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# Enlist or enroll: Credit constraints, college aid, and the military enlistment margin



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#### ABSTRACT

Money for education is a primary motivation for military enlistment. One explanation is that individuals use these benefits to overcome borrowing constraints. I explore this by examining the enlistment response of individuals to additional financial aid that can be used immediately upon high-school graduation or delayed until after military enlistment. I find that the introduction of a merit-aid program decreases the probability that a male enlists in the military by 0.6 percentage points (a 6% reduction), and that these effects are concentrated among applicants who are more likely to qualify for merit scholarships. The reductions are largest in low-income areas, supporting the argument that the effects on enlistment are a result of easing financial constraints.

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#### 1. Introduction

Each year, millions of high school graduates choose between entering the labor market and investing in higher education. Some youth from low-income families underinvest in education due to the costs of college; this may be especially true if these individuals lack access to credit or have high levels of debt aversion. As one avenue to overcome these constraints, individuals may join the military to access military education benefits. The military provides a variety of generous education benefits in return for an individual's service. These benefits rank among the top two reasons provided when individuals explain their motivations for joining the military. In this paper, I explore the enlistment versus

enrollment decision to estimate the importance of borrowing constraints in the college enrollment.

Recruits disproportionally come from the second and third lowest income quintiles, areas of the income distribution that are barely ineligible for most need-based financial aid.<sup>2</sup> These individuals may then enlist in the military because they are incapable of financing college without access to military education benefits. One respondent to a 1998 survey on military enlistment expectations noted, "I'm sorry ... I can't afford [college for my children]... So I'm going to have at least two children gone to the Army" (Lehnus, 2000). Another stated "I would have liked [my son] to go straight to college... He wants to have some sort of medical career... [But] we're not even a middle-class family... Money is an issue... the biggest idea of going in the Navy... was college money." These anecdotes are supported by Table 1, which

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<sup>&</sup>lt;sup>1</sup> The other motivation is job training (Youth Attitude Tracking Study (YATS) 1991–1994). The YATS is a survey conducted annually by the Department of Defense to collect information from youth on topics such as military enlistment expectations, military recruitment advertising, and future plans. See Appendix A for additional information.

<sup>&</sup>lt;sup>2</sup> During the 1999–2000 school year, only 19% of dependents with family incomes in this range were Pell recipients. Nearly 60% of dependents with lower family incomes received a Pell grant (author's calculations using the 2000 National Postsecondary Student Aid Study (NPSAS)).

**Table 1**Reasons to join by ability to pay for school (percentage indicating "Yes").

Ability to pay for school	Education	Job training	Duty to country
75–100%	25%	50%	32%
51-74%	26%	21%	37%
50%	27%	41%	15%
25-49%	46%	41%	8%
1–24%	41%	29%	18%
0%	86%	57%	0%
N = 229			

Note: Ability to pay is derived from the answer to: "Taking into account help from your family and your own savings and earnings, what percent of your yearly school and living expenses could you cover if you go to school?" Percentages given indicate the proportion of individuals who indicated a particular reason as a motivation for joining the military conditional on mentioning "military service" in their plans for the future. *Source*: 1991 Youth Attitude Tracking Study (YATS). See Appendix A for additional information.

separates individuals' enlistment motivations by their ability to pay yearly schooling and living expenses out of family earnings and savings. Among those able to pay 50–100% of college expenses, only 25% list education benefits as a motivation for joining the military. In contrast, among those able to pay 1–49% or none of college expenses, over 40% and 86%, respectively, list education benefits as a motivation.

Research on the existence of credit constraints in the college enrollment process is inconclusive. However, recent work suggests an increased role of credit constraints, furthering the argument that some individuals are enlisting in the military because they simply cannot afford to enroll in college otherwise (see Lochner and Monge-Naranjo (2011) for an overview of this work). Much work has been done to test for the presence of credit constraints in human capital investment decisions, yet most of it focuses on the relationship between family income and college enrollment and thus suffers from endogeneity concerns. Building on intuition developed by Cameron and Taber (2004), I present a new test relying on the differential effect of changes in immediate and delayed benefits for constrained and unconstrained individuals.

I leverage a series of financial aid shocks, provided by the introduction of 14 merit aid programs over 12 years, to identify the effect of changing financial aid conditions on the decision to enlist. Because nearly all statutes allow individuals to delay receipt of merit aid if they enter the active-duty military, these programs increase (1) the value of enrolling directly after high school and (2) the value of enlisting in the military and then enrolling. The increase in the value of enlisting and then enrolling may be slightly smaller due to discounting, but the returns to both options increase by a similar amount. Absent meaningful credit constraints, theory and prior empirical evidence on the effect of education subsidies predicts a minor response to the small subsidy generated by discounting. In contrast, theory predicts an observable decrease in enlistment if credit constraints are meaningful.

I use the American Community Survey (ACS) to illustrate that merit-aid introduction has an effect on the decision to enlist, and that for males this effect is stronger for those most likely to be eligible for merit aid (non-Hispanic White individuals). Using a dataset of all military applications and contracts between 1990 and 2004, I show that the effects are concentrated among those most likely to be affected by the introduction of merit-aid: higher ability recruits and those enlisting while in high school. I find smaller or null effects for groups less likely to be eligible for aid: dropouts and low aptitude individuals. Finally, I show that the effects are concentrated in low-income areas, supporting the argument that credit constraints motivated some individuals to enlist.

In the next section, I provide an overview of the prior work on military enlistment, post-secondary investment, and credit constraints. In Section 3, I provide background information on the recruits and merit aid programs. Section 4 provides the theoretical motivation for the test, Section 5 outlines the data, and Section 6 sets up the relevant tests. Section 7 presents the results, and Section 8 provides further discussion and concludes.

### 2. The intersection of enlistment, enrollment, and aid

There are established strands of research literature on the transition to college and the decision to enlist, yet researchers have largely ignored the intersection of the two. With the exception of a handful of papers that examine changing veteran education benefits (Angrist, 1993; Angrist & Chen, 2011; Barr, 2015a, 2015b; Bound & Turner, 2002; Lemieux & Card, 2001; Stanley, 2003), research on the enrollment process largely ignores the military. Similarly, research on military enlistment largely ignores changes in the cost of many potential recruits' most likely outside option: college.<sup>5</sup>

This is surprising because 33% of those with plans to join the military mention education benefits as a motivation for enlisting.<sup>6</sup> During the 1990s and early 2000s, the Montgomery GI Bill (MGIB) was the primary education benefit provided by the military. Roughly half of military veterans used the benefit. Because military education benefits are set at the national level, the few studies that attempt to identify their effects use variation over time in benefit levels.<sup>7</sup> However, there is no published work of which I am aware that considers the effect of changes in non-military forms of financial aid on enlistment. Understanding this effect is particularly important if individuals join the military primarily because they cannot finance college.

The role of credit constraints in determining college enrollment is uncertain. Early work examining the relationship between family income and college enrollment in the

<sup>&</sup>lt;sup>3</sup> The ability to delay merit-aid receipt in Arkansas is unclear; all results are robust to the exclusion of Arkansas from the analysis, which is done implicitly for regressions for the 1995–2004 period as Arkansas had a merit-aid program for this entire period.

<sup>&</sup>lt;sup>4</sup> Furthermore, several programs cover "full tuition"; therefore, increases in the size of the merit award may outpace this discounting.

<sup>&</sup>lt;sup>5</sup> Instead the literature tends to focus on changes in military compensation, recruiting practices, and local labor market conditions (Asch, Heaton, & Savych, 2009; Brown, 1985; Orvis & Asch, 2001; Warner, Simon, & Payne, 2003)

<sup>&</sup>lt;sup>6</sup> Author's calculations using the 1991–1994 versions of Youth Attitude Tracking Study (YATS).

<sup>&</sup>lt;sup>7</sup> For example, a study by Warner, Payne, and Simon (1999) suggests the importance of the changing generosity of military education benefits (including the GI Bill) in driving changes in recruiting, finding that an increase in the level of education benefits of one percent results in a 0.2% increase in high quality accessions.

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