civilian labor force—64.1 percent for Hispanics, 63.9 percent for whites, and 45.0 percent for blacks.

The married rates for AC enlisted women follow the same basic patterns; black enlisted women are less likely to be married than white or Hispanic enlisted women. And, although the married rates for white and Hispanic women in the civilian labor market are similar, married rates for black women in the civilian labor market are much lower.

The married rates for 25-year-old women follow:

- In the AC enlisted force—52.7 percent for Hispanics, 51.7 percent for whites, and 41.1 percent for blacks
- In the civilian labor force—22.1 percent for Hispanics, 25.1 percent for whites, and 10.0 percent for blacks.

The married rates for 35-year-old women follow:

- In the AC enlisted force—63.6 percent for Hispanics, 65.7 percent for whites, and 54.5 percent for blacks
- In the civilian labor force—52.5 percent for Hispanics, 61.4 percent for whites, and 33.4 percent for blacks.

In summary, compared to AC enlisted men, civilian men marry later, are less likely to be married, and exhibit larger racial differences in marriage rates. The results for women show similar married rate differences. Black men and women in the civilian labor market are much less likely to be married than their military peers; in the military, the married rates among blacks are closer to the rates for civilian whites and Hispanics of the same gender and age. Figure 32 shows married rates by age for AC enlisted men and women by race and ethnicity.

Figure 32. FY16 AC enlisted married rates, by gender, age, and racial/ ethnic background
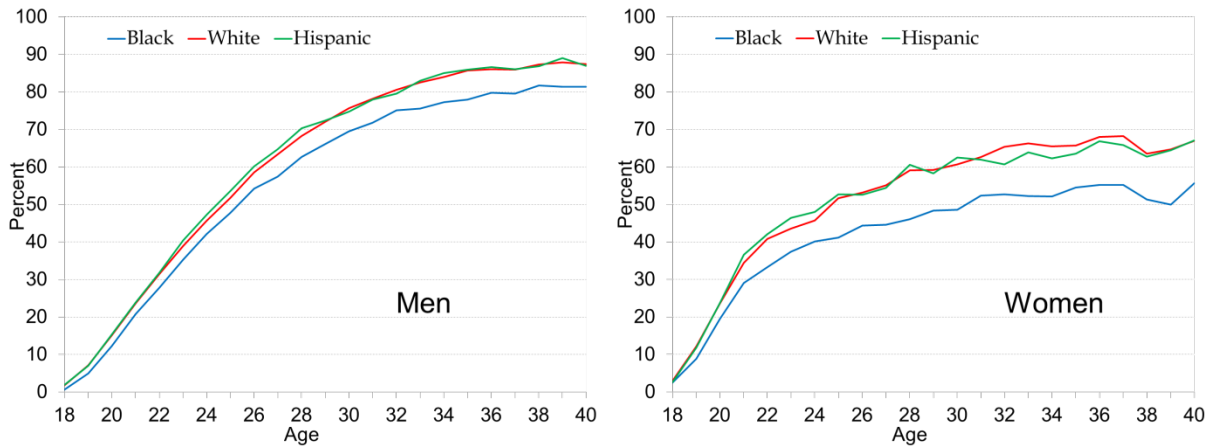
Source: Table B-16.

Paygrade distributions of women and racial/ethnic minorities

We use two methods to evaluate representation: by comparison with the civilian workforce and by grade representation relative to overall representation in the military. Table 8 illustrates the FY16 paygrade distribution for women, racial minorities, and Hispanics. Because there is very little lateral entry into military service, these paygrade distributions reflect both current and past accession and retention patterns. Relative to the civilian workforce benchmark of 46.7 percent female, women in the military are underrepresented in all military paygrades. Relative to the 15.6 overall percentage for women in the enlisted force, however, women are underrepresented in senior paygrades (E7+), slightly underrepresented in the mid-level paygrades (E5-E6), and slightly overrepresented in the junior paygrades (E1-E4).

Table 8. FY16 percentage of AC enlisted personnel by paygrade, gender, race, and ethnicity and civilian benchmark

	E1-E4	E5-E6	E7+	Overall (E1-E9)	Civilian benchmark
Women	16.6	14.9	12.8	15.6	46.8
Racial minorities	29.5	32.2	31.0	30.6	23.3
Hispanics	18.4	16.4	13.8	17.1	19.0

Source: Tables B-17 and B-37.

Note: The civilian benchmark is the 18-to-44-year-old civilian labor force. To calculate minority percentages, we assume that those of unknown race and Hispanic background are distributed the same way as those of known backgrounds.

For racial minorities, the picture is reversed. Relative to their civilian labor market benchmark of 23.3 percent, racial minorities are overrepresented in all military paygrades. However, relative to their overall participation in the military at 30.6 percent, racial minorities are underrepresented in the junior paygrades and overrepresented in the mid-level and senior paygrades. These minority paygrade distributions reflect the facts that recent racial minority accession percentages, particularly for black accessions, have been lower than those historically, and some minority groups (such as blacks) have higher retention.

For Hispanics, junior paygrades are overrepresented while mid-level and senior paygrades are underrepresented relative to their overall military representation of just over 17 percent in the military. At all paygrades, however, enlisted Hispanics are underrepresented in the military relative to their civilian labor market percentage of 19.0 percent.

For commissioned officers' representation within the force, the patterns are more regular, as the percentage of women, the percentage of racial minorities, and the percentage of Hispanics fall as paygrade increases. All three groups shown in Table 9 are overrepresented in the junior paygrades (O1-O3) and underrepresented in the mid-level (O4-O6) and senior (O7+) paygrades relative to their overall percentage of commissioned officers. However, relative to their civilian benchmark of labor force percentages for college graduates ages 21 to 49, all three groups are underrepresented in the commissioned officer corps.

Table 9. Percentage of AC commissioned officers by paygrade, gender, race, and ethnicity and civilian benchmark

	O1-O3	O4-O6	O7+	O1-O10	Civilian benchmark
Women	20.1	15.0	7.0	18.1	51.4
Racial minorities	18.2	15.7	11.0	17.2	22.4
Hispanics	8.5	6.4	1.7	7.7	9.1

Source: Tables B-25 and B-39.
Note: The civilian benchmark is the 21-to-49-year-old college graduate labor force. To calculate minority percentages, we assume that those of unknown race and ethnicity are distributed the same way as those of known backgrounds.

It is not clear which is the "correct" metric for comparison. Is it the percentage in particular paygrades rather than the overall representation in the force? Or, is it the representation in the force relative to the representation in the civilian labor market? Both metrics, however, are needed to understand how representation varies by paygrade and how it varies across the military and civilian sectors of the economy.

Occupational differences in the enlisted force

By gender

Gender differences in the occupational distribution of the enlisted force are well known. Women are overrepresented in administrative and medical occupations, whereas men are overrepresented in warfighting and engineering occupations, which include infantry, gun crews, seamanship, and electrical occupations. The lack of women in warfighting occupations is due both to people's preferences and to restrictions on women in service in some of these occupations. Because all occupational restrictions for women were lifted as of January 2016, it will be interesting to see how these occupational distributions change in future years. Figure 33 shows the enlisted force occupational distribution by gender in FY16.

Figure 33. FY16 occupational distribution of the AC enlisted force, by gender
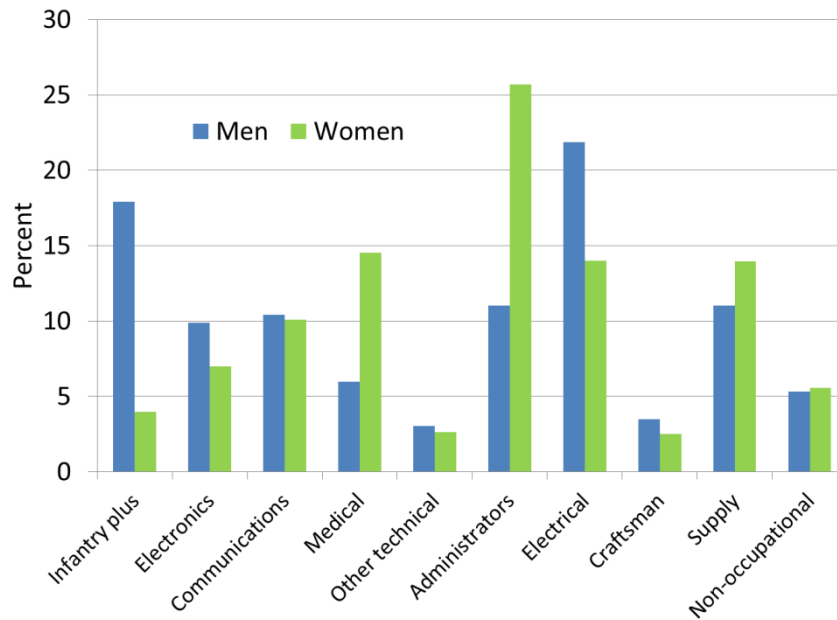
Source: Table B-20.
Note: Infantry plus includes infantry, gun crews, and seamanship occupations. Although women were not in the infantry prior to the lifting of the restriction, they did serve in gun, air crew, and seamanship occupations.

By race

Although most occupational analyses of the enlisted force have focused on gender differences, there also are large racial differences. To further explore these differences, we divided the enlisted force into two categories (white and racial minorities), both

because some racial groups are very small and because we wanted to illustrate broad differences.[46] In Table 10, we highlight the largest differences in gray.

Table 10. Occupational distribution of the enlisted force, by gender and race, FY16

Occupational group	White men	Racially diverse men	White women	Racially diverse women
Electronics	9.9%	9.9%	7.6%	6.6%
Medical	4.9%	7.3%	15.9%	13.7%
Electrical	22.1%	21.6%	14.2%	13.9%
Craftsmen	3.4%	3.6%	2.4%	2.6%
Supply	9.7%	12.6%	13.4%	14.3%
Communications	11.8%	8.7%	13.9%	7.8%
Other technical	3.6%	2.4%	3.7%	2.0%
Administrative	7.8%	15.1%	17.8%	30.5%
Infantry, Gun Crews, and Seamanship*	21.3%	13.7%	4.3%	3.7%
Nonoccupational**	5.4%	5.1%	6.7%	4.9%

Source: Table B-20.
Notes: The largest differences are highlighted in gray in the table.
* Although women were not in the infantry prior to the lifting of the restriction, they did serve in gun, air crew, and seamanship occupations.
**Nonoccupational includes students, patients, those with unassigned duties, and unknowns.

Almost one third of racially diverse women in the enlisted force are in administrative occupations compared with less than 20 percent of white women. The next largest difference is in communications (13.9 percent of white women versus 7.8 percent racially diverse women), and the next is in medical (15.9 percent of white women versus 13.7 percent of racially diverse women). The representation of white and racially diverse women is more similar for the remaining occupational areas.

AC enlisted separation and continuation rate patterns, by service

Next, we discuss enlisted separation and continuation rate patterns for the AC enlisted force. Monitoring separation and continuation patterns is critical if the services are to meet their force management objectives—force profiles by years of service, promotion timing targets, and first-term/career force mix.

Enlisted separation and continuation rates in the first 10 years of service vary by service for at least two reasons. First, first-term obligation lengths vary by service, and separation rates are highest when first-term contractual obligations end. Second, the

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[46] The racially diverse category is dominated by blacks.

services differ in their desired length-of-service force profiles. For example, the Air Force uses only 4- or 6-year enlistment contracts, so we see a spike in separations at 4 and 6 years of service, but a reduction in separations at 5 years. In contrast, the first separation peaks for the other services indicate that the Marine Corps primarily uses 4- and 5-year contracts, the Army 3- and 4-year contracts, and the Navy 4-year contracts.[47] Overall, the Marine Corps desires a smaller career force and, thus, separates proportionally more members at the end of the first enlistment (see Figure 34).

Figure 34. Average AC enlisted separation rates by service, FY16
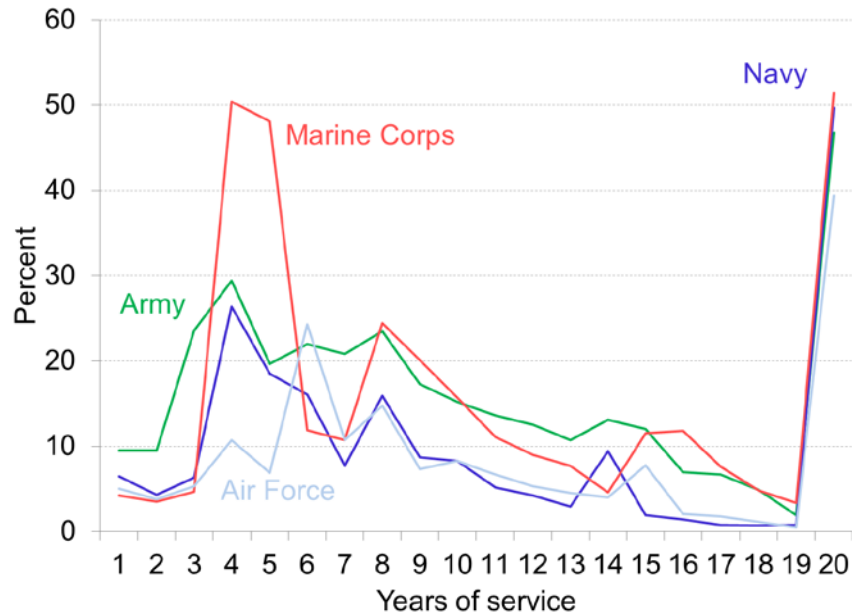
Source: Table B-40.
Note: Yearly separation rates are defined as (1 - continuation rate).

After the first contract ends, continuing servicemembers are either on an extension or another contract.[48] Military retirement eligibility starts at 20 years of service; those who leave before 20 years of service have no retirement provisions.[49] The phenomenon of "cliff vesting" at 20 years of service is shown clearly in Figure 34: as soon as members are vested and gain retirement eligibility, separation rates rise sharply.

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[47] The Army also offers a small number of 2- and 3-year contracts.

[48] Notice the spike in separation for the Marine Corps as first-enlistment contracts end. By design, the Marine Corps has chosen to have a small enlisted career force.

[49] This is not true if they separate under periodic early-retirement provisions or with a disability retirement. Under the Blended Retirement System (BRS), servicemembers will have retirement provisions if they leave service prior to retirement eligibility.

The opposite of separation rates appears in Figure 35, which shows AC enlisted continuation-rate profiles by service. We show the FY16 profile, as well as the average for FY13 through FY15. Continuation rate profiles differ significantly by service. The profiles are influenced by long-term service practices, as well as more current force-shaping activities.

Figure 35. Continuation rate profiles, FY16 and FY13–FY15, by service
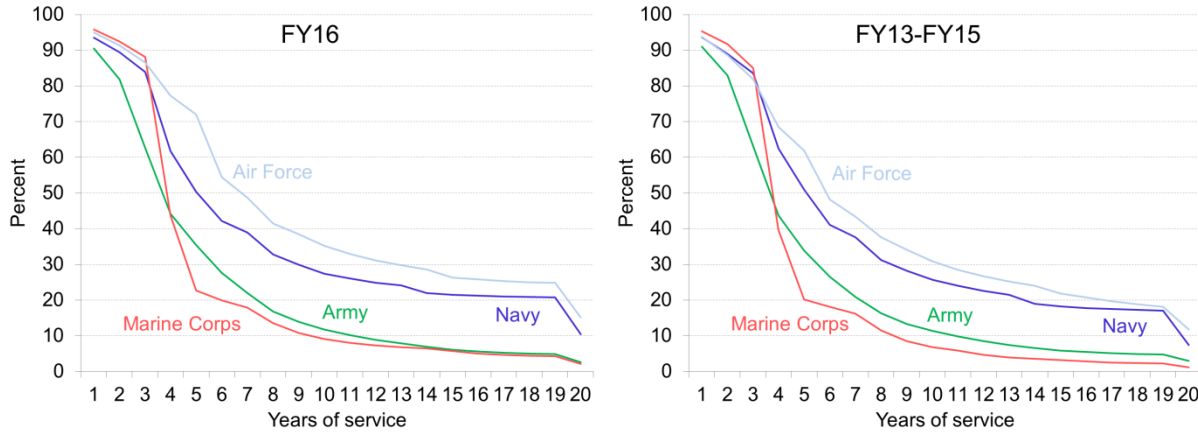
Source: Table B-40 and the FY13, FY14, and FY15 *PopRep* reports.

From these continuation profiles for AC enlisted personnel, we can approximate current retirement probabilities for FY16 and the average for FY13 to FY15. The percentages remaining until their 20th year of service (with FY13–FY15 averages shown in parentheses) follow:

- 5 percent (5 percent) for the Army
- 20 percent (17 percent) for the Navy
- 4 percent (2 percent) for the Marine Corps
- 25 percent (18 percent) for the Air Force

Among enlisted personnel, Airmen and Sailors have the highest retirement probabilities. Marines and Soldiers have the lowest retirement probabilities. For enlisted Marines, 1 in 25 will continue to 20 years of service, given current continuation rates.[50]

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[50] These retirement probabilities use current continuation rates. Thus, they do not represent actual retirement probabilities for any cohort of servicemembers.

Section IV: DOD Reserve Component (RC)

The DOD RC consists of six elements: the Army National Guard (ARNG), the U.S. Army Reserve (USAR), the U.S. Navy Reserve (USNR), the U.S. Marine Corps Reserve (USMCR), the Air National Guard (ANG), and the U.S. Air Force Reserve (USAFR). In FY16, the RC was 63 percent the size of the AC. Total endstrength was 811,732, which can be divided as follows:

- 681,097 enlisted (83.9 percent of RC endstrength)
- 118,342 commissioned officers (14.6 percent of RC endstrength)
- 12,293 warrant officers (1.5 percent of RC endstrength)

Virtually all RC warrant officers are in the Army's guard and reserve components. There are none in the Air Force's guard or reserve components and few in either the Navy or Marine Corps reserve.

RC data from DMDC are available only as gains. A gain is a transaction in the reserve database and reflects the addition of a record that was not in the previous file. For example, reserve gains include broken-service reenlistments. Although the AC has few prior-service (PS) enlisted accessions, many RC enlisted gains are PS personnel. In FY16, over 44 percent of the gains in the enlisted RC were PS personnel (refer back to Table 2).

Overview and comparisons of the RC and the AC

The RC can be described in at least three ways:

- By relative size

- By service

- By guard or selected RC

In terms of size, about two-thirds of RC endstrength resides in the Army reserve components (ARNG and USAR). The Air Force, Navy, and Marine Corps make up the remaining one-third. More than half—about 55 percent—of RC endstrength is in guard units. The ARNG is by far the largest component, with 42 percent of RC personnel. The smallest component is the USMCR, with less than 5 percent of all RC personnel.[51] Figure 36 shows the historical distribution of RC endstrength (enlisted personnel plus commissioned officers) across the six service elements.

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[51] If one broadens the definition of RC to include the Coast Guard, the Coast Guard's RC of 6,573 is the smallest component.

**Figure 36. RC percentages, by service element, FY74–FY16**
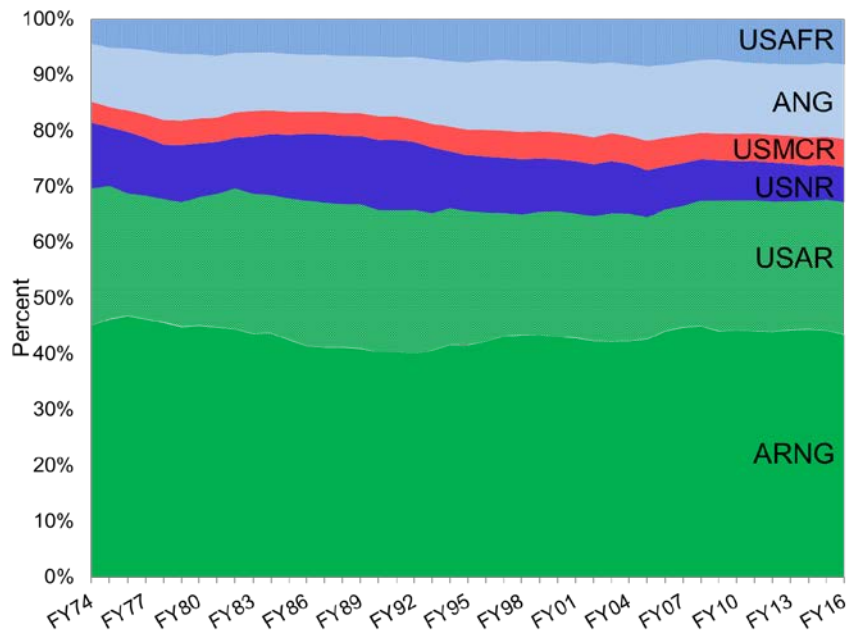
Source: Tables D-20 and D-21.
Note: These data omit warrant officers.

For most of the years since FY74, and consistently since FY93, the RC has had a higher ratio of enlisted to commissioned officers than the AC (see Figure 37). In the AC, the ratio of enlisted to commissioned officers varied by service, with the Marine Corps having the highest ratio and the Air Force the lowest. In FY16, the RC had 5.8 enlisted personnel for every commissioned officer (the comparable ratio in the AC was 5.0), but, as in the AC, these overall ratios mask large differences by service (see Table 11).

In the RC, the ratio of enlisted to commissioned officers varies from 3.1 in the USNR to 8.4 in the USMCR. Adding warrant officers does not appreciably narrow the range of these ratios. Both the Air Force and the Army have a higher enlisted-to-officer ratio in their guards than in their reserves, effectively making the enlisted-to-officer ratios in their reserves closer to those in their active forces.

Figure 37. DOD AC and RC ratios of enlisted to commissioned officers, FY74–FY16
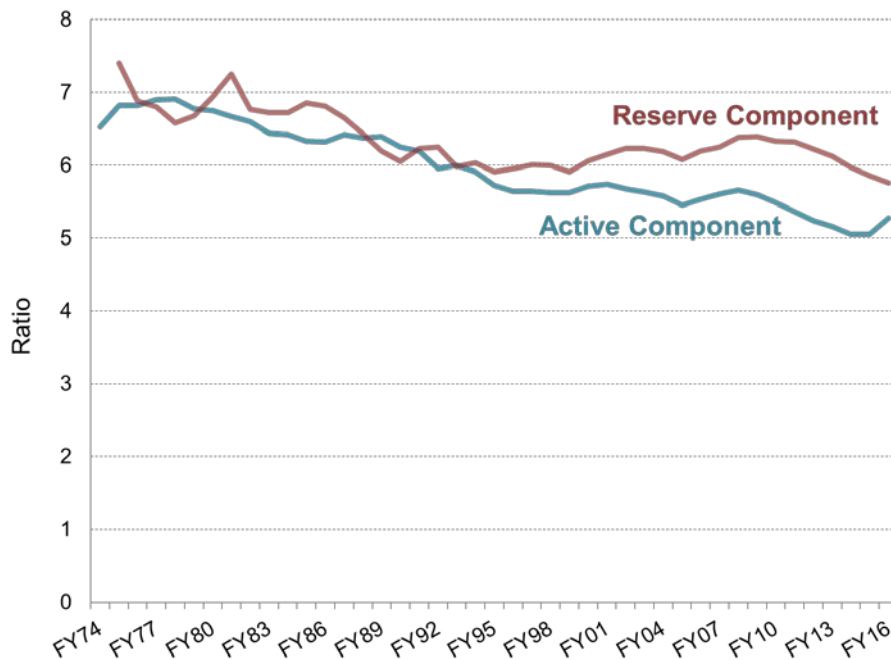
Source: Tables D-11, D-18, D-20, and D-21.
Note: These ratios omit warrant officers.

**Table 11. Enlisted-to-officer ratios, by RC service element, FY16**

Ratios	ARNG	USAR	USNR	USMCR	ANG	USAFR
Enlisted to commissioned officers	8.0	4.7	3.1	8.4	6.0	4.0
Enlisted to commissioned officers plus warrant officers	6.5	4.3	3.1	7.9	6.0	4.0

Source: Tables D-20, D-21, and D-41.

Age distributions

One stark difference between the civilian workforce and the military is the age distribution of personnel. Figure 38 shows these distributions for the AC. Over one-third of the AC enlisted force is age 20 to 24; the percentage in that age group is much smaller in the civilian labor force. In contrast to the civilian labor force where one-third are age 50 or older, fewer than 1 percent of AC enlisted personnel and 4 percent of AC officers are age 50 and older.

Figure 38. DOD AC and civilian age distributions, enlisted and officers, FY16
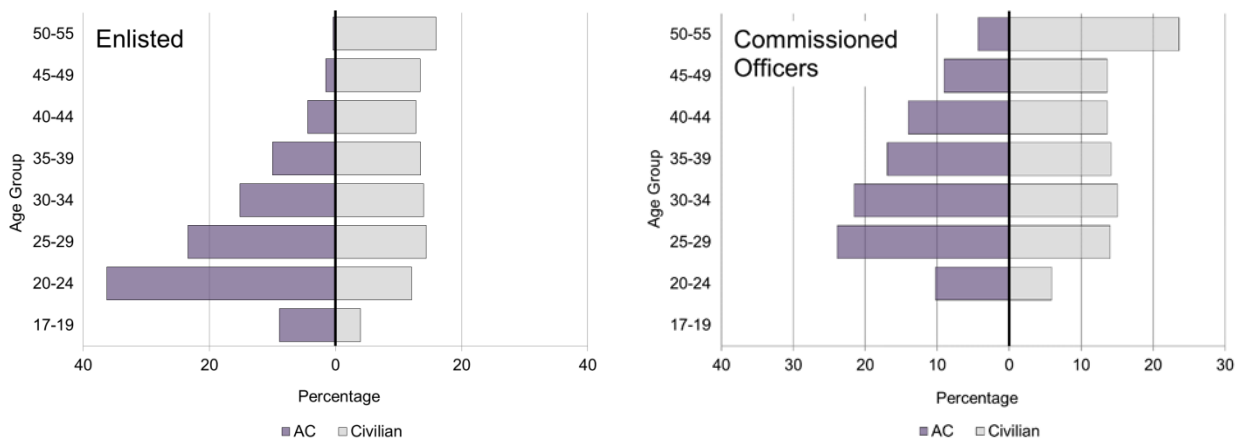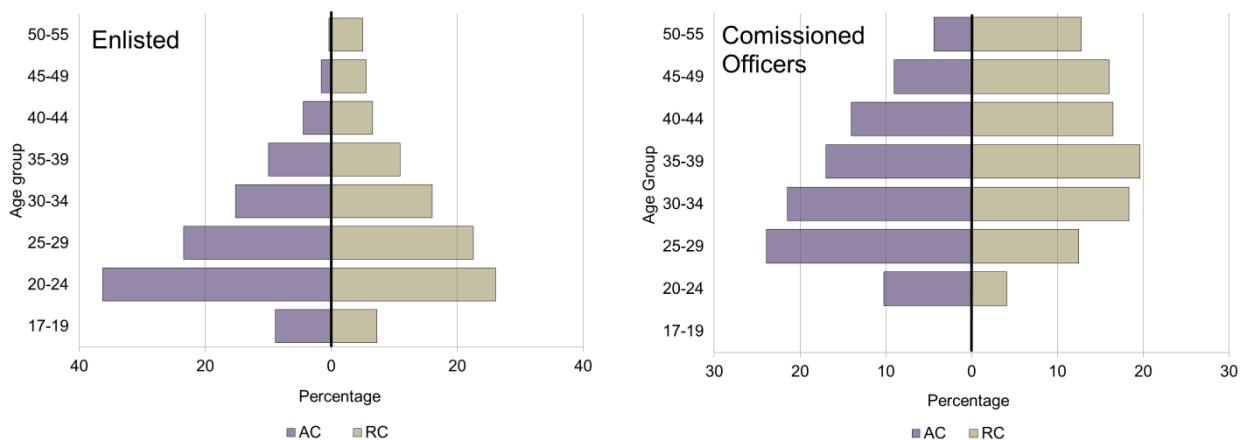

Source: Tables B15 and B22.
Note: The civilian benchmark for enlisted personnel is the civilian labor force. The civilian benchmark for commissioned officers is the civilian college graduate labor force, age 21 and older.

There also are some fairly large differences in the age distribution of the AC and RC (see Figure 39). The first panel is for enlisted personnel, and the second is for commissioned officers. The left side of each panel illustrates the AC age distribution, while the right side shows the RC distribution. Looking first at enlisted personnel, it is clear that the AC enlisted force is younger than the RC enlisted: Almost 11 percent of enlisted reservists are 45 or older, while the percentage for the AC enlisted force is strikingly smaller—2 percent. The differences for officers are equally dramatic; while 29 percent of RC officers are 45 or older, the comparable percentage in the AC is only 13 percent. Thus, although the civilian labor force is considerably older than either the RC or the AC, both officers and enlisted personnel in the RC are older than those in the AC.

Figure 39. DOD AC and RC age distributions, enlisted and officers, FY16

Source: Tables B15, C11, B22, and C17.

Quality of RC NPS enlisted gains

As in the AC, RC recruits are mostly those with Tier 1 education credentials and AFQT scores at or above the 50th percentile. In FY16, the RC had a smaller proportion of Tier 1 enlisted gains than the AC; 93.0 percent of RC enlisted gains were Tier 1 (see Table C-6), compared with 98.2 percent of NPS AC enlisted accessions (see Table B-7). The USMCR and the USAFR had the highest percentages of Tier 1 enlisted gains, and there were some fairly large differences by service (see Table 12).

Table 12. Quality of RC NPS gains, FY16

	ARNG	USAR	USNR	USMCR	ANG	USAFR	DOD
Tier 1	94.9	84.0	91.0	97.3	99.0	99.9	93.0
AFQT 50+	60.4	66.2	70.2	76.6	77.5	77.6	65.7

Source: Tables C-4 and C-6.

Gains for each reserve/guard component show that over 60 percent of NPS recruits scored at or above the 50th percentile on the AFQT. Overall, 66 percent of all NPS RC enlisted gains had AFQT scores at or above the 50th percentile in FY16, compared with 73 percent of NPS AC accessions (see Tables B-4 and C-4). Furthermore, as in the AC, the educational credentials and aptitude test scores of NPS reservists significantly exceed those of the civilian population.

RC married rates, gender, and racial/ethnic representation

There are some notable differences in married rates between AC personnel and reservists. Overall, even though RC personnel are generally older than their AC counterparts, RC personnel are less likely to be married than AC personnel, and their age-specific married rates are closer to those of civilians than to AC personnel (within age and gender groups in Table 13, we bold categories with the highest married rates).

Table 13. Percentage of married AC and RC enlisted personnel, with civilian comparisons by single years of age, FY16

	Enlisted men				Enlisted women		
Age	AC	RC	Civilian		AC	RC	Civilian
20	**14.3**	1.9	2.7		**22.4**	4.1	4.4
25	**50.1**	24.1	18.4		**48.1**	25.7	22.0
30	**74.0**	52.9	45.3		**56.7**	44.0	46.9
35	**84.0**	69.2	62.3		**61.5**	52.2	57.8
40	**86.0**	75.3	69.5		**62.3**	55.5	59.6

Source: Tables B-16 and C-12.
Note: The civilian data are for the civilian labor force age 17 to 55 and are from the Bureau of Labor Statistics' Current Population Survey, September 2015.

The most striking differences are at younger ages: for example, at age 20, both AC men and AC women are 3 to 7 times more likely than reservists or civilians to be married. Even at older ages, AC men are more likely than RC men to be married, and RC men are more likely than comparable civilians to be married.

The ordering of age-specific married rates from highest to lowest depends on age. At age 20, the ordering is AC, civilians, and RC for both men and women. The AC has higher marriage rates than the RC, which has higher rates than civilians for men age 25 and older. For women, the AC has higher marriage rates than the RC, which has higher rates than civilians for women at age 25, but the RC marriage rates are lower than civilian rates for women age 30 and older.

Thus, even though RC enlisted personnel are older than AC enlisted personnel, AC enlisted personnel are more likely than RC enlisted personnel to be married (50.1 percent vice 39.8 percent). In contrast, the married rates of AC and RC commissioned officers (not shown) are similar (67.8 and 67.7 percent, respectively).

Like the AC, the RC strives for a diverse force. In fact, both for enlisted personnel and officers, the RC has a higher percentage of female personnel than the AC. In FY16, the RC enlisted force was 19.4 percent female, while the AC enlisted force was 15.6 percent female. Within the RC's enlisted forces, the percentage of women varied from 26.7 percent for the USAFR to 3.6 percent for the USMCR. For commissioned officers, the AC was 18.1 percent female, whereas the RC was 20.0 percent female, and the percentages varied from 27.5 percent in the USAFR to 7.6 percent in the USMCR.[52]

The RC has more gender diversity than the AC, but the comparisons are less straightforward for racial and ethnic diversity. The AC enlisted force is more racially diverse than the RC enlisted force, but AC and RC commissioned officer comparisons show fairly equal racial and ethnic diversity if the unknown racial and ethnic backgrounds are distributed like the known racial and ethnic backgrounds. Table 14 shows these data.

The civilian comparison group for commissioned officers includes only college graduates. Both RC and AC commissioned officer percentages for blacks are close to the civilian benchmark, but Asians and Hispanics are underrepresented in the RC. Thus, in both the RC and the AC, Asians and Hispanics are underrepresented in the officer and enlisted ranks.

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[52] See Tables B-16 and C-11 for enlisted personnel and B-23 and C-18 for commissioned officers.

Table 14. AC and RC race and ethnicity percentage distributions for enlisted personnel and commissioned officers, FY16

	Enlisted personnel			Commissioned officers		
	AC	RC	Civilians	AC	RC	Civilians
Race						
White	69.4	74.4	77.0	82.8	82.8	77.6
Black	19.9	18.3	13.1	8.8	10.3	9.2
Asian	4.4	4.2	6.2	5.4	4.5	10.7
Other	6.3	3.1	3.7	3.1	2.5	2.6
Ethnicity						
Hispanic	17.1	12.3	18.7	7.7	6.4	9.1

Source: Tables C-13, C-20, B-17, and B-25. We used the portion of the source tables that distributed unknown race and ethnicities as known race and ethnicities.

Note: The racial category "other" includes American Indian/Alaska Native (AIAN), Native Hawaiian/Pacific Islander, and two or more races. The civilian data include the 18- to-55-year-old civilian labor force for enlisted personnel and the 21- to-59-year-old civilian college graduates for commissioned officers.

Section V: U.S. Coast Guard

The U.S. Coast Guard is the smallest of the five armed services. Part of the Department of Homeland Security (DHS) in peacetime, the Coast Guard may be called in wartime to join the Navy and, therefore, would fall under DOD jurisdiction.[53] Table 15 shows the breakdown of the Coast Guard's AC and RC endstrength in FY16.

Table 15. Coast Guard endstrength in FY16

Personnel category	AC	RC
Enlisted personnel	31,324	5,463
Commissioned officers	6,527	983
Warrant officers	1,746	127
Total	39,597	6,573

Source: Tables E-12, E-15, E19, E-24, E26, and E-29.

Thus, the Coast Guard is between one-fifth and one-fourth the size of the Marine Corps, making it the smallest of the U.S. military services.

Number and quality of AC NPS enlisted accessions

More than the other services, the Coast Guard has let accessions fluctuate as budgetary concerns and retention dictate in recent years. Figure 40 shows Coast Guard NPS and PS accessions since FY05. PS accessions always have been small, but NPS accessions were around 3,500 yearly from FY05 to FY09. In FY10, they dropped to 2,155, then rose in FY11 to 3,332, then dropped again in FY12 to 2,368, and again in FY13 to 1,424, before rising to 2,414 in FY14, to 2,809 in FY15, and to 3,199 in FY16.

Like the DOD services, the Coast Guard seeks high-quality recruits—those with AFQT scores at or above the 50th percentile and Tier 1 educational credentials. And, like the other services, the Coast Guard had another successful recruiting year in FY16. Figure 41 illustrates this, comparing Coast Guard recruiting achievement with the DOD AC services. Over 84 percent of Coast Guard recruits scored in the top half of the AFQT distribution, and almost 99 percent had Tier 1 educational credentials. The Coast Guard, Navy, and the Air Force had the highest percentages of high-quality recruits in FY16.

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[53] Title 14 of the United States Code governs the process by which authority over the Coast Guard may be transferred to DOD in wartime.
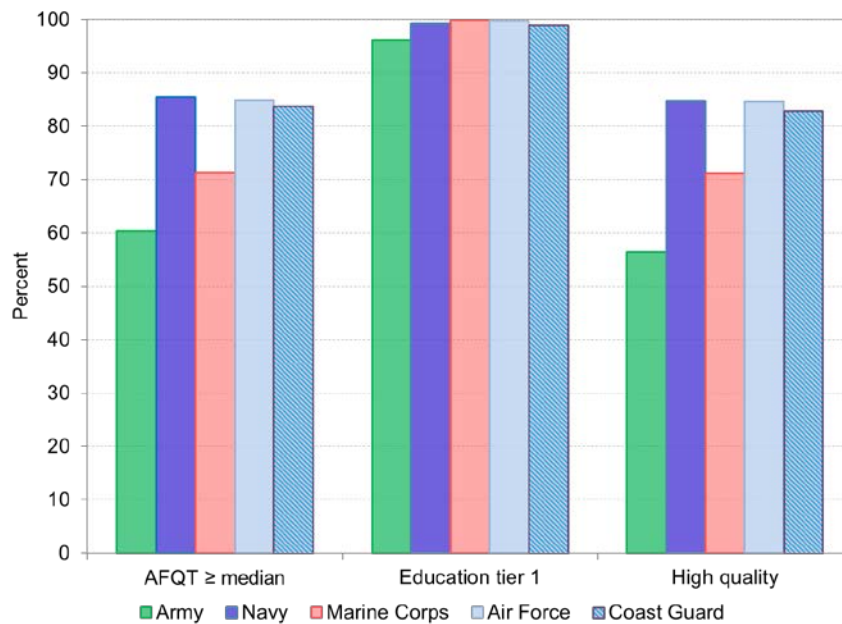
Figure 40. Coast Guard AC NPS and PS accessions, FY05-FY16
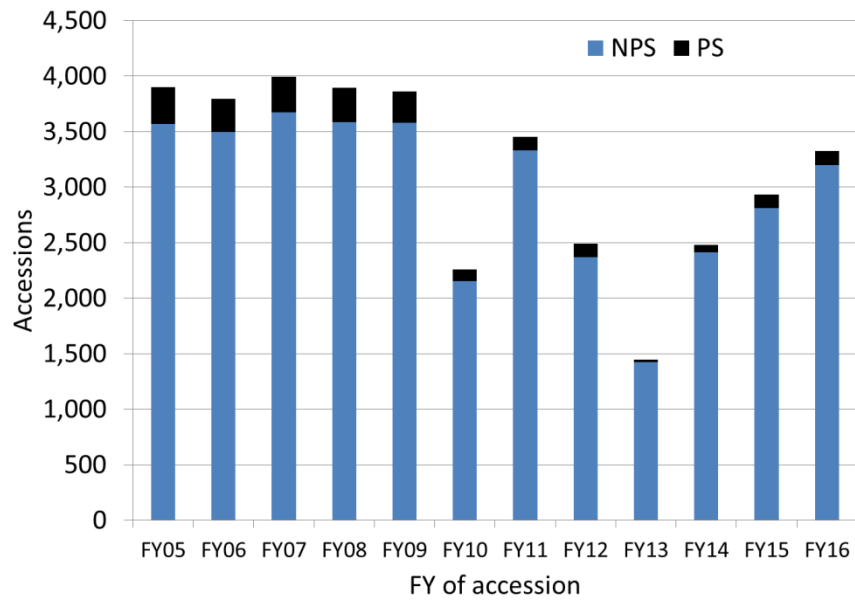
Source: Table E-7 and E-11.

Figure 41. Quality of AC NPS enlisted accessions, by service, FY16

Source: Tables B-4, B-6, B-8, E-7, E-8, and E-9.

Gender, race, and ethnicity in the U.S. Coast Guard

In FY15, the Coast Guard led DOD's AC military services in the percentage of female enlisted and commissioned officer accessions. In FY16, the Coast Guard's percentage of female officer gains (28.3 percent) led DOD's (22.9 percent), but its percentage of NPS female enlisted accessions (14.1 percent) was less than DOD's (18.3 percent).

In the Coast Guard, there is a larger percentage of women in the officer corps (21.7 percent) than in the enlisted force (13.8 percent). This difference is similar to those found in the AC Army and Air Force, but it differs from the Navy and Marine Corps in which the percentages of women in the AC enlisted force and the AC officer corps are similar.

The DOD RC has a higher percentage of women in both the enlisted force and the officer corps than does the DOD AC. That pattern continues in the Coast Guard, with women constituting 15.9 percent of the Coast Guard's enlisted reserve component (13.8 percent in the AC) and 23.9 percent of the Coast Guard's reserve officer corps (21.7 percent in the AC).

White non-Hispanics are overrepresented in the Coast Guard's AC NPS enlisted accessions and commissioned officer gains and in the enlisted and commissioned officer corps in our tables that distribute unknown racial and ethnic background like known racial and ethnic backgrounds.

In the next section, we recap the highlights of the FY16 *Population Representation in the Military Services.*

Section VI: Concluding Highlights

DOD has provided this congressionally mandated annual report on the demographic and service-related characteristics of U.S. military personnel every year since 1974. Available electronically since 1997, it is easily accessible to policymakers, the media, and the public at www.cna.org/research/pop-rep.

Overall, the All-Volunteer Force continues to be a success. Combat operations have been sustained in Iraq and Afghanistan for almost two decades now, while the military continued to meet other contingency operations throughout the world. Even with unemployment rates near record lows in the early years of the war, the military had tens of thousands of young men and women on waiting lists to join. The military has expanded and contracted in response to the country's needs, and it has done all this with a volunteer force that consistently met numerical recruiting goals.

In recent years, the military's size has been relatively stable after years of drawing down since FY10. In FY16, there were almost 1.3 million military personnel in DOD's AC and over 811,000 in its RC; the U.S. Coast Guard had an AC endstrength of almost 39,600 and a RC endstrength of 6,600. The Army is the largest of the DOD's military services, and the Marine Corps is the smallest; the Coast Guard is the smallest of the U.S.'s military services if we include it as well.

In FY16, the U.S. military continued to exceed the DOD recruit quality benchmarks of 90 percent Tier 1 educational credentials and 60 percent AFQT scores at or above the 50th percentile. The AC overall attained 98 percent Tier 1 and 73 percent AFQT scores at or above the 50th percentile. Overall, RC accessions were 93 percent Tier 1 and 65 percent top half AFQT scores. These AFQT scores at or above the 50th percentile exceed the civilian population by substantial amounts; only 51 percent of the civilian population scores in the top half of the ability distribution.[54] Non-citizen NPS enlisted accessions also exhibit high quality: across the DOD services, 68 percent of citizen accessions and 67 percent of non-citizen accessions were high-quality recruits in FY16.

Dimensions where it is generally agreed that is it good for the military to reflect society include socioeconomic background, geographic origin, and race and ethnicity. The socioeconomic backgrounds (as measured by neighborhood affluence) of FY16 AC accessions generally reflect the U.S. population's distribution, although enlisted recruits are somewhat underrepresented in neighborhoods in the lowest and highest household income quintiles.

Geographically, in FY16, NPS AC accessions from the South are overrepresented relative to the 18-to-24-year-old population, providing 20 percent more accessions than

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[54] When the AFQT was normed to the civilian population in 1997, 52 percent of men and 50 percent of women scored in the top half of the ability distribution.

their population share would indicate. Accessions from the Midwest are slightly underrepresented, and those from the Northeast are more underrepresented, providing only 72 percent of the numbers that their population share would indicate. The services have been quite successful in obtaining minority accessions from states with smaller minority populations. Still, military accessions come from all states and are reasonably representative of the U.S. population.

In the AC enlisted force, racial minorities are overrepresented, with the civilian labor market benchmark at 23 percent and DOD representation at 31 percent. This is primarily due to black overrepresentation as Asians are underrepresented. Hispanics also are underrepresented in the enlisted force, at fewer than 17 percent, while the civilian benchmark is 19 percent.

Because commissioned officers must be college graduates, we compare the percentage of military officers with the minority percentage of the 21-to-49-year-old college graduate labor force. In terms of minority representation in the AC officer ranks, both racial minorities and Hispanics are underrepresented. Although black officers are underrepresented (8.8 percent versus 9.5 percent), underrepresentation is more severe for Asians, who make up 5 percent of commissioned officers but 11.4 percent of the civilian benchmark population. Hispanics are underrepresented as well—7.7 percent versus 9.9 percent for 21-to-49-year-old college graduates in the civilian labor force.[55]

Finally, although the percentage of women in the AC enlisted force reached an all-time high of 15.6 percent in FY16, the percentage has moved little in the past two decades, fluctuating between 14 and 15 percent. By contrast, female AC commissioned officer corps representation has steadily climbed hitting 18.1 percent in FY16. Secretary of Defense Ashton Carter announced in January 2016 that all military positions would be opened to women without exception. This historic change cleared the way for women to serve alongside men in combat arms occupations and Special Force and infantry units. Most observers expect that these changes will lead to increased numbers of women in the military forces.

One notable diversity factor in the military that differs from the civilian workforce is the intersection of gender and race/ethnicity.[56] For both AC enlisted and officer forces, women are considerably more racially and ethnically diverse than men. The dominance of women in racial and ethnic minority servicemembers also is found in FY16 female enlisted accessions and officer gains. These gender differences are large and are found

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[55] As in the text, we assume that missing racial or ethnic information is distributed the same way as known racial/ethnic distributions.

[56] See Figure 23 and Figure 25 for these differences in the civilian benchmark and the enlisted and officer forces, respectively.

in every service. Such differences are not found in the civilian workforce. In addition, non-citizen NPS enlisted accessions tend to be more female than citizen accessions.

The RC has a larger percentage of women than the AC. RC personnel are older than AC personnel, but servicemembers in both components are considerably younger than the civilian labor force. By age, military personnel are more likely than civilians to be married, and, in general, AC male personnel are more likely than female personnel to be married.