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Policy Options for Military Recruiting in the College Market

Results from a National Survey

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Summary

Military recruiting became more difficult in the late 1990s and the average recruiting cost per recruit rose across the services from \$7,600 in fiscal year (FY) 1996 to \$11,700 in FY 2001, according to the Directorate of Accession Policy in the Office of the Secretary of Defense. Yet despite the increase in the amount of resources devoted to recruiting, most of the services missed their recruiting goals in one or two years in the late 1990s, the first time since the late 1970s.

The reasons for these recruiting difficulties have been analyzed elsewhere (Asch and Orvis, 1994; Asch et al., 2002). One of the key factors explaining these problems is a fundamental shift in the U.S. labor market that has caused the earnings of those with a college degree to increase relative to those with a high school diploma. This change has increased the incentive to attend college and has therefore resulted in a steady increase in college enrollments among high school graduates, a figure equal to about two-thirds of high school graduates today, according to Department of Education statistics. As a consequence, the military's traditional recruiting market—high school seniors and recent high school graduates—has been diminishing in relative size compared to the size of the college market—high school seniors and recent graduates who are in college or have immediate college plans.

To respond to the rise in college enrollment as well as other factors making military recruiting more challenging, the services improved existing programs such as the College Fund and devised new programs to attract the college market. One type of new program was the college-before-accession program that allowed and, in some cases, subsidized individuals to attend college before they enter the military. The Army's College First program is an experimental program that repays up to \$65,000 in federal college loans, pays between \$250 and \$350 per month college stipend for two years of college, allows the individual to enter the military as an E-4, and makes these participants eligible for a "high-grad" bonus of \$8,000.¹ The Navy has programs such as "CASH" and "tech-prep" that provide benefits to enable individuals to attend college before they enlist in critical occupational areas, such as hospital corpsmen and the nuclear-related fields.

Such newly devised programs are an important step toward improving the attraction of military service to college market youth. However, these programs are only the first generation of policies. It seems prudent to plan for the future and consider what the second generation of programs that allow college before enlistment should look like. The research presented in this report provides information toward the development and improvement of such programs. Specifically, the questions we sought to answer were:

¹ The high-grad bonus was \$8,000 during the first year of the College First test in 2001, but was later raised to as high as \$12,000. The high-grad bonus has been reduced to as low as \$6,000.

- Within the context of a college-before-accession program, which policy attributes—pay, stipend, bonuses, or loan repayment—have the largest effect on enlistment propensity of the college market? Should the structure of the program emphasize bonuses, pay, stipend benefits, or loan repayment? How do requirements related to the individual’s college major or their military career field affect propensity to enlist in college-before-accession programs?
- Does responsiveness to the different policy attributes vary by college market segment—high school seniors, college students, or recent college dropouts?²
- How do dropouts respond to direct enlistment programs relative to programs that allow them to return to college before enlistment?
- Which policy attributes are the most cost-effective?

Approach

The approach we took was to design and field a national survey of individuals, ages 17 to 21, who are in the college market, defined for the purpose of our study as individuals in one of three groups: college-bound high school seniors, current college students, and recent college dropouts. The survey, conducted in the winter of 2001, included many background questions but at its core was a set of 36 hypothetical policy programs that would allow individuals to attend college before entering the military.

Individuals were queried on their likelihood of enlisting under each hypothetical program where the likelihood could vary from a level of 1 (definitely not likely) to 7 (definitely likely). The hypothetical programs varied in terms of five policy attributes: (1) the level of military entry pay and enlistment bonus amount; (2) the amount and type of college stipend or benefit; (3) the length of time for which the benefit would be paid (two or four academic years); (4) the requirement regarding the type of college major the individual could pursue (academic or vocational); and (5) the requirement regarding the individual’s entry military occupational specialty (technical or any for which the individual qualifies). The individual was told that he or she would be required to enlist for a four-year term of service and would be required to maintain at least a C average while in college. Because it was of interest to also consider how college dropouts would respond to a set of programs that allowed them to directly enlist in the military without first returning to college, we included 12 hypothetical programs for the college dropout sample. These additional 12 programs varied in terms of their level of pay, bonuses, and requirements regarding military career field.

To identify the survey participants, we used a randomly selected sample drawn from lists of current college-bound high school seniors (from the class of 2001) and of former college-bound seniors (from the class of 1999) provided by a list vendor. The current class list provided a sample of current college-bound high school seniors, and the older list provided a sample of current college students or recent college dropouts.

Comparisons between the demographic characteristics of the survey respondents and Department of Education statistics on college enrollees suggested that the college students in our sample were somewhat more likely to be female, white, and enrolled in a four-year college or university program. We therefore used post-stratification to control for gender, education, and ethnicity developed using data from the Current Population Survey and applied them to our survey data. We used these weights for the descriptive analysis and computed the predicted effects of alternative policies. Our regression analysis controls for background characteristics, thereby addressing the representativeness issue to the extent that is possible with our data.

² Throughout the report we use the term “college dropout” to refer both to individuals who have left college with no intention of returning and to “stopouts” who are individuals who left college temporarily but plan to return in the future.

We used the survey data to estimate an ordered logit regression model. The model provides estimates of the effect of each policy attribute (pay, bonuses, and so forth) on the probability of stating each level of enlistment interest (1 to 7). We use the estimated model parameters to predict the effect of alternative policies on the probability of expressing a positive level of enlistment interest (i.e., a level of 5, 6, or 7, the top three levels relative to a base case). Since the base case also represents a college-before-accession program, all of the policy estimates we make are relative to a program that is a college-before-accession option and is also a hypothetical policy.

Past studies indicate that there is a positive relationship between stated enlistment propensity and actual enlistment behavior (Orvis, Sastry, and McDonald, 1996; Bachman, Segal, Freedman-Doan, O'Malley, 1998). However, because there is some uncertainty about the exact relationship between propensity and enlistment rates, especially for the hypothetical programs in the survey, we have more confidence in our conclusions about the relative magnitudes of the effects of the alternative policies on enlistments than in our conclusions about their actual size.

Results on Policy Effectiveness

We find that the \$65,000 loan repayment program has a large effect on the probability that college market youth express a positive propensity to enlist. Offering the program increases the probability by over 50 percent. Using our regression model, we find that it would take a 35 percent pay raise, the enlistment bonus would need to increase to \$50,000, and the monthly stipend would need to be raised to \$2,100 per month to achieve the same effect as the Loan Repayment Program (LRP).³

That the LRP approach has such a large relative effect on stated propensity is somewhat surprising. The fraction of high-quality recruits enlisting with the LRP has historically been quite small, around 3.3 percent of high-quality Army enlistees in FY 1998.⁴ The low percentage reflects the low percentage of recruits with sizable federal student loan debt and the traditional allocation of recruiter effort towards youth in the high schools and not toward those with some college and the small level of resources devoted to the LRP in past years. For example, the Army budget for the LRP rose from \$22.9 million to \$30.2 million in FY 2000, according to budget figures provided by the Office of Accession Policy within the Office of the Secretary of Defense. Yet, the LRP budget was substantially smaller in FY 2000 than was either the Army's enlistment bonus budget (\$108.1 million), the College Fund budget (\$104.9 million), or the advertising budget (\$240 million).

It is possible that individuals responding to the LRP option in the survey did not fully comprehend that the benefit would only pay for federal loan debt, not any college debt, despite the fact that the survey question explicitly stated "federal student loans." On the other hand, the maximum benefit of \$65,000 under the LRP is larger than all of the college stipend options that we included in the survey. For example, the highest monthly stipend we offered was \$1,400 for 4 years of school (or 36 months, given that an academic year is 9 months). This stipend works out to be a total benefit of \$50,400—less than the \$65,000 maximum LRP benefit. Perhaps not surprisingly, then, the respondents were more responsive to the LRP benefit.

³ The results of our study indicate that the LRP option is highly promising relative to other college-before-accession approaches. It does not provide direct evidence on the efficacy of the Army's College First test relative to existing programs. Such an analysis would need to assess how the recruiting results in the test compare to those in the control cell, where the control cell only offers existing programs. Thus, to compute the effect of the Army's test program, one needs to understand how it compares to existing programs, including the LRP. That analysis is beyond the scope of this paper, but the issue is being investigated by another RAND study sponsored by the Army (Orvis, 2001).

⁴ The figure is based on analysis by John Warner at Clemson University using the Army's recruiting master file provided in verbal communication to the authors in 2000.

The high level of responsiveness to the LRP option in the survey suggests that the growth in the Army's LRP budget in recent years is sensible. As recruiters devote more effort to the college market and the program becomes better funded and more easily available, the survey results indicate that youth will find this option relatively attractive.

Relative to the stipend and enlistment bonus, pay had the largest effect on the probability of expressing a positive enlistment propensity while bonuses had the smallest effect. Our elasticity estimates of the effects on the probability of a 10 percent change in pay, bonuses and stipend benefits are remarkably consistent with estimates produced in studies of enlistment supply such as the one by Warner, Simon, and Payne (2001), despite the fact that supply studies use actual high-quality enlistments, not propensity, as their outcome variable and they focus on traditional enlistment programs, not the college-before-accession program. Specifically, we estimate that raising the bonus by 10 percent increases the predicted probability of responding in the top three categories by 1.0 percent relative to the base case. Raising entry pay by 10 percent is predicted to increase the predicted probability of stating a positive propensity level by 14.5 percent. Finally, raising the monthly stipend benefit by 10 percent is predicted to increase the predicted probability by 3.5 percent. The similarity of our results to earlier work gives us confidence about the validity of our results and the robustness of the supply studies' estimates of the effects of pay, bonuses, and college benefits. Our results also suggest that recent improvements in military pay will increase the attractiveness of the military to college market youth, including the college-before-accession option. They also suggest that the increases in the stipend benefits in the Army's test College First program from \$150 per month before FY 2002 to \$250 to \$350 per month beginning in FY 2002 will have a positive, although modest, effect.

We also found that on average requirements that narrow the individual's choice of college major or military career field had a negative effect on the probability of expressing a positive enlistment interest. This result does not imply that programs limited in size, such as the Navy's tech-prep or CASH program, will be unsuccessful. In fact, such programs that allow individuals to tie their college major with their military career field could increase enlistments from the college market. Instead, our results imply that broad application of such requirements across the college market will be met with less enlistment interest.

About 81 percent of the survey respondents who were college dropouts said they would like to attend college part-time or full-time in the future. To examine whether or not programs that allow dropouts to directly enlist were associated with a higher positive enlistment interest probability, our survey included hypothetical programs that would allow dropouts to directly enlist without first returning to college as well as programs that would allow them to first return to college. Both sets of programs offered higher pay and bonuses and, in some cases, had requirements regarding their military career field.

We found that the programs allowing dropouts to enlist directly without first returning to college were associated with a stronger stated enlistment interest level. Although the effect of the individual attributes of the direct-enlistment programs were not statistically significant at the conventional levels (except for the variable representing the career field requirement), the variables were jointly significant at the 5 percent level.

At first blush, these results seem to run counter to the first-year results of the Army's College First test. In the first year, the College First program expanded enlistments among individuals with less than a year of college by 43 percent. This group included current college students as well as recent college dropouts. However, among all high school graduates as well as among graduates with more than one year of college, there was no market expansion effect in the first year.⁵ Our sample of dropouts is comprised of individuals who have been out of high school for two years. Furthermore, we did not examine how college students respond to

⁵ Later results of the test, especially in years two and three, indicate an expansion effect of the College First program for graduates as well as seniors. (Information based on personal communication with RAND researcher Bruce Orvis, project leader of the study analyzing the College First test results.)

direct enlistment programs, so our sample of dropouts is not directly comparable to the graduates for whom an expansion effect was found in the test. Our analysis indicates that current efforts by the services to actively recruit dropouts to enlist in current direct enlistment programs are appropriate. Indeed, more than 20 percent of Army accessions now have some college experience according to the Army, a testament to the Army efforts to expand recruiting in the college market. The Army hopes to increase this percentage in the future.

The survey also provides corroborating evidence on the potential importance of college dropouts as a source of high-quality enlistments (Asch and Kilburn, 2002). Our analysis showed that college dropouts had a higher probability of expressing a positive enlistment interest in the college-before-accession programs. We find that the fraction expressing a positive propensity to enlist is higher on average for dropouts (41 percent) than it is for high school seniors (33 percent) or college students (29 percent) in response to the hypothetical propensity questions. We also find that they are more oriented toward the world of work in terms of their future plans than are college students or high school seniors. For example, only 40 percent of dropouts but 83 percent of high school seniors said they planned to go to college full-time in the next few years. In contrast, 60 percent of dropouts but only 11 percent of seniors said they planned to work full-time in the next few years.

However, nearly all of the differences in propensity across college market groups were due to differences in background characteristics. In other words, when we controlled for background characteristics, dropouts had interest probabilities similar to the college-bound seniors and college students. Dropouts are more likely to be employed and less likely to have attended an academically oriented high school or to have achieved higher grades, and these characteristics are positively associated with enlistment interest levels.

The survey also confirms earlier findings that suggest that many dropouts leave college for financial reasons rather than because of poor health or poor grades, two factors that might result in their ineligibility to enlist. For example, we find that 39 percent of the dropouts said they left college without a degree because they lacked the money to continue while only 3 percent cited poor health and only 15 percent cited poor grades. The lack of financial resources suggests that some dropouts might be receptive to programs that offer them resources to attend college, such as the College Fund, the MGIB, tuition assistance, or even a college-before-accession program.

We also investigated whether specific groups were more or less responsive to changes in pay, bonuses, stipend benefits, and other policy attributes. The groups we considered were college market segment (dropout, senior, college student), gender, and race/ethnicity. The only consistent group difference was gender. In general, we found males more positively responsive to pay, bonuses, stipend benefits, and the LRP and less negatively responsive to requirements regarding college major or military career field. As males are the traditional target recruiting market, these results are encouraging. We also found that the negative effect of military career field requirements was particularly large for the college dropout group. It may be the case that this group has a clearer understanding of the implications of this requirement because they are more likely to be employed and are therefore more attached to their working conditions. This result suggests that college-before-accession programs that channel individuals into specific military career fields will have more limited success with college dropouts than other college market youth

Result on Cost-Effectiveness

We computed rough marginal cost estimates of the different policy attributes. We find that to produce a given increment in enlistments using the college-before-accession approach, the loan repayment program is the most cost-effective in general and pay is the least cost-effective. Because we examine hypothetical options and have no information about the actual enlistment rates under these programs, we made a series of assumptions to compute cost and conducted numerous sensitivity analyses to see if our conclusions were sensitive to specific

assumptions. Regardless of whether we assumed higher or lower enlistment rates, discount rates, or benefit take rates, we consistently found the loan repayment program the most cost-effective policy attribute.

The only exception to this conclusion is when we made an alternative assumption about the amount of the dollar loan repayment benefit recipients actually used. In most of our computations we assumed that LRP recipients used only 25 percent (or about \$16,000) of the LRP benefit. This figure was based on actual Army LRP usage rates in FY 2000. The reason the LRP was found to be so cost-effective was because enlistment interest among the survey's college market youth was highly responsive to the \$65,000 dollar benefit, yet the cost of the benefit was fairly modest because we assumed they only used \$16,000 of the benefit. When we assumed a substantially larger usage rate, equal to 75 percent rather than 25 percent, the LRP was no longer found to be more cost-effective than bonuses and stipend benefits. Thus, at current usage rates, our study suggests that the loan repayment program is the most cost-effective tool to expand college market enlistments, but not at high rates.

The Role of Recruiter Effort and a College Recruitment Infrastructure

The survey responses we obtained came directly from potential military recruits. Therefore, our analysis completely sidesteps two important factors that have been shown to influence military recruiting success. Those factors are recruiter effort and the role of recruiter management. Past studies have shown that recruiter effort and the incentive mechanisms used to motivate recruiter effort, such as monthly goals and incentive plans, affect the success of different recruiting policies. The services will not fully realize the gains in enlistments associated with policies such as expanded bonuses or advertising budgets unless recruiters are motivated to allocate their effort towards the enlistment of high-quality recruits.

These studies show the importance of recruiter management and, more generally, the importance of the recruiting infrastructure in achieving success of new programs. The lesson we draw from these studies is that the services will need to ensure that the appropriate infrastructure is in place if they are to be successful in the college market. For example, it is crucial that recruiters have an incentive mechanism that rewards them for success in the college market, even if it means that recruits are in the Delayed Entry Pool (DEP) for extended periods of time while they attend college. Furthermore, the services need to ensure that advertising campaigns support recruiters' efforts in the college market. They also need to ensure that recruiters are selected, trained, and provided the necessary resources to enable them to succeed in this new market. To the extent that such an infrastructure is not entirely in place, policies to recruit the college market, including those discussed in this report, will not realize their full potential. Therefore, it is of critical importance to devise not just new policies and benefits for college market recruits, but also a management infrastructure that ensures those programs' success.