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# Modeling Reserve Recruiting

Estimates of Enlistments

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Prepared for the Office of the Secretary of Defense  
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## Summary

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As reserve forces have become more important to military operations, reserve recruiting has faced many of the same challenges that have confronted recruiting for the active forces. These include more attractive civilian opportunities and a declining propensity among youth to join the ranks of military service. An additional challenge for the reserves is the shrinking active duty force, from which the reserves draw two-thirds of their members.

Despite the growing importance of the reserves, research on reserve recruiting has received much less attention than active duty recruiting. For about two decades, researchers estimated models of active duty recruiting, variously referred to as “enlistment supply models” or “aggregate recruiting models.” These models typically examine how labor market factors, demographic factors, and recruiting policies influence enlistment in the active duty.

Given the growing importance of reserve recruiting, the Office of the Secretary of Defense asked RAND to assess the feasibility of this type of estimating model for reserve recruiting. In the first portion of this effort, we reviewed trends in reserve recruiting and the civilian factors that influence recruiting, and we recommended updates to the active duty models of enlistment supply based on the reserve recruiting process and these trends. These results are currently unpublished RAND research by M. Rebecca Kilburn, Sheila Nataraj Kirby, C. Christine Fair, and Scott Naftel. In this monograph, we describe available data and the strategies we used to create models to estimate reserve recruiting, report the results from the models, and discuss the policy implications of the estimates.

Our work incorporates four features that we believe provide a more realistic representation of reserve recruiting than previous research has done. Specifically, we

- account for the possibility that individuals without prior service may choose active service, reserve duty, or civilian opportunities, rather than the typical approach of choosing to enlist in active duty or the reserves separately
- consider education as well as work among the alternatives to enlistment
- recognize that men are devoting increased amounts of time to family life, which may restrict the amount of time they would be willing to give to the reserves
- incorporate the effects that role models may have on recruiting.

After three straight years of failing to meet its goal for recruiting reserves, the Department of Defense (DoD) met its goal for FY 2000, thanks largely to accessions among individuals with no prior military service. About two-thirds of reserve accessions are by individuals with prior active duty service. Such accessions were below the FY 2000 goal, but this shortfall was offset by accessions among non-prior-service (NPS) individuals that exceeded

DoD goals. Active duty components also recruit NPS individuals and may compete with the reserve components for these recruits.

## **Developing a Model and Objective**

Recruiting models can be used to predict the number of recruits the military is likely to receive in future years or to identify what labor market, demographic, and policy variables are most likely to affect recruiting. Because our goal is to identify the relationships between these variables and recruiting outcomes, we developed a model that would yield optimal properties of coefficient estimates for the effects of different variables.

We developed two separate models, one each for individuals with and without prior service. Our data set included observations from 50 states and the District of Columbia for the years 1992 through 1999, resulting in 408 “state-FY” cases for observation. At the time of the analysis, many of the variables we selected were not available before 1992, and updated information on some was not available after 1999.

## **Model Variables and Their Predicted Effects**

For each of these 408 observations, we compiled statistics on variables most likely to affect a decision to enlist. For example, we hypothesize that higher civilian wages would encourage a potential recruit to seek civilian employment over active duty enlistment, while higher civilian unemployment rates could influence a youth to select military service. More general hypothesized relationships, and some of the variables we selected to test them, include the following.

### **Economic Variables**

We expect that a stronger economy would reduce the number of recruits for active duty because of better civilian job opportunities. For reserve accessions, economic effects are not clear. A stronger economy would produce more opportunities for second jobs, reducing the number of persons inclined to enter the reserves. At the same time, such an economy could influence persons who would otherwise select active duty to take a civilian job and enlist in the reserves instead. We include unemployment rates and wage levels to measure economic effects.

### **Demographic Factors**

Because enlistment rates of different racial and ethnic groups vary, we expect enlistment rates in areas to vary based on the race and ethnicity of their populations. Hence we include in our model, by state, the percentages of youth who are black or Hispanic.

### **“Influencer” Variables**

In planning for their years after high school, youths typically seek the guidance of their parents and of other “influencers,” such as teachers, coaches, and other adult friends. In recent years, as the veteran population has declined, it is likely that the number of influencers with positive, personal military experience who would recommend it to young adults has declined.

To account for this change, we include in our model percentages by state of adults 25 to 65 years of age who are veterans. While the veteran population has declined, the college-educated population, and the number of influencers who may recommend college over military service, has increased. Hence, we also include in our model percentages by state of the population 25–65 with a bachelor's or higher degree.

### **Civilian Workforce Characteristics**

Beyond the opportunity for jobs, the types of jobs that workers hold may influence reserve enlistment. Employer support of participation in the reserves varies by size and type of employer, with larger firms and public employers generally having more flexible policies than other employers for reservists. At the same time, larger firms typically pay higher wages, so people in states with a higher concentration of larger firms may have better alternative opportunities to enlisting. Also, a large public employment base, perceived to be less susceptible to economic fluctuations, could encourage youths to seek public civilian employment rather than military enlistment. To evaluate these factors, we include variables on workers by size of firm and by sector of employment.

### **Educational Effects**

To measure the challenge that colleges can pose to reserve recruiting, we include in our model variables on wages of college graduates and on public college tuition. We also include variables on availability of state merit-based scholarships, such as the Helping Outstanding Pupils Educationally (HOPE) program in Georgia. We expect such programs reduce the number of accessions into both active and reserve forces.

### **Policy Variables**

The DoD may seek to increase recruiting by increasing its advertising, number of recruiters, or bonus programs for recruits. We expect that states with more generous recruiting resources produce more recruits. Given that our model is estimated by state and year, we can include only variables on recruiting resources that vary across state and by year. Because of a lack of data, however, we include just two such variables in our model: the number of active duty recruiters and the availability of state educational incentive programs for members of the National Guard. We were not able to obtain state-level numbers of reserve recruiters.

## **Research Results**

The results we obtained for the model of reserve enlistments by individuals with prior service (PS) largely yielded unreliable results. We believe this unreliability is the result of conceptual and practical problems inherent in assigning a home state to separating PS members. New approaches for PS reserve recruiting estimation models need to be developed that do not rely so heavily on identifying a state for prior active duty members.

### **Non-Prior-Service Model**

The policy variables we included in the NPS model had sizeable and significant effects on both active duty and reserve recruiting. States with educational incentives for National Guard members have higher numbers of both reserve and active duty recruits. In general, at

lower levels of recruiter density, both active duty and reserve recruiting benefit from the addition of another recruiter, but as the number of recruiters rise, this benefit becomes successively smaller, eventually becoming negative for reserve recruiting in the range where we observe the bulk of recruiter density. These findings imply that empirical models that just examine the effect of active duty recruiters on active duty recruiting could overstate the net benefits of increasing the number of active duty recruiters from a total force perspective, because reserve recruiting could decrease. Thus, when comparing the cost-effectiveness of various active duty recruiting resources, the impact on reserve recruiting should be considered as well.

Among economic and demographic variables in the NPS model, we found two with a particularly strong relation to recruiting. Higher unemployment rates, not surprisingly, boosted both reserve and active duty recruiting. Minority population prevalence is also a strong predictor of recruiting effort success, including in Hispanic areas.

Our variables on college education had significant but somewhat differing results. First, we found reserve and active duty recruiting lagged in states with scholarship programs similar to the Georgia HOPE program. Such programs initiated over the past decade have been enormously popular; our findings on their effects add to a growing literature on the competition posed by colleges to military recruiting.

Tuition rates had differing effects on active duty and reserve recruiting. States with higher tuition levels had higher percentages of youths enlisting in active duty but lower percentages enlisting in the reserves. This suggests that college is a substitute for active duty but could be a complement to reserve service. There may be opportunities to develop more explicit strategies to attract reservists who would like to couple college studies and military service.

Several economic and demographic variables are noteworthy for their lack of a relationship with recruiting. We did not find varying characteristics of civilian employers to affect recruiting greatly, nor did we find a notable relationship between enlistment and our “influencer” variables. We also found little association between enlistment in the reserves and our measure for the potential demand on men’s time for home and family responsibilities.