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Intergenerational Transmission of Occupation: Lessons from the United States Army
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ABSTRACT

This paper estimates causal intergenerational occupation transmission in the military using discontinuities in parents' eligibility for service from the Armed Forces Qualification Test. A parent's enlistment in the Army increases their children's military service propensity by between 58% and 110%. Intergenerational occupational transmission rates vary by race and sex—they are highest for demographic groups whose parents gained the most economically from service and for same-sex parent-child pairs. Our findings provide new evidence on the mechanisms driving intergenerational occupation correlations and indicate increasing access to good occupations is an important channel for improving intergenerational economic mobility for less advantaged groups.

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1 Introduction

When disadvantaged workers get good jobs, do their children follow in their footsteps? Occupational segregation is widespread in the labor market with many high-paying occupations like legislators, economists, lawyers, doctors, plumbers, and dentists concentrated among advantaged demographic groups. Furthermore, occupational segregation between Black and White Americans is an important driver of racial wage inequality: relative to White workers, Black workers are underrepresented in positions of authority and are concentrated in lower-quality occupations (Jardina et al., 2023). Intergenerational occupational transmission is one channel through which such occupational inequalities might persist or be broken. Indeed, the topic of intergenerational occupational mobility has attracted significant research attention. Conley and Glauber (2005), Black and Devereux (2011), Long and Ferrie (2013), Jacobs et al. (2017), and many others, have documented strong familial correlations in earnings and occupations. In Figure 1, we show that it is nearly universally true that a child is more likely to work in an occupation if they have a parent who has worked in the occupation. How much of the correlation between parent and child occupation is causal? What are the intergenerational consequences of under-represented groups gaining access to high-quality occupations and what can this teach us about barriers to entering a given occupation?

As noted by Emran and Shilpi (2011), finding credible exogenous variation in *occupation* is extremely difficult. We start to bridge the gap between evidence of intergenerational occupational correlations and causal intergenerational spillovers by documenting causal intergenerational transmission in the United States military.[1] Army admission policies provide a rare opportunity to recover causal estimates of intergenerational occupational transmission in one of the most common occupations for disadvantaged Americans. The United States military is the largest employer in the United States.[2] Not only does the military employ more non-college-bound young adults than the entire manufacturing sector (Ruggles et al., 2024),[3] it provides many people, particularly those from less advantaged demographic groups, with opportunities for upward economic mobility (Greenberg et al., 2022). Using the universe of active-duty Army applicants from 1990-2004 and regression discontinuity designs at two Armed Forces Qualification Test (AFQT) score cutoffs—at the 31st and 50th per-

[1] Working in the military is its own 2-digit standard occupational classification code. As a result, throughout the paper we will refer to military transmission as occupational transmission.

[2] The U.S. Department of Defense currently employs over 2.6 million personnel as servicemembers (Active Duty, Reserve, and Guard) or civilians DoD Personnel, Worforce Reports & Publications (accessed 18 November 2024). *Forbes* lists Walmart, with 2.3 million employees in 2022, as the largest private employer in the U.S. Top 10 Largest Fortune 500 Employers In The U.S. (accessed 18 November 2024).

[3] In a 2015-2019 5-year ACS sample the military and manufacturing sectors employ 4.6% and 4.2% of 18-22 year-old's with no college education, respectively.

centile of national math and verbal ability—we estimate the effects of a parent's enlistment on their children's military service.[4]

We find that when a parent enlists due to crossing the 31 or 50 AFQT threshold, their children are approximately 6 percentage points more likely to serve, which represents a relative increase of 110% and 58%, respectively. Among the same cohorts in the overall U.S. population, we find that children of military parents are about 10 percentage points more likely to serve than children of non-military parents. Paired with our estimates, this suggests that approximately half of the intergenerational correlation is causal. However, these average effects mask substantial heterogeneity; we uncover important differences in the effect of a parent serving in the Army by race. Children of Black applicants are 158% (31 cutoff) to 223% (50 cutoff) more likely to enlist if their parent enlists. Children of White applicants may be more likely to enlist if their parent does, but the effects are smaller and not statistically different from zero (21% and 9% at the 31 and 50 cutoffs, respectively).

Differences in the effects by race, along with prior estimates of the causal effects of service on earnings, suggest that the value of military experience for parents is an important contributor to intergenerational occupation transmission. Greenberg et al. (2022) find that, among a population that includes the parents in our sample,[5] long-run earnings increases due to service are concentrated among Black enlistees and Hispanic enlistees at the 31 cutoff. We observe strong intergenerational transmission in these subgroups. In contrast, Greenberg et al. (2022) find White enlistees and Hispanic enlistees at the 50 cutoff do not experience significant long-run changes in earnings and we do not see significant intergenerational transmission within these groups. Overall, we find a 77% correlation between the Greenberg et al. (2022) subgroup long-run earnings effects for parents and the corresponding intergenerational transmission of occupation to children.[6,7]

The intergenerational transmission we document also follows correlational patterns across parent-child sex pairs and is driven by the application stage of the job search process. A

[4]The Department of Defense (DoD) requires at least 96% of recruits to have an AFQT score of 31 or higher and 60% of recruits to have an AFQT of 50 or higher. As a result, the Army seldom accepts applicants with AFQT scores below 31 and frequently requires applicants to score 50 or higher to receive enlistment bonuses. In Greenberg et al. (2022) we use the same regression discontinuities and empirical approach to study the effects of military service on applicants' economic outcomes including earnings, employment, disability, and education.

[5]Relevant estimates from Greenberg et al. (2022) also include non-parents from the applicant cohorts included in our sample (1990-2004) and three cohorts of younger applicants (2005-2007).

[6]This correlation is calculated for the 5 demographic (by sex) groups of applicants examined in Greenberg et al. (2022) at each of the two cutoffs for a total of 10 subgroups. Groups of parent applicants include Black mothers, Black fathers, White mothers, White fathers, and Hispanic parents.

[7]An alternative explanation for these relationships and our main finding is that increased earnings of parents directly make them more likely to enlist in the military, but as we later discuss, this is unlikely to explain much, if any, of the effect.

growing body of research suggests that children are more likely to share an occupational field (Emran and Shilpi, 2011) or employer (Staiger, 2021) with a parent if they also share their parent's sex. We find evidence that this pattern is causal in our context: exogenous variation in parent military service has a stronger effect on children's service when the parents and children share the same sex, which is notable for a traditionally male-dominated field.[8] Because we observe both Army application and subsequent enlistment, we are also able to investigate the extent to which observed effects stem from higher application rates or a greater likelihood of successfully enlisting conditional on applying. We find the effects of parental enlistment on a child applying to the Army are as large, or larger than, the effects of serving in the Army. This suggests that parental service increases children's interest in serving and does not just increase preparedness or possession of traits valued by the military.

There are a variety of mechanisms by which a parent's occupation may increase a child's propensity to work in the same occupation. These include direct nepotism/job connections, transmitting occupation specific human capital (e.g. skills, fitness), and increasing children's interest in the occupation (e.g. conveying information about returns or shaping preferences). In our context, there is little scope for nepotistic job placement.[9] Since occupational transmission varies strikingly by race and sex and is strongest for the demographic groups whose parents gained the most financially from service, simple mechanisms where parents increase child military service absent having a positive economic experience themselves (e.g. increase patriotism independently of changes in perceived benefits of service) are poorly suited to explain our results. Instead, our findings are most consistent with parents who directly learned about the benefits of service influencing their children's skills, information sets, and preferences. Since we estimate effects on application to service that are at least as large as effects on service – findings that would be hard to reconcile with a pure human capital story – our results suggest increased interest on the child's part, not just higher rates of successful enlistment among applicants. These changes in interest could be driven by direct informational transmission about occupational quality to children, but also from parents shaping preferences for aspects of military service.

Last, our results suggest that non-parental-occupational factors, such as the many other aspects of the environment and innate traits, can have a meaningfully different role in intergenerational occupation correlations for different populations. We find that if a Black

[8]These findings also complement related causal research that indicates that the influence of teachers and leaders is strongest when they are the same sex as the individual (Carrell et al., 2010; Kofoed et al., 2019) though these effects are typically asymmetric (for females only) and the effects of same-sex siblings or parents are inconclusive (Altmejd et al., 2021; Dahl et al., 2020).

[9]The military admissions process is standardized and requires applicants to meet objective aptitude test, health, and physical fitness admissions criteria. Thus parents who have served are unlikely to be able to influence admissions decisions.

applicant scores below one of the AFQT thresholds and does not serve, then their child is no more likely to serve than an average Black American their child's age. However, the children of White Army applicants who do not serve due to being below an AFQT cutoff serve at approximately twice the rate of similarly-aged White Americans. Thus, even though children of all servicemembers are more likely to serve than the general population, the children of Black servicemembers are primarily influenced by the causal effect of their parent's occupation, while the children of White servicemembers are not and instead must have other factors driving them to serve. These could include, for example, environmental and social factors like friends, school and family connections that predispose them to military service.

Overall, our findings offer insights for both the Army and for understanding broader occupational transmission. Our results speak directly to the drivers of Army enlistment, a key concern as the force missed its active-duty enlistment goals in 2022 and 2023 and faces one of its greatest recruiting challenges since the advent of the All-Volunteer Force.[10] Perhaps surprisingly to many, including military leaders and scholars of civil-military relations,[11] among White children, having a parent who served is not an important driver of service. Overly focusing on this as a cause of, or a solution to, recruiting challenges mistakes correlation for causation. Many other factors could lead children of White applicants to serve. In contrast, for more disadvantaged groups, having a parent who served appears to be important, while other factors seem not as strong. Our findings suggest that designing policies to increase the returns to military service, and identifying factors beyond parental influence that encourage service among White children or that create barriers to enlistment among disadvantaged populations, may provide the best options for increasing future enlistment.

Crucially, our findings enhance our understanding of occupational transmission beyond just the military. First, comparisons between the military and other occupations, while correlational, support external validity. Occupational transmission rates for the military fall squarely in the middle of the distribution of occupations (Figure 1). Second, there is no significant effect of military service on whether a child ever shares any employer (military or non-military) with their parent. If causal transmission were unique to the military, we would expect strong positive effects on this outcome. Instead, our null results suggest that intergenerational transmission occurs across a wide range of jobs. Finally, we identify a key driver of occupational transmission—that parents are more likely to transmit a job to their children when it yields long-term economic benefits—that plausibly extends to a wide range

[10] See, for example: America isn't ready for another war–because it doesn't have the troops; and Why recruiting and confidence in America's armed forces is so low right now, (accessed 22 October 2024).

[11] For example: Recruiting Shortfalls and Growing Mistrust: Perceptions of the U.S. Military. Hearing Before the Subcommitee on Military Personnel of the Committee on Armed Services House of Representatives, (accessed 18 November 2024), and Schafer (2017).

of occupational settings. Indeed, consistent this channel, across all the occupations in Figure 1, we find a 36% raw correlation between median occupation wages and the occupational transmission rates.[12] This strong correlation suggests that increasing access to the military and *other good jobs* can promote intergenerational mobility among less advantaged groups.

Related Literature. In the U.S., intergenerational income mobility rates vary substantially across place, class, and race (Chetty et al., 2014b,c, 2020, 2024). One component of intergenerational income mobility is intergenerational occupational transmission. Using Canadian Census data, Haeck and Laliberté (2023) estimate that a third of intergenerational income mobility can be explained by occupations. A wealth of papers document large familial correlations in both earnings and occupations (see e.g. Adermon et al., 2021; Conley and Glauber, 2005; Black and Devereux, 2011; Long and Ferrie, 2013; Jacobs et al., 2017, among many others). For example, Long and Ferrie (2013) find that 80% of male U.S. farmers sampled between 1949 and 1973 had a father who was also a farmer. Evidence from more recent cohorts shows strong intergenerational occupation correlation among physicians (Lentz and Laband, 1989), lawyers (Laband and Lentz, 1992), pharmacists (Mocetti, 2016), and other professions with high barriers to entry (Aina and Nicoletti, 2018). In the military, approximately 30% of recruits have a parent who has served (Philipps and Arango, 2020)—a share that is nearly identical to the share of tenure-track faculty at selective institutions who have a parent with a Ph.D. (Morgan et al., 2022). These associations highlight the potential importance of intergenerational occupational transmission, but direct causal evidence is scarce.

Although causal evidence for intergenerational occupational transmission is limited, there is some causal evidence for intergenerational spillovers in choices *related to* occupation and employment. For example, Dahl et al. (2020) use cutoff scores for high school majors in Sweden and find that children are approximately 20% more likely to choose a major if their father was admitted into the major.[13] Using a discontinuity approach, Dahl and Gielen (2021) find children are 11% less likely to participate in disability programs if their parent's disability benefits were significantly reduced due to missing an implemented DI cutoff. Oreopoulos et al. (2008) find that children whose parents are displaced by company closures have lower earnings and are more likely to be unemployed. Most directly, using close elections Dal Bó et al. (2009) show causal evidence of intergenerational transmission of political power and that dynastic prevalence in Congress appears particularly high relative to other occupations.

[12] Measure of median wages by occupation come from 2013 Census tabulations. Source: https://www.census.gov/data/tables/time-series/demo/industry-occupation/median-earnings.html

[13] There is also a literature exploring intra-generational spillovers in education choices. See, for example Altmejd et al. (2021); Joensen and Nielsen (2018).

Goodman and Isen (2020) show causal evidence of intergenerational military service using variation in parental conscription. Relative to causal transmission of political power and conscription-based service, our estimates explore causal occupation transmission in a setting where the demographic composition, job choice, and hiring process are more representative of the U.S. population.

Our setting also allows us to speak to the potential mechanisms underlying occupational transmission. There are many potential reasons for similar occupational and economic outcomes between family members, including heritable traits, shared environments, human capital transmission, and nepotism, and it can often be hard to distinguish these channels. Twins have stronger earnings correlations when they are identical vs. non-identical (Taubman, 1976) and children only share education outcomes with a father when they are conceived with a father's sperm vs. a donor's Rasmussen et al. (2024), suggesting that heritable traits play an important role in family correlations. Other research suggests that neighborhoods, schools, parents, teachers, and peers have a significant impact on economic outcomes (see e.g. Björklund et al., 2006; Chetty et al., 2016, 2011, 2014a; Carrell et al., 2018; Chyn, 2018; Chyn et al., 2022), including recent research on the impact of neighborhoods on children in military families (Kawano et al., 2024), implying shared environments may also significantly contribute to family correlations. Children benefit when parents are exposed to greater education opportunities (Currie and Moretti, 2003; Lundborg et al., 2014), suggesting that human capital transmission matters. Evidence such as Staiger (2021); Mocetti et al. (2022); Dal Bó et al. (2009) suggests children are more likely to work for their parent's employer when their parent is in a job with high earnings, barriers to entry, or prestige. This could be due to nepotism or the fact that a parent's occupation is more likely to influence a child's occupation choice when it has positive economic returns. We show direct evidence that causal occupational transmission occurs in the absence of nepotism and that intergenerational transmission is higher when parents gain more economically from the job and when it is transmitted through more similar parent-child pairs.

2 Background

2.1 Enlistment Process

For parents of children in our sample, applying to the Army involves meeting age, citizenship, criminal background, physical fitness, medical, and aptitude test requirements.[14] To meet aptitude requirements, all applicants must take the Armed Services Vocational Aptitude

[14]Exceptions may be made to these requirements through a waiver system.

Battery (ASVAB). The ASVAB consists of 10 subtests, four of which focus on math and reading ability and are combined to generate an applicant's Armed Forces Qualification Test (AFQT) score.[15] An individual's raw AFQT score is converted into a scale score from 1-99 where each score corresponds to an individual's national percentile rank of reading and math ability among 18- to 23-year-olds.

Non-high school graduates who score below 31 on the AFQT are ineligible for service. Department of Defense policy also stipulates that no more than 4% of all enlistees can have AFQT scores below 31 and that 60% of enlistees must have AFQT scores of at least 50. To comply with these rules, the Army rarely offers enlistment contracts to applicants with AFQT scores below 31, restricts, or offers larger, enlistment bonuses to applicants with AFQT scores of 50 or higher,and sometimes requires GED holders to score 50 to enlist (DoD, 2004; U.S. Army Recruiting Command Regulation 601-96, 2012). These policies generate discontinuities in military service at first-AFQT score thresholds of 31 and 50 (see Figure 2).[16]

2.2 Army and Veteran Experiences for Enlisted Parents

Parents of children in our sample who enlist spend an average of 5.6 years serving in the military, predominantly in Active-Duty Army service. The modal experience of an enlistee is to serve one term of service (usually 3 to 4 years), although approximately 25% of soldiers fail to complete their first term and about 10% serve more than 10 years (Greenberg et al., 2022). Once in the Army, enlistees specialize in a military occupational specialty (MOS). While around 40% of soldiers in our sample work in combat MOSs (e.g. infantry), a majority of enlistees work in non-combat MOSs, such as automobile mechanics or logistics. Nevertheless, experiences across MOS share much in common (including, for the most part, pay and benefits) and all soldiers can be deployed. Benefits of enlistment include free personal and family health care, subsidized childcare, and access to student loan repayment and tuition assistance programs. Risks include exposure to violence, with about half of soldiers being deployed to a combat zone, 2% wounded in action and 0.2% killed in action.[17]

[15] The full suite of subtests is used to construct several 'line scores' that determine eligibility for the various military occupational specialties, but these line scores are constructed using different groupings of subtests from those that make up the AFQT.

[16] Applicants are eligible to retake the ASVAB after waiting 1 month after their first attempt, 1 month after their second attempt, and 6 months after subsequent attempts. We use the first AFQT scores on file because there is substantial selection on retaking based on initial AFQT scores. Greenberg et al. (2022) find that 38% of applicants with scores just below the 31 cutoff retake at least once and 16% of applicants just below the 50 cutoff retake at least once, but that retaking more than one time is somewhat rare.

[17] Bruhn et al. (2024) find that while combat deployments have a positive, causal effect on injuries, deaths directly attributable to combat, and receipt of disability compensation, exposure to combat has few detectable effects on suicide, deaths of despair, criminal misconduct, credit scores, and educational attainment.

After leaving service, veteran parents in our sample are eligible for a number of benefits including access to free or subsidized health care, disability compensation, and education benefits. Most veterans pay few out-of-pocket costs for health care provided through the VA. Additionally, a significant fraction of veterans receive compensation for service-related disabilities. VA disability benefits are typically not work-limiting and range from monthly payments of $170 to $4,000 depending on the severity of the service-connected disability. Finally, a majority of veteran parents in our sample are eligible for generous Montgomery or Post 9-11 GI Bill benefits, which entitle eligible enlistees to generous tuition and housing benefits while attending college.

3 Data and Sample

3.1 Data Sources

To construct our data, we merge Army applicant records from the U.S. Military Entrance and Processing Command (MEPCOM) from 1990-2021, with administrative U.S. Army service and pay records (1990-2021), federal tax records (1996-2021), and Social Security Administration family records (1987-2021).

3.2 Sample Construction

Our sample consists of 976,064 individuals who we identify as a child of someone who applied to enlist in the active-duty Army between 1990 and 2004.[18] We identify an individual as a child of an Army applicant if they are claimed by the applicant as a dependent child on Form 1040 or if the applicant is listed as one of their parents on their application for a Social Security Number. We restrict our sample to dependent children who are born between 1972 and 1999, are at least 16 years younger than their parent, and, if they are identified through Form 1040 filings, are claimed by a servicemember before turning 18 years old.[19] After these restrictions, our sample consists of 976,064 children of 511,701 applicants with AFQT scores

[18]We limit our sample to children of active-duty Army applicants because our data do not include applications to other active-duty branches of the military or applications to the Army Reserves or the Army National Guard. However, military application administrative records indicate whether an active-duty Army applicant enlists in the Army or into another branch of the military, the Army Reserves, or the Army National Guard.

[19]Following Greenberg et al. (2022), we also exclude children of applicants who served in the military prior to their application to the active-duty Army or who took their ASVAB in high school as part of the ASVAB Career Exploration Program. We omit these observations because applying to service is optional for those in the Career Exploration program and there is evidence that students apply to the Army in response to their scores (Greenberg et al., 2022).

close to our two cutoffs (between 12 and 68).

Table 1 presents summary statistics for our sample.[20] Panel A presents the characteristics for applicants (parents) and panel B presents characteristics for children of applicants. Parents in our sample are, on average, 21 years old at application, mostly male (71%), and below the median of math and reading ability (AFQT of 40.3 vs 50). These parents mostly have not attended college (96%) by the time of their Army application. Compared to a nationally representative sample of 17- to 23-year-olds from the 2000 Current Population Survey (CPS), parents in our sample are disproportionately Black (38% vs. 15%) and non-Hispanic (89% vs. 85%). Applicants are also from disproportionately disadvantaged counties in terms of household incomes, employment, and Chetty and Hendren (2018) measures of inter-generational mobility (Greenberg et al., 2022). These parents are also young: on average, parents in our sample have their first child before they turn 21 years old.

On average, children in our sample are born five months after their parent enlists. As these children grow up, most will attend college (61%) and a significant fraction (10%) will serve in the military. This rate of service is much higher than the 3.5% service rate among the population of similarly-aged young people in the United States (Ruggles et al., 2024).

3.3 Outcomes

We link each individual in our analysis sample to tax records and Army administrative records from 1990-2021. Our primary treatment is whether a parent serves in any branch of the military (though this will generally reflect active-duty Army service as crossing our thresholds has little impact on enlistment in other services) and our primary outcome is whether children of applicants serve in any branch of the military.[21] Related outcomes are whether the children of applicants apply to and enlist in the active-duty Army, specifically, which we are able to construct because we have information on applications to the active-duty Army in our Army administrative records.

[20] Summary statistics separated by AFQT analysis windows are presented in Table A.1.

[21] Hence, for both parents and children, enlistment encompasses serving in the active-duty Air Force, Army, Navy, Marines, or Coast Guard, any branch's Reserves, or the National Guard. For parents in our sample, this is recorded in the military application administrative records. For children in our sample, we identify military occupation based on the Employer Identification Number (EIN) on Form W-2 issued to the individual.

4 Estimating Framework

4.1 Empirical Approach

Our empirical strategy follows Greenberg et al. (2022) by using service and bonus eligibility cutoffs for Army service in the Armed Forces Qualification Test to estimate the effects of military service. Panel A of Figure 2 graphically depicts the relationship between a parent applicant's first AFQT score on record and the probability they enlist.[22] There are discrete jumps in the probability that parents enlist of 9.7 percentage points at an AFQT score of 31 and 8.9 percentage points at an AFQT score of 50 (see Table A.2 which shows the first stage of our fuzzy regression discontinuity (RD) approach).[23] In our empirical strategy, we use AFQT test-score cutoffs (AFQT≥31 and AFQT≥50) as instruments for parents enlisting in the U.S. military.[24] Specifically, our reduced-form estimation equation is:

$$\text{Reduced Form:} \qquad y_{cp} = f(AFQT_p) + \beta(AFQT_p \geq CUT) + \mathbf{X}_p'\gamma + \eta_{cp} \tag{1}$$

And we estimate the effects of parental military service on child outcomes with the following two stage least squares (2SLS) model:

$$\text{First Stage:} \qquad Enlist_p = f(AFQT_p) + \beta_1(AFQT_p \geq CUT) + \mathbf{X}_p'\gamma_1 + \nu_p \tag{2}$$

$$\text{Second Stage:} \qquad y_{cp} = f(AFQT_p) + \beta_2 Enlist_p + \mathbf{X}_p'\gamma_2 + \epsilon_{cp} \tag{3}$$

$Enlist_p$ is an indicator for a parent's military service in any branch of the military. y_{cp} is an outcome for a child c of parent p such as whether a child serves in the military. $f(AFQT_p)$ is a function of a parent's first AFQT score on record. In these equations, $CUT = 31$ when we estimate effects at the 31 cutoff and $CUT = 50$ when we estimate effects at the 50 cutoff. $AFQT_p \geq CUT$ is an indicator for a parent's first AFQT being at or above the 31 or 50 AFQT cutoff. We estimate effects at each cutoff separately. Furthermore, X_p is a vector of parent characteristics measured prior to application, which always include quarter-by-year

[22] Panels B and C of Figure 2 show first stage estimates for Black and White applicant parents, respectively.

[23] Table A.2 also report race-specific first stage estimates, demonstrating strong first stages at both cutoffs for both Black and White applicants.

[24] Although our endogenous variable is enlistment in any military service, a significant majority of enlistees in our Army applicant sample join the active-duty Army. Crossing either cutoff has little impact on enlistment in non-active-duty Army service, so our estimates generally reflect the effects of active-duty Army service (Greenberg et al., 2022).

of application fixed effects. Finally, η_{cp}, ν_p, and ϵ_{cp}, are idiosyncratic error terms. When estimating the effects of a parent's service among children of Black and White applicants, we estimate Equations 1, 2, and 3 separately by race.

In our primary specification, $f(AFQT_p)$ is a quadratic function of AFQT scores with a bandwidth of 19 (our maximum symmetric bandwidth at both cutoffs) and a rectangular kernel. We allow this function of AFQT to differ on either side of the cutoff. We also estimate a variety of alternative specifications with different functional forms (e.g., linear, linear with a triangular kernel, quadratic with a triangular kernel), bandwidths (e.g. 3, 4, ..., 19), and demographic controls (e.g., parent age, sex, race, education, and home state). Heteroskedasticity-robust standard errors clustered at the parent-applicant level are reported in all cases.

Our parameter of interest is β_2, which identifies the local average treatment effect (LATE) of a parent's military service among children who have parents near the applicable AFQT cutoff and were induced to serve or not serve in the military based on their position relative to their cutoffs. Complier parents at the lower cutoff are applicants who only receive and accept an offer of enlistment when they achieve an AFQT score of 31 or greater on their first recorded ASVAB test. At the higher cutoff, most complier parents are applicants who receive any bonus offer (or a larger bonus offer) due to scoring at least 50 on their first recorded AFQT and who serve because of the bonus offer. In addition, roughly one-third of compliers at the higher cutoff are GED holders without a high-school diploma, many of whom only receive an enlistment offer by scoring at least 50 on the AFQT.

4.2 Validity of the Discontinuity Design

A primary threat to the validity of our empirical approach is discontinuity in potential outcomes at the threshold, as discussed in McCrary (2008) and Frandsen (2017). While applicants are unlikely to be able to manipulate their AFQT score on any given ASVAB test, one possible source of discontinuity in potential outcomes across cutoffs is differential ASVAB retaking patterns around AFQT cutoffs. Specifically, certain applicants just below admissions cutoffs may retake the test until they attain a score above the cutoff. Because it is likely that children of applicants who retake the ASVAB until they score above an AFQT cutoff have different potential outcomes than children of applicants who do not retake the test, an RD using applicants' most recent AFQT score would not be valid. Instead, we use applicants' first recorded AFQT score for our RD design (as in Greenberg et al. (2022)).

A second potential source of discontinuity in potential outcomes specific to this paper is an effect of military service on fertility or whether a parent claims a dependent child on

Form 1040 (which is how we identify a large fraction of children of applicants). If military service affects fertility or claiming children via Form 1040 filing, those who we identify as parents of children within the applicants in our sample may differ on important dimensions across the cutoffs *even if* we observe balance in the full sample of applicants across both cutoffs.

One way we can investigate whether enlistment affects fertility or child-claiming behavior is to visually inspect the density of children at each parent AFQT score around both cutoffs. In Figure A.1 we show the density of children at each parent AFQT score for our full sample, children of Black applicants, and children of White applicants in panels A, B, and C, respectively. Although there is heaping at certain AFQT scores in each panel of Figure A.1, this is due to how raw AFQT scores are converted into percentile scores.[25] However, there does not appear to be differential heaping across either AFQT threshold in panels A, B, or C, suggesting applicants are unlikely to be manipulating their scores around the cutoff or significantly changing their fertility or child-claiming decisions at either cutoff.[26]

Another way that we can investigate whether Army service affects having children is to use our two-stage least squares RD design to directly estimate whether enlistment affects child-matching outcomes. In panel A of Table A.3, we estimate the effect of enlistment on whether an applicant is ever linked to any children that meet our matching requirements outlined in Section 3.2.[27] In columns 1-2, we do not find any significant effects of enlistment on being linked to children at either the 31 or 50 AFQT threshold.[28] Similarly, in columns 3-4, we do not find any significant effects of enlistment on being a parent at either threshold among Black applicants in our sample. In column 5 we do find that enlistment leads to a marginally significant 9.0 percentage point reduction in parenthood among White applicants at the 31 AFQT cutoff, but that enlistment leads to a positive and insignificant effect of parenthood among White applicants at the 50 cutoff. In panel B we estimate the effect of enlistment on the number of children applicants are linked to and do not find any evidence

[25] This bunching occurs at points where multiple raw AFQT scores correspond to a single AFQT percentile score (Mayberry and Hiatt, 1992; Segall, 2004).

[26] Formal tests for manipulation of scores around AFQT cutoffs using the methods described in McCrary (2008) or Frandsen (2017) cannot be employed in our sample because they assume continuity or local smoothness in the running variable. Instead, we estimate Equation 1 on data collapsed to the first AFQT score level where the outcome is the number of applicants per AFQT score. The results of these tests do not indicate a significant discontinuity in the density at either cutoff.

[27] These include a child being born between 1972 and 1999 via Form 1040 filing or Social Security Administrative records, being at least 16 years younger than the parent, and matching the parent prior to turning 18 years old.

[28] The means are low because any children born after 1999 are not included in our parent-child sample. While many parents in our sample have children after 1999, we exclude these children because they are not old enough to enlist in the military in our data. This restriction means we are excluding a larger portion of children of servicemembers from later enlistment cohorts in our data.

that military service changes the number of children applicants have. Together, panels A and B suggest that the effects of enlistment on fertility or claiming children on tax forms are unlikely to be a significant source of bias in our study.[29]

To provide further evidence of the validity of our design, we examine whether applicants who have children have differing observable characteristics on either side of AFQT cutoffs in Table 2. In Table 2 we examine balance for 54 variable/sample/cutoff combinations and find four instances of imbalance at the $p<0.10$ level, two instances of imbalance at the $p<0.05$ level, and one instance of imbalance at the $p<0.01$ level—similar to what we would expect to find by chance. Looking closer, in column (1) we explore differences at the 31 cutoff in age, sex, pre-application education, age at birth of first child, and the applicant's number of children. Of these variables, none vary across the cutoff and these characteristics are jointly insignificant. We find similar balance at the 50 cutoff in column (2), with only whether a student has low education levels (i.e. not finishing high school) differing at the 10% level. In column (3), only whether applicants have attended some college differs (at the 10% level) across the 31 cutoff for Black applicants and all the variables are jointly insignificant. In column (4), we do see imbalance across the 50 cutoff in whether Black applicants were in high school or had not completed high school at the time they applied, which contributes to the variables being jointly significant ($p=.04$), but find age, sex, fertility, and other education variables balance across the cutoff. In columns (5) and (6) we find evidence of balance for White applicants at both cutoffs. In all, our Table 2 suggests that applicants look similar across both 31 and 50 AFQT cutoffs in our full sample and Black and White subsamples.[30]

5 Intergenerational Effects of Military Service

5.1 Military Occupation Transmission

In panel A of Figure 3 we show the reduced-form relationship between a parent's first AFQT score and the likelihood that their child serves in the military. At both the 31 and 50 AFQT cutoffs, we observe jumps in the probability that a child serves in any branch of the military (Army, Navy, Marines, Air Force, Coast Guard, Reserves or National Guard). Columns 1 and 2 of Panel A, Table 3 show two-stage least squares (2SLS) estimates of parent's military service on the probability that a child serves. We find that a parent serving increases the probability that their child serves by 6.2 percentage points at the 31 AFQT cutoff ($p<0.05$)

[29]Figures A.2 and A.3 show the reduced form plots that correspond to Panel A and B in Table A.3, respectively.

[30]Reduced form plots corresponding to Table 2 for our full sample, Black subsamples, and White subsamples can be found in Figures A.4, A.5, and A.6, respectively.

and by 5.5 percentage points at the 50 AFQT cutoff ($p<0.10$). When we estimate the untreated complier means for children with parents just below the cutoffs (i.e., children with a parent who did not serve because the parent scored just below the relevant cutoff), we find that 5.6% of these children with parents near the 31 cutoff serve in the military and 9.4% of these children with parents near the 50 cutoff serve in the military.[31] Therefore, our estimates suggest that a parent enlisting in the Army increases the probability that their children serve in the military by 110% and 58% at the 31 and 50 cutoffs, respectively. In the overall population among the same cohorts, we find that the children of parents who served in the military are 11.7 percentage points more likely to serve themselves. Thus, a back-of-the-envelope comparison suggests that in our context half of the intergenerational transmission of occupation in causal.

While children of Army applicants who enlist at significantly higher rates than children of applicants who do not enlist, we also find that children of those who do not enlist due to having AFQT scores below cutoffs still serve at considerably higher rates than similar cohorts in the U.S. Population. Specifically, in Figure 4, Panel A, we show that in 2022 4.3% of Americans from the same birth cohorts of children in our sample have served or are currently serving in the military Ruggles et al. (2024).[32] Figure 4 suggests that children of non-serving applicants serve in the military at roughly twice the population rate and that children of serving applicants serve at roughly three times the population rate. These differences highlight important channels of intergenerational transmission of occupation. The fact that children of Army applicants who do not serve enlist at higher rates than children of non-applicant parents suggests that factors besides a parent's actual occupation, such as hereditary traits and shared social environments, are also important contributors to positive intergenerational correlation in military occupations.

How does transmission vary by race, and in turn, by how much parents benefited from service? Greenberg et al. (2022) document that 11-19 years after applying to enlist, service has large positive earnings effects for Black applicants but smaller and statistically insignificant effects for White applicants. If parents are more likely to convey positive information about (or shape child preferences in favor of) occupations that have

[31] We estimate average potential outcomes for compliers whose parents did not enlist by estimating 2SLS regressions of $-Y_i(1 - ParentEnlist_i)$ on $ParentEnlist_i$.

[32] This estimate comes from person-weighted statistics in the 2022 American Community Survey (ACS). Unlike tax records, the ACS allows us to generate race-specific population estimates of military service. We count individuals who indicate they are currently on active duty, in the Reserves or National Guard, or are veterans as having served in the military. We weight ACS birth cohorts to match the distribution of birth cohorts of children of applicants in our sample. In Panels B and C, we construct analogous race-birth-cohort weighted estimates of military service rates for Black and White Americans, respectively, which we discuss later.

high returns (e.g. Staiger, 2021), we would expect a larger effect of intergenerational military occupation transmission for Black applicants than White applicants. This is exactly what we find. Panels B and C of Figure 3 show the reduced-form relationship between parents' first AFQT scores and children's probability of military service separately for children of Black and White applicants, respectively. Panel B shows large jumps in the probability of service at both the 31 and 50 AFQT cutoffs for children of Black applicants, while panel C shows little evidence of changes in military service at either cutoff among White applicants. These patterns are confirmed in columns 3-6 of Panel A in Table 3. For children of Black applicants, parent enlistment increases the probability that the child enlists by 6.8 percentage points at the 31 cutoff and 14.5 percentage points at the 50 cutoff. Given non-serving complier rates of service of 4.3% and 6.5%, at the 31 and 50 cutoffs respectively (Figure 4) parent enlistment increases the probability that children of Black applicants enlist by between 158% and 223%. In contrast, in columns 5 and 6 of Table 3, we find smaller and statistically insignificant intergenerational occupation transmission for White applicants of 1.9 and 1.0 percentage points (21% and 9%) at the 31 and 50 AFQT cutoffs, respectively.[33]

Further supporting the hypothesis that parents with positive occupational experiences transmit this information to their children, Greenberg et al. (2022) find large positive long-run earnings effects for Hispanic servicemembers at the 31 cutoff but sizeable negative, statistically insignificant, long-run earnings effects for Hispanic servicemembers at the 50 cutoff. We find corresponding patterns in intergenerational occupation transmission to children of Hispanic applicants in Figure A.7. Parent enlistment significantly increases their children's military service by 14.8 percentage points ($p<0.01$) at the 31 cutoff but has insignificant negative effects on enlistment at the 50 cutoff.

To formalize the connection between Greenberg et al. (2022) long-run earnings effects of enlistment and intergenerational transmission, we plot estimated long-run earnings effects and estimated intergenerational occupation transmission for each demographic subgroup from Greenberg et al. (2022) in Figure 5. In this figure, we find that the long-run earnings effects of enlistment and intergenerational occupation transmission are highly correlated (correlation=0.77) and statistically significant ($p<0.05$).[34] This relationship is unlikely to

[33]In Table A.4 we additionally explore the effects of parent enlistment on child active-duty service in different branches (active duty Army, other active duty services, Army reserve service, and non-Army reserve service). In panels A and B we find evidence of positive effects of parental service on both Army and non-Army active-duty positions, with the positive overall effects being roughly evenly split between Army and Non-Army active duty service. In panels C and D of Table A.4 we examine whether parental service increases participation in Army and non-Army reservist/National Guard programs and find some suggestive but typically not statistically significant evidence that parent service increases participation in these non-active duty components.

[34]Subgroups from Greenberg et al. (2022) include Black fathers, Black mothers, White fathers, White mothers, and Hispanics at both the 31 and 50 AFQT cutoffs (the final group was not split by sex in that

be driven by a direct effect of parent income on child service, as the correlation between parent income and child military service among non-serving parents is trivially small in comparison.[35]

Comparisons with prior estimates of intergenerational occupation transfer in the military are also consistent with job quality being an important factor in transmission. The effects we measure are 2-3 times larger than the intergenerational spillovers in military service induced by the Vietnam War draft measured by Goodman and Isen (2020). While these differences could be due to a variety of factors, it is likely that military service was perceived to be better after parental volunteer service, with its accompanying benefits, than parental military service induced by conscription during the Vietnam era (Angrist, 1990).[36]

These sub-group specific intergenerational estimates together with panels B and C of Figure 4 have important implications. Panels B and C of Figure 4 show that children of Black applicants who do not serve because their test scores are below the relevant test score (compliers) have similar rates of service to the broader population of young Black Americans. Nearly all of the intergenerational correlation in military service for Black servicemembers can be explained by the causal effect of parents serving, perhaps because credible information about the material benefits of service would not have been conveyed to children otherwise. In stark contrast, children of White applicants who do not serve still enlist at approximately two times the rate of young White Americans from the broader population. In other words, nearly all of the intergenerational correlation in military service for White servicemembers can be explained by a parent's interest in serving, and not their service itself. Other transmission channels that do not require parental service appear to be important – these could include values like patriotism or other heritable traits, information or familiarity with the military through people besides parents, or environmental factors. To the extent that similar results hold outside our specific context, this suggests that direct experience might be important

paper due to power limitations relating to its small sample size, which is about a quarter the size of the other groups). Inference comes from a bootstrap procedure described in the notes of Figure A.8. In Figure A.8, 98.2% of our bootstrapped correlation coefficients are greater than 0.

[35] In the population of U.S. children that match the birth cohorts in our sample (1983-1999) but do not have a parent who serves in the military, we (1) average parent earnings for when the child is between the ages of 10-18 and (2) record whether the child ever serves in the military. Overall, parent earnings is positively correlated with child military service, but the relationship is small. Across $500 average parent earnings bins from $500 to $99,500, average child military service never drops below 4.4% and never exceeds 5.8%. While not causal, the positive correlation is only apparent in the lower end of the income distribution, and even at its maximum, a $20,000 increase in average lifetime income – the range in Figure A.7 – is associated with only a half a percentage point increase in service, a trivial amount compared to the relationship in the effect on earnings and the effect on children's service shown in the figure.

[36] Our findings that occupation transmission is strongest among non-White parents who have, on average, experienced the largest economic benefits from military service is also consistent with research that suggests that relative to White Americans, non-White Americans are less likely to be motivated to serve by patriotism and more likely to be motivated by financial benefits (Griffith, 2008; Krebs and Ralston, 2022).

for bringing under-represented groups into high-return occupations when other pull factors may be lacking.

Does transmission vary by parent and child sex? Military service is notably a male-dominated occupation. Male soldiers account for 84% of the Army population[37] and 71% of our parent applicant population. Given sex differences in the composition of the military, we are interested in whether mothers' or fathers' service has a larger impact on their children's service, whether daughters or sons are more influenced by their parents' military service, or if the sex pairing of parent and child matters for intergenerational transmission.

In Table 4, we explore whether sons or daughters are more responsive to parental enlistment and whether fathers or mothers cause stronger intergenerational transmission among their children.[38] Despite the disproportionately male composition of the military, we find that fathers and mothers enlisting have qualitatively similar and statistically indistinguishable effects on their children's military service in panels A and B of Table 4. Similarly, we do not find systematic differences in the responsiveness of male and female children to their parents in Panels C and D of Table 4. Overall, the estimates in Table 4 suggest that mothers' and fathers' occupation choices both matter in similar ways to their children and that sons and daughters respond in similar ways to their parents' occupation decisions.

However, the lack of differences in intergenerational transmission across parent and child sex in Table 4 might mask important sex-match effects. A broad literature shows evidence that teachers and leaders have a stronger influence when they share attributes such as sex and race with the individual (e.g. Black and Devereux, 2011; Carrell et al., 2010; Hoffmann and Oreopoulos, 2009; Kofoed et al., 2019). Does the intergenerational transmission we observe follow similar patterns?

In Figure 6, we explore reduced-form evidence for whether the sex match between parent and child affects intergenerational occupational transmission. Consistent with patterns from the literature, this figure shows evidence of larger effects for same-sex pairs than opposite-sex pairs. When we estimate the corresponding 2SLS estimates of intergenerational occupation transmission in columns (1) and (2) of Table 5, we find that our estimates of intergenerational occupation transmission are 6.5 and 10.7 percentage points larger for same-sex pairs relative to opposite-sex pairs at the 31 and 50 cutoff, respectively.[39] In columns (3)-(6), we find similar patterns for Black and White subsamples: while not statistically significant, intergenerational occupation transmission is strongest between children and parents of the

[37] Source: https://api.army.mil/e2/c/downloads/2022/11/15/62a2d64b/active-component-demographic-report-october-2022.pdf, accessed 18 November 2024.

[38] Reduced-form plots corresponding to the estimates in Table 4 can be found in Figures A.15-A.17.

[39] The effects are statistically insignificant at the 31 cutoff (p=0.130) but statistically significant at the 50 cutoff (p=0.050).

same sex for both subgroups at both cutoffs.[40] Altogether, these patterns are consistent with the literature on the influence of those with shared attributes being stronger.

5.2 Robustness of Results

We examine the robustness of our primary estimates of intergenerational occupation transmission (Table 3 Panel A) to different functional forms and bandwidths in Figures A.9-A.14. Specifically, we estimate the effects of intergenerational transmission using different combinations of (a) functional forms (quadratic, quadratic with a triangular kernel, linear, linear with a triangular kernel), (b) bandwidths of AFQT scores (3-19), and (c) inclusion of control variables (applicant sex, age, education at time of application, and home of record state). Overall, while we find that precision improves with larger bandwidths and the use of linear vs. quadratic specifications, our results are robust to modifications in functional form, bandwidths, and inclusion of controls at both AFQT cutoffs and within subpopulations of Black and White applicants. In particular, in Table 2, we noted that we saw some imbalance in observable characteristics among Black applicants at the 50 AFQT cutoff. However, including controls has no impact on our estimated treatment effects for Black applicants at the 50 cutoff for any combination of functional form or bandwidth.

5.3 Intergenerational Transmission Channels

Even when it is possible to identify causal intergenerational occupation transmission, there are a number of potential channels for observed effects. Since occupational transmission in our setting is strongest for demographic groups whose parents benefited the most financially from military service, candidate mechanisms should vary with whether or not the parent benefited economically. This means that explanations like transmission of information, preferences (e.g. patriotic values (Campante and Yanagizawa-Drott, 2015)), or occupation-specific human capital, independent of parental learning, are unlikely to explain the effects. Instead, parents who benefited most must be more likely to convey relevant information about the returns to service, shape their children's preferences for service, or their children's suitability

[40] We also investigate intergenerational occupational transmission for mother-daughter, mother-son, father-daughter, and father-daughter matches in Figures A.18-A.20 and Table A.5. We find that for sons of applicants, the estimated effects of fathers (panel A) are larger than the effects of mothers at both cutoffs (panel B). For daughters of applicants, the effects of mothers (panel D) are larger than the effects of fathers (panel C) at both cutoffs. These differences are statistically insignificant at the 31 cutoff, but statistically different at the 50 cutoff. When we examine these results separately by race, we find larger absolute magnitude effects for same-sex pairs vs. opposite-sex pairs in 7 out of 8 comparisons, with the one exception being a slightly larger measured effect of Black mothers than fathers on boys at the 31 cutoff. We also find a positive effect of White fathers and a larger in absolute magnitude effect of mothers on girls at the 31 cutoff.

for military jobs (i.e. military-related human capital).[41] Next, we use Army applicant data to show that such parents are increasing their children's interest in the occupation (either by passing on relevant information or shaping preferences).

Are children of servicemembers more interested in the military or just better at getting in? Typically researchers are only able to investigate the ultimate employment outcome of an individual and not whether an individual had an interest in an occupation. Our access to Army administrative data allows us to not only observe whether an individual serves in the active-duty Army, but also whether they ever applied to active-duty Army service. This analysis is limited to Army applicants and servicemembers because we do not observe applications to other branches of service (e.g. the Navy and Air Force).

Investigating the combination of application and employment data can inform whether the effects on employment we observe are more likely to be driven by increased interest or human capital transmission channels. If parent service increases their children's service purely through increasing children's military-specific human capital (and not interest in service)—owing to higher ASVAB scores, health, and physical fitness, all of which can increase the probability of an enlistment offer conditional on application—then we might expect small or no effects on Army application. Specifically, if it is not very costly for individuals to apply to Army service, then we would expect increases in military-relevant human capital to only affect Army service through higher yield among existing applicants. Even if it is costly for potential applicants to apply (e.g. some applicants only apply if they believe they have a sufficiently high probability of being admitted), then we would expect increases in military-specific human capital to lead to smaller effects on application than on service. This is because increased military-specific human capital would not only increase applications (and eventual service) among those who would have not applied otherwise, but also increase the rates of service (either by admittance or acceptance of service offers) among those who would have always applied.[42] If, however, the effects of parental service operated purely through

[41] Existing research has pointed to nepotism and social capital as likely contributors to intergenerational transmission (e.g. Mocetti, 2016; Dal Bó et al., 2009; Staiger, 2021). However, in the military, there is less scope for nepotism in intergenerational occupation transmission due to a standardized admissions process with minimal scope for favoritism.

[42] While it is possible for increases in military-specific human capital to lead to equal or greater effects of applications than on service, we view this as highly unlikely. For this to be the case, the number of individuals who are induced to apply by increased military-specific human capital *but do not serve* must be greater or equal than the number of people who are induced into service by increased military-specific human capital who would have otherwise applied to military service and not served. If application costs are low, then few people are likely to be induced into applications by higher human capital. If application costs are very high, then it would likely require a large increase in military-specific human capital to push a large group of people into application. However, the type of increase in military-specific human capital that would induce a large group of individuals to apply when application costs are high would also likely significantly

increased interest in the military, we would expect the effects on application to be equal to or larger than the effects on service.

In Panels B, and C of Table 3 we investigate the effects of parental enlistment on active-duty Army service and application to active-duty Army service, respectively. Overall, we find the effects of parent service on active-duty Army application are weakly larger than the effects on actual active-duty Army service. Parent service has an insignificant positive effect on both overall active-duty Army application and service at the 31 cutoff of exactly 1.8 percentage points. Parent service increases overall active-duty application by 4.7 percentage points ($p<0.05$) and active-duty service by 3.2 percentage points ($p<0.10$) at the 50 cutoff. For children of Black applicants, parent service has a statistically insignificant effect on Army application and service at the 31 cutoff of 1.4 percentage points and 1.1 percentage points, respectively. At the 50 cutoff, parent service increases both active-duty Army service and active-duty Army application by exactly 8.8 percentage points ($p<0.01$ and $p<0.05$, respectively).

Our finding that the effects of parent service on active-duty Army application are at least as large, if not larger, than the effects on active-duty Army service suggest increased interest is an important driver of intergenerational occupation transmission. Parents who learn about the economic returns to military service could increase child interest through direct informational transmission about occupational returns or by shaping their children's preferences for aspects of service. While we do not have surveys that directly speak to the motives of children in our sample, surveys of young Americans consistently suggest that the most common reasons for considering enlistment in the military are related to benefits and experiences (e.g. pay, education, travel, and health benefits) as opposed to reasons like family tradition or a duty to serve (DoD, 2011, 2024). The evidence that transmission is strongest among parents who experience the largest financial benefits from service, that parent service increases children's interest in the military, and that the net economic benefits of service are of primary importance to potential recruits, is consistent with parents who learned that service was economically beneficial credibly conveying this message to their children.

5.4 External Validity

We have documented how a parent enlisting increases their children's probability of serving in the military (in large part due to differential willingness to apply in the first place) and that

increase yield among those who would have always applied. Thus, it is difficult to come up with scenarios where increases in military-specific human capital lead to equal or greater effects on Army application than Army service.

this intergenerational occupation transmission is driven by (1) groups like Black enlistees who particularly benefited from military service and (2) parents who match their child's sex. Our findings are consistent with parents increasing their children's interest in the occupation (via passing on information or shaping preferences) when it was a good job for them.

We expect causal intergenerational occupational transmission to occur outside of the military as well. Figure 1 places the raw, correlational rates of transmission for the military very much in the middle of the pack of occupations. Our data also suggests that intergenerational transmission is not restricted to the military. In Table A.6, we examine whether having a parent serve in the military affects the probability that a child ever shares an employer with a parent. Crossing an AFQT threshold shifts the distribution of jobs for compliers towards one with fewer non-military jobs. If same employer-transmission was more prevalent in the military than in non-military jobs (or in the extreme only present in the military), then we would expect to find positive estimates. On the other hand, we would expect to find null effects if transmission in non-military jobs is more similar to that in the military. We do not reject the null hypothesis of no effect for any estimate, and while somewhat imprecise, the average across point estimates is near zero. While these results are only suggestive of similar causal occupation transmission in non-military jobs, this exercise along with the fact that roughly a quarter of the children of applicants will be employed by an employer that had once employed their parent suggests that causal occupation transmission is unlikely to be unique to the military.

Last, the driver of occupational transmission that we identify plausibly extends to a wide range of occupations: that parents are more likely to transmit jobs that they learn are economically beneficial to them. Suggestively, the raw correlation between median occupation wages and the occupational transmission rates for the occupations in Figure 1 is high: 36%. To the extent that this correlation indicates that occupation transmission is partially a function of the occupation's long term economic return, our findings suggest that increasing access to good jobs may significantly improve intergenerational mobility for less advantaged groups.

6 Conclusion

In this paper, we use a regression discontinuity approach to test whether children of parents who serve in the military are more likely to serve themselves. We find that parental service increases the probability that children serve by between 58% and 110%, depending on the cutoff. Given that the U.S. Military is the largest employer in the United States, enlisting is one of the most common career choices for the non-college population, and enlistment

promotes economic mobility particularly for minority Americans, our evidence of causal intergenerational transmission has important implications for a large and important part of the labor market. We document that intergenerational military transmission is strongest for the children of demographic and cutoff-specific subgroups that experience the largest long-run earnings gains, including the children of Black applicants at both cutoffs and children of Hispanic applicants at the 31 cutoff. Intergenerational transmission is stronger across parent-child same-sex pairs and is driven by the application stage of the job search process. Altogether, our results suggest that parents who have a beneficial occupational experience are more likely to increase their children's interest in that occupation.

When we estimate rates of service among children of Black servicemembers whose parents do not serve *because* they fall just below a cutoff, their rates of service are indistinguishable from the rate of service among the population of young Black adults in the United States. In contrast, when we estimate rates of service among children of White servicemembers whose parents do not serve *because* they fall just below a cutoff, their rates of service are approximately two times the rate of service among the population of young White adults in the United States and indistinguishable from children of parents who serve because they are *above* an AFQT cutoff. Hence, children of White applicants are drawn towards military service regardless of whether a parent enlists, through other heritable traits or environmental factors. We should therefore be cautious when interpreting intergenerational occupational correlations. If researchers were to naïvely attribute the correlation in intergenerational military occupations to the causal effect of parent occupation, they would be approximately right for children of Black applicants but wrong for children of White applicants.

To the extent our results generalize to other occupations, they help shine a light on the forces that drive occupational segregation. Many environmental forces shape occupational entry. While typically over-represented groups in a good occupation may experience many factors pulling them into that occupation, less-represented groups might need a stronger push, such as direct parental experience, to enter it. For occupations with few such parents in the first place, other barriers need to be broken to make meaningful progress on occupational desegregation. Yet, when parents do break through, our results suggest that gaining access to good jobs can directly improve intergenerational mobility.

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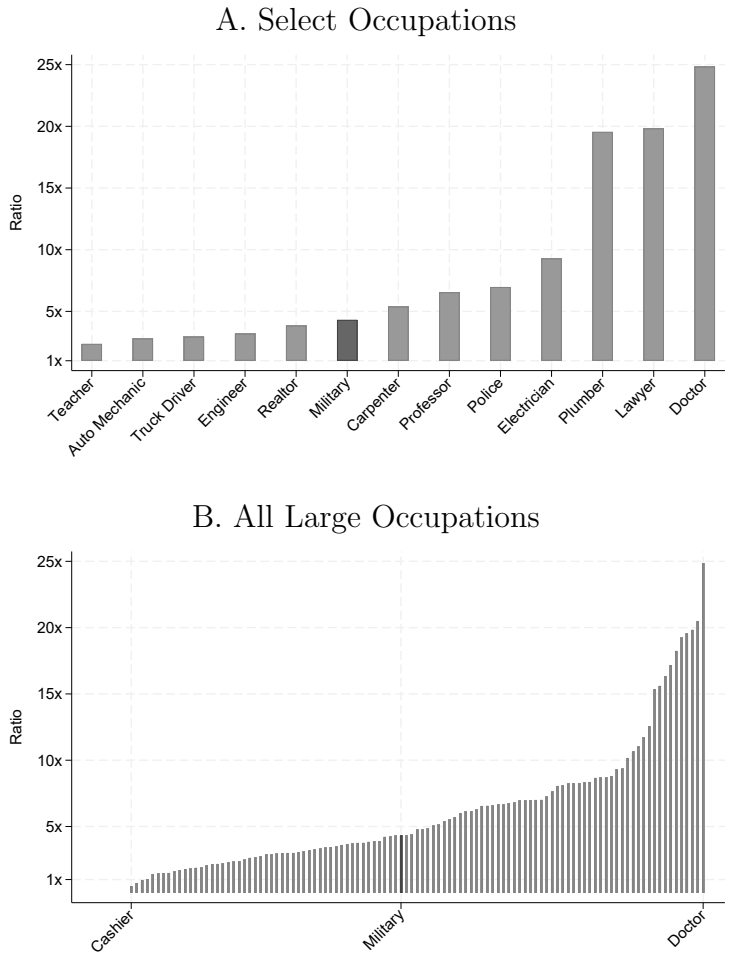
Figures

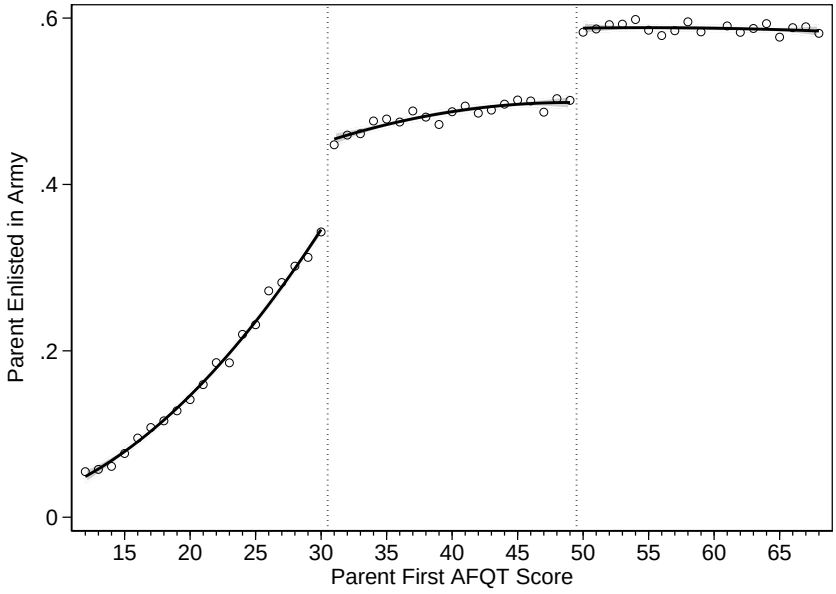
Figure 1: How Much More Likely is it to Work in an Occupation if a Parent has Worked in the Occupation?



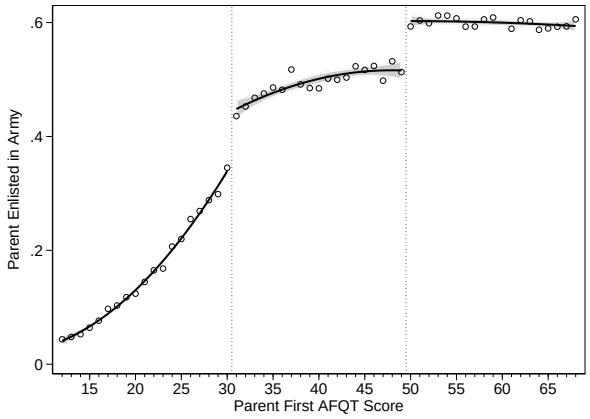
Notes: This figure uses data from the 1993-2022 rounds of the General Social Survey (GSS) to document the relationship between parent and child occupations. Each bar represents the relative likelihood that an individual working in the profession if they report having had a parent work in the occupation vs. if they do not report having had a parent work in the occupation, based on 2010 Census 4-digit occupation codes. We include individuals between the ages of 25 and 65 at the time of their survey. Military service is highlighted in dark gray. In Panel A, all occupations are matched to a single 4-digit code except for "Auto Mechanic", which includes codes 7200-7260, "Engineer", which includes codes 1320-1530, and "Teacher", which includes codes 2300-2330. In Panel B, we include all 2010 Census 4-digit occupation codes for which we have at least 50 respondents in the occupation and 50 parents of respondents in the occupation among our sample. Of the 116 occupations that meet our creteria for inclusion in Panel B, there are nine occupations for which no children and parents share the occupation. These include "Engineering technicians, except drafters" (1550), "Special education teachers" (2330), "Sales and related workers, all other" (4965), "Billing and posting clerks" (5110), "Tellers" (5160), "Data entry keyers" (5810), "Office and administrative support workers, all other" (5940), "Heating, air conditioning, and refrigeration mechanics and installers" (7315), and "Packers and packagers, hand" (9640). We note that the modal experience of a servicemember is to spend one 3-6 year term in the military and a small fraction of servicemembers identify military as their occupation (or their parent's occupation) in the GSS. However, results from the GSS and tax return data suggest broadly similar patterns. In the GSS, those who report having a parent serve in the military are 4.3 times more likely to serve than those who do not. In the tax return data among individuals with similar birth cohorts to children in our analysis sample, those with a parent who ever receives a military W-2 are 3.4 times more likely to ever have a military W-2 than those who do not.

Figure 2: Parents' AFQT scores and Military Service

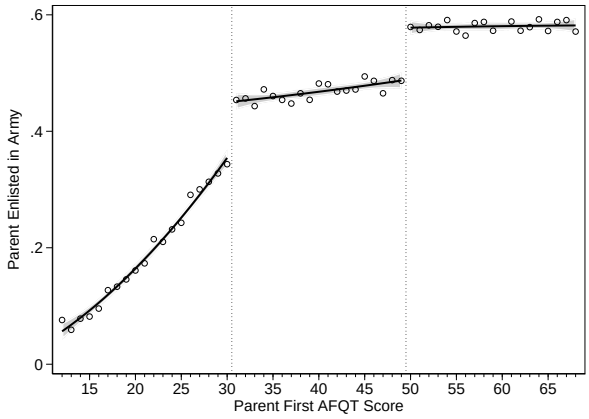
A. All Parent Applicants



B. Black Parents



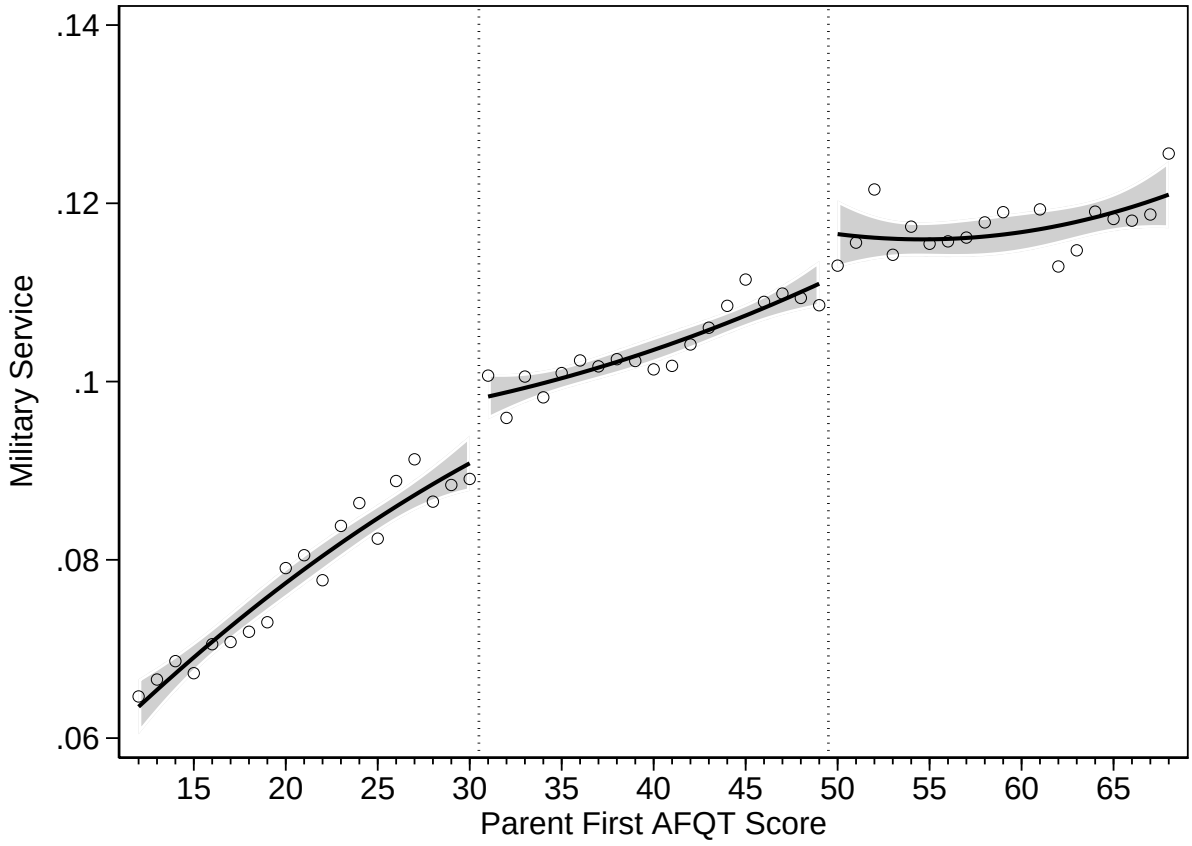
C. White Parents



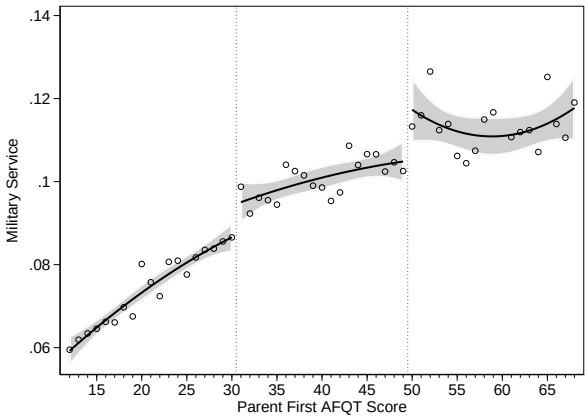
Notes: Panel A shows our first stage for parents who apply for military service: it plots the probability of a parent's military service as recorded in the Army applicant data against that parent's earliest AFQT score on file. The two RD cutoffs at AFQT scores of 31 and 50 are indicated by dashed vertical lines. Panels B and C plot our first stage for Black parents and White parents who apply for Army service, respectively. 95% confidence intervals are indicated.

Figure 3: Reduced Form: Intergenerational Military Service, By Race

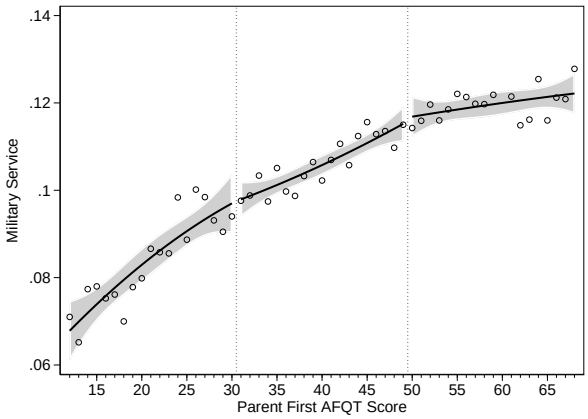
A. All Children of Applicants



B. Children of Black Applicants

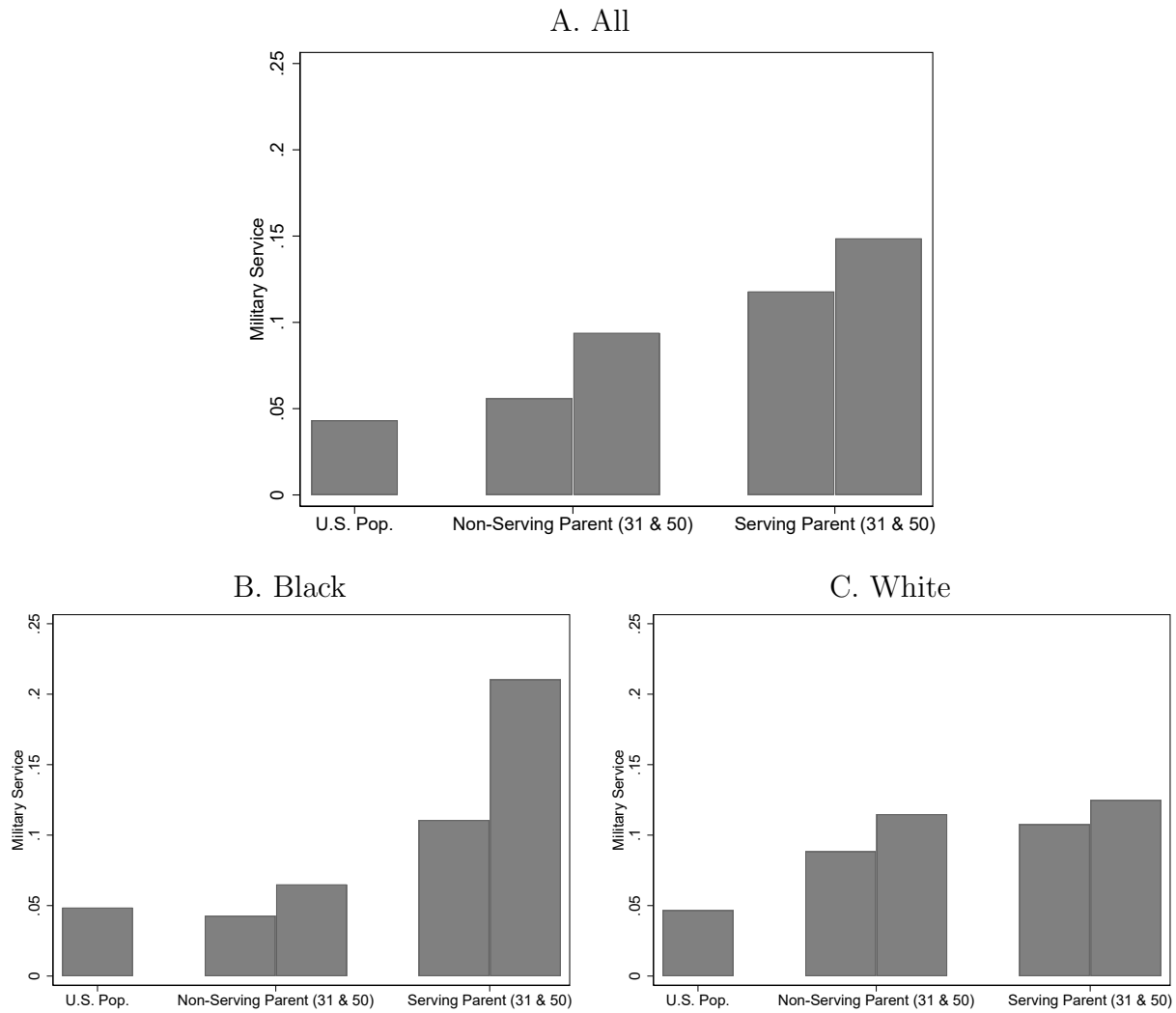


C. Children of White Applicants



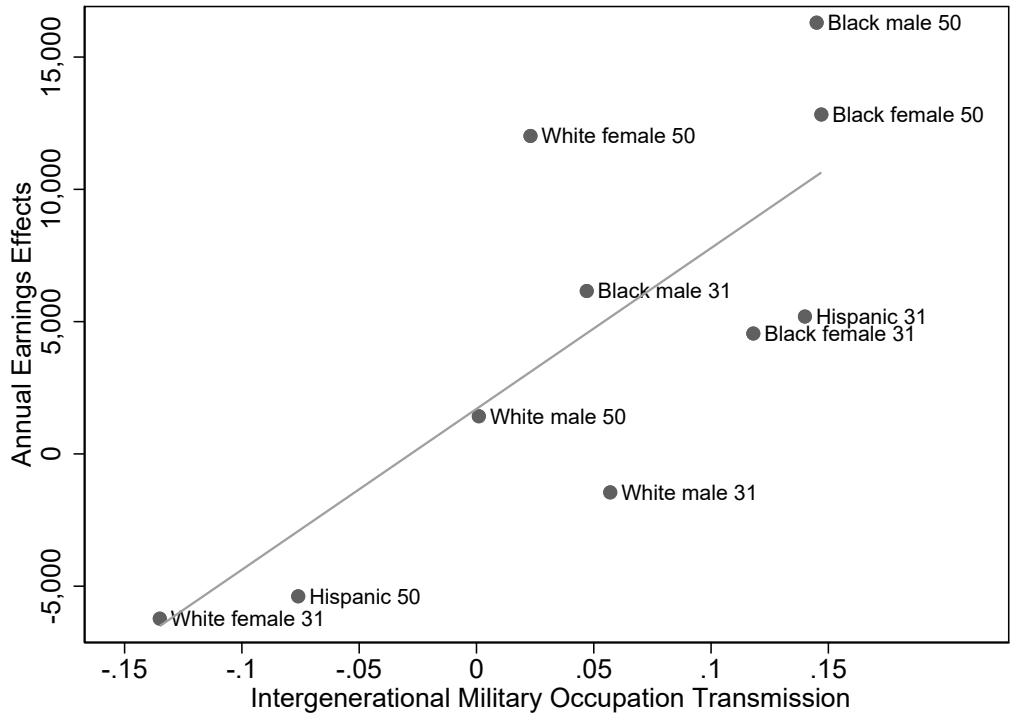
Notes: Panel A shows how parents' first AFQT scores on file correspond to their children's probability of military service as identified by W-2 filings. Panels B and C show the same correspondence, but are restricted to individuals with Black and White parent applicants, respectively. The two RD cutoffs at AFQT scores of 31 and 50 are indicated by dashed vertical lines. 95% confidence intervals are indicated.

Figure 4: Military Service among U.S. Young-Adult Population, Children of Non-Serving Compliers, and Serving Compliers



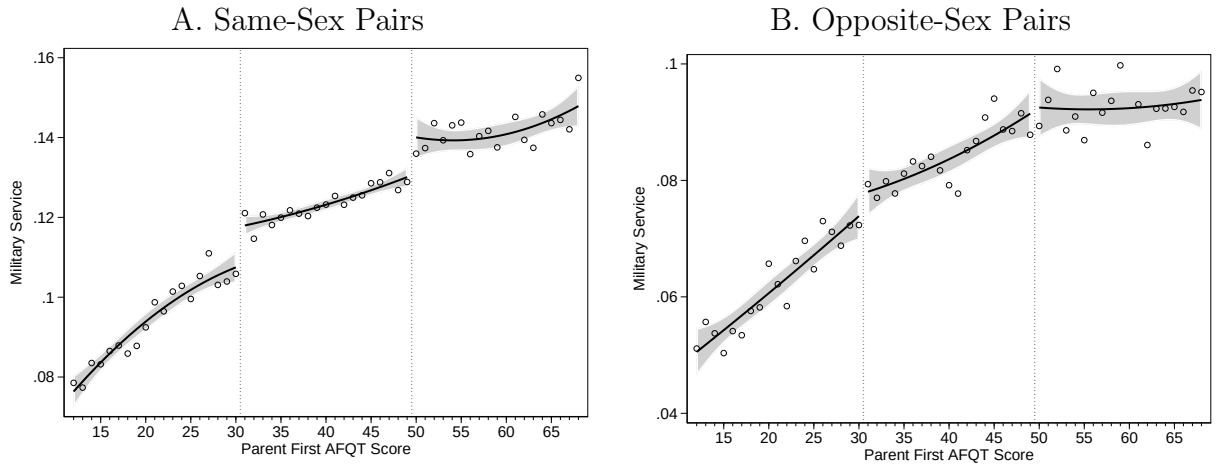
Notes: Panel A reports estimates of rates of military service (past or present) for the U.S. population, children of non-serving compliers at the 31 and 50 AFQT cutoffs, and children of serving compliers at the 31 and 50 AFQT cutoffs. Panel B reports estimates of rates of military service (past or present) for the U.S. population of Black individuals, children of non-serving Black compliers at the 31 and 50 AFQT cutoffs, and children of serving Black compliers at the 31 and 50 AFQT cutoffs. Panel C reports estimates of rates of military service (past or present) for the U.S. population of White individuals, children of non-serving White compliers at the 31 and 50 AFQT cutoffs, and children of serving White compliers at the 31 and 50 AFQT cutoffs. Our U.S. Population estimates come from American Community Survey (ACS) estimates of individuals who are veterans or currently on Active Duty, National Guard, or Reservist service. We use the ACS for U.S. population estimates because Treasury records do not indicate race (we measure parents' race from military application records). In Panel A, we weight ACS birth cohorts to match the distribution of birth cohorts of all children of applicants in our analysis sample. In Panels B and C, we construct analogous race-birth-cohort weighted estimates of military service rates for Black and White Americans, respectively. We estimate service rates for non-serving compliers by running 2SLS regressions of $-Enlist_i(1 - ParentEnlist_i)$ on $ParentEnlist_i$. We estimate outcomes for serving compliers by running 2SLS regressions of $Enlist_i(ParentEnlist_i)$ on $ParentEnlist_i$.

Figure 5: Earnings Effects of Service and Intergenerational Occupation Transmission



Notes: X-axis values represent the causal estimates of intergenerational military occupation transmission for the stated subpopulation and Y-axis values represent the Greenberg et al. (2022) estimated long run (11-19 years post application) effects of enlistment on earnings for the same subpopulation. Subpopulations match those estimated for Greenberg et al. (2022) and include Black male, Black female, White male, White female, and Hispanic applicants at both the 31 and 50 AFQT cutoffs. An unweighted linear fit is presented. The correlation between long-run earnings effects of enlistment and intergenerational occupation transmission is 0.77 and statistically significant ($p<0.05$). Inference comes from a bootstrap procedure described in the notes of Figure A.8. In Figure A.8, 98.2% of our bootstrapped correlation coefficients are greater than 0.

Figure 6: Reduced Form: Intergenerational Military Service, By Parent and Child Sex Pairs



Notes: Panel A shows how parents' first AFQT scores on file correspond to their children's probability of military service, as identified by W-2 filings, when the parent and child share the same sex. Panel B shows how parents' first AFQT scores on file correspond to their children's probability of military service, as identified by W-2 filings, when the parent and child have opposite sexes. The two RD cutoffs at AFQT scores of 31 and 50 are indicated by dashed vertical lines. 95% confidence intervals are indicated.

Tables

Table 1: Summary Statistics

	(1) Analysis Sample	(2) Black Applicants	(3) White Applicants
	A. Applicants (Parents)		
Enlisted	0.434	0.393	0.471
Years Served	2.373	2.420	2.262
Age	21.194	21.211	20.956
First AFQT Score	40.314	36.165	44.573
Male	0.712	0.630	0.766
White (Non-Hispanic)	0.472	0.000	1.000
Black (Non-Hispanic)	0.378	1.000	0.000
Hispanic	0.110	0.000	0.000
In High School	0.210	0.200	0.229
No HS Diploma	0.135	0.079	0.185
High School Diploma	0.610	0.676	0.550
Some College+	0.044	0.044	0.037
Age at First Birth	20.678	20.123	21.058
	B. Children		
Military W-2	0.100	0.092	0.108
Officer	0.002	0.002	0.002
Officer (Strict Definition)	0.001	0.001	0.001
Applied to Active-Duty Army	0.056	0.059	0.054
Male	0.509	0.506	0.510
Age at Parent Application	-0.454	-0.160	-0.904
Earnings at Age 26	21,140	18,665	23,173
Employed at Age 26	0.806	0.808	0.808
College Attendance	0.596	0.615	0.568
Homeowner	0.072	0.042	0.103
Married	0.152	0.089	0.212
Number of Applicants	511,701	193,566	241,277
Number of Children	976,064	400,968	431,679

Notes: Panel A reports summary statistics for Army Applicants between Fiscal Years 1990-2004 who have at least one child who reaches the age of 22 by 2021 (either identified by Social Security Administration birth records or Form 1040 child claiming) and attain an AFQT score between 12 and 68. The variable enlisted indicates if the parent enlisted into any military service (Army, Navy, Air Force, Marines, or Coast Guard) and any component (Active-Duty, Reserves, and National Guard) as identified in Army applicant data. The education categories listed are mutually exclusive and are defined in the following ways: "In High School" indicates that the applicant was still enrolled in High School when applying, "No HS Diploma" indicates that the applicant is not enrolled in high school at time of application and either has no credential or a GED, "High School Diploma" indicates that the applicant has a high school diploma but has not attended any college at the time of application, and "Some College+" indicates that the applicant has attended college for at least one semester. Panel B reports summary characteristics for children who reach the age of 22 by 2021 of the Army applicants identified in Panel A. "Military W-2" identifies a military employer from all services and all components. "Applied to Active-Duty Army" identifies if someone applied specifically to the active-duty Army and does not include applications to other services, to the Army Reserves, or to the Army National Guard.

Table 2: Applicant Balance on Observable Characteristics

	(1)	(2)	(3)	(4)	(5)	(6)
	All		Black		White	
	31 Cutoff	50 Cutoff	31 Cutoff	50 Cutoff	31 Cutoff	50 Cutoff
Age	0.034	-0.044	0.026	-0.030	0.039	-0.070
	(0.034)	(0.035)	(0.051)	(0.067)	(0.050)	(0.045)
Male	-0.005	-0.001	-0.005	0.004	-0.000	-0.004
	(0.004)	(0.005)	(0.007)	(0.009)	(0.007)	(0.006)
Black	0.005	0.002				
	(0.005)	(0.005)				
White	-0.004	-0.007				
	(0.005)	(0.005)				
Hispanic	-0.001	0.004				
	(0.003)	(0.003)				
In High School	-0.000	0.006	0.001	0.016**	0.001	-0.002
	(0.004)	(0.004)	(0.006)	(0.007)	(0.007)	(0.006)
No HS Diploma	0.001	-0.006*	-0.005	-0.014***	0.009	-0.000
	(0.003)	(0.004)	(0.004)	(0.005)	(0.006)	(0.005)
High School Diploma	-0.004	-0.002	-0.001	-0.003	-0.010	0.003
	(0.005)	(0.005)	(0.007)	(0.009)	(0.008)	(0.007)
Some College+	0.003	0.002	0.005*	0.001	-0.000	-0.001
	(0.002)	(0.002)	(0.003)	(0.004)	(0.003)	(0.003)
Age at First Birth	-0.033	-0.015	-0.013	-0.061	-0.037	-0.028
	(0.031)	(0.031)	(0.045)	(0.057)	(0.048)	(0.040)
Number of Children	0.014	0.009	0.008	0.035	0.018	0.005
	(0.011)	(0.011)	(0.019)	(0.022)	(0.016)	(0.014)
N	350,122	358,197	152,252	115,603	140,213	194,381
χ^2	9.249	13.202	5.847	16.153	6.017	4.848
p	0.599	0.280	0.664	0.040	0.645	0.774

Notes: This table reports reduced-form RD estimates of Equation (1) where the left-hand-side variable is the covariate or pre-application outcome listed in the leftmost column above. Columns 1 and 2 report balance results for all parent applicants in our sample at the 31 and 50 cutoffs, respectively. Columns 3-4 report balance results for Black parent applicants and Columns 5-6 report balance for White parent applicants in our sample. The education categories are mutually exclusive, as described in the notes for Table 1. Significance levels: $*$: 10% $**$: 5% $***$: 1%.

Table 3: Two-staged Least Squares Estimates of Parent Enlistment on Military Service

	(1)	(2)	(3)	(4)	(5)	(6)
	All Applicants		Black Applicants		White Applicants	
	31 Cutoff	50 Cutoff	31 Cutoff	50 Cutoff	31 Cutoff	50 Cutoff
	A. Any Military Service					
Enlist	0.062***	0.055*	0.068**	0.145***	0.019	0.010
	(0.022)	(0.028)	(0.032)	(0.051)	(0.041)	(0.038)
N	680,682	667,688	319,188	233,501	252,319	346,388
Dep. Var. Mean	0.093	0.110	0.087	0.104	0.100	0.113
	B. Any Active-Duty Army					
Enlist	0.018	0.032*	0.011	0.088***	-0.007	-0.004
	(0.014)	(0.018)	(0.021)	(0.033)	(0.026)	(0.024)
N	680,682	667,688	319,188	233,501	252,319	346,388
Dep. Var. Mean	0.036	0.043	0.035	0.043	0.037	0.042
	C. Apply Active-Duty Army					
Enlist	0.018	0.047**	0.014	0.088**	-0.011	0.015
	(0.017)	(0.028)	(0.026)	(0.039)	(0.030)	(0.028)
N	680,682	667,688	319,188	233,501	252,319	346,388
Dep. Var. Mean	0.053	0.059	0.056	0.065	0.050	0.056

Notes: This table presents 2SLS RD estimates of the effect of a parent's enlistment on a child's military service. Enlistment for parents is identified through Army applicant records. The outcome in Panel A is an indicator that equals 1 if the child served in any military service, which is identified through W-2 tax records, and is 0 otherwise. The outcome in Panel B is an indicator that equals 1 if the child enlisted in the active-duty Army as identified through Army applicant records. The outcome in Panel C is an indicator that equals 1 if the child applied to the active-duty Army. Columns 1-2 report results for all children of Army applicants in our sample at the 31 and 50 AFQT cutoffs, Columns 3-4 report results for children of Black Army applicants, and Columns 5-6 report results for children of White Army applicants. Standard errors are clustered at the parent level. Significance levels: $*$: 10% $**$: 5% $***$: 1%.

Table 4: Effects of Parent Enlistment on Military Service, by Parent and Child Sex

	(1)	(2)	(3)	(4)	(5)	(6)
	All Applicants		Black Applicants		White Applicants	
	31 Cutoff	50 Cutoff	31 Cutoff	50 Cutoff	31 Cutoff	50 Cutoff
	A. Male Applicants (Fathers)					
Enlist	0.065***	0.051	0.047	0.145**	0.057	0.001
	(0.024)	(0.034)	(0.033)	(0.070)	(0.044)	(0.044)
N	482,899	469,516	204,923	143,227	194,864	261,029
Dep. Var. Mean	0.086	0.101	0.078	0.093	0.094	0.106
	B. Female Applicants (Mothers)					
Enlist	0.052	0.058	0.118	0.147**	-0.135	0.023
	(0.052)	(0.048)	(0.073)	(0.071)	(0.113)	(0.078)
N	197,739	198,121	114,257	90,264	57,440	85,330
Dep. Var. Mean	0.109	0.129	0.103	0.123	0.120	0.135
	C. Male Children (Sons)					
Enlist	0.100***	0.033	0.109**	0.152**	0.058	-0.017
	(0.037)	(0.045)	(0.052)	(0.077)	(0.073)	(0.062)
N	346,532	339,618	161,776	118,227	128,784	176,585
Dep. Var. Mean	0.135	0.163	0.115	0.139	0.158	0.178
	D. Female Children (Daughters)					
Enlist	0.025	0.078***	0.027	0.133**	0.015	0.037
	(0.022)	(0.028)	(0.036)	(0.058)	(0.034)	(0.036)
N	334,112	328,043	157,410	115,269	123,528	169,797
Dep. Var. Mean	0.049	0.054	0.058	0.069	0.039	0.046

Notes: This table presents 2SLS RD estimates of the effect of a parent's enlistment on a child's military service. Enlistment for parents is identified through Army applicant records. Enlistment for children, into any military service, is identified through W-2 tax records. Panel A reports the effects for children of male applicants, Panel B reports the effects for children of female applicants, Panel C reports the effects for male children of applicants, and Panel D reports the effects for female children of applicants. Columns 1-2 report results for all children of Army applicants in our sample at the 31 and 50 AFQT cutoffs, Columns 3-4 report results for children of Black Army applicants, and Columns 5-6 report results for children of White Army applicants. Standard errors are clustered at the parent level. Significance levels: $*$: 10% $**$: 5% $***$: 1%.

Table 5: Effects of Parent Enlistment on Military Service, by Parent-Child Sex Congruence

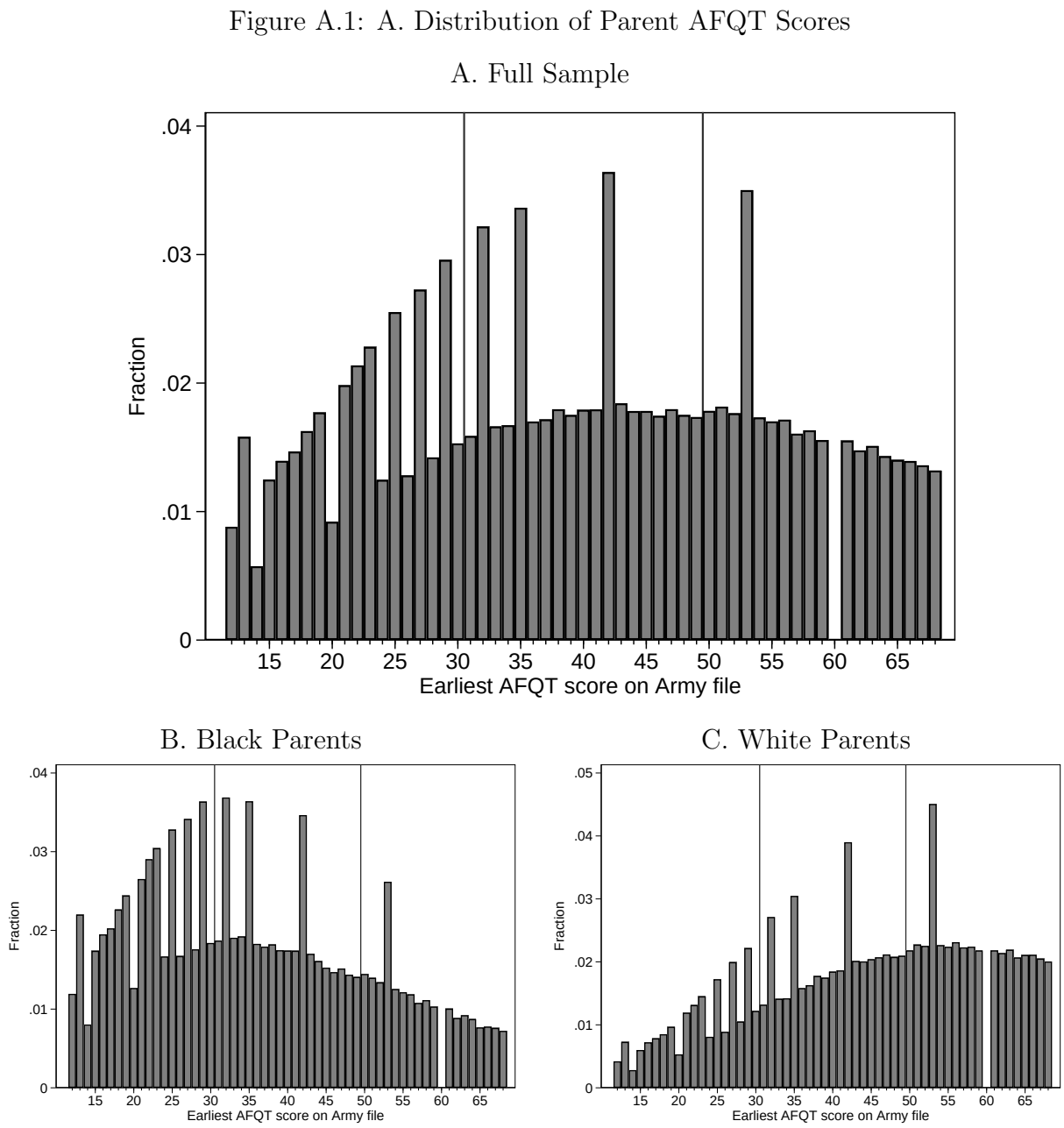
	(1)	(2)	(3)	(4)	(5)	(6)
	All Applicants		Black Applicants		White Applicants	
	31 Cutoff	50 Cutoff	31 Cutoff	50 Cutoff	31 Cutoff	50 Cutoff
	A. Applicant and Child Same Sex					
Enlist	0.093***	0.108**	0.100**	0.211***	0.040	0.044
	(0.032)	(0.042)	(0.045)	(0.072)	(0.064)	(0.057)
N	343,517	336,710	161,127	117,874	127,163	174,453
Dep. Var. Mean	0.111	0.131	0.094	0.111	0.129	0.144
	B. Applicant and Child Opposite Sex					
Enlist	0.028	0.001	0.032	0.077	-0.001	-0.032
	(0.029)	(0.035)	(0.044)	(0.068)	(0.049)	(0.049)
N	337,165	330,978	158,061	115,627	125,156	171,935
Dep. Var. Mean	0.075	0.088	0.080	0.098	0.070	0.082
Same vs. Opposite P-val	0.130	0.050	0.271	0.163	0.613	0.311

Notes: This table presents 2SLS RD estimates of the effect of a parent's enlistment on a child's military service. Enlistment for parents is identified through Army applicant records. Enlistment for children, into any military service, is identified through W-2 tax records. Panel A reports the pooled effects for male children of male applicants and female children of female applicants and Panel B reports the pooled effects for male children of female applicants and female children of male applicants. Columns 1-2 report results for all children of Army applicants in our sample at the 31 and 50 AFQT cutoffs, Columns 3-4 report results for children of Black Army applicants, and Columns 5-6 report results for children of White Army applicants. Standard errors are clustered at the parent level. Significance levels: $*$: 10% $**$: 5% $***$: 1%.

Online Appendix

Appendix Figures

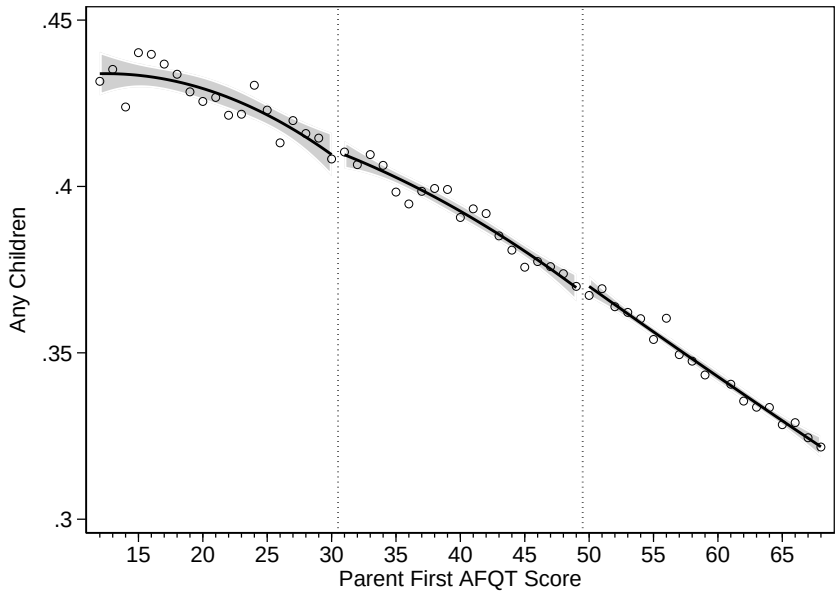
Figure A.1: A. Distribution of Parent AFQT Scores



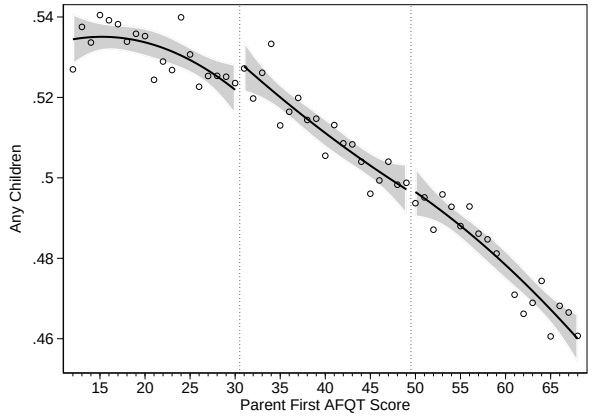
Notes: This figure shows the distribution of applicant (Parents) first AFQT scores on record. Panel A shows the distribution for our entire analysis sample. Panels B and C show the distribution for Black and White Applicants, respectively.

Figure A.2: Parents' AFQT Scores and Having Any Children

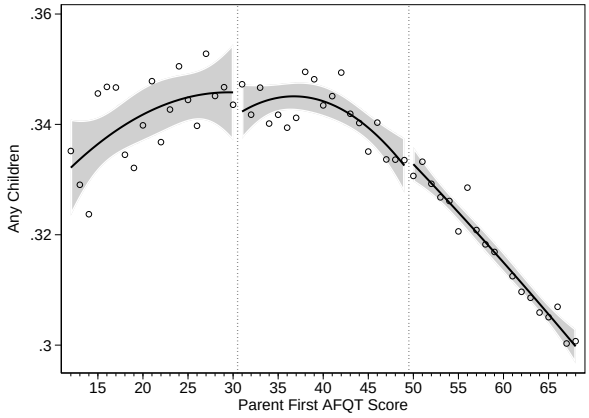
A. All Applicants



B. Black Applicants



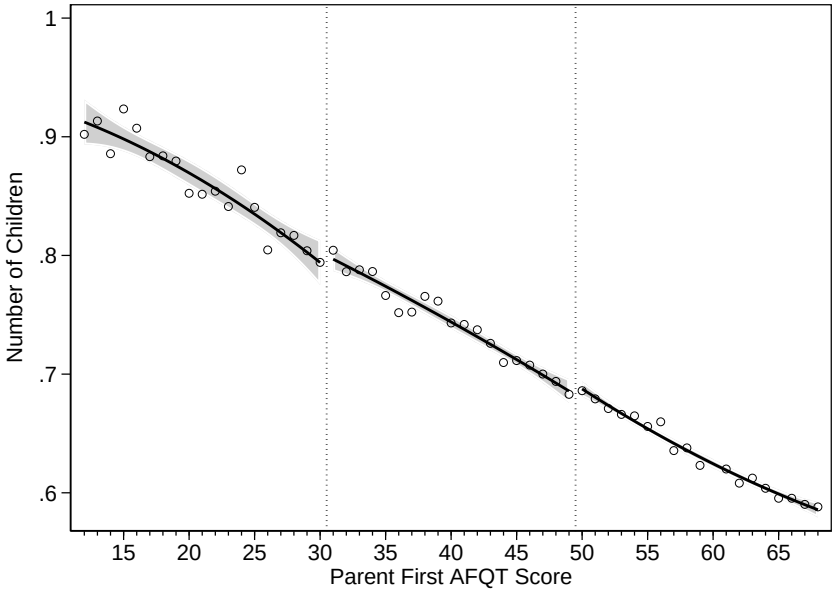
C. White Applicants



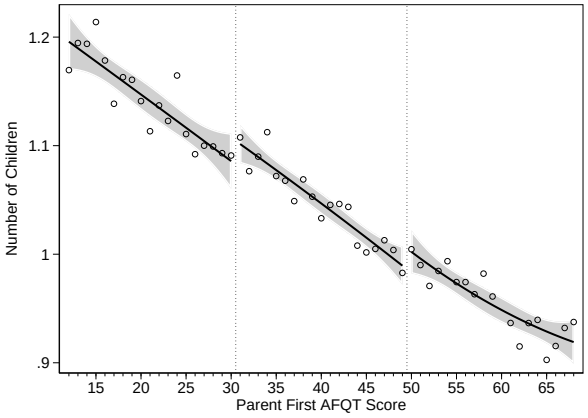
Notes: Panel A shows reduced-form impacts of military service on parenthood: it plots the probability of an Army applicant having at least one dependent child who meets the criteria outlined in Section 3.2, including reaching the age of 22 by 2021, by AFQT score, as recorded in Social Security Administration records or Form 1040 filings. The two RD cutoffs at AFQT scores of 31 and 50 are indicated by dashed vertical lines. Panels B and C plot our reduced-form estimates for Black and White Army applicants, respectively. 95% confidence intervals are indicated.

Figure A.3: Parents' AFQT Scores and Number of Children

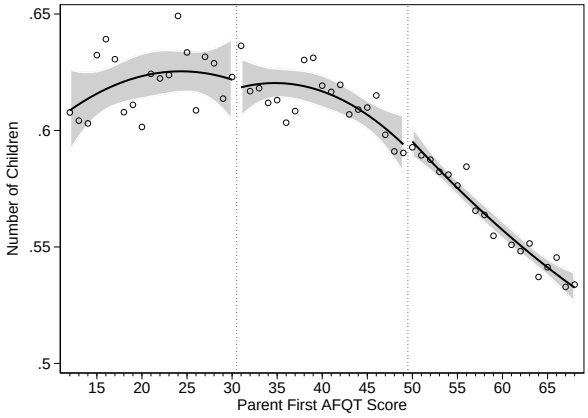
A. All Applicants



B. Black Applicants

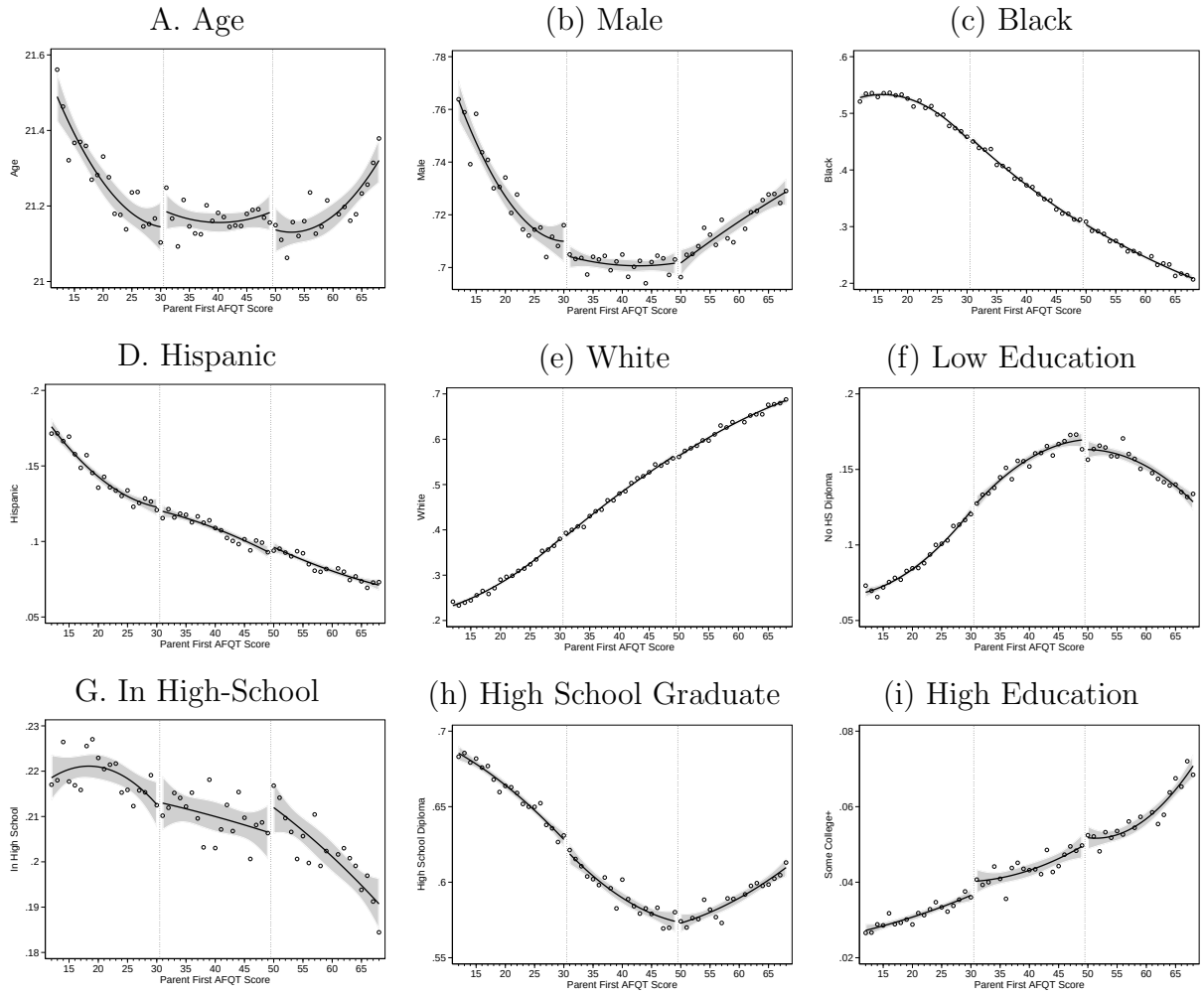


C. White Applicants



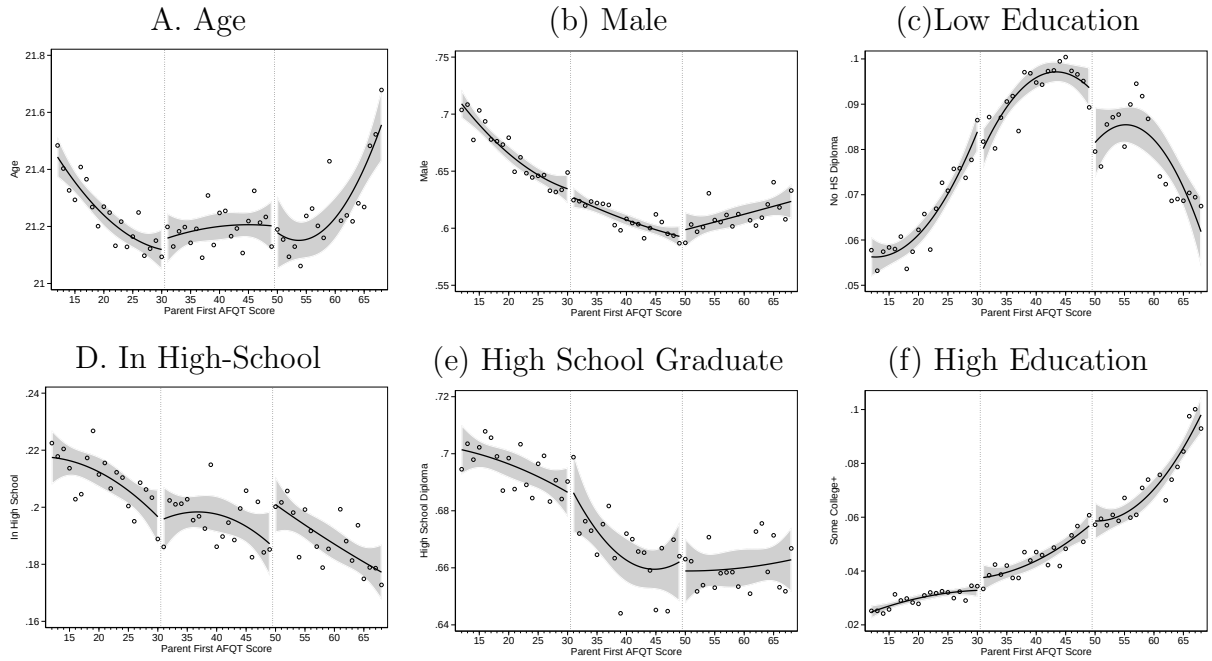
Notes: Panel A shows reduced-form impacts of military service on fertility: it plots how many children an Army applicant has that who meets the criteria outlined in Section 3.2, including turning 22 by 2021. The two RD cutoffs at AFQT scores of 31 and 50 are indicated by dashed vertical lines. Panels B and C plot our reduced-form estimates for Black and White Army applicants, respectively. 95% confidence intervals are indicated.

Figure A.4: Balance of Parent Characteristics Across AFQT Thresholds



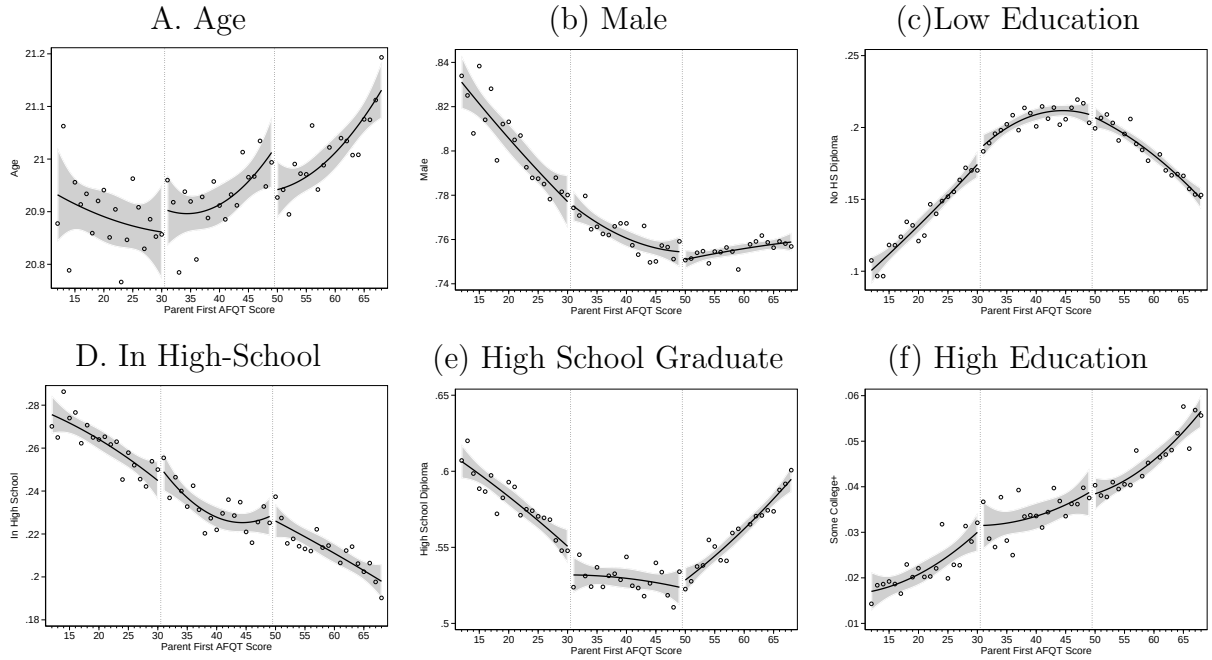
Notes: Each panel shows a parent applicant's characteristics by their AFQT Score. The two RD cutoffs at AFQT scores of 31 and 50 are indicated by dashed vertical lines. 95% confidence intervals are indicated.

Figure A.5: Balance of Parent Characteristics Across AFQT Thresholds, Black Applicants



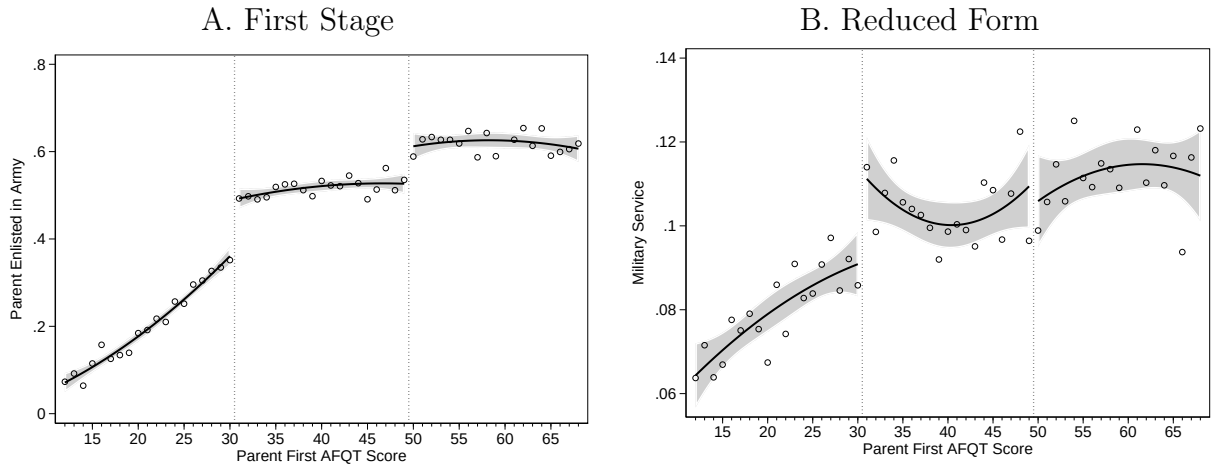
Notes: Each Panel shows a parent applicant's characteristics by their AFQT Score for Black parents. The two RD cutoffs at AFQT scores of 31 and 50 are indicated by dashed vertical lines. 95% confidence intervals are indicated.

Figure A.6: Balance of Parent Characteristics Across AFQT Thresholds, White Applicants



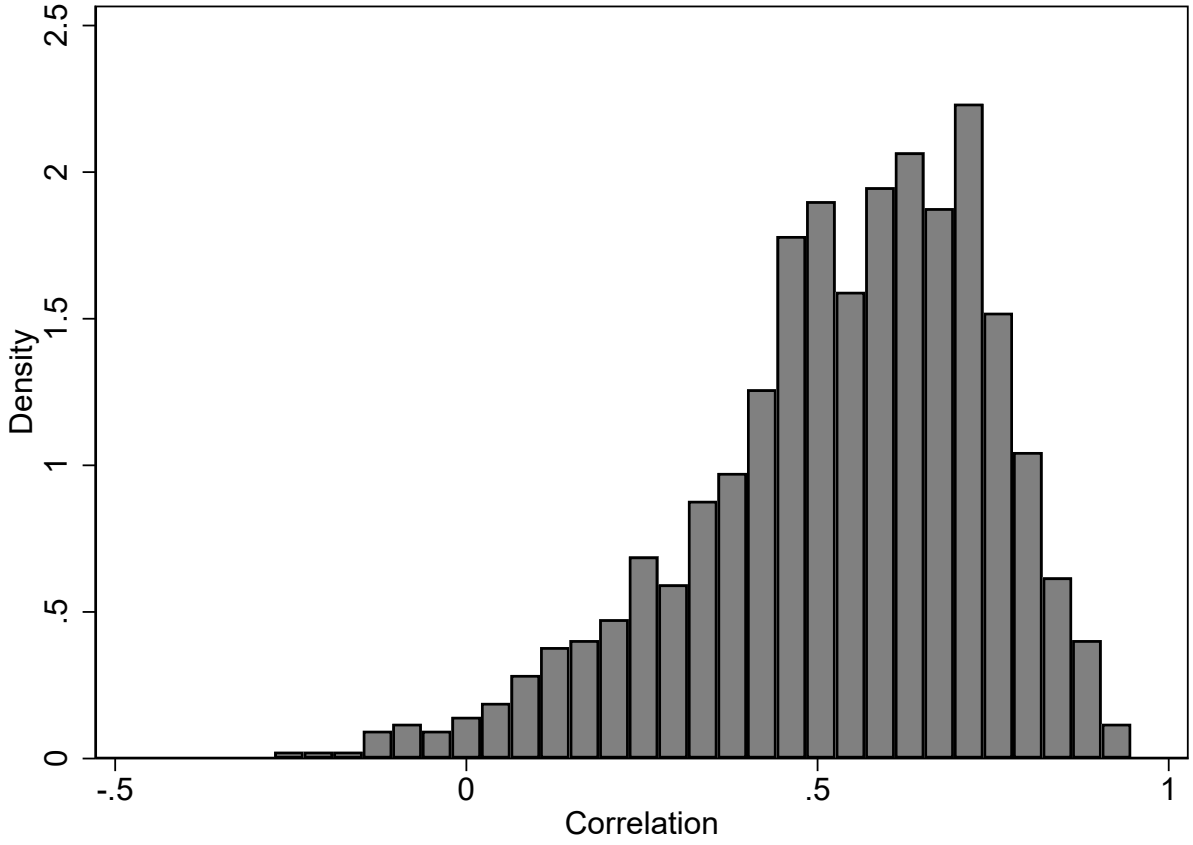
Notes: Each Panel shows a parent applicant's characteristics by their AFQT Score for White parents. The two RD cutoffs at AFQT scores of 31 and 50 are indicated by dashed vertical lines. 95% confidence intervals are indicated.

Figure A.7: Parent Enlistment and Military Service, Hispanic Applicants



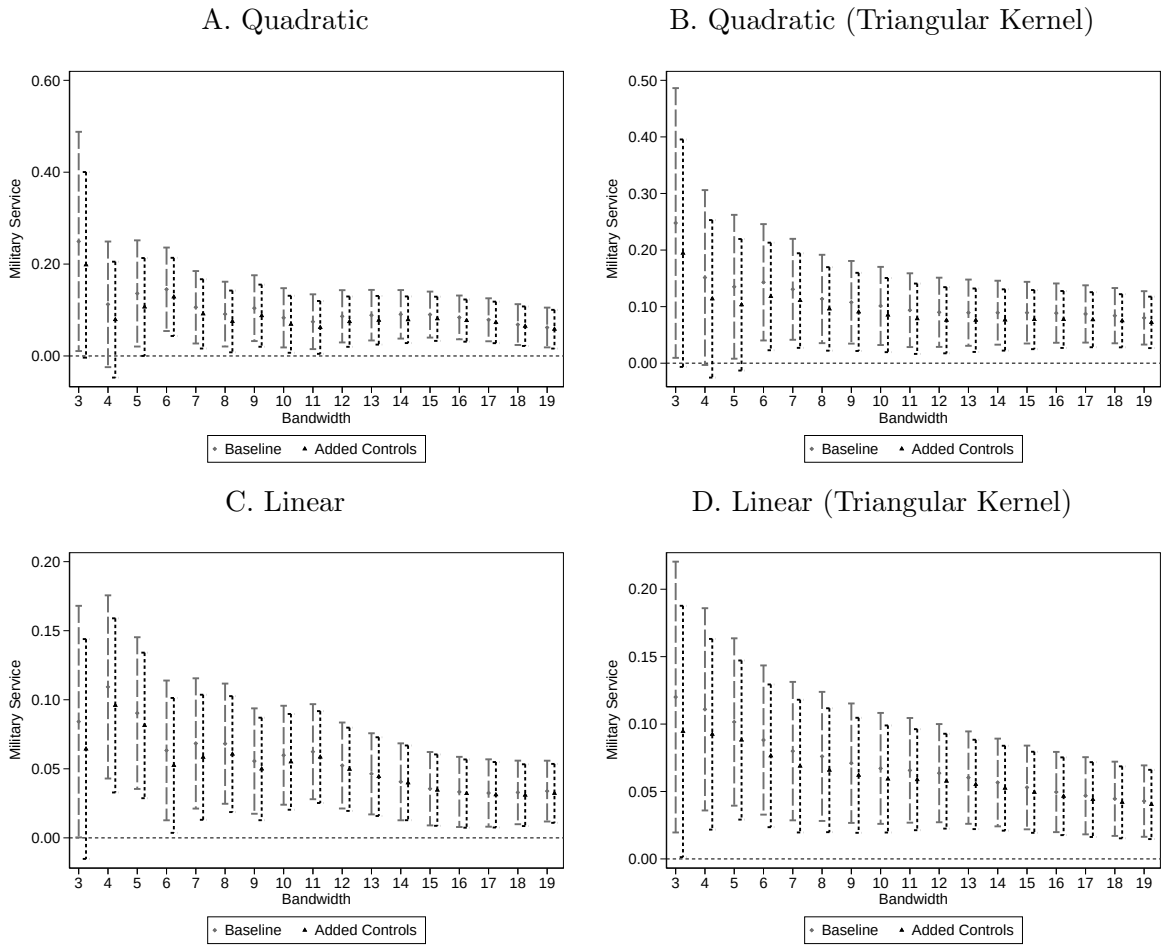
Notes: Panel (a) shows how the first-stage relationship between AFQT scores and Military service for parents. Panel (b) shows the reduced-form relationship between parent AFQT scores and children's military service. The two RD cutoffs at AFQT scores of 31 and 50 are indicated by dashed vertical lines. 95% confidence intervals are indicated. 2SLS IV estimates associated with these first-stage and reduced form plots suggest parent service increases child enlistment by 14.8 percentage points (standard error=5.6 percentage points) at the 31 cutoff and decreases child enlistment by 7.6 percentage points (standard error=9.6 percentage points).

Figure A.8: Bootstrapped Correlations of Earnings Effects and Occupation Transmission



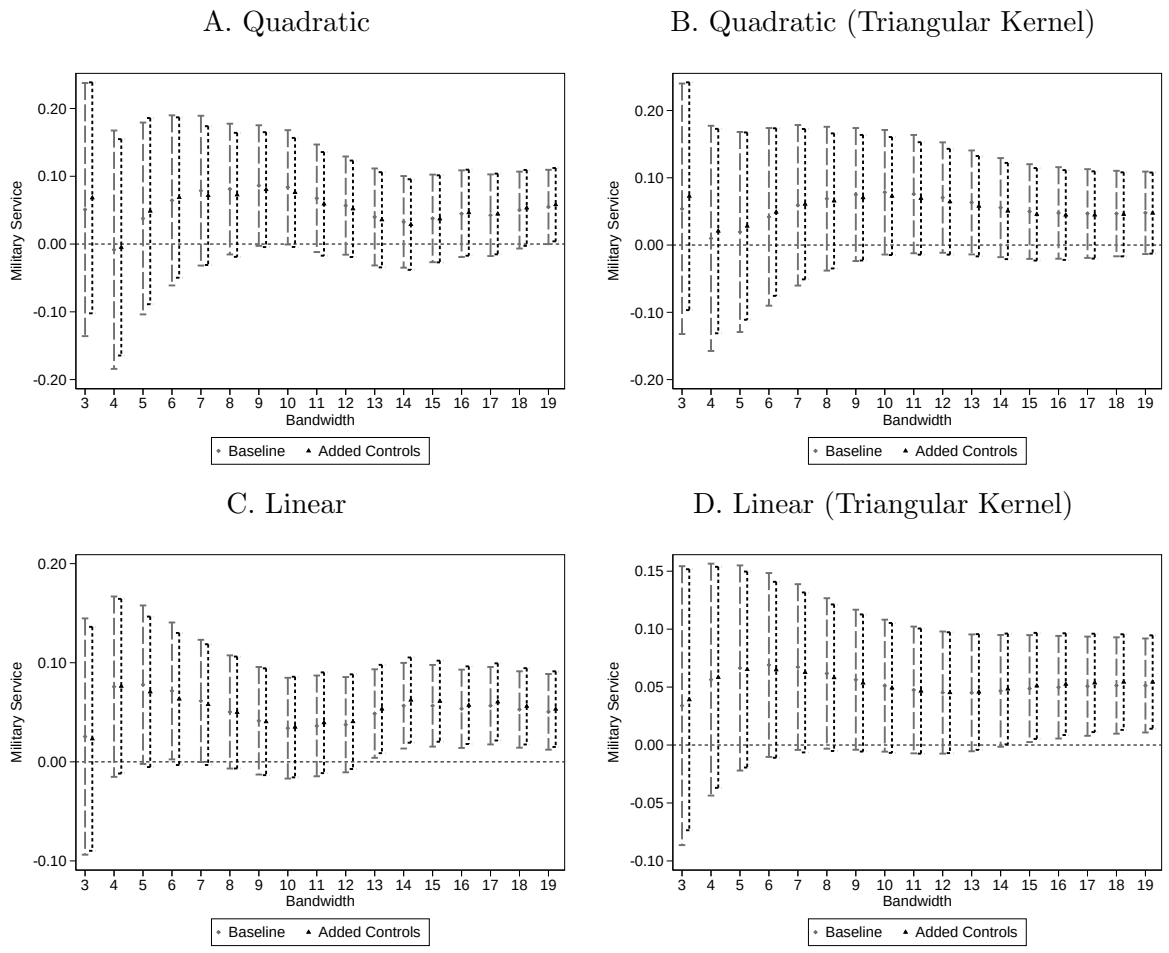
Notes: This figure presents the distribution of bootstrapped correlations between effects of enlistment on average earnings 11-19 years after application for a subpopulation and the intergenerational occupation transmission for that subpopulation. Subpopulations match those estimated for Greenberg et al. (2022) and include Black male, Black female, White male, White female, and Hispanic applicants at both the 31 and 50 AFQT cutoffs. Correlations come from a bayesian bootstrap procedure where we (1) assign random Dirichlet weights to observations that generate long-run earnings estimates (2) estimate and store the long-run earnings effects for each demographic subgroup from our random-weighted sample, (3) assign random Dirichlet weights to observations that generate intergenerational occupation transmission estimates, (4) estimate and store intergenerational occupation transmission effects for each demographic subgroup from our random weighted sample, (5) estimate and store the correlation between randomly-weighted earnings effects and randomly-weighted intergenerational occupation transmission effects. This procedure is repeated 1000 times, with the distribution of results plotted above. We find that 98.2% of our estimated correlation coefficients are greater than 0.

Figure A.9: Effects on Military Service, AFQT=31 Robustness Checks



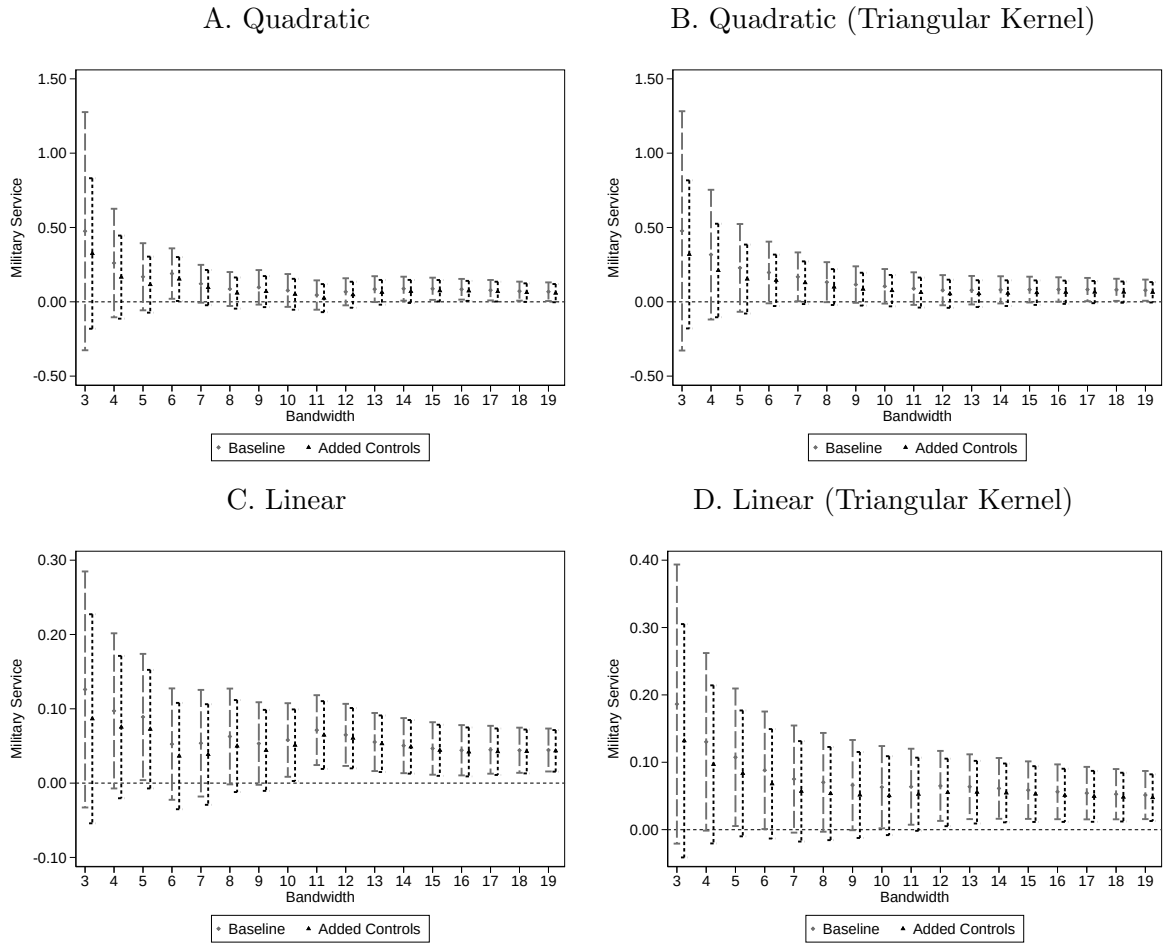
Notes: This figure shows 2SLS estimates of the effects of parent Army service on a child's military service for children with parents with AFQT scores near the 31 AFQT cutoff for various specifications, bandwidths, and controls. Specifications with controls include controls for: sex, race, age, education at time of application, and dummies for home of record state. Panel (a) shows quadratic (rectangular kernel) 2SLS RD estimates where BW=19 without controls is our primary specification. Panel (b) shows quadratic (triangular kernel) 2SLS RD estimates. Panel (c) shows linear 2SLS RD estimates (rectangular kernel). Panel (d) shows linear 2SLS RD estimates (triangular kernel).

Figure A.10: Effects on Military Service, AFQT=50 Robustness Checks



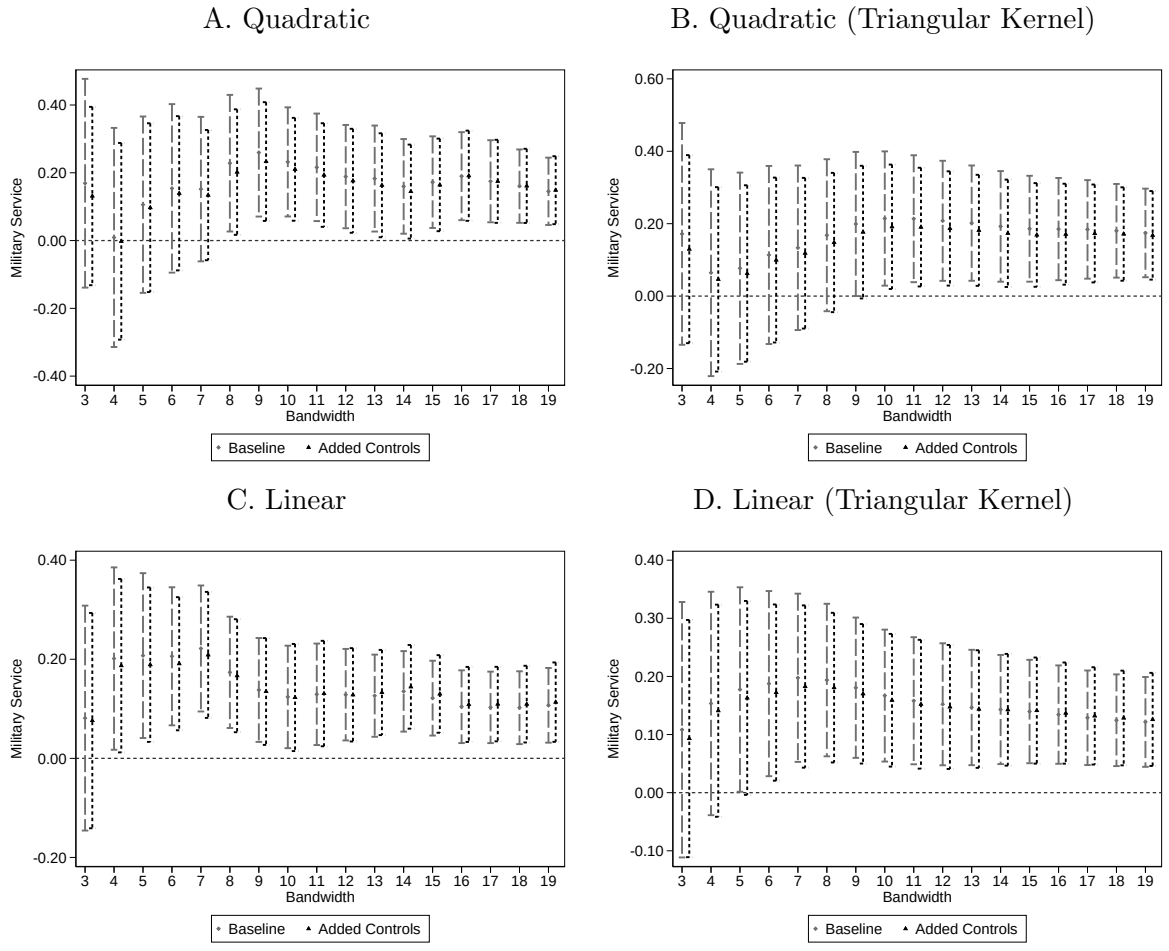
Notes: This figure shows 2SLS estimates of the effects of parent Army service on a child's military service for children with parents with AFQT scores near the 50 AFQT cutoff for various specifications, bandwidths, and controls. Specifications with controls include controls for: sex, race, age, education at time of application, and dummies for home of record state. Panel (a) shows quadratic (rectangular kernel) 2SLS RD estimates where BW=19 without controls is our primary specification. Panel (b) shows quadratic (triangular kernel) 2SLS RD estimates. Panel (c) shows linear 2SLS RD estimates (rectangular kernel). Panel (d) shows linear 2SLS RD estimates (triangular kernel).

Figure A.11: Effects on Military Service-Children of Black Applicants, AFQT=31 Robustness Checks



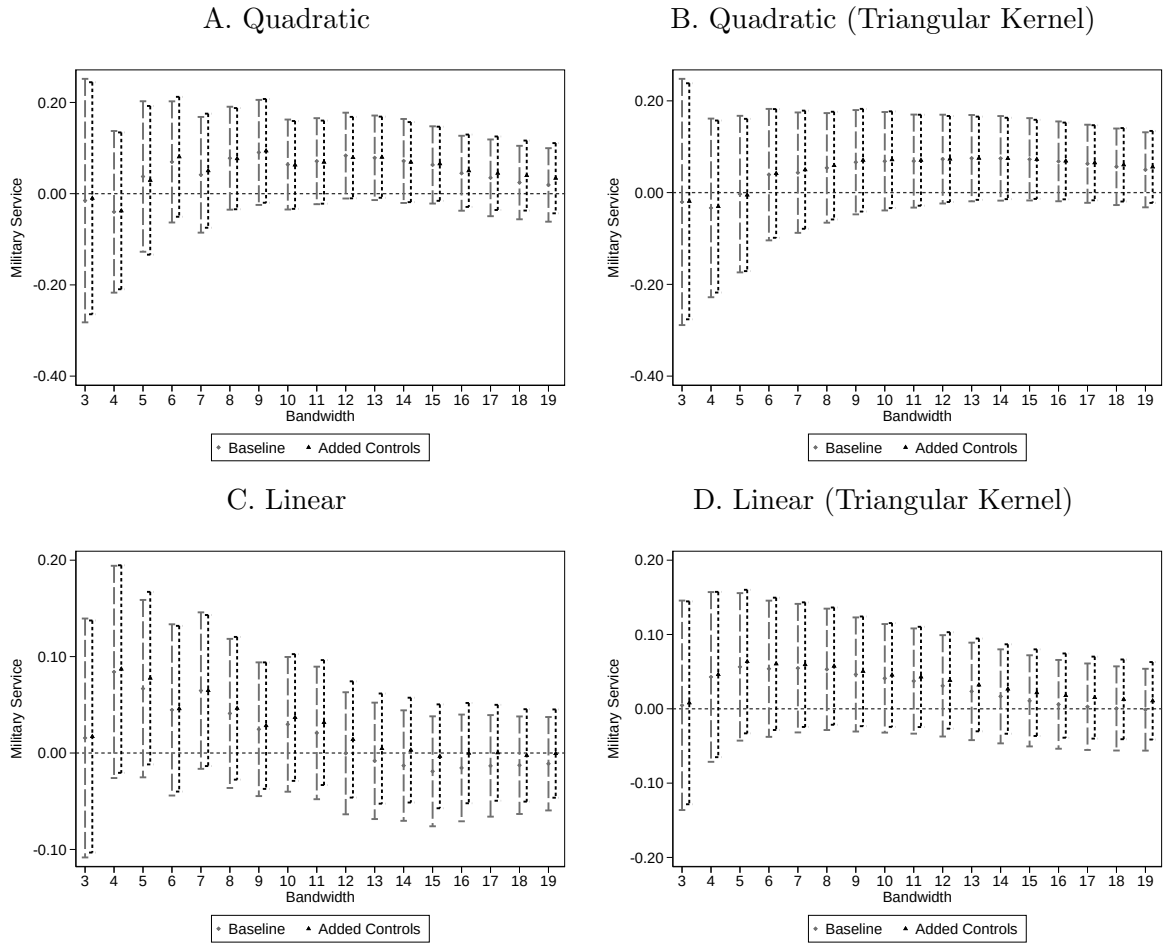
Notes: This figure shows 2SLS estimates of the effects of parent Army service on a child's military service for children with parents with AFQT scores near the 31 AFQT cutoff for various specifications, bandwidths, and controls. Specifications with controls include controls for: sex, race, age, education at time of application, and dummies for home of record state. Panel (a) shows quadratic (rectangular kernel) 2SLS RD estimates where BW=19 without controls is our primary specification. Panel (b) shows quadratic (triangular kernel) 2SLS RD estimates. Panel (c) shows linear 2SLS RD estimates (rectangular kernel). Panel (d) shows linear 2SLS RD estimates (triangular kernel).

Figure A.12: Effects on Military Service-Children of Black Applicants, AFQT=50 Robustness Checks



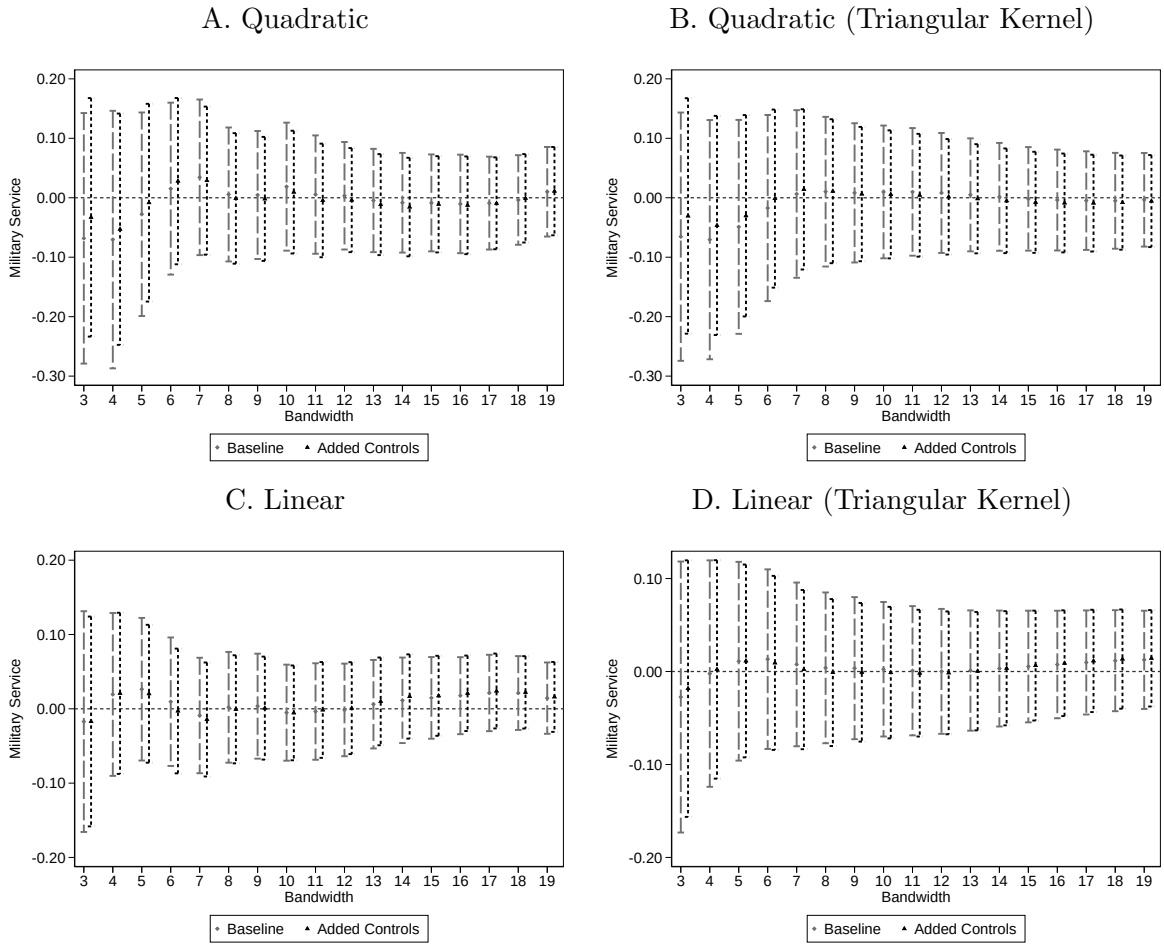
Notes: This figure shows 2SLS estimates of the effects of parent Army service on a child's military service for children with parents with AFQT scores near the 50 AFQT cutoff for various specifications, bandwidths, and controls. Specifications with controls include controls for: sex, race, age, education at time of application, and dummies for home of record state. Panel (a) shows quadratic (rectangular kernel) 2SLS RD estimates where BW=19 without controls is our primary specification. Panel (b) shows quadratic (triangular kernel) 2SLS RD estimates. Panel (c) shows linear 2SLS RD estimates (rectangular kernel). Panel (d) shows linear 2SLS RD estimates (triangular kernel).

Figure A.13: Effects on Military Service-Children of White Applicants, AFQT=31 Robustness Checks



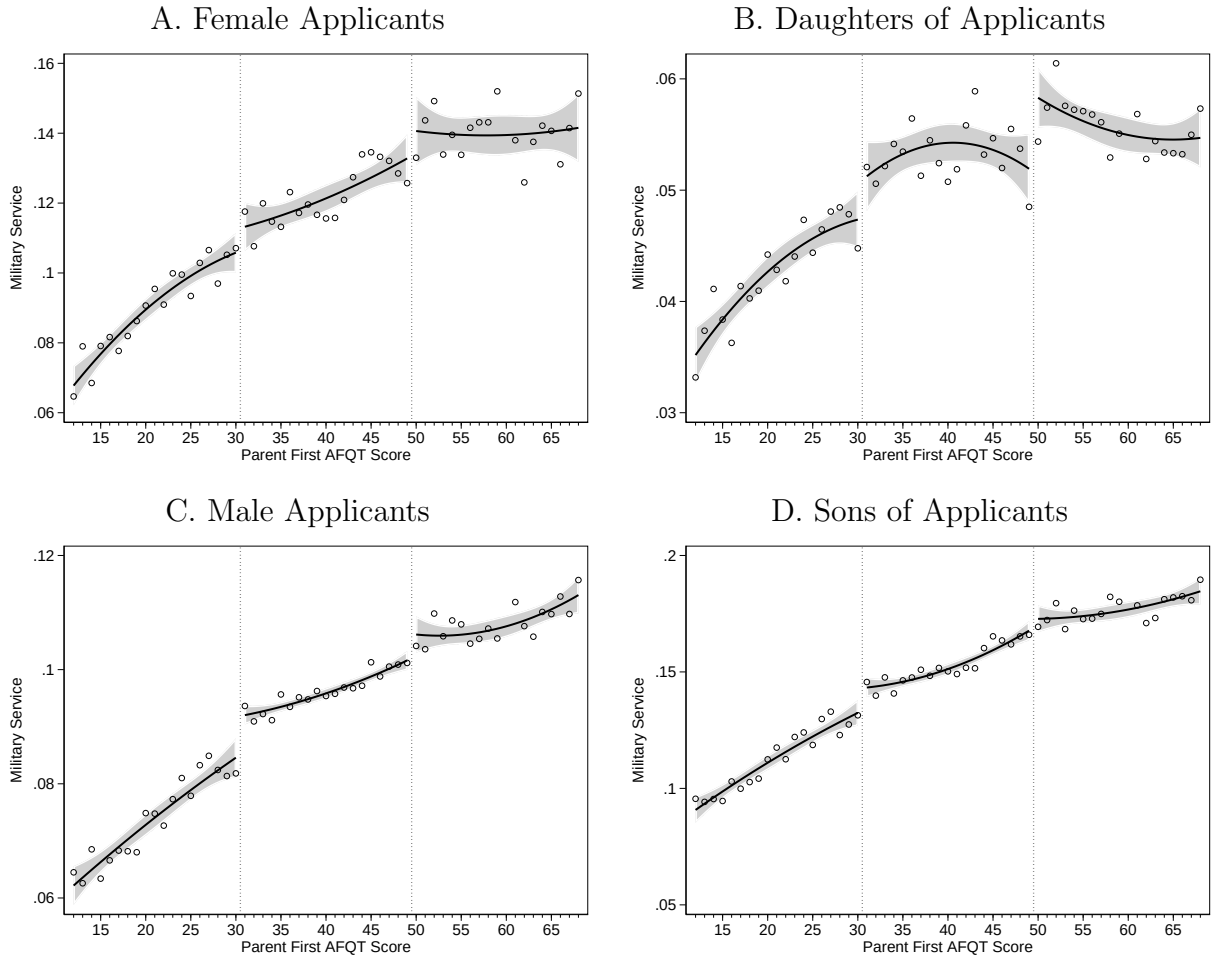
Notes: This figure shows 2SLS estimates of the effects of parent Army service on a child's military service for children with parents with AFQT scores near the 31 AFQT cutoff for various specifications, bandwidths, and controls. Specifications with controls include controls for: sex, race, age, education at time of application, and dummies for home of record state.. Panel (a) shows quadratic (rectangular kernel) 2SLS RD estimates where BW=19 without controls is our primary specification. Panel (b) shows quadratic (triangular kernel) 2SLS RD estimates. Panel (c) shows linear 2SLS RD estimates (rectangular kernel). Panel (d) shows linear 2SLS RD estimates (triangular kernel).

Figure A.14: Effects on Military Service-Children of White Applicants, AFQT=50 Robustness Checks



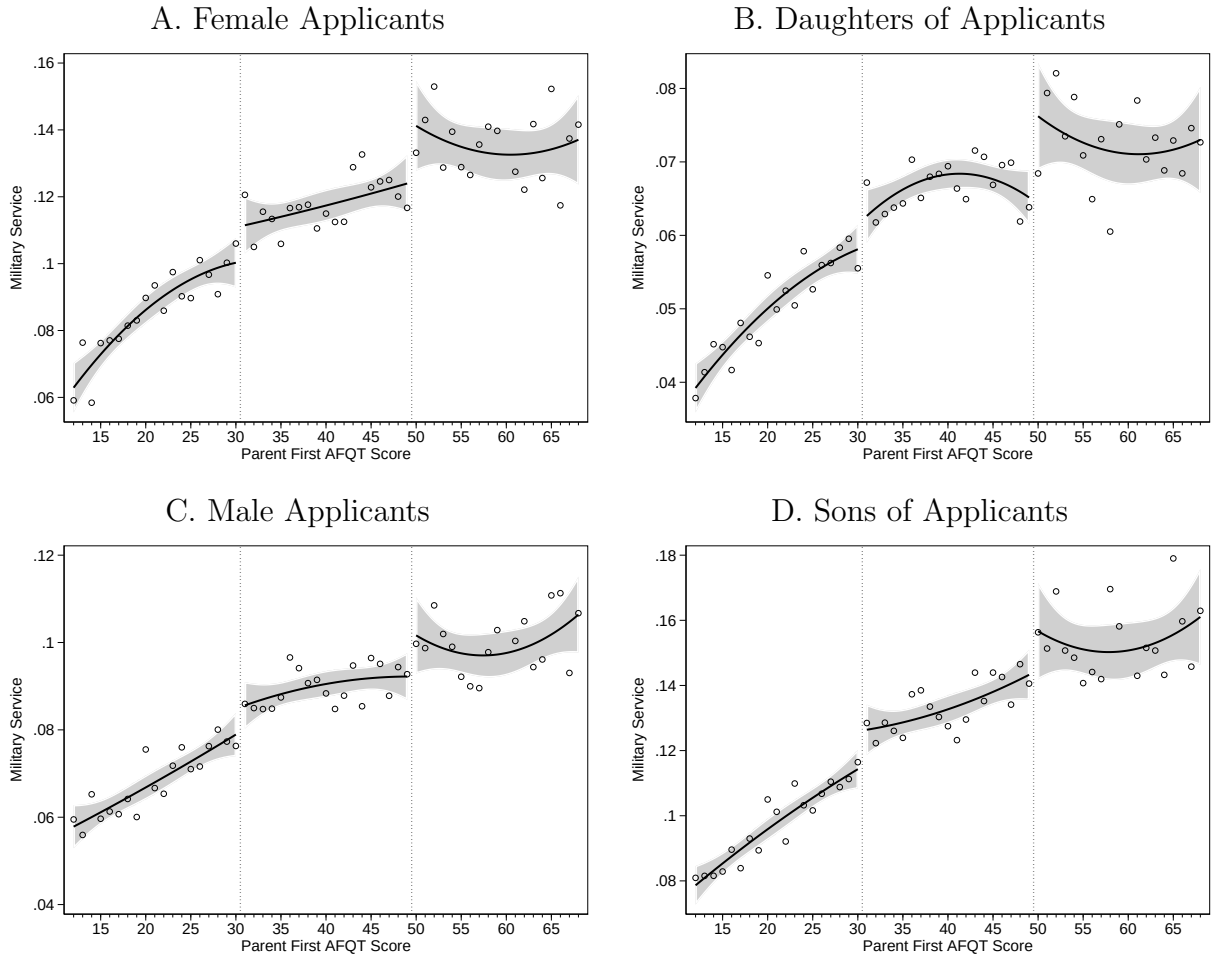
Notes: This figure shows 2SLS estimates of the effects of parent Army service on a child's military service for children with parents with AFQT scores near the 50 AFQT cutoff for various specifications, bandwidths, and controls. Specifications with controls include controls for: sex, age, education at time of application, and dummies for home of record state. Panel (a) shows quadratic (rectangular kernel) 2SLS RD estimates where BW=19 without controls is our primary specification. Panel (b) shows quadratic (triangular kernel) 2SLS RD estimates. Panel (c) shows linear 2SLS RD estimates (rectangular kernel). Panel (d) shows linear 2SLS RD estimates (triangular kernel).

Figure A.15: Reduced Form: Intergenerational Military Service, By Parent and Child Sex



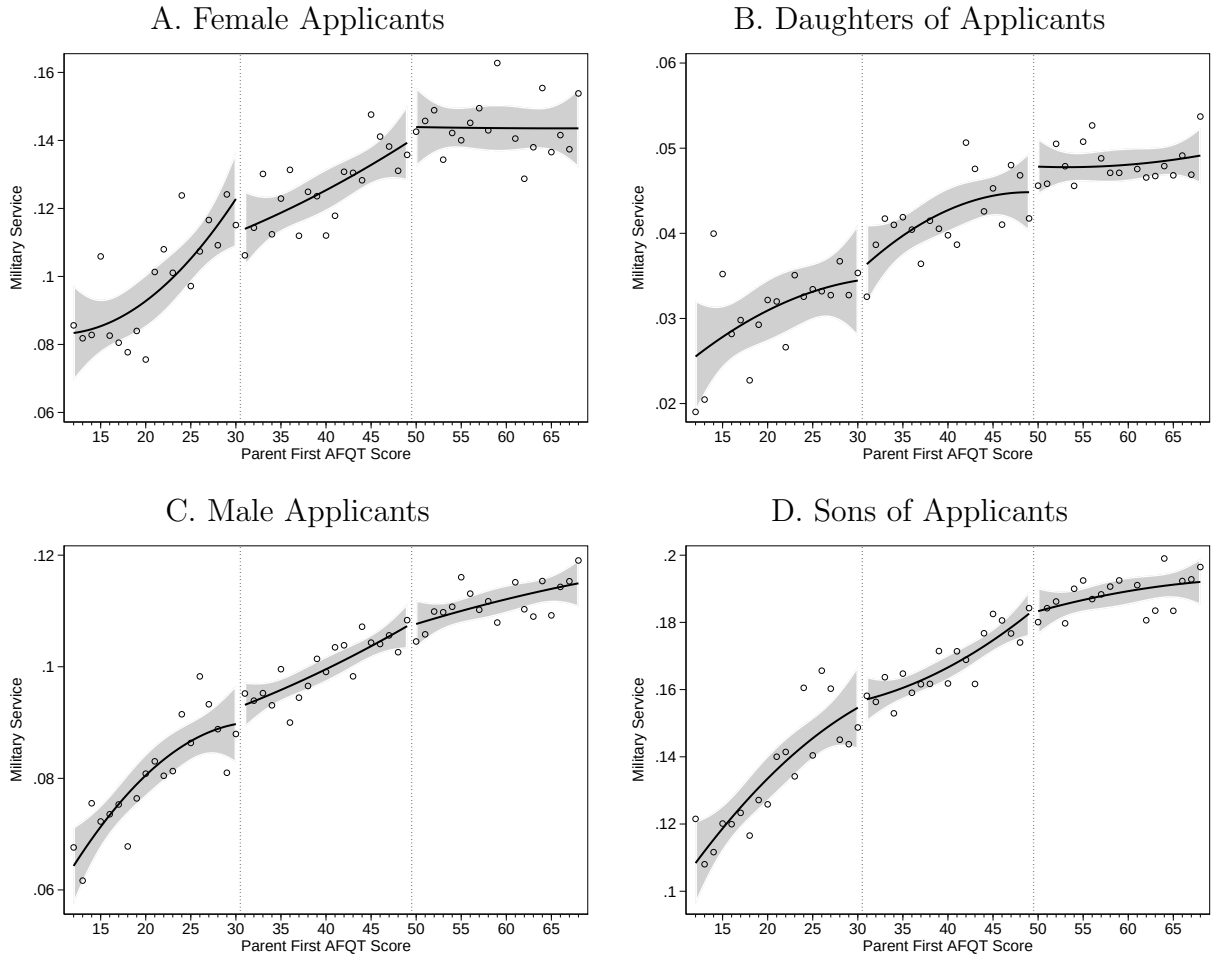
Notes: Panel (a) shows how female applicants' first AFQT scores on file corresponds to their childrens' probability of military service as identified by W-2 filings. Panel (b) shows how applicants' first AFQT scores on file corresponds to their daughters' probability of military service as identified by W-2 filings. Panel (c) shows how male applicants' first AFQT scores on file corresponds to their childrens' probability of military service as identified by W-2 filings. Panel (d) shows how applicants' first AFQT scores on file corresponds to their sons' probability of military service as identified by W-2 filings. The two RD cutoffs at AFQT scores of 31 and 50 are indicated by dashed vertical lines. 95% confidence intervals are indicated.

Figure A.16: Reduced Form: Intergenerational Military Service among Black Applicants, By Parent and Child Sex



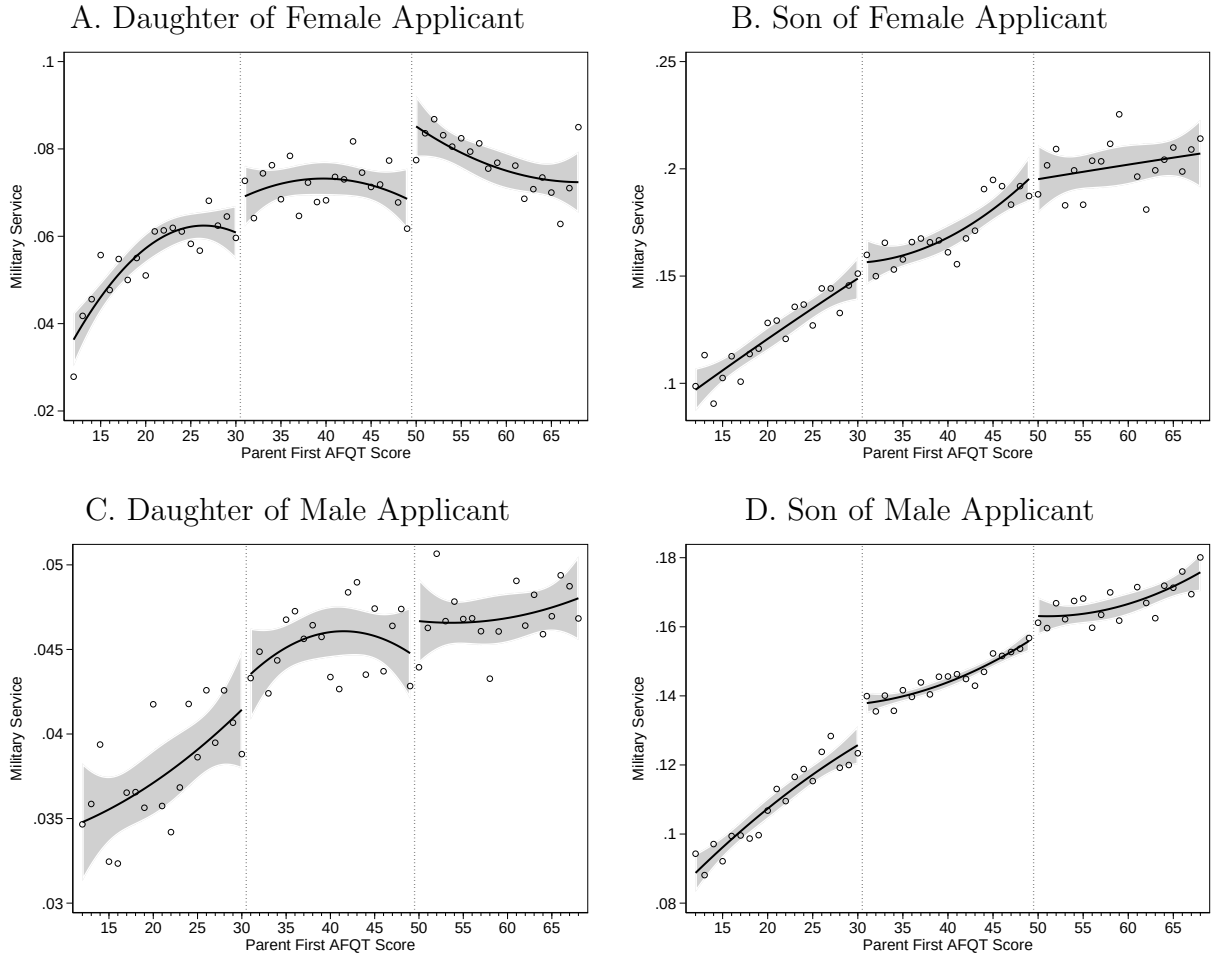
Notes: Panel (a) shows how Black female applicants' first AFQT scores on file corresponds to their childrens' probability of military service as identified by W-2 filings. Panel (b) shows how Black applicants' first AFQT scores on file corresponds to their daughters' probability of military service as identified by W-2 filings. Panel (c) shows how Black male applicants' first AFQT scores on file corresponds to their childrens' probability of military service as identified by W-2 filings. Panel (d) shows how Black applicants' first AFQT scores on file corresponds to their sons' probability of military service as identified by W-2 filings. The two RD cutoffs at AFQT scores of 31 and 50 are indicated by dashed vertical lines. 95% confidence intervals are indicated.

Figure A.17: Reduced Form: Intergenerational Military Service among White Applicants, By Parent and Child Sex



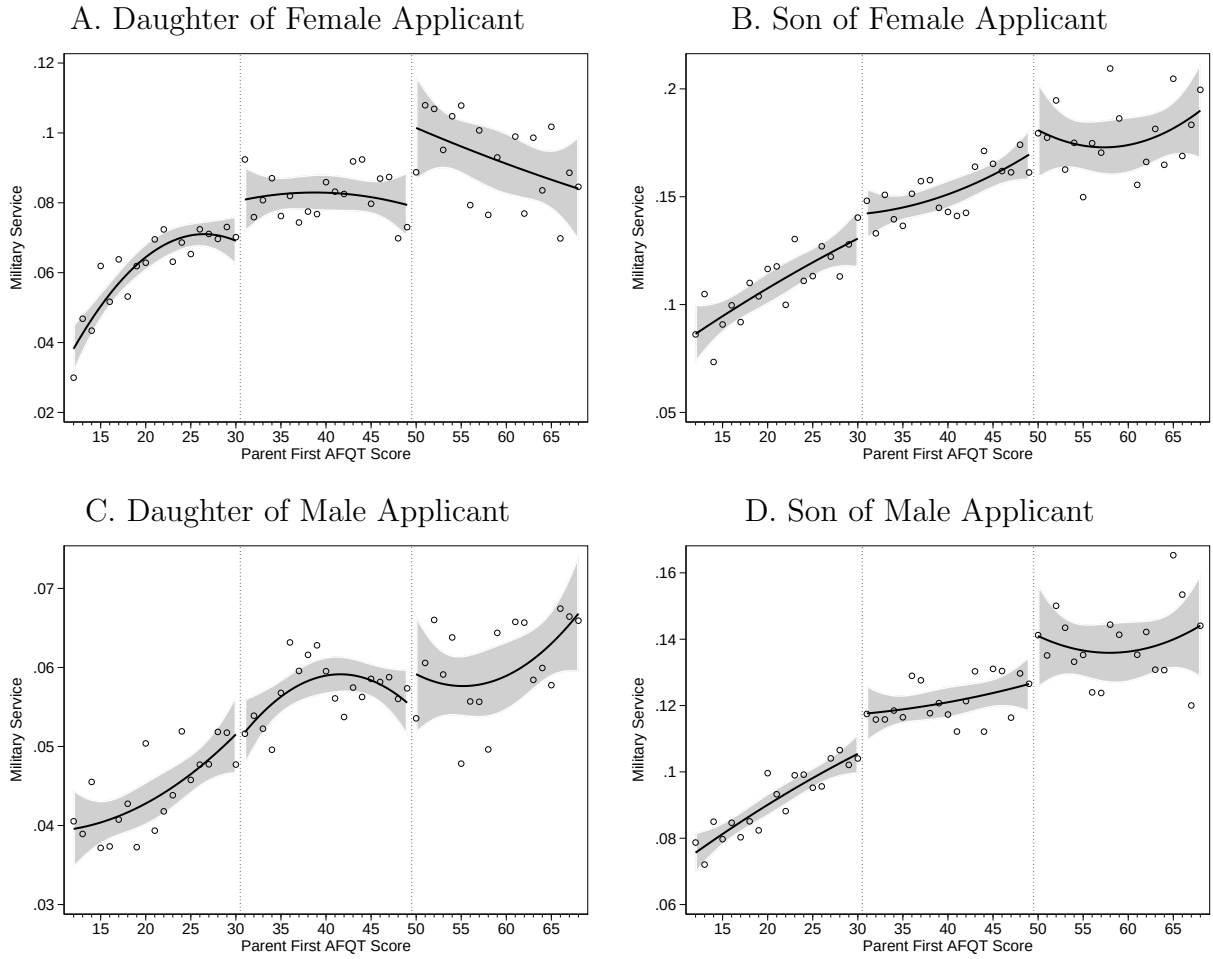
Notes: Panel (a) shows how White female applicants' first AFQT scores on file corresponds to their childrens' probability of military service as identified by W-2 filings. Panel (b) shows how White applicants' first AFQT scores on file corresponds to their daughters' probability of military service as identified by W-2 filings. Panel (c) shows how White male applicants' first AFQT scores on file corresponds to their childrens' probability of military service as identified by W-2 filings. Panel (d) shows how White applicants' first AFQT scores on file corresponds to their sons' probability of military service as identified by W-2 filings. The two RD cutoffs at AFQT scores of 31 and 50 are indicated by dashed vertical lines. 95% confidence intervals are indicated.

Figure A.18: Reduced Form: Intergenerational Military Service, By Parent and Child Sex Pairs



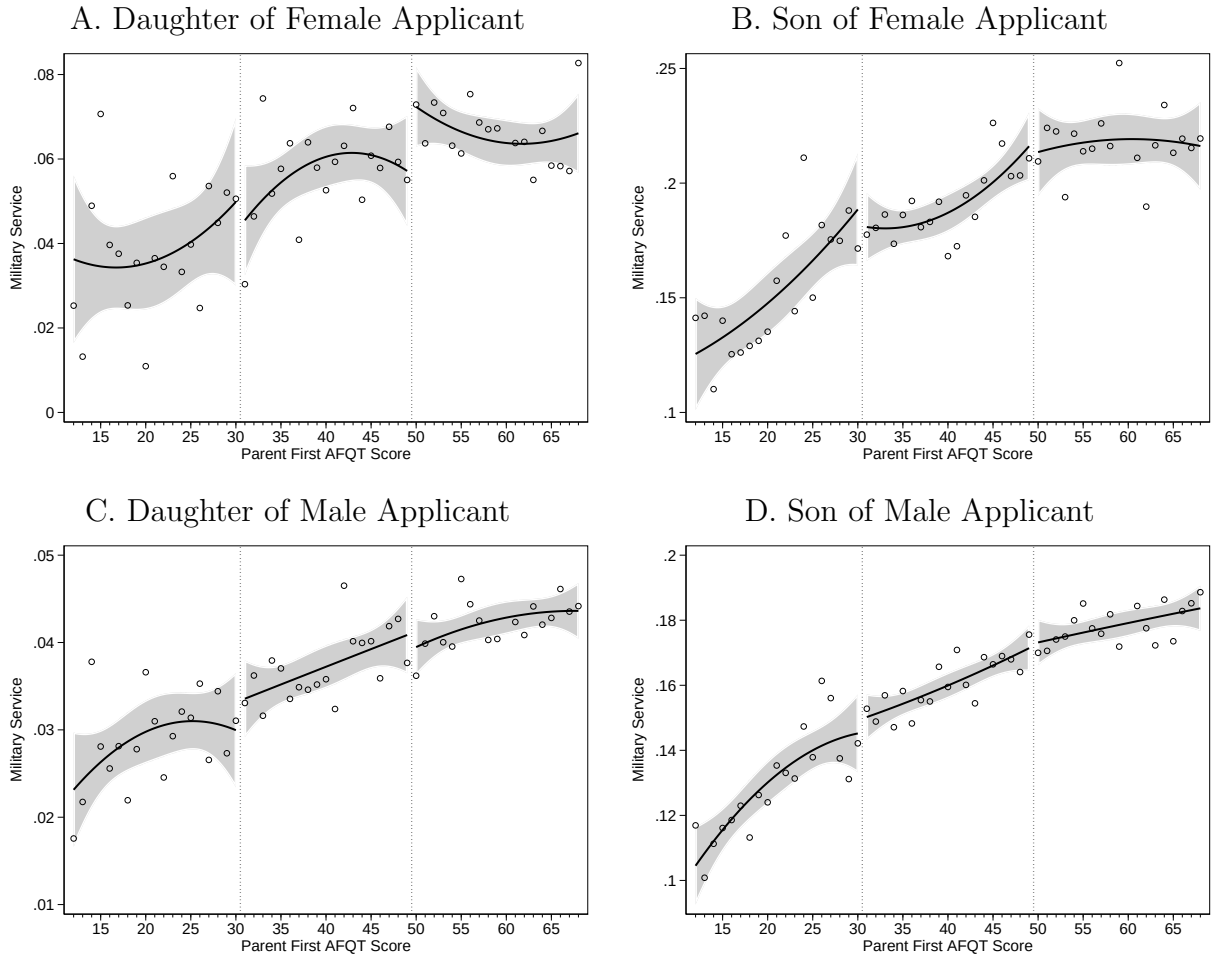
Notes: Panel (a) shows how female applicants' first AFQT scores on file corresponds to their daughters' probability of military service as identified by W-2 filings. Panel (b) shows how female applicants' first AFQT scores on file corresponds to their sons' probability of military service as identified by W-2 filings. Panel (c) shows how male applicants' first AFQT scores on file corresponds to their daughters' probability of military service as identified by W-2 filings. Panel (d) shows how male applicants' first AFQT scores on file corresponds to their sons' probability of military service as identified by W-2 filings. The two RD cutoffs at AFQT scores of 31 and 50 are indicated by dashed vertical lines. 95% confidence intervals are indicated.

Figure A.19: Reduced Form: Intergenerational Military Service among Black Applicants, By Parent and Child Sex Pairs



Notes: Panel (a) shows how Black female applicants' first AFQT scores on file correspond to their daughters' probability of military service as identified by W-2 filings. Panel (b) shows how Black female applicants' first AFQT scores on file correspond to their sons' probability of military service as identified by W-2 filings. Panel (c) shows how Black male applicants' first AFQT scores on file correspond to their daughters' probability of military service as identified by W-2 filings. Panel (d) shows how Black male applicants' first AFQT scores on file corresponds to their sons' probability of military service as identified by W-2 filings. The two RD cutoffs at AFQT scores of 31 and 50 are indicated by dashed vertical lines. 95% confidence intervals are indicated.

Figure A.20: Reduced Form: Intergenerational Military Service among White Applicants, By Parent and Child Sex Pairs



Notes: Panel (a) shows how White female applicants' first AFQT scores on file corresponds to their daughters' probability of military service as identified by W-2 filings. Panel (b) shows how White female applicants' first AFQT scores on file corresponds to their sons' probability of military service as identified by W-2 filings. Panel (c) shows how White male applicants' first AFQT scores on file corresponds to their daughters' probability of military service as identified by W-2 filings. Panel (d) shows how White male applicants' first AFQT scores on file corresponds to their sons' probability of military service as identified by W-2 filings. The two RD cutoffs at AFQT scores of 31 and 50 are indicated by dashed vertical lines. 95% confidence intervals are indicated.

Appendix Tables

Table A.1: Summary Statistics

	(1)	(2)	(3)	(4)	(5)	(6)
	Analysis Sample		Black Applicants		White Applicants	
	31 Cutoff	50 Cutoff	31 Cutoff	50 Cutoff	31 Cutoff	50 Cutoff
	A. Applicants (Parents)					
Enlisted	0.362	0.534	0.336	0.535	0.390	0.530
Years Served	2.002	2.897	2.049	3.297	1.849	2.543
Age	21.197	21.187	21.189	21.240	20.908	20.991
First AFQT Score	32.098	48.038	30.385	45.683	34.562	49.771
Male	0.711	0.708	0.636	0.609	0.773	0.758
White (Non-Hispanic)	0.400	0.543	0.000	0.000	1.000	1.000
Black (Non-Hispanic)	0.435	0.323	1.000	1.000	0.000	0.000
Hispanic	0.122	0.097	0.000	0.000	0.000	0.000
In High School	0.214	0.206	0.203	0.193	0.240	0.221
No HS Diploma	0.128	0.154	0.079	0.089	0.186	0.195
High School Diploma	0.619	0.590	0.681	0.664	0.543	0.544
Some College+	0.038	0.050	0.037	0.054	0.030	0.040
Age at First Birth	20.577	20.748	20.080	20.162	21.002	21.066
	B. Children					
Military W-2	0.093	0.110	0.087	0.104	0.100	0.113
Officer	0.001	0.002	0.001	0.002	0.001	0.002
Officer (Strict Definition)	0.001	0.002	0.001	0.002	0.001	0.001
Applied to Active-Duty Army	0.053	0.059	0.057	0.065	0.050	0.056
Male	0.509	0.509	0.507	0.506	0.510	0.510
Age at Parent Application	-0.406	-0.466	-0.172	-0.096	-0.918	-0.861
Earnings at Age 26	20,410	21,970	18,288	19,394	22,607	23,521
Employed at Age 26	0.802	0.811	0.805	0.814	0.803	0.812
College Attendance	0.582	0.611	0.602	0.640	0.541	0.583
Homeowner	0.066	0.079	0.040	0.044	0.099	0.105
Married	0.141	0.165	0.086	0.096	0.208	0.214
Number of Applicants	350,122	358,197	152,252	115,603	140,213	194,381
Number of Children	680,682	667,688	319,188	233,501	252,319	346,388

Notes: Panel A reports summary statistics for Army Applicants between Fiscal Years 1990-2004 who have at least one child who meets the criteria outlined in Section 3.2 and attain an AFQT score between 12 and 69. Panel B reports summary characteristics for children of applicants identified in Panel A. "Military W-2" identifies a military employer from all services (Army, Navy, Air Force, Marines, and Coast Guard) and all components (Active-Duty, Reserves, and National Guard). "Applied to Active-Duty Army" identifies if someone applied specifically to the Active-Duty Army and does not include applications to other services, to the Army Reserves, or to the Army National Guard.

Table A.2: First Stage Estimates

	(1)	(2)	(3)	(4)	(5)	(6)
	All Applicants		Black Applicants		White Applicants	
	31 Cutoff	50 Cutoff	31 Cutoff	50 Cutoff	31 Cutoff	50 Cutoff
Enlist	0.097***	0.089***	0.095***	0.088***	0.089***	0.089***
	(0.005)	(0.006)	(0.008)	(0.011)	(0.009)	(0.008)
N	680,682	667,688	319,188	233,501	252,319	346,388
Dep. Var. Mean	0.352	0.529	0.325	0.529	0.386	0.527

Notes: This table reports first stage estimates of the effects a parent crossing an AFQT threshold on serving in any branch of the military. Columns 1-2 report results for all potential parents in our sample, columns 3-4 report results for potential Black parents in our sample, and columns 5-6 report results for potential White applicants in our sample. Significance levels: $*$: 10% $**$: 5% $***$: 1%.

Table A.3: Military Service and Fertility

	(1)	(2)	(3)	(4)	(5)	(6)
	All		Black		White	
	31 Cutoff	50 Cutoff	31 Cutoff	50 Cutoff	31 Cutoff	50 Cutoff
	A. Any Children					
Enlisted	-0.006	0.046	0.044	0.013	-0.090*	0.037
	(0.030)	(0.036)	(0.047)	(0.073)	(0.052)	(0.046)
N	856,052	980,010	289,480	234,979	406,033	596,312
Dep. Var. Mean	0.409	0.366	0.526	0.492	0.345	0.326
	B. Number of Children					
Enlisted	0.058	0.127	0.140	0.241	-0.073	0.093
	(0.078)	(0.084)	(0.136)	(0.198)	(0.117)	(0.101)
N	856,052	980,010	289,480	234,979	406,033	596,312
Dep. Var. Mean	0.795	0.681	1.103	0.994	0.621	0.581

Notes: This table reports 2SLS RD estimates of the effects of military service on fertility outcomes. Panel A reports the effects of military service on matching to at least one dependent child who is born between 1972 and 1999 on social security records or Form 1040 filings. Panel B reports the effects of service on the number of children an Army applicant has. Columns 1-2 report results for all potential parents in our sample, columns 3-4 report results for potential Black parents in our sample, and columns 5-6 report results for potential White applicants in our sample. Significance levels: $*$: 10% $**$: 5% $***$: 1%.

Table A.4: Two-staged Least Squares Estimates of Parent Enlistment on Types of Military Service

	(1)	(2)	(3)	(4)	(5)	(6)
	All Applicants		Black Applicants		White Applicants	
	31 Cutoff	50 Cutoff	31 Cutoff	50 Cutoff	31 Cutoff	50 Cutoff
	A. Ever Active Duty Army					
Enlist	0.018	0.032*	0.011	0.088***	-0.007	-0.004
	(0.014)	(0.018)	(0.021)	(0.033)	(0.026)	(0.024)
N	680,682	667,688	319,188	233,501	252,319	346,388
Dep. Var. Mean	0.036	0.043	0.035	0.043	0.037	0.042
	B. Ever Active Duty Non-Army					
Enlist	0.036**	0.014	0.048**	0.055*	0.028	0.009
	(0.014)	(0.018)	(0.020)	(0.032)	(0.027)	(0.026)
N	680,682	667,688	319,188	233,501	252,319	346,388
Dep. Var. Mean	0.038	0.046	0.033	0.041	0.042	0.049
	C. Ever Army Reserve					
Enlist	0.024**	0.016	0.018	0.015	0.010	0.005
	(0.011)	(0.014)	(0.016)	(0.024)	(0.021)	(0.019)
N	680,682	667,688	319,188	233,501	252,319	346,388
Dep. Var. Mean	0.023	0.026	0.021	0.024	0.025	0.028
	D. Ever Non-Army Reserve					
Enlist	0.001	0.009	-0.005	0.014	0.012	0.005
	(0.005)	(0.006)	(0.007)	(0.011)	(0.009)	(0.008)
N	680,682	667,688	319,188	233,501	252,319	346,388
Dep. Var. Mean	0.004	0.005	0.004	0.005	0.004	0.005

Notes: This table presents 2SLS RD estimates of the effect of a parent's enlistment on military service types. Columns (1)-(2) present estimates for our full sample, columns (3) and (4) present results separately for Black parent applicants, and columns (5)-(6) present results for White parent applicants. Panel A presents results for active duty Army, Panel B for Non-Army active duty (Navy, Air Force, Marines, or Coast Guard), Panel C presents results for Army Reserves, and Panel D presents results for any Non-Army Reserves. Significance levels: $*$: 10% $**$: 5% $***$: 1%.

Table A.5: Two-staged Least Squares Estimates of Parent Enlistment on Military Service

	(1)	(2)	(3)	(4)	(5)	(6)
	All Applicants		Black Applicants		White Applicants	
	31 Cutoff	50 Cutoff	31 Cutoff	50 Cutoff	31 Cutoff	50 Cutoff
	A. Male Applicants + Male Children (Fathers + Sons)					
Enlist	0.112***	0.074	0.100*	0.215*	0.092	0.009
	(0.039)	(0.057)	(0.054)	(0.112)	(0.077)	(0.070)
N	246,150	239,093	104,322	72,915	99,251	132,848
Dep. Var. Mean	0.129	0.154	0.105	0.127	0.151	0.170
	B. Female Applicants + Male Children (Mothers + Sons)					
Enlist	0.060	-0.047	0.128	0.087	-0.106	-0.094
	(0.093)	(0.076)	(0.125)	(0.106)	(0.230)	(0.129)
N	100,367	100,500	57,451	45,305	29,528	43,724
Dep. Var. Mean	0.151	0.183	0.132	0.159	0.183	0.205
	C. Male Applicants + Female Children (Fathers + Daughters)					
Enlist	0.016	0.025	-0.010	0.063	0.044	-0.020
	(0.023)	(0.032)	(0.037)	(0.075)	(0.037)	(0.040)
N	236,716	230,400	100,600	70,307	95,606	128,176
Dep. Var. Mean	0.042	0.046	0.050	0.058	0.035	0.040
	D. Female Applicants + Female Children (Mothers + Daughters)					
Enlist	0.054	0.175***	0.115	0.206**	-0.088	0.169**
	(0.051)	(0.055)	(0.080)	(0.088)	(0.083)	(0.080)
N	97,367	97,617	56,805	44,959	27,912	41,605
Dep. Var. Mean	0.065	0.074	0.073	0.086	0.053	0.062

Notes: This table presents 2SLS RD estimates of the effect of a parent's enlistment on a child's military service. Enlistment for parents is identified through Army applicant records. Enlistment for children, into any military service, is identified through W-2 tax records. Panel A reports the effects for male children of male applicants, Panel B reports the effects for male children of female applicants, Panel C reports the effects for female children of male applicants, and Panel D reports the effects for female children of female applicants. Columns 1-2 report results for all children of Army applicants in our sample at the 31 and 50 AFQT cutoffs, Columns 3-4 report results for children of Black Army applicants, and Columns 5-6 report results for children of White Army applicants. Standard errors are clustered at the parent level. Significance levels: $*$: 10% $**$: 5% $***$: 1%.

Table A.6: Two-staged Least Squares Estimates of Parent Enlistment on Sharing the Same Employer

	(1)	(2)	(3)	(4)	(5)	(6)
	All Applicants		Black Applicants		White Applicants	
	31 Cutoff	50 Cutoff	31 Cutoff	50 Cutoff	31 Cutoff	50 Cutoff
	Ever Has Same Employer as Parent					
Enlist	-0.045	0.061	-0.081	0.063	-0.046	0.053
	(0.037)	(0.042)	(0.056)	(0.075)	(0.067)	(0.057)
N	680,682	667,688	319,188	233,501	252,319	346,388
Dep. Var. Mean	0.257	0.248	0.273	0.258	0.256	0.249

Notes: This table presents 2SLS RD estimates of the effect of a parent's enlistment on a dummy variable indicating whether the parent and child ever share an employer, as identified by W-2 filings and firm EINs. Significance levels: $*$: 10% $**$: 5% $***$: 1%.