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THE ECONOMIC RETURNS TO MILITARY SERVICE

BY

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AND

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November 1986

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U.S. Army Recruiting Command
Fort Sheridan, Illinois 60037

TECHNICAL REPORT

THE ECONOMIC RETURNS TO MILITARY SERVICE

by

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November, 1986

Prepared for the
Program Analysis and Evaluation Directorate
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Fort Sheridan, Illinois

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The views, opinions, and findings in this report are those of the author and should not be construed as an official Department of the Army position, policy, or decision, unless so designated by other authorized documents.

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EXECUTIVE SUMMARY

The purpose of this study is to assess the extent to which service in the military is a good career investment for young men. Some people believe that the answer is yes, including many young men who are entering the Armed Forces with the anticipation that their training and experiences will enhance their civilian careers. However, many others seem to hold the negative view that skills obtained through military training have little payoff in the civilian labor market. Proponents of the negative view often point to what might be termed "low-tech" jobs in the Army, and especially in the combat arms, as being especially disadvantageous.

The economic returns to military service have been the subject of much research over the years. However, this issue has taken on added significance since the institution of the ^{the Volunteer Force} ~~AVF~~ in 1973 necessitating that the military compete for young people with civilian employers and educational institutions. Unfortunately, earlier research may be of only limited value in assessing the returns to military service during the AVF era since previous research suggests that the returns to military service vary across historical time periods.

Data for the study are from two cohorts of men sampled as part of the National Longitudinal Surveys of Labor Market Experience (NLS). The first cohort is comprised of over 4000 young men between the ages of 22 and 26 in 1984 who were interviewed annually since 1979. The second cohort is comprised of over 5000

prime-age men ages 29 to 39 in 1981 who were interviewed 12 times since 1966.

Of the many features of the NLS data that make them advantageous for this study, three stand out as most important. First, they are longitudinal in nature. This allows us to compare the earnings trajectories over the life cycle of men with and without military service rather than earnings differences at a particular point in time. Second, the NLS data contain a wealth of information about the labor market experiences of the respondents, as well as a wide range of demographic, social, psychological, and economic characteristics. This improves our ability to separate the effects of military service from the effects of family background, education, mental ability, and motivation. Third, thanks to funding from the Department of Defense, the data for the young men sample contain a special military subsample as well as comprehensive and detailed information on the military experiences of all respondents.

After first organizing the data for young men into a pooled cross-section time series data file, we modeled earnings trajectories for young men who make different choices after leaving high school about whether to enter the military, college, or the civilian labor market. A similar analysis for the 1981 earnings of men ages 29 to 39 was also conducted to examine the longer term returns to military service. The major findings of these analyses can be summarized briefly as follows:

- (1) Consistent with recent comparisons of military and civilian pay, we find a significant earnings advantage

for young men in the military relative to their civilian counterparts.

- (2) The earnings of servicemen drop substantially at the time of separation.
- (3) However, the civilian earnings of former servicemen then rise rapidly and overtake the earnings of their civilian counterparts within one to four years after separation.
- (4) Once they overtake the earnings of those who never served, the higher earnings of veterans persist until the end of the period covered by the study, approximately 19 years after high school.
- (5) Many veterans go back to school to further their education.
- (6) Men who complete a tour of military duty and then invest in a college education earn more than men who work in the civilian labor market and then invest in a college education. However, both groups earn less than men who invest in a college education soon after high school.
- (7) The unemployment trajectories mirror the earnings trajectories. Unemployment is high for former servicemen just after discharge but falls to below that of their civilian counterparts within two to four years.
- (8) The economic returns to military service are greater for minorities than for whites.

- (9) The civilian earnings of former soldiers tended to be lower than veterans of the other branches.
- (10) Only small differences exist among those who held combat arms, technical, and other types of military jobs in terms of their subsequent civilian earnings.

These findings have several research and policy implications:

- (1) The different shapes of the earnings trajectories for those with and without military service demonstrate the necessity of a life cycle analytical strategy.
- (2) Our results suggest significant temporary or frictional unemployment problems just after discharge resulting from imperfect information in the labor market and the slowness of the job search process. Consideration should be given to added resources for improved counseling for discharges.
- (3) The sustained steeper slope of the earnings trajectories of veterans suggests the possibility that many civilian employers undervalue training obtained in the military. That is, due to negative images of the military resulting from the Vietnam War, negative publicity about the problems of the AVF during the late 1970s, and recent media stories on the non-transferability of skills obtained through the military, employers may underestimate the skills and potential of veterans. It is only after veterans eventually have an opportunity to demonstrate their true individual value to

employers that their earnings become commensurate with their skills. Research needs to be done to understand the costs to veterans of negative stereotypes. In addition, education programs or information should be made available to employers to correct inaccurate stereotypes.

- (4) The greater economic returns to military service for minorities supports the view that the military is a leader among employers with regards to equal employment opportunity efforts.
- (5) Research needs to be done to better understand the economic returns to military service for women.
- (6) Our results suggest that the economic returns to military service are multi-dimensional. Mechanisms for the payoff to military service appear to include:
 - (1) technical training, (2) work attitudes such as self-confidence, social maturity, acceptance of legitimate authority, (3) opportunities to develop and display leadership skills in the military, (4) signaling effects such as acting as a substitute for educational credentials, and (5) military educational benefits.
- (7) Educational benefits programs such as VEAP, the ACF, and the GI Bill, and post-military education play an important role in enhancing the civilian labor market careers of veterans. It appears that completing a tour of military service and then obtaining a college

education is an effective career strategy for those who choose not to go or cannot afford to go to college right after high school.

Introduction

Is the military a good investment for young men? Some people believe that the answer is yes, including many young men who are entering the Armed Forces with the anticipation that their training and experiences will enhance their civilian careers. However, many others seem to hold the negative view that skills obtained through military training have little payoff in the civilian labor market. Proponents of the negative view often point to what might be termed "low-tech" jobs in the Army, and especially in the combat arms, as being especially disadvantageous. This issue has been the subject of several recent investigative stories in the media. To a substantial degree, the general conclusion of these stories has been that the military service is a bad investment for young people.

A better understanding of the relationships between military experience and civilian occupational choices and earnings is critical for several reasons. An understanding of these relationships would improve the quality of counseling that can be provided to servicemen at the time of discharge. Moreover, a better understanding of these issues would be valuable in the recruiting effort. Of course, recruiting has been a particular concern since the establishment of the All Volunteer Force (AVF). As is well known, recruiting sufficient numbers of qualified young people will likely become even more difficult over the next few years as smaller and smaller birth cohorts enter the prime enlistment ages. Furthermore, the difficulty of recruiting qualified people could be exacerbated if the economy continues to

improve and the civilian educational, training, and job opportunities for youths become more attractive.

The economic returns to military service have been the subject of much research over the years. However, this issue has taken on added significance since the end of the draft and the institution of the AVF in 1973. Now that military service is primarily a matter of individual choice, the military must compete for young people with civilian employers and educational institutions (Blair and Phillips, 1983). Based on the observation that young people's decisions about allocating time among major activities such as schooling, the military, and the civilian labor market depend on perceptions about the degree to which these activities enhance future earnings capacity, recruiting efforts by the military have increasingly emphasized the training value of military service. In an analysis of 1980 data on youth, Kim (1982) found that the desire for occupational training and the desire to accumulate resources to finance higher educational attainment were primary factors in the enlistment decision. To perhaps a greater degree than ever before, young people entering the military are viewing military service as an investment in human capital.

Unfortunately, earlier research may be of only limited value in assessing the returns to military service during the AVF era since previous research suggests that these returns vary across historical time periods. Several studies have found that the relative earnings of veterans of World War II and the Korean conflict were higher than for non-veterans (Chamarette and

Thomas, 1982; Villamez and Kasarda, 1976; Fredland and Little, 1980; Detray, 1982).

In contrast, studies of Vietnam-era veterans have generally yielded a negligible or negative impact of veteran status on civilian earnings (Berger and Hirsch, 1983; Rosen and Taubman, 1982). In perhaps the most thorough examination of this era, Berger and Hirsch (1983) found the earnings of veterans and non-veterans to be similar.

The present study uses data from the National Longitudinal Surveys (NLS) to examine the economic returns to military service. In the next section we describe the theoretical framework for the analysis. Here we use a human capital perspective to derive hypothetical earnings trajectories over the early career for young men choosing either the military, college, or the civilian labor market after leaving high school. We then briefly describe the data drawn from our NLS samples as well as the basic analytical strategy. Next, we present empirical results comparing young men who choose military, college, and civilian options. Then, we present our analytical results on the determinants of earnings and earnings trajectories. In the discussion of these results we focus on the role of education (including post-military education and military educational benefits), race, branch, and military occupation. Finally, we summarize the findings of our study and their policy implications.

Conceptual Framework

Human capital theory provides a useful framework for modeling the impact of military service on subsequent civilian labor

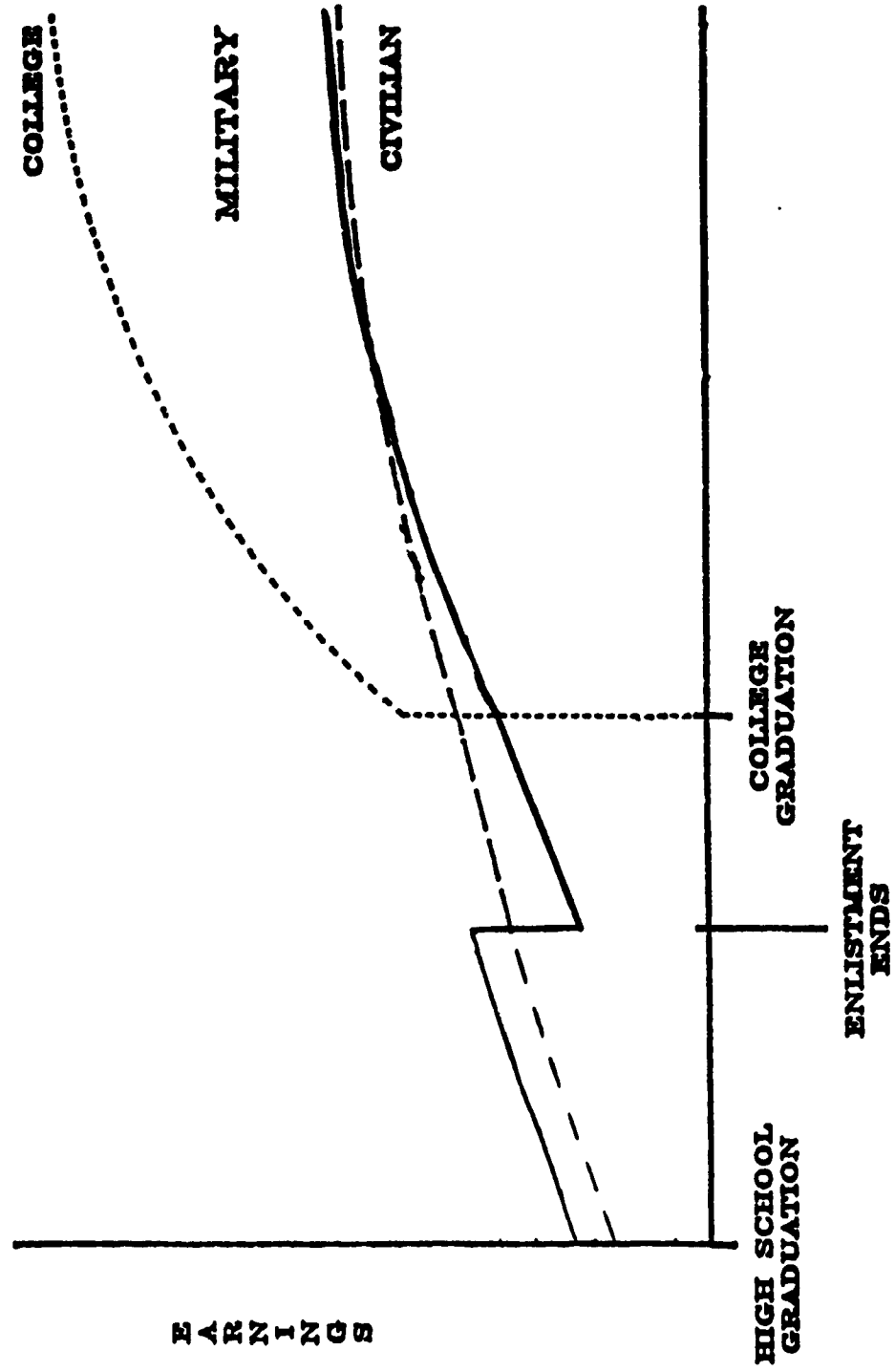
market success. Human capital theory can be used to help explain individual variation in earnings and earnings trajectories as well as the decision to participate in schooling, military service, civilian work experience, or other major activities (e.g. Becker, 1975; Mincer, 1974; Ben-Porath, 1967; Rosen, 1972; 1976; Freeman, 1976). Individual variation in earnings is viewed as arising from individual variation in skills that are valued by employers. Skills are viewed as being a function of innate abilities and learning through various educational and training activities, including on-the-job training.

According to this theory, decisions about education and training are conceptualized as "human capital" investment decisions and are analyzed in a manner similar to decisions about investing in physical or financial capital. The costs and benefits of each alternative are evaluated over some time horizon, and the individual chooses that alternative with the most favorable benefit/cost comparison. In deciding whether to invest in a college education, for example, an individual compares the expenses and foregone earnings associated with going to college with the anticipated increase in earnings capacity over the career. An individual will decide to go to college only if the "returns" to college are greater than the returns to the alternative uses of the individual's time. Of course, the decision to enter the military also can be and has been analyzed as an investment decision. A key issue here is the degree to which military experience enhances future earnings capacity.

Human capital theory and previous empirical research have demonstrated that earnings vary over the life cycle. Moreover, we can expect that the shape of the earnings trajectory may vary over the life cycle depending upon which major activity a young man chooses after leaving high school. Figure 1 illustrates hypothetical earnings trajectories over the early career for young men making each of three post high school choices: military, college, or the civilian labor market. For civilians, earnings are expected to rise after leaving school at a declining rate due to on-the-job training and various institutional arrangements such as seniority rules. Young men who choose the college option typically earn little while they are in school, and what they do earn may well be counterbalanced by substantial educational expenses. However, upon graduation, earnings tend to rise at a rapid rate, quickly surpassing the earnings of those who choose to enter the labor market directly out of high school. This rapid rise in earnings during the early career presumably reflects, at least in part, the fact that college produces, or signals, a greater ability to learn through on-the-job training.

Like those entering the civilian labor market, young men who enter the military soon after high school are able to obtain earnings right away. However, there appears to be incomplete information concerning the relative earnings of young servicemen and civilians for recent time periods. The problem stems, in part, from the fact that the relative earnings of military and

Figure 1. **HYPOTHETICAL EARNINGS TRAJECTORIES**
THREE POST HIGH SCHOOL CHOICES: MILITARY, COLLEGE, CIVILIAN LABOR MARKET



civilians have varied over time with changes in legislation; they also vary depending upon which definitions of military compensation are used. Perhaps the most appropriate definition of military compensation for making comparisons with civilian earnings is "military cash compensation" (U.S. General Accounting Office, 1986). Military cash compensation includes regular military compensation (RMC) -- which is the sum of basic pay, non-taxable cash allowances for quarters and subsistence, and the imputed tax advantage of these non-taxable allowances -- plus special and incentive pays. Military cash compensation does not include the value of benefits such as health and life insurance, disability benefits, and retirement benefits.

A June, 1986 GAO report compared military cash compensation with the earnings of full-time civilian high school graduates for men of the same ages. Overall, military cash compensation was estimated to be about 110 percent of civilian earnings. However, this ratio varied substantially with age. For men ages 19 to 24, the military to civilian pay ratio was over 120 percent. This ratio jumped to over 130 percent when the value of military and civilian benefits were also considered.

When the enlistment ends and the young man enters the labor market, his earnings are likely to fall significantly. An important question is the extent to which this decline is temporary. Economic theory would suggest that at least part of this decline is temporary, and reflects the type of employment problems that frequently occur when an individual first enters the labor market or leaves a job, whether it be military or

civilian. These temporary or, in economic terminology, "frictional" employment problems are a function of imperfect information in the labor market and the slowness of the job search process. On the other hand, much of this reduction in earnings may persist through the career. This would occur if, for example, the skills and knowledge developed in the military are not transferable to civilian jobs.

We hypothesize that a substantial portion of the decline is temporary and that the earnings of former servicemen will rise more quickly than the earnings of civilians of comparable ages. The first reason for this hypothesis is that the frictional employment problems of former servicemen will dissipate soon after discharge and the exhaustion of unemployment insurance (UI) benefits. Second, many young men will take advantage of the availability of military educational benefit programs such as the GI Bill, the Veterans Educational Assistance Program (VEAP), and the Army College Fund, and further their education after discharge. This will both lower their earnings soon after discharge and increase earnings later after they complete their education.

A third reason for expecting a more rapid rise in earnings for former servicemen has to do with (mis)perceptions by civilian employers of the value of skills obtained in the military. Consider the possibility that due to negative images of the military resulting from the Vietnam War, negative publicity about the problems of the AVF during the late 1970s, and recent media stories on the non-transferability of skills obtained through the military, employers underestimate the skills and potential of

veterans. If this is the case, then earnings would be kept low and unemployment would be high soon after discharge due to employers acting on their misperceptions. But, earnings would rise quickly as the veterans eventually have an opportunity to demonstrate their true value to employers.

To the extent that these hypothetical earnings trajectories have some validity, it becomes clear that estimates of the economic returns to military service could depend critically on the point in the career at which earnings are measured. In particular, an analysis which focuses on the earnings soon after separation would be choosing the period at which the relative earnings of veterans are at their lowest, and hence, would likely produce the greatest downward bias in estimates of the economic returns to military service.

Clearly, an approach is needed which considers the nature of these earnings trajectories. Thus, we will use two longitudinal data sets to examine the relative earnings of young men who choose to enter the military, college, or the civilian labor market over approximately the first 19 years of their career.

Of course, the earnings trajectories presented in Figure 1 obscure many important variations in the relative earnings of young servicemen. Our analysis will explore the degree to which earnings trajectories vary by such factors as race, branch of service, type of military job category, and post-military education.

Oftentimes, the economic returns to military service are discussed and analyzed only in terms of the transferability of

specific technical skills to civilian occupations. Certainly this theme dominates many popular discussions of these issues such as the Wall Street Journal article of October 9, 1985.

While assessing the transferability of technical skills is important, we should not lose sight of the fact that military service may benefit veterans in other ways as well. It seems likely, for example, that experience in the military helps one to accept legitimate authority and responsibility and adapt to the regimentation of the workplace. Moreover, although some employers may stereotype young veterans in a negative manner, evidence exists that other employers, especially in earlier eras, may have considered the successful completion of an enlistment as a credential or signal that learning has occurred. In addition, many servicemen rise to positions of leadership while in the military. It is not unreasonable to suspect that the interpersonal and leadership skills acquired in these positions are general enough to be transferable to civilian organizations.

Finally, we will consider the role of military programs such as the Veteran's Educational Assistance Program (VEAP), the Army College Fund, and the new GI Bill through which the military provides financial assistance to help veterans invest in higher education. Certainly, some portion of the economic returns to this education should be attributable to military service.

Data

Two data sets were used for our analyses, both drawn from the National Longitudinal Surveys of Labor Market Experience

(NLS). For a complete description of these data see Center for Human Resource Research (1986). The NLS has been the most utilized data set for studies of labor market topics in general and is becoming increasingly utilized for studies of military manpower issues. Of the many features of the NLS that make it valuable for such purposes, the breadth and depth of the information collected on individuals, the longitudinal nature of the data, and the oversampling of young men in the military in 1979 stand out as most important.

The sample in each cohort constitutes a representative national probability sample of the non-institutionalized population of the particular cohort as of the first survey date. The samples were drawn and personal or telephone interviews conducted by the U.S. Bureau of the Census and the National Opinion Research Center for the Center for Human Resource Research at Ohio State University which maintains the data. The NLS data include an abbreviated work history up to the time of the initial survey, an employment history for most of the period covered by the surveys, a wealth of information about a wide range of demographic, social, psychological, human capital, and economic characteristics of respondents, as well as characteristics of the respondent's job and local labor market.

The first data set is for young men. These data come from the NLS Youth Cohort. This cohort has been interviewed annually since 1979 and includes approximately 13,000 men and women between the ages of 14 to 22 in the first year of the survey. Our analysis will be restricted to males between the ages of 18

to 22 in 1979. Thus, the members of this sample will be 22 to 26 in 1983, the latest year in which earnings are available (from the 1984 survey). (While this sample comes from the NLS Youth Cohort, it's members have outgrown that name, and we will refer to it as the sample of young men.)

The analysis for young men is facilitated by the fact that blacks and Hispanics were systematically over-sampled. This necessitates that weighted analyses be performed with each observation weighted in proportion to its likelihood of being selected into the sample.

Thanks to funding from the Department of Defense, the data for young men contain a special military subsample as well as comprehensive and detailed information on the military experiences of all respondents. This information includes, but is not limited to branch, dates that each reserve or regular enlistment began and ended, military occupations, pay grade and income, type and amount of military training, reserve or guard activities, formal education received while in the service, reasons entered military, reasons left military, future military and civilian plans, type of discharge, enlistment and reenlistment bonus received, civilian job offer at time of discharge, whether the respondent returned to the same employer after active duty with the reserves or guard, satisfaction with military service, GI Bill, VEAP and Army College Fund benefits, and whether military skills were used on the civilian job.

The second data set is for men who have entered their prime-age years. This cohort was interviewed 12 times between

1966 and 1981 and contains 5,713 men, ages 14 to 24, in 1966, and 29 to 39 in 1981. (While this cohort is often referred to as the NLS Young Men's Cohort, we will refer to it as our sample of prime-age men.) These data can be used to estimate longer term returns to military service than can be estimated with the data for young men. Although the military data for prime-age men are not nearly as rich as for young men, information is available on such factors as the amount of time served in the military, discharge date, branch, and the use of educational benefits.

Analytical Strategy

Our general strategy is to model the earnings trajectories of young men who, after leaving high school, make different choices about whether to enter the military, college, or the civilian labor market. Thus, one of our first tasks was to partition the young men in the sample into three groups corresponding to the military, college, and civilian options. A guiding factor in developing these definitions was that we were mainly concerned with the major activity chosen by these young men during the first few years after high school. Thus, the military group included young men who entered the military and completed a tour of duty by age 23. Attriters were excluded from the analysis. Individuals were considered to have completed a tour of duty if they served at least 33 months. This length of time was chosen to allow individuals with three year enlistments who were released early to still be counted as completing their term. Very few individuals who enlisted during the period in which the members of our sample enlisted, 1974 to 1980, enlisted

for a tour of duty of less than three years. Also, it appears that very few individuals who had longer enlistments and who remained in the service for at least 33 months subsequently attrited.

Young men were included in the college group if they completed 16 years of schooling by age 23. Young men who did not meet either of these criteria were included in the civilian labor market group. In order to take advantage of the longitudinal nature of the data for young men and to better analyze earnings trajectories, we created a pooled cross-section time series data file. That is, the data file contained up to six observations for each respondent, one for each of the survey years between 1979 and 1984. These surveys were generally conducted in the spring of the year and assessed annual earnings for the previous calendar year, that is, 1978 to 1983. We included an observation for an individual in a given year if the individual was not enrolled in school during the year, had wage and salary earnings of at least \$1,000, was at least 19 years old, and had information on key factors such as education.

Comparison of Military, College, and Civilian Groups

Table 1 shows selected characteristics of successful completers by year entered the military. The 738 successful completers in our sample entered the military between 1974 and 1980. Individuals who entered the service after 1980 could not have completed their tour of duty by the beginning of 1983, the

Table 1. Characteristics of successful completers by year entered the military

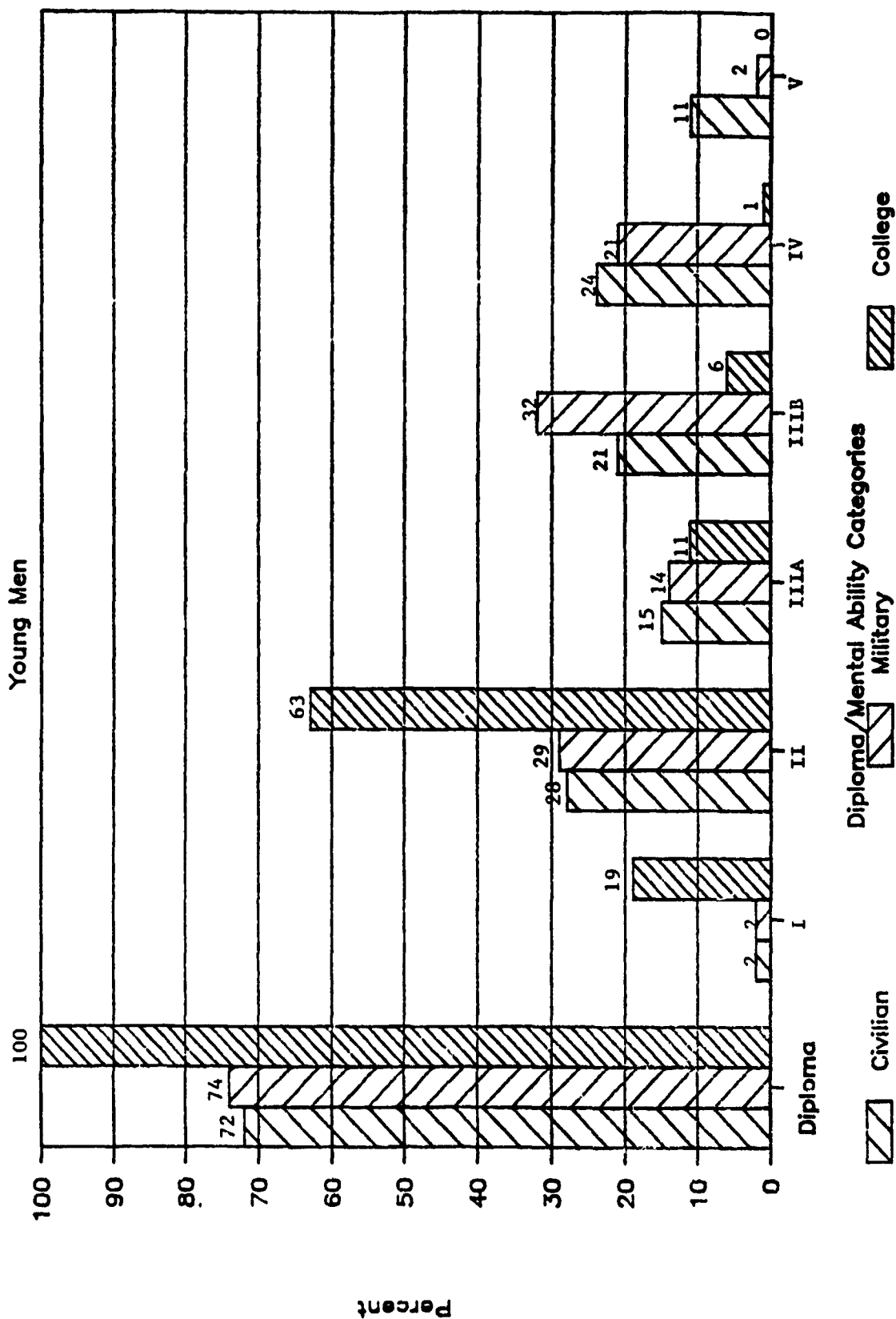
Year Entered Military	% H.S.	% Cat. I-III A	% Cat. IV-V	% Black	% Hispanic	Sample (unweighted)	Population (1,000s)
1974 or 75	72	50	19	9	9	101	107
1976	74	50	22	17	4	206	159
1977	74	44	27	22	5	222	182
1978	84	45	16	25	7	129	125
1979	63	45	25	29	3	54	146
1980	84	31	28	22	6	26	73
Total	74	45	23	21	5	738	792

latest year in which earnings were measured, and hence, were excluded from the analysis. Unless otherwise noted, distributions and analyses presented in this report are based on weighted analytical procedures. The use of weighted analytical procedures was necessitated by the oversampling of blacks, Hispanics and members of the military in 1978.

Seventy-four percent of the successful completers in our sample were high school diploma graduates. This corresponds closely to the results in Figure 2 that 72 percent of non-college civilians were high school diploma graduates (see also Appendix Table A-1). The little variations that occurred across entry years in our sample roughly corresponded to the variation in accessions reported by the Army and other services. For example, the temporary increase in the proportion of high school diploma graduates experienced by the Army in 1978 shows up in Table 1. We tend to find higher proportions of high school diploma graduates than in data on Army accessions primarily for two reasons. First, we include those who enlisted in all four branches of the military and, second, we only include those who successfully completed a tour of duty.

Approximately 45 percent of our military sample scored above the national average (i.e. categories I-III A) on the AFQT test. This equals the percentage of the non-college civilian sample. On the other hand, 93 percent of the college sample scored above the national average. Young men at the lower end of the mental ability distribution (category IV or V) are under-represented in our military sample relative to the civilian sample (23 percent

Figure 2. % With Diploma & In Mental Ability CATS



versus 35 percent). It should be noted that the members of our military sample entered the service prior to the substantial improvement in recruit quality, especially in the Army, that started at the beginning of this decade. The proportion of non-graduates and AFQT category IV enlistments has dropped precipitously since 1980. At the same time, it should be remembered that our ability to control for several dimensions of quality in our analyses should increase the generalizability of our results to more recent enlistees. Members of the college sample appear to have the highest levels of motivation as measured by the Rotter locus of control scale (Figure 3). The motivation levels of members of the military sample are only slightly higher than the levels of the civilian sample.

Blacks, but not Hispanics are disproportionately represented in our military sample. Blacks comprise 21 percent of the military sample, but only 13 percent of the civilian sample, and 5 percent of the college sample. The over-representation of blacks in our military sample reflects, in part, the fact that most of the members of our sample entered the military during the late 1970s when blacks were entering the military at record high rates.

Previous research has indicated that a substantial and probably growing number of young men are entering the military service in order to obtain educational benefits to finance their college education (Kim, 1982; Westat, Inc., 1986). This tendency is reflected in differences in educational expectations shown in Figure 4. In the 1979 interview, when these young men were

Figure 3. Levels of Motivation

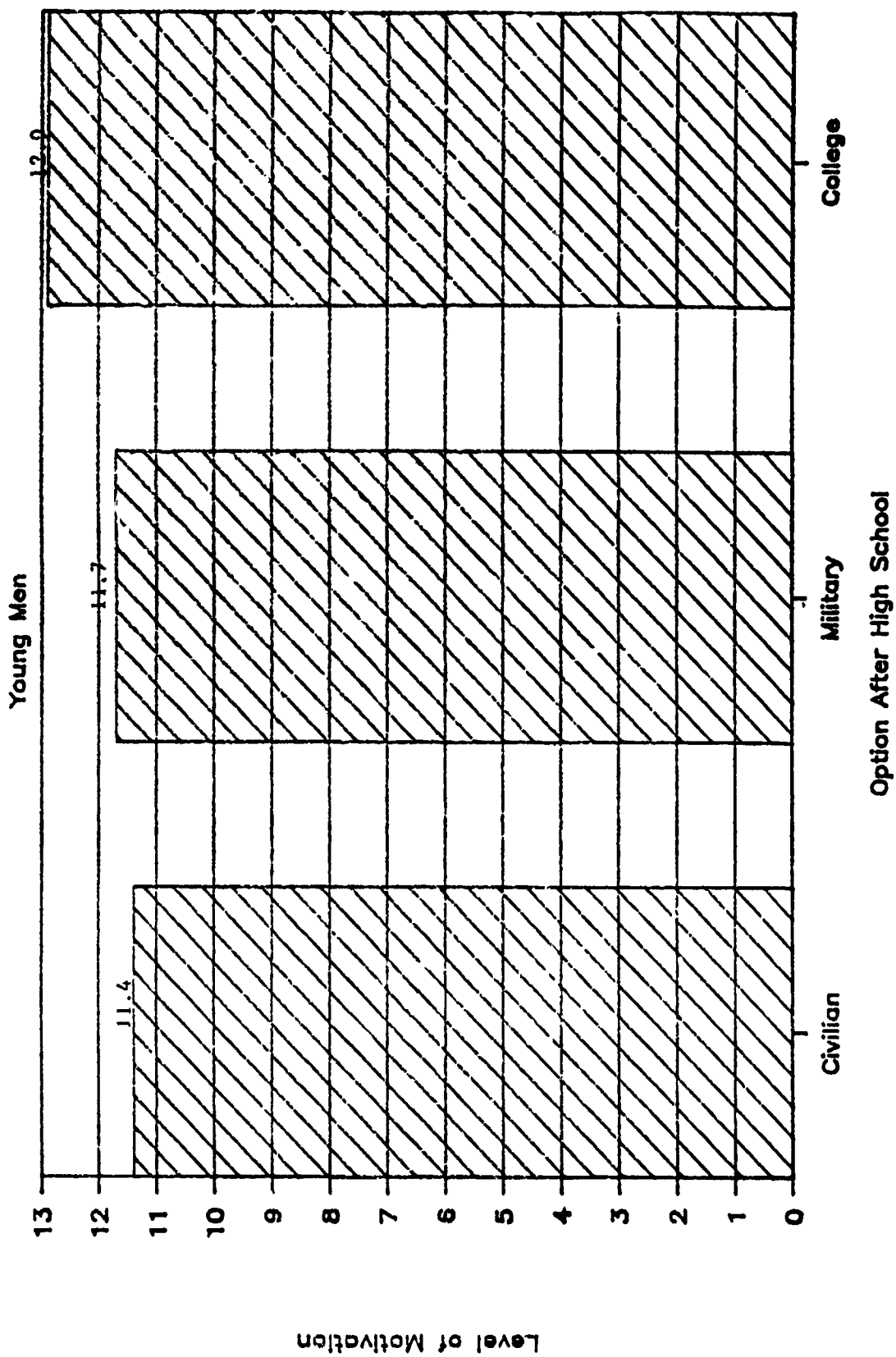
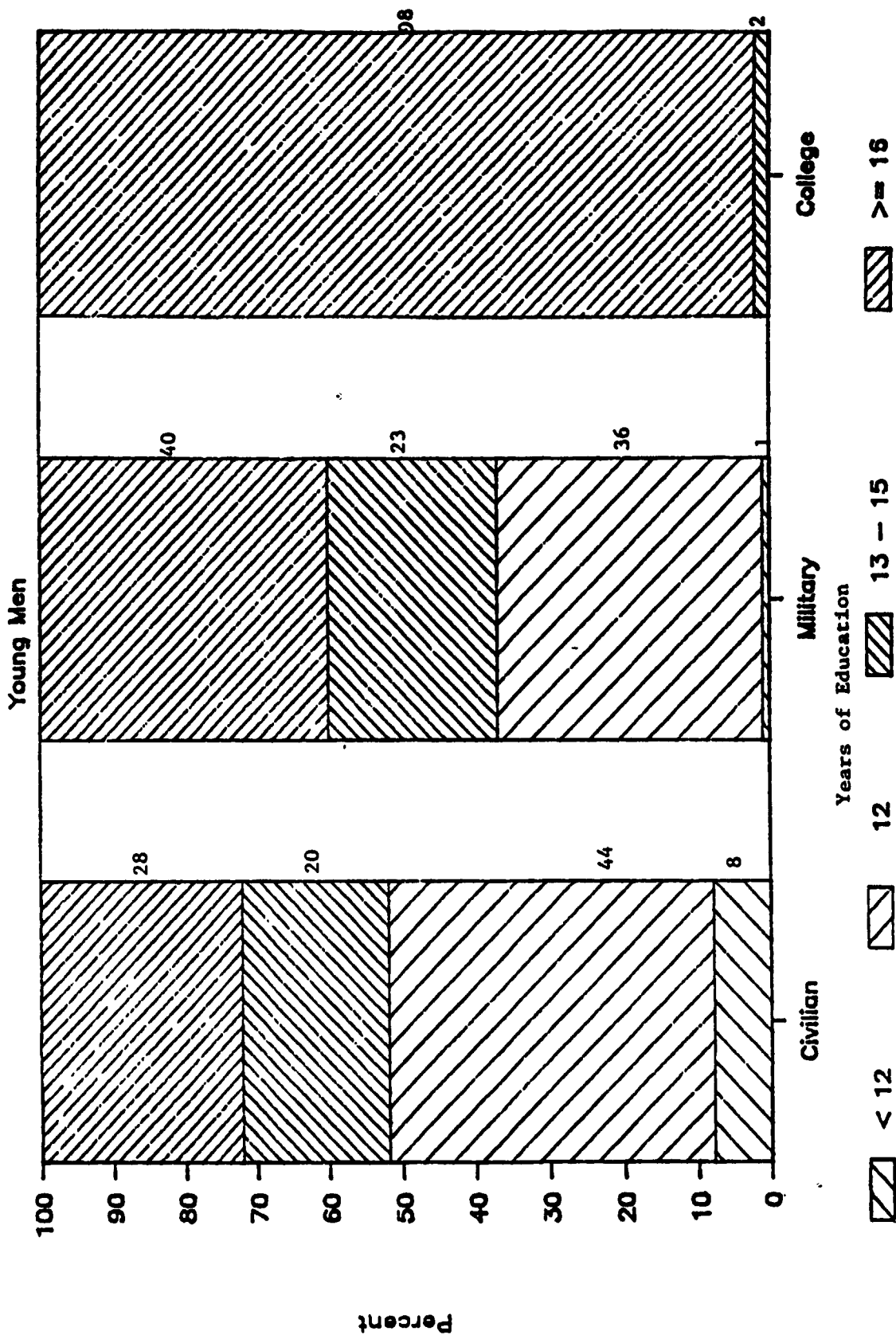


Figure 4. Educational Expectations by Choice



17 to 21 years old, they were asked how many years of education did they expect to attain. Sixty-three percent of the military sample expected to complete at least one year of college compared to 48 percent of the civilian sample. Furthermore, 40 percent of the military sample expected to graduate from college compared to 28 percent of the civilians. The high percentage of servicemen who plan to be enrolled in school in the future is even more significant since the members of our sample entered the military before the substantial increase in recruit quality during the 1980s. For example, our sample entered before the Army introduced its "Dual Market" concept around 1980, whereby the Army redirected a significant amount of its attention and resources toward attracting college-bound youth. This strategy, combined with other factors such as increases in military compensation, increases in recruiting resources, and more generous educational benefits seems to have paid off in terms of higher quality accessions during the 1980s.

Apparently, many of the servicemen are committed to achieving their educational expectations as indicated by the fact that 50 percent of them participated in the VEAP program or utilized their GI Bill educational benefits. Approximately 13 percent of our military sample enlisted in 1974 or 1975, and thus were eligible for the "old" GI Bill. For the rest, however, obtaining educational benefits required participation in the VEAP program which in turn required a financial contribution on the part of the serviceman. While this contribution was matched by the government on at least a 2 for 1 basis, participation in the VEAP

program did require a significant investment by the serviceman and is suggestive of a commitment to obtaining further education after discharge.

Earnings Analysis for Young Men: Model

To begin to model earnings trajectories for the military, college, and civilian samples, we estimated an earnings equation on our pooled cross-section time series data set covering the years 1978 to 1983. The dependent variable was wage and salary annual earnings.¹ Annual earnings were adjusted to 1985 dollars based on the U.S. Bureau of Labor Statistics estimate of average weekly earnings for production or non-supervisory workers on non-agricultural payrolls (Monthly Labor Review; 1986). It is fairly common to use the logarithm of annual earnings rather than annual earnings in earnings equations. A primary motivation for this practice is the perception that distributions of earnings

¹To assess wage and salary earnings, respondents were asked "how much did you receive from wages, salaries, commissions, or tips from all jobs, before deductions for taxes or anything else?" Respondents in the military were asked, "how much total income did you receive from the military before taxes and other deductions? Please include money received from special pays, allowances, and bonuses." However, the majority of servicemen in their first tour of duty do not receive allowances for quarters and subsistence, but receive quarters and subsistence in kind. Since civilian employees rarely receive this type of in kind compensation, we adjusted military earnings for in kind quarters and subsistence. We used information on pay grade, marital status, and the likelihood of receiving quarters and subsistence in kind to calculate the average value for quarters and subsistence in kind. This average value, \$3420, was added to the annual earnings of individuals for the years in which they were in the military. We made no adjustment for the greater value of military fringe benefits relative to the fringe benefits provided by the average civilian employer (U.S., General Accounting Office, 1986).

tend to be skewed to the right and correspond more closely to a log-normal distribution than a normal distribution. However, we are analyzing earnings for young men and include individuals with annual earnings as low as \$1000. As a consequence, the distribution of log annual earnings is more skewed (skewness = -1.05) than the distribution of annual earnings (skewness = .77). Moreover, analyses of earnings have somewhat greater interpretive appeal than analyses of log earnings. Thus, we focus our attention on analyses with earnings as the dependent variable. However, we also present the results for analyses of log earnings in the appendix. (See Tables A-5 and A-7)

Several sets of explanatory variables were included in the model. The first of which were life cycle variables designed to capture the changes in earnings over the life cycle for our three groups. Thus, we included time since high school which is simply the number of years between the year the respondent left high school until earnings were observed. To allow for likely curvilinear effects, we also included squared and cubed terms for time since high school. For individuals who completed at least four years of college we measured time since college. More specifically, to model differences in the earnings trajectories between young men choosing the college and civilian options, we included three variables: a college completion dichotomous term, a linear time since college term, and a squared time since college term. Observations for the years that individuals were still in college were excluded from the analysis. Individuals

choosing the military or civilian options were coded 0 on all the college variables.

To model differences in the earnings trajectories between young men choosing the military and civilian options, we included 5 variables. The first was a dichotomous variable coded 1 for the observation year if, and only if, the individual had entered the military but had not yet been discharged as of the observation year. The second was a dichotomous variable coded 1 for the observation year if, and only if, the individual was discharged during the observation year. The third was a dichotomous variable coded 1 for the observation year if, and only if, the individual had been discharged in a year prior to the observation year. The fourth, and fifth variables were linear and squared terms measuring the number of years since the individual was discharged and earnings were being observed.² Young men choosing the college or civilian options were coded 0 on all military variables.

²One exception to the description of the coding of the military variables for men who remain in the service after their first enlistment should be noted. The main purpose of this research is to assess the economic returns to investing in a tour of active duty in the military soon after high school. Thus, our models need to recognize that at the end of the first tour of active duty, many servicemen have the opportunity to reenlist for an additional tour and possibly make the military a career. Hence, the earnings of servicemen during second and subsequent enlistments should be treated the same as civilian labor market earnings, that is, as a potential payoff to an investment in a tour of duty in the military after high school. Thus, for young men who reenlisted for a second enlistment, the year their first enlistment ended was treated as the year of discharge.

As noted above, the majority of our military sample participated in educational benefits programs. Since many of these young men will be investing in their education after discharge, their initial participation in the civilian labor market may be less extensive, less intense, and hence, less rewarding financially in the short run. We would expect, however, this post-service investment in education to have a long-run payoff. To model differences in the civilian earnings trajectories for those veterans who did and did not participate in educational benefits programs, we included a dichotomous educational benefits term and an educational benefits time years since military interaction term in our equations.

We also included a number of human capital, background, and demographic factors in the model to minimize the effects of individual differences. That is, our models are designed to measure the effects of choosing the military, college, or civilian labor market after high school, rather than the effects of differences in the individuals making the different choices. Thus, we included measures of educational attainment through high school and whether the individual obtained a high school diploma. Since all members of the sample, military and civilian, took the ASVAB battery of tests, we were able to categorize them into mental ability categories based on their AFQT score. As a measure of motivation, we included the Rotter locus of control index. We also included an indicator of whether health problems limited the amount or kind of work that the respondent could do. In addition, demographic indicators were included for being

black, being Hispanic, residing in the South, residing in the suburbs, and residing in a center city (as opposed to residing outside of a metropolitan area). As measures of socioeconomic background, we included measures of the amount of literature in the home, number of siblings, southern residence, and whether an adult male was present in the household. Finally, a series of dichotomous year variables were included to indicate the year in which earnings were being observed.

Earnings Analysis for Young Men: Results

The estimated effects of the choice and life cycle variables on earnings based upon our regression analysis are shown in Table 2, (Appendix Table A-3 shows the results for all the control variables in our earnings equations as well as our choice-life cycle variables.) Column 1 of Table 2 shows the results of a simplified version of our model. The results for years since high school indicate that, as expected, earnings rise at a declining rate over the early part of the career. The results also show that while the earnings of college graduates are relatively low immediately after college, they rise much more rapidly than the earnings of those who do not choose college after high school.

The results for military service are basically consistent with our hypothetical earnings trajectories. On average young men in the military earn about \$1776 more than civilians who are comparable in terms of measured experience, education, abilities, and background. The size of this pay advantage for young men in the military is roughly comparable to results of the recent GAO

Table 2. Effects of choice-life cycle variables
on annual earnings for young men

Choice-Life Cycle Variable	Model					
	1		2		3	
	Coeff.	(t)	Coeff.	(t)	Coeff.	(t)
In Military	1776	(5.1)	1776	(5.1)	1775	(5.1)
Discharge Year	-1018	(1.8)	-1018	(1.8)	-1025	(1.8)
Completed Mil. Tour	-1029	(1.2)	-489	(0.5)	-130	(0.1)
Yrs. Since Mil.	408	(1.1)	526	(1.4)	154	(0.1)
Yrs. Since Mil. Sq.					77	(0.2)
College Grad.	-2631	(4.3)	-2639	(4.3)	-3049	(2.5)
Yrs. Since Coll.	2003	(7.7)	2006	(7.7)	2443	(2.2)
Yrs. Since Coll. Sq.					-88	(0.4)
Yrs. Since H.S.	1386	(7.8)	1394	(7.9)	1574	(3.6)
Yrs. Since H.S. Sq.	-78	(3.6)	-79	(3.7)	-130	(1.1)
Yrs. Since H.S. Cubed					4	(0.5)
Ed. Benefits			-1465	(1.7)	-1400	(0.7)
Ed. Ben. * Yrs. Since Mil.					-40	(0.0)

report comparing military cash compensation with civilian earnings. Our estimated military advantage is slightly smaller than the advantage estimated by the GAO. One possible explanation for this difference in estimates is that our study covers the period 1978 to 1983 and hence includes years prior to the increases in military compensation enacted in the early 1980s. The GAO analyzed 1985 earnings.

The negative coefficient for the discharge year term reflects the drop in earnings that typically occurs when one leaves the service and enters the civilian labor market. Indeed, this coefficient probably underestimates the drop in earnings because, on average, the respondents were serving and earning in the military for half of the discharge year. The coefficients for completed military tour and years since military suggest that while former servicemen are at a disadvantage relative to civilians with equivalent characteristics, their earnings rise faster and overtake civilian earnings about 2 to 3 years after discharge.

As recognized by the Army's Dual Market Strategy, a substantial proportion of servicemen plan to further their education after discharge. And even though the members of our sample entered the service prior to 1981, one-half participated in educational benefits programs. The results in column 2 of Table 2 show that even though we excluded from the analysis observations for those years in which individuals were enrolled in school, veterans who participated in educational benefits

programs tended to earn less during the first few years out of the military than veterans who did not participate.

To more accurately model the shape of the life cycle effects we added selected linear and curvilinear terms (Table 2: column 3). Although this more complete model fits the earnings trajectories most accurately, the high degree of colinearity among the linear, squared, and cubed terms implies that the value of a given coefficient may vary considerably depending upon the values of the other terms in the model. Thus, the coefficients must be interpreted together. Perhaps the best way to do this is to calculate standardized earnings trajectories for the four options. Hence, we calculated earnings trajectories for the first nine years after high school for young men who chose either the military with education benefits, the military without education benefits, college, or the civilian labor market. These earnings trajectories are standardized in that they control for the human capital, demographic and environmental variables in the model.³

³ More specifically, the earnings trajectories are calculated as follows:

$$Y_{ct} = \sum_i b_i X_i + \sum_j b_j Z_{cjt}$$

where

Y_{ct} = expected earnings t years after high school given choice c .

X_i = mean or standard value for the i th control variable. The control variables include all the variables included in the model other than the choice-life cycle variables shown in Table 5.

Z_{cjt} = the value for the j th career-life cycle variable for

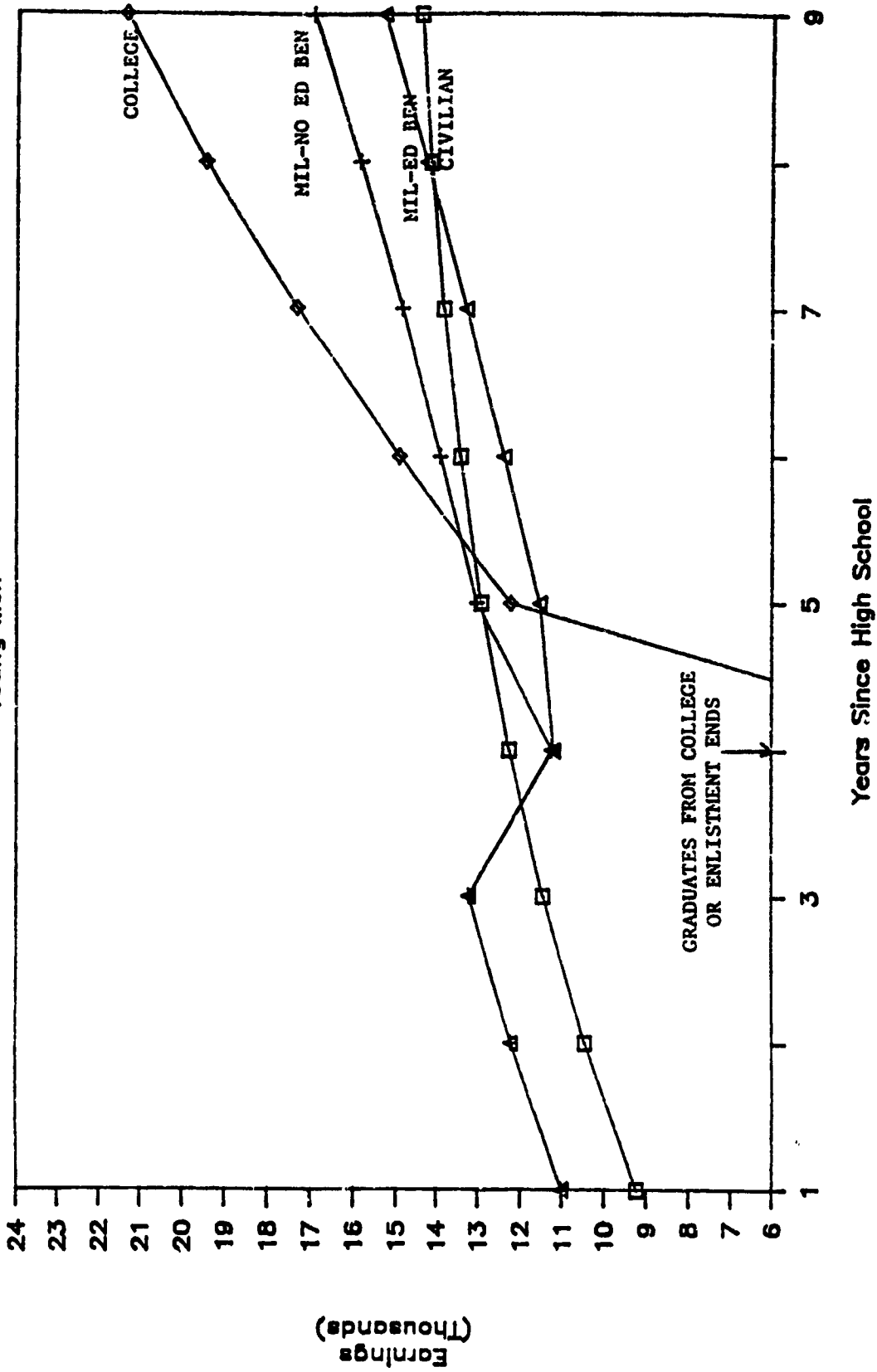
Our standardized earnings trajectories show that the earnings of civilians rise after leaving high school and then taper off (Figure 5). During the first few years after high school, while servicemen are still in the military, their earnings are higher than for comparable civilians. However, when they are discharged, their earnings drop significantly to below those of civilians. However, this disadvantage is only temporary as the earnings of veterans rise faster than do those who never served. For veterans who did not participate in educational benefits programs, earnings overtake the earnings of civilians only one year out of the service or five years out of high school. The earnings of veterans who participated in educational benefits

the t th year after high school given choice c .
 b_i = the regression coefficient for the i th control variable.
 b_j = the regression coefficient for the j th choice-life cycle variable.

For example, for choice=civilian and $t=3$, the time since high school linear, square, and cubic terms equal 3, 9, and 27 respectively, and all other Z 's=0.

These standardized earnings trajectories will vary somewhat depending on when individuals enter and leave the military or college. For our trajectories we assume that individuals who choose to go to college enter the year they leave high school and graduate four years later. Similarly, we assume that servicemen enter the military the year they leave high school and complete their tour of duty four years later. For example, for choice=military (with or without education benefits) and $t=2$, the time since high school linear, square and cubic terms equal 2, 4, and 8 respectively, the in military term equals 1, and all other Z 's=0. For choice=military with educational benefits and $t=0$, the time since high school linear, square, and cubic terms=9, 81, and 729 respectively, the completed military tour, years since military, and years since military squared terms=1, 5, and 25 respectively, the education benefits and (ed. benefits * yrs. since mil) terms=1 and 5 respectively, and all other Z 's=0.

Figure 5. Standardized Earnings Trajectories
Young Men



Note: See Appendix Table A-4 for complete data

programs are lower, presumably because of their less extensive participation in the labor market.

Why do earnings of servicemen drop at the time of discharge and then rise more quickly than those of civilians? Clearly, one reason for this pattern is the frictional unemployment problems that result from imperfect information in the labor market and the slowness of the job search process. Economic theory and previous research indicate that these types of problems lead to temporary unemployment or low earnings for individuals when they enter or reenter the labor market or leave a job without having lined up a new one. It often takes a considerable amount of time for an unemployed worker and an employer to find each other even when they are compatible. If the low earnings of veterans were to persist through the career then it would constitute evidence that the military did not help develop skills relevant to the civilian labor market. However, the overtaking of civilian earnings by the earnings of veterans in Figure 5 suggests that the labor market problems of veterans are temporary and that the military does provide relevant skills.

The steeper rise in civilian earnings for the military sample may also reflect a process whereby individual veterans are slowly overcoming the effects of an underestimation of their skills by many employers. As we discussed earlier, consider the possibility that due to negative images of the military resulting from the Vietnam War, negative publicity about the problems of the AVF during the late 1970s, and recent media stories depicting the military as a poor investment for young people, employers

underestimate the skills and potential of veterans. Employers acting on these misperceptions may contribute to the low earnings of servicemen shortly after discharge. However, once on the job, veterans are evaluated more on their performance than on their previous experiences. The relatively steep rise in earnings of veterans suggests the possibility that their actual performance has been greater than their employers' original perceptions of their qualifications and potential.

Unemployment Analysis for Young Men

We also used our regression model to analyze unemployment for these young men (Table 3). The dependent variable for this analysis was a function of the number of weeks unemployed during the calendar year.⁴ The standardized weeks unemployed trajectories based on these regression results are shown in Figure 6. Consistent with published age by unemployment statistics, we find that unemployment levels for young civilians are high during the

⁴More specifically, the dependent variable was:
 $Y_{ct} = \log (WKUNEMP - 1)$
 where WKUNEMP is weeks unemployed during the previous calendar year. This specification was used primarily because of the highly skewed distribution of annual weeks unemployed. In calculating the standardized unemployment trajectories, we converted back to the weeks unemployed metric:

$$WKUNEMP = e^{Y_{ct} - 1}$$

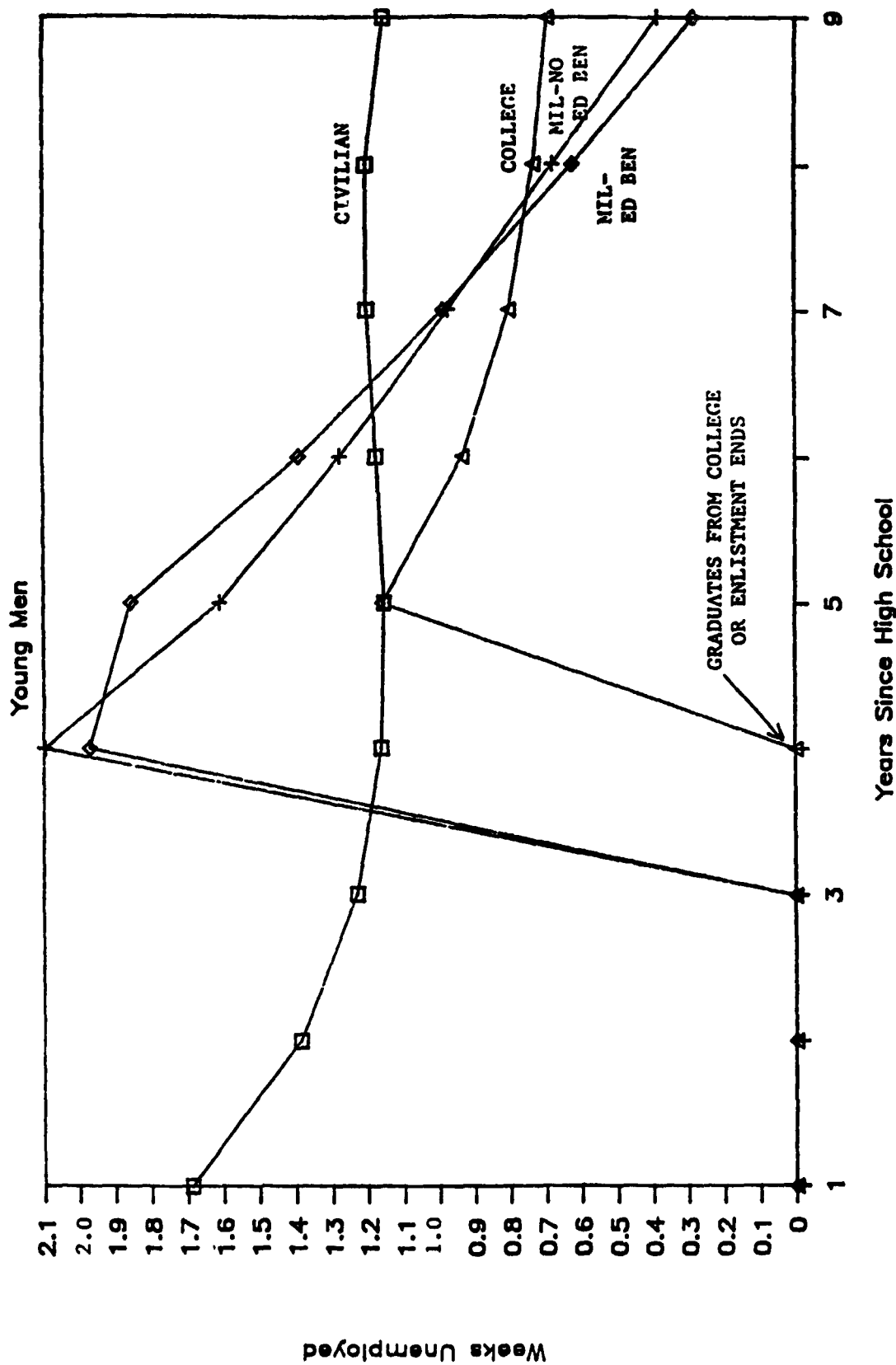
where Y_{ct} is the expected value of the dependent variable t years after high school given choice c . Because of our log specification of the regression equation, the standardized weeks unemployment levels in Figure 6 cannot be interpreted as approximately the arithmetic mean of weeks unemployed for given values of c and t . They are substantially lower than the arithmetic mean and are more analogous to a geometric mean.

Table 3. Effects of choice-life cycle variables on unemployment for young men

Choice-Life Cycle Variable	Model					
	1		2		3	
	Coeff.	(t)	Coeff.	(t)	Coeff.	(t)
Discharge Year	0.350	(3.8)	0.350	(3.8)	0.360	(3.8)
Completed Mil. Tour	0.440	(3.1)	0.400	(2.6)	0.330	(1.1)
Years Since Mil.	-0.177	(2.9)	-0.184	(3.0)	-0.135	(0.5)
Years Since Mil. Sq.					-0.004	(0.1)
College Grad.	0.070	(0.7)	0.070	(0.7)	0.160	(0.8)
Yrs. Since Coll.	-0.082	(1.9)	-0.082	(1.9)	-0.183	(1.0)
Yrs. Since Coll. Sq.					0.020	(0.6)
Yrs. Since H.S.	-0.127	(4.4)	-0.127	(4.4)	-0.218	(3.0)
Yrs. Since H.S. Sq.	0.012	(3.5)	0.012	(3.5)	-0.004	(0.1)
Yrs. Since H.S. Cubed					-0.002	(1.4)
Ed. Benefits			0.090	(0.9)	0.170	(0.6)
Ed. Ben. * Yrs. Since Mil.					-0.042	(0.3)

Note: Unemployment=log (WKUNEMP-1) where
WKUNEMP is weeks unemployed in a calendar year.

Figure 6. Standardized Unemployment Trajectories



Note: See Appendix Table A-4 for complete data

first calendar year after high school, then decline and taper off. Unemployment levels for college graduates are also fairly high during the first calendar year after finishing college, approximately the same level as for young men of similar ages who participated in the civilian labor market after high school. However, the unemployment levels for the college group then decline to levels significantly below the levels for the civilian labor market group.

Of course, servicemen experience no unemployment while they are in the military. When they are discharged, however, many veterans experience significant spells of unemployment, presumably due to frictional unemployment problems suffered by many job leavers and new entrants into the labor market. Indeed, the unemployment levels for veterans are higher than those for civilians one year out of high school. However, we need to keep in mind that we did not include in the analysis observations for individuals when they are enrolled in school. Thus, a more appropriate comparison is between civilians one year after completing high school and veterans one year after discharge or five years after completing high school. Figure 6 reveals that at these comparable points in the career the unemployment levels for veterans and civilians are similar. We also must remember that while most individuals are not eligible for unemployment benefits if they cannot find a job when they leave school and enter the civilian labor market, recently discharged veterans are eligible for unemployment benefits. Hence, the availability of unemployment benefits provides veterans with greater resources to

finance substantial periods of unemployment and to conduct a longer job search to find the right job.

The temporary nature of the unemployment problems experienced by many veterans is demonstrated by the precipitous decline in unemployment as time elapses since discharge. By three to four years after discharge, veteran's unemployment levels have fallen below those of their civilian counterparts who never served.

These earnings and unemployment trajectories underscore the fact that the results of earnings comparisons between young men who did and did not serve in the military will depend on the point in the career that earnings are measured. In particular, studies which focus on civilian labor market success shortly after discharge have a built in bias leading to an underestimation of the economic value of military service.

Returns to Military Service for Young Minority Men

The effects of choice-life cycle variables on annual earnings and unemployment for young minority men are shown in Table 4. These results indicate that the earnings of young minority servicemen are about \$3700 higher than the earnings of their civilian counterparts. Surprisingly, we find little evidence of any significant frictional unemployment problems for young black veterans at the time of discharge. Also in contrast to our results for the entire sample of young men, the civilian earnings of young minority veterans are as high or higher than the earnings of comparable young men who never served, but their advantage does not increase over time. Taken together, these

Table 4. Effects of choice-life cycle variables on annual earnings and unemployment for young minority men

Choice-Life Cycle Variable	Model					
	1		2		3	
	Coeff.	(t)	Coeff.	(t)	Coeff.	(t)
ANNUAL EARNINGS						
In Military	3764	(5.8)	3764	(5.8)	3771	(5.8)
Discharge Year	671	(0.7)	671	(0.7)	701	(0.7)
Completed Mil. Tour	842	(0.5)	743	(0.4)		
Yrs. Since Mil.	-22	(0.03)	-29	(0.0)	2800	(0.8)
Yrs. Since Mil. Sq.					-811	(1.0)
College Grad.	461	(0.7)	463	(0.3)	3219	(1.1)
Yrs. Since Coll.	713	(1.2)	712	(1.2)	-1745	(0.7)
Yrs. Since Coll. Sq.					406	(1.0)
Yrs. Since H.S.	1512	(4.3)	1512	(4.3)	1053	(1.3)
Yrs. Since H.S. Sq.	-85	(2.1)	-85	(2.1)	37	(0.2)
Yrs. Since H.S. Cubed					-9	(0.6)
Ed. Benefits			230	(0.1)	-2504	(0.7)
Ed. Ben. * Yrs. Since Mil.					1645	(0.9)
UNEMPLOYMENT						
Discharge Year	0.006	(0.3)	0.006	(0.0)	0.009	(0.0)
Completed Mil. Tour	0.281	(0.8)	0.312	(0.8)	0.417	(0.5)
Yrs. Since Mil.	-0.231	(1.4)	-0.230	(1.4)	-0.432	(0.6)
Yrs. Since Mil. Sq.					0.063	(0.4)
College Grad.	-0.147	(0.4)	-0.148	(0.4)	-0.731	(1.2)
Yrs. Since Coll.	-0.047	(0.4)	-0.047	(0.4)	-0.498	(1.0)
Yrs. Since Coll. Sq.					-0.097	(1.1)
Yrs. Since H.S.	-0.150	(2.1)	-0.149	(2.1)	-0.210	(1.2)
Yrs. Since H.S. Sq.	0.010	(1.2)	0.010	(1.2)	0.027	(0.6)
Yrs. Since H.S. Cubed					-0.001	(0.4)
Ed. Benefits			-0.067	(0.2)	0.209	(0.3)
Ed. Ben. * Yrs. Since Mil.					-0.161	(0.5)

results are consistent with the view that the military has been a leader among employers with regards to equal employment opportunity efforts for minorities (e.g., Moskos, 1986).

Post-Military Educational Enrollment

In Table 5 we show the proportion of young men enrolled in school between the ages of 22 and 26 for each option, excluding men still in the military. These results indicate that, at each age, a larger proportion of veterans than civilians are enrolled in school. Among veterans who participated in educational benefit programs, about one-third were enrolled in school in any given year between the ages of 22 and 26. Indeed, by age 26 the proportion of the veterans enrolled in school (29 percent) was larger than the proportion of the college graduates enrolled in school (20 percent). These results indicate that even among veterans who entered the military during a period of less generous education benefits, a very substantial proportion were investing in their education after their enlistment ended. This emphasis on learning rather than earning would tend to lower their earnings during the first few years after their tour of duty ends. The question is, will it enhance their earnings in the future?

Earnings Analysis for Prime-Age Men: Model

To examine the longer run economic value of military service we estimated earnings models for our sample of prime-age men. These men were ages 14 to 24 at the time of the first survey in 1966 and ages 29 to 39 at the time of the last interview in 1981. In most respects the model is very similar to the one used for

Table 5. Percentage of young men enrolled in school
by option and age

Age	MILITARY			COLLEGE	CIVILIAN
	Without Ed. Benefits	With Ed. Benefits	Total		
22	2	40	29	97	18
23	4	37	24	60	15
24	7	30	20	37	14
25	7	34	24	37	12
26	0	29	20	20	7
Total	5	33	23	61	15

* See Appendix Table A-4 for complete data

young men. However, some differences were necessitated by differences in the life cycle and time period covered and differences in the data available for the two samples.

To be included in the military option subsample, an individual had to have completed 21 months of military service by the age of 24.⁵ The dependent variable was wage and salary annual earnings measured in the 1981 interview. Respondents were asked about their annual earnings during the 12 month period preceding the interview and most of the respondents were interviewed during the summer. Thus, the period covered includes the last half of 1980 and the first half of 1981 for most respondents. For the purposes of specifying the life cycle variables, we used the beginning of the period as the reference point. Thus, years since high school for someone who completed high school in 1970 was 1980-1970 or 10 years. The choice-life cycle variables included in the analysis for prime-age men were analogous to those included in the analysis for younger men. However, data on prime-age men extend further into their careers, so that we were able to measure whether an individual who did not graduate from college relatively soon after high school, did so later. To model the effects of taking different routes to obtaining a college degree, we included three college graduation variables

⁵ If an individual completed at least 15 years of education by age 23, then he had to have entered the military by age 20 to be included in the military sample. This was done so that men who completed or nearly completed their college education before entering the military would not be counted choosing the military option but instead counted as choosing the college option.

(see Table 6). The first, college graduate (post HS), was coded 1 if the individual was committed to the college option soon enough after high school to have graduated by age 24. The second college variable, college graduate (post military), was coded 1 if the individual graduated from college after completing his military service. The third variable, college graduate (post civilian), was coded 1 if the individual graduated from college after age 24 and did not serve in the military. Individuals who served in the military, but for less than 21 months were excluded from the analysis. Linear and curvilinear years since college variables were also included corresponding to each route to college variable.

We are able to include a rich array of human capital and demographic control variables in our model, although not quite as rich as the controls that we included in our analysis of young men. Perhaps, the biggest differences in the control variables in the two analyses is the lack of a direct measure of mental ability in our analysis of prime-age men. However, we do include the "knowledge of the world of work" scale which measures the respondents' knowledge about selected aspects of jobs and the labor market.

Earnings Analysis for Prime-Age Men: Results

The effects of the choice-life cycle variables on annual earnings are shown in Table 6. (For complete regression results see Appendix Table A-6). The results for our simplest model

Table 6. Effects of choice-life cycle variables
on annual earnings for prime-age men

Choice-Life Cycle Variable	Model			
	1	2	3	4
	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)
Completed Mil.Tour	587 (1.2)	537 (0.4)	1098 (0.7)	-4939 (0.6)
Yrs. Since Mil.		-0 (0.0)	-49 (0.3)	1140 (0.4)
Yrs. Since Mil. Sq.				-49 (0.2)
Yrs. Since Mil. Cubed				0 (0.0)
Coll. Grad (Post H.S.)	5115 (9.8)	-1973 (1.2)	-1877 (1.1)	-4436 (0.5)
Yrs. Since Coll. (post-H.S.)		660 (4.6)	719 (5.0)	2171 (0.8)
Yrs. Since Coll. Sq. (post-H.S.)				-196 (0.8)
Yrs. Since Coll. Cubed (post-H.S.)				7 (0.9)
Coll. Grad. (post-mil.)			-3017 (1.6)	-3802 (1.5)
Yrs. Since Coll. (post-mil.)			1093 (3.3)	1500 (1.6)
Yrs. Since Coll. Sq. (post-mil.)				-43 (0.5)
Coll. Grad. (post-civ.)			-2007 (1.3)	-653 (0.3)
Yrs. Since Coll. (post-civ.)			657 (3.4)	232 (0.3)
Yrs. Since Coll. Sq. (post-civ.)				-43 (0.5)
Yrs. Since H.S.	671 (9.0)	1312 (1.8)	1048 (1.5)	-12294 (2.1)
Yrs. Since H.S. Sq.		-26 (1.1)	-18 (0.8)	903 (2.2)
Yrs. Since H.S. Cubed				-21 (2.3)

indicate that on average, men who chose the college option earned more than \$5100 more per year than those who chose the civilian labor market option over the period covered by the analysis, roughly 10 to 19 years after high school (Table 6, Column 1). Men who chose the military, or were drafted into it, earned almost \$500 more, on average, than those who chose the civilian labor market option. It should be noted, however, that the military service effect is not statistically significant at traditional levels. Interestingly, when we use log annual earnings as the dependent variable, the military service effect is statistically significant (Appendix Table A-7).

In Column 2, we see that the payoff to post high school college increases with time over this portion of the career. In Column 3, we see that the pattern of the military service effect depends upon whether the veteran obtains a college degree after completing his tour of duty. The small military advantage for those who do not obtain a college degree slowly declines over this portion of the life cycle. However, post-military college has a strong effect that grows rapidly over the career.

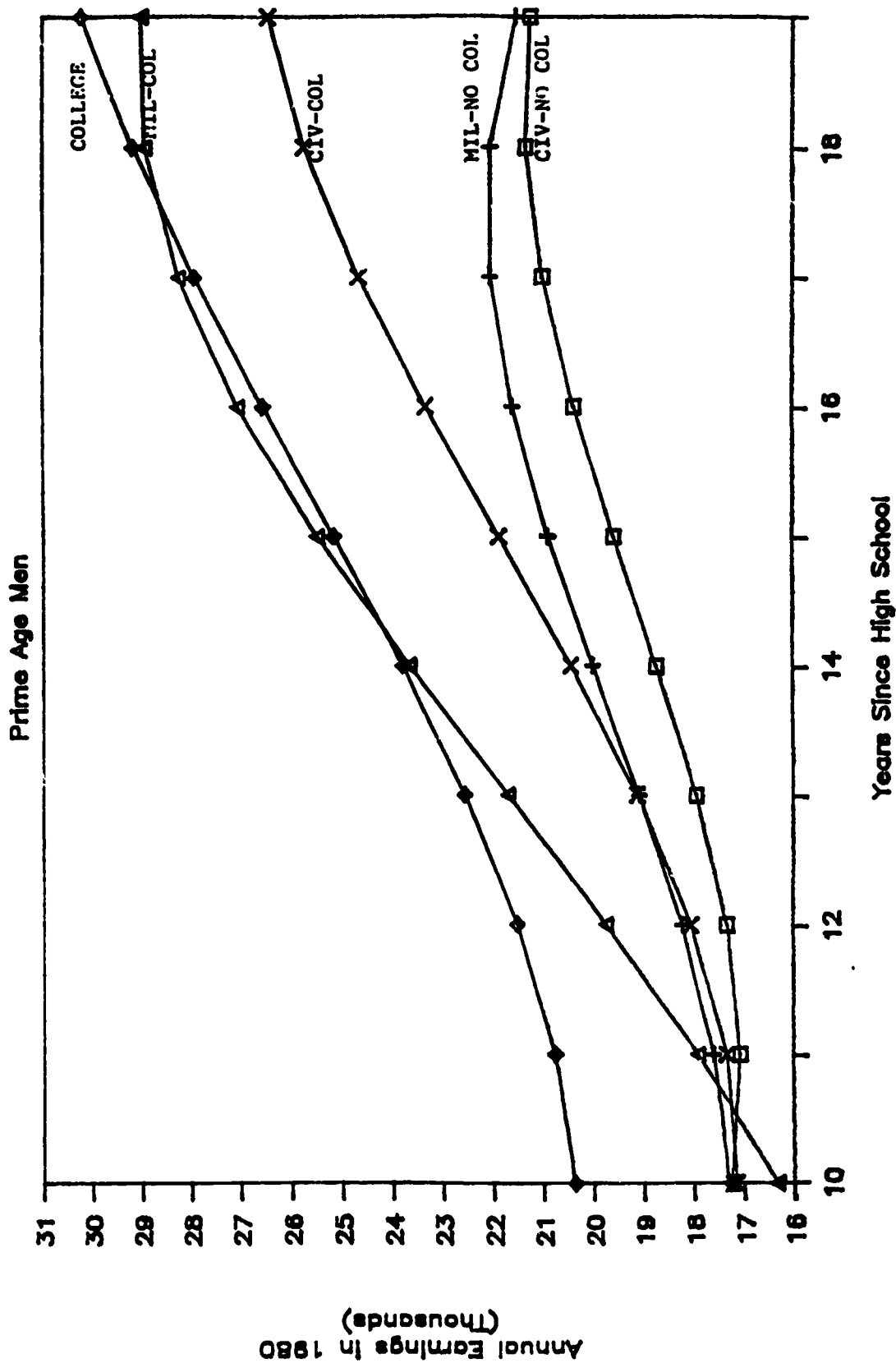
As we did for the analysis for young men, we constructed standardized earnings trajectories to better interpret these regression results for prime-age men. These earnings trajectories are standardized in that they control for the human capital, background, and demographic variables in the model. See Footnote 2 for the general equation used to generate these standardized earnings trajectories. We calculated five earnings trajectories for five different (constrained) choices concerning

post high school options and different routes to a college degree. The first choice is "college," that is, obtaining a college degree by age 24. The second choice is "military-no college," that is, serving in the military (for at least 21 months) and not obtaining a college degree. The third choice is "military-college", that is, serving in the military service and then obtaining a college degree. The fourth choice is "civilian-no college", that is, participating in the civilian labor market after high school and not obtaining a college degree. The fifth choice is "civilian-college", that is, participating in the civilian labor market after high school and then obtaining a college degree. For the purposes of calculating our standardized earnings trajectories, we assumed that veterans completed their tour of duty four years after completing high school, post-high school college graduates graduated four years after completing high school, and post-military and post-civilian college graduates graduated from college eight years after high school.

The standardized earnings trajectories for our five groups are shown in Figure 7. Consistent with the trajectories for young men, the earnings of the military-no college and civilian-no college groups are approximately equal 10 years after high school.

In addition, as suggested by the trajectories for young men, the earnings of veterans rise slightly faster over the next four to five years. However, the earnings advantage of veterans then begins to decline and is almost eliminated by 19 years after high school. Taken together, our results for young and prime-age

Figure 7. Standardized Earnings Trajectories



Note: See Appendix Table A-8 for complete data

non-college men suggest that the earnings of men who served in the military were as high or higher than the earnings of men who did not serve for all but about two of the first 19 years following high school.

The trajectories in Figure 7 demonstrate the substantial payoff to a college education. Regardless of whether the investment in college was made soon after high school or later after some time in the military or the civilian labor market, the earnings of college graduates rise to a point substantially above those who do not obtain a college degree. However, the shapes of the earnings trajectories vary depending upon the route taken to obtain a college degree.

Earnings rise quite rapidly after college graduation. Hence, men who invest in college and obtain their degree soon after high school have substantially higher earnings than all other groups 10 years after high school. Although the military-college group obtains their degree later in the life cycle, their earnings rise very quickly such that they are approximately equal to the earnings of the college group at about 14 years after high school. However, it does appear that the earnings of the military-college group may taper off at a slightly lower level than the earnings of the college group. While the earnings of the civilian-college group rise after college, they do not rise as quickly as the earnings of the military-college group. The military-college group has a substantial earnings advantage over the civilian-college group over most of the period covered by this analysis. Taken together, these results suggest that

completing a tour of military service and then obtaining a college education is an effective career strategy for those who, either due to constraints or choices, do not go to college right after high school.

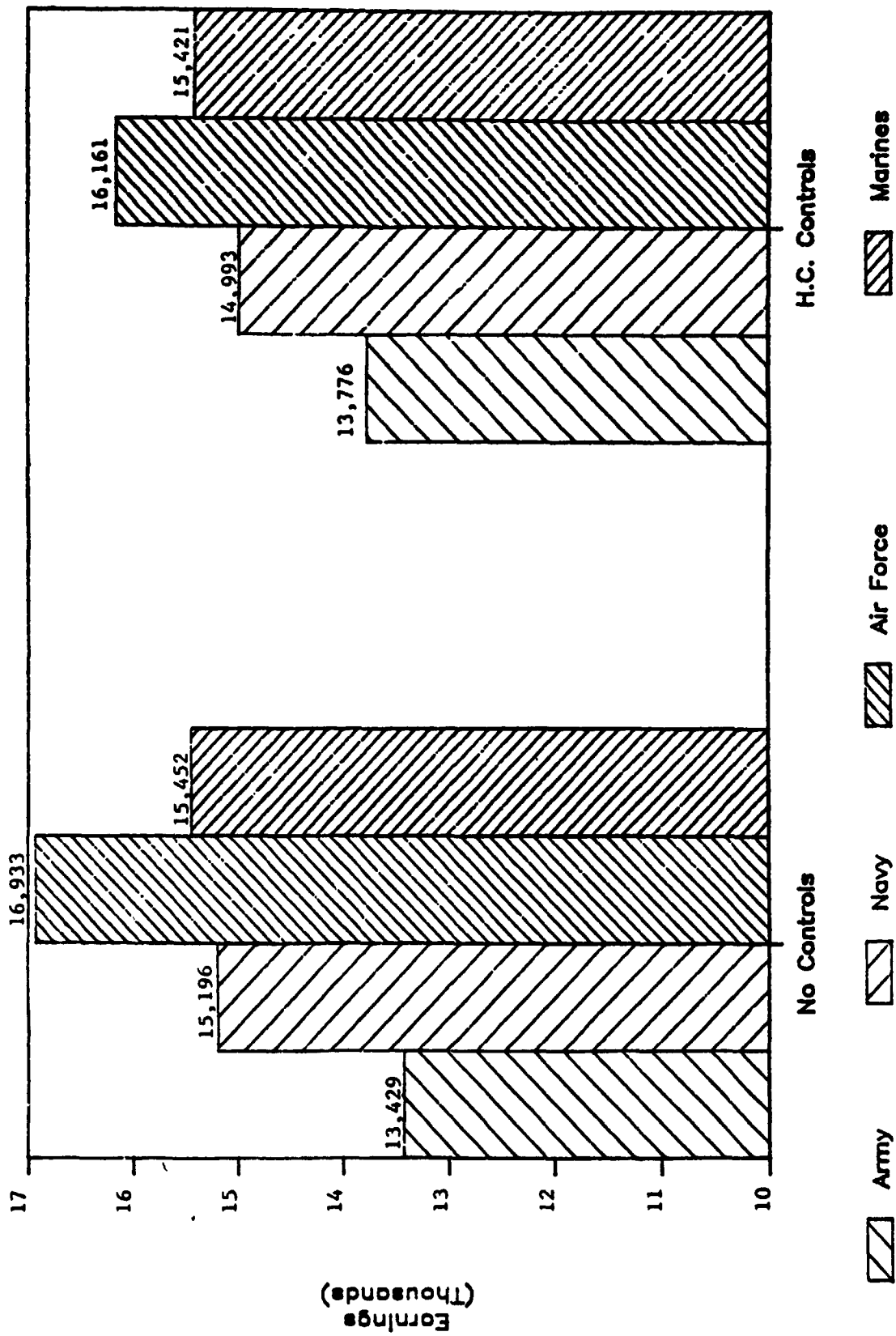
Of course, our interpretation of these earnings trajectories is complicated by the fact that it is impossible to unambiguously disentangle life cycle (or age) and vintage (or cohort) effects. We have modeled and interpreted age differences as life cycle effects, but individuals who differ in age also differ in terms of birth cohort. Thus, for example, the risk of and opportunities for military service will vary depending on the period in history in which a young man reaches adulthood. Consider the facts that the men in our prime-age sample were born between 1942 and 1952 and that the men shouldering the major responsibility for fighting the Vietnam War as enlisted men were born between 1946 and 1950. Thus, we need to ask ourselves: Does the relatively high payoff to military service for the middle part of the portion of the life cycle shown in Figure 7 reflect differences in the quality of individuals entering the service during the Vietnam era as opposed to those entering just before or just after? Moreover, does the more rapid tapering of the military trajectories result from a cohort effect reflecting the differences in quality between pre-Vietnam era and Vietnam era veterans? The answers to these questions will have to await further research.

Earnings Differences by Branch and Military Job

To examine the effects of branch on civilian earnings, we reestimated our earnings model on a sample restricted to young veterans during their post-military years. We first reestimated the model including only branch variables and variables measuring the time since high school and military (Figure 8). The results indicated that, on average, young Army veterans earned between \$1700 and \$3500 less than veterans from the other services at the same point in the life cycle. When we then included in the model our control variables for human capital, background, and demographic factors, we find that the earnings disadvantage of Army veterans is reduced by about 30 percent to between \$1200 and \$2400 relative to veterans from the other services. The results of a similar branch analysis for the sample of prime-age men suggest that the basic pattern of these branch effects on civilian earnings may persist for several years into their careers. Specifically, the analysis for prime-age men showed that relative to Army veterans, comparable Navy veterans earned \$1012 more, Air Force veterans earned \$2310 more, and Marine veterans earned \$650 less. Thus, the only substantial difference in the two analyses was the lower relative earnings for Marines in the prime-age analysis.

It is interesting to ask why this disadvantage for Army veterans exists. One possibility is that, although we have included a rich array of human capital variables, we have not completely controlled for inter-service differences in quality. A second possibility is that the Army has proportionately more

Figure 8. Expected Earnings by Branch: Young Vets

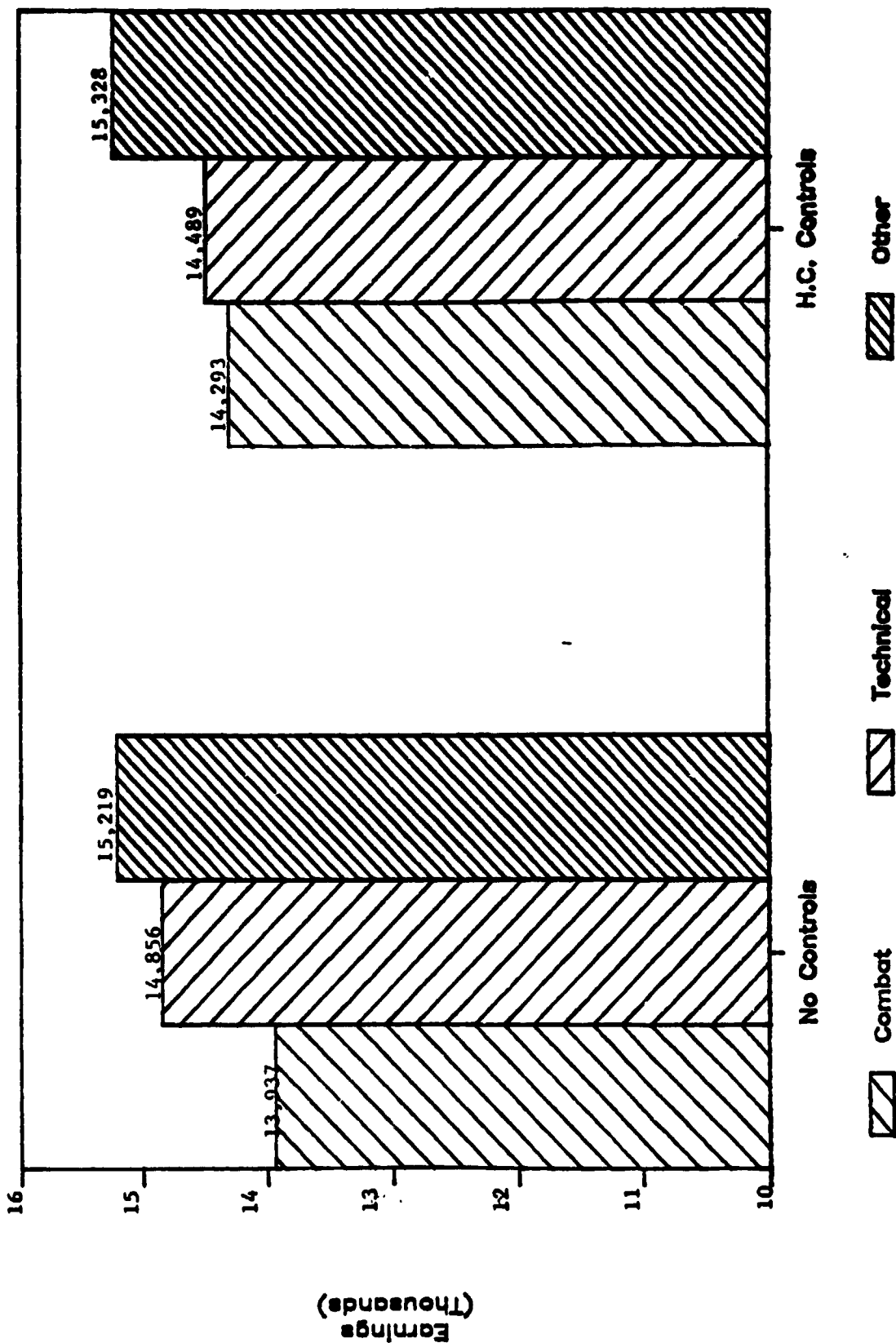


jobs that are non-technical, are in the combat arms, or are otherwise less valuable in developing skills that are relevant to the civilian labor market. For example, 44 percent of the Army veterans had had military jobs classified as combat arms compared to only 10 percent of Air Force veterans. Moreover, 34 percent of Army veterans had had technical jobs in the service compared to 52 percent for Air Force veterans.

To examine the effects of military jobs on the civilian earnings of veterans, we used the same models as we used to estimate the effects of branch, except that we substituted military job variables for the branch variables (Figure 9). We included three categories of military jobs in our model: combat arms, technical, and other.⁶ Whether or not we controlled for human capital, background, and demographic factors, we found relatively small differences in earnings across the categories of military jobs. Perhaps most interesting are the small and insignificant earnings differences when we include our controls for quality and other factors.

⁶All military jobs were coded according to the Department of Defense 3-Digit Enlisted Occupational Classification System (U.S. Department of Defense, 1982). These detailed occupational codes were aggregated into three broad categories. Combat arms jobs (31 percent of the veterans) included infantry and gun crew (010-099). Technical jobs (39 percent of the veterans) included electrical equipment (100-199), communications and intelligence (200-299), medical and dental (300-399), technical and allied (400-499), and equipment repair (600-699). Other jobs (29 percent of the veterans) included functional support (500-599), crafts (700-799), and service supply (800-899).

Figure 9. Expected Earnings By Job : Young Vets



In terms of subsequent civilian earnings, the payoff to technical jobs in the military is trivially greater than the payoffs to jobs in the combat arms and slightly lower than other jobs.

What can account for this finding which is so inconsistent with conventional wisdom? To begin with, we need to remember that we are analyzing the data for young men and most of the observations refer to earnings from 1 to 3 or 4 years after completing an enlistment. Thus, we need to consider the possibility that the civilian earnings of veterans who were in technical jobs are low during this period because they were more likely to have participated in educational benefits programs and were investing in education during the first few years after discharge. As it turns out, however, veterans who had technical jobs were slightly less likely to have participated in educational benefit programs than veterans in "other" jobs, while veterans who had combat arms jobs were slightly more likely to have participated. Moreover, these results come from a model that includes controls for participation in educational benefit programs. Because the data for prime-age men do not include information on military jobs, we cannot estimate the long-term returns to military jobs.

In interpreting the results for the effects of military job we need to remember that, in general, veterans did as well as or better than men who did not serve. Thus, the question to be asked is why do veterans who had jobs in the combat arms and in other occupations do as well as they do. We suspect that part of

the answer to this question is that the mechanisms of the returns to military service are multi-dimensional. Part of the payoff is through formal and on-the-job training in technical occupations. However, the great emphasis placed on technical training and its transferability to civilian jobs in media stories and some research is misplaced. The slightly higher payoffs to other jobs, many of which are in clerical and craft areas, suggest that occupational training in non-high tech areas can be valuable. After all, the clerical field has been a major area of employment growth over the last few years.

Opportunities for leadership and responsibility may be another aspect of the returns to military service. Although we are not aware of objective data on the subject, impressionistic observation leads us to believe that opportunities for young men to advance to positions that involve leadership and responsibility are as great or greater in the military than in civilian jobs at comparable points in the life-cycle. More generally, the military seems to foster to some degree, or at least to signal, social maturity and a greater acceptance of legitimate authority and of the regimentation of the work place. Finally, as our results indicate, especially the earnings trajectories in Figure 7, educational benefits programs and post-military education play an important role in enhancing the civilian labor market careers of veterans.

The small differences in civilian earnings across military job categories indicate that branch differences in occupational distributions cannot account for the branch differences in

civilian earnings.⁷ Perhaps a more detailed analysis of military occupation could account for more of the branch differences. Or, as we discussed above, the branch differences may be partly due to unmeasured quality differences in first-term enlisted personnel. The plausibility of this second explanation is enhanced by the fact that most of the veterans in our analysis for young men entered the military during the late 1970s -- a period noted as one in which the Army had difficulty in recruiting quality personnel.

Conclusions and Implications

This study has focused on the economic returns to military service for men during the AVF era, and the longer term returns for Vietnam era veterans. Data for the study are from two cohorts of men from the NLS. The first cohort is comprised of over 4000 young men between the ages of 22 and 26 in 1984 who were interviewed annually since 1979. The second cohort is comprised of over 5000 men, ages 29 to 39, in 1981 who were interviewed 12 times since 1966. Of the many features of the NLS that make it valuable for our analysis, the breadth and depth of the information collected on individuals, the longitudinal nature of the data, and the oversampling of young men in the military in 1979 stand out as most important.

⁷When the military job variables were included in the branch analysis for young men, the civilian earnings disadvantage shown in Figure 9 were reduced by less than 10 percent.

After first organizing the data for young men into a pooled cross-section time series data file, we modeled earnings trajectories for young men who make different choices after leaving high school about whether to enter the military, college, or the civilian labor market. A similar analysis for the 1981 earnings of men, ages 29 to 39, was also conducted to examine the longer term returns to military service. These analyses yielded several findings:

- (1) Consistent with recent comparisons of military and civilian pay, we find a significant earnings advantage for young men while in the service relative to their civilian counterparts.
- (2) The earnings of servicemen drop substantially at the time of separation.
- (3) However, the civilian earnings of former servicemen rise rapidly after separation and overtake the earnings of their civilian counterparts within one to four years.
- (4) Once their earnings overtake those who never served, the higher earnings of veterans persist until the end of the period covered by the study, approximately 19 years after high school.
- (5) Many veterans go back to school to further their education.
- (6) Men who complete a tour of military duty and then invest in a college education earn more than men who work in the civilian labor market and then invest in a

college education. However, both groups earn less than men who invest in a college education soon after high school.

- (7) The unemployment trajectories mirror the earnings trajectories. Unemployment is high for former servicemen just after discharge but falls to below that of their civilian counterparts within two to four years.
- (8) The economic returns to military are greater for minorities than for whites.
- (9) The civilian earnings of former soldiers tended to be lower than veterans of the other branches.
- (10) Only small differences exist among those who held combat arms, technical, and other types of military jobs in terms of their subsequent civilian earnings.

These findings have several research and policy implications:

- (1) The different shapes of the earnings trajectories for those with and without military service demonstrate the necessity of a life cycle analytical strategy.
- (2) Our results suggest significant temporary or frictional unemployment problems just after discharge resulting from imperfect information in the labor market and the slowness of the job search process. Consideration should be given to added resources for improved counseling for discharges.
- (3) The sustained steeper slope of the earnings trajectories of veterans suggests the possibility that many civilian employers undervalue training obtained in the

military. That is, due to negative images of the military resulting from the Vietnam War, negative publicity about the problems of the AVF during the late 1970s, and recent media stories on the non-transferability of job skills obtained through the military, employers may underestimate the skills and potential of veterans. It is only after veterans eventually have an opportunity to demonstrate their true individual value to employers that their earnings become commensurate with their skills. Research needs to be done to understand the costs to veterans of negative stereotypes. In addition, educational programs or information should be made available to employers to correct inaccurate stereotypes.

- (4) The greater economic returns to military service for minorities support the view that the military is a leader among employers with regards to equal employment opportunity efforts.
- (5) Research needs to be done to better understand the economic returns to military service for women.
- (6) Research also needs to be done to assess the impact of service in the reserves and educational programs available to the reserves on civilian labor market success.
- (7) Our results suggest that the economic returns to military service are multi-dimensional. Mechanisms for the payoff to military service appear to include:

(1) technical training, (2) work attitudes such as self-confidence, social maturity, acceptance of legitimate authority, (3) opportunities to develop and display leadership skills in the military, (4) signaling effects such as acting as a substitute for educational credentials, and (5) military educational benefits.

- (8) Educational benefits programs such as VEAP, the ACP, and the GI Bill, and post-military education play an important role in enhancing the civilian labor market careers of veterans. It appears that completing a tour of military service and then obtaining a college education is an effective career strategy for those who choose not to go or cannot afford to go to college right after high school.

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Table A-1. Selected characteristics of military, college and civilian groups

Option	H.S. Diploma %	Mental Ability(AFQT)							Locus of Control	Unweighted Sample Size
		I	II	IIIA	IIIB	IV	V			
Civilian	72	2	28	15	21	24	11	11.4	2,372	
Military	74	2	29	14	32	21	2	11.7	738	
College	100	19	63	11	6	1	0	12.9	417	

Table A-2. Educational expectations by choice
for young men (in percentages)

Expected Educational Attainment	Civilian	Military	College
less than 12 years	8	1	0
12 years	44	36	0
13 through 15 years	20	23	2
16 or more years	28	40	98

Table A-3. Effects of choice-life cycle and control variables on annual earnings and unemployment for young men

Explanatory Variable	Dependent Variable					
	Earnings		Log Earnings		Unemployment	
	Coeff.	(t)	Coeff.	(t)	Coeff.	(t)
In Military	1775	(5.1)	0.318	(10.1)		
Discharge Year	-1025	(1.8)	0.036	(0.7)	0.360	(3.8)
Completed Mil. Tour	-130	(0.1)	0.083	(0.5)	0.330	(1.1)
Yrs. Since Mil.	154	(0.1)	-0.025	(0.2)	-0.135	(0.5)
Yrs. Since Mil. Sq.	77	(0.2)	0.013	(0.5)	-0.004	(0.1)
College Grad.	-3049	(2.5)	-0.116	(1.1)	0.160	(0.8)
Yrs. Since Coll.	2443	(2.2)	0.061	(0.6)	-0.183	(1.0)
Yrs. Since Coll. Sq.	-88	(0.4)	0.008	(0.4)	0.020	(0.6)
Yrs. Since H.S.	1574	(3.6)	0.176	(4.4)	-0.218	(3.0)
Yrs. Since H.S. Sq.	-130	(1.1)	-0.021	(2.0)	-0.004	(0.1)
Yrs. Since H.S. Cubed	4	(0.5)	0.001	(1.2)	-0.002	(1.4)
Ed. Benefits.	-1399	(0.7)	-0.132	(0.8)	0.170	(0.6)
Ed. Ben. * Yrs. Since Mil.	-42	(0.0)	0.002	(0.0)	-0.042	(0.3)
Education (age 19)	169	(2.0)	0.010	(1.3)	0.002	(0.2)
H.S. Diploma	2086	(9.7)	0.225	(11.4)	-0.440	(12.5)
Men. Abil. I	1194	(2.3)	0.024	(0.5)	-0.280	(3.2)
Men. Abil. II	901	(4.1)	0.055	(2.8)	-0.160	(4.5)
Men. Abil. IIIA	---	---	---	---	---	---
Men. Abil. IIIB	-233	(1.0)	-0.036	(1.7)	0.010	(0.3)
Men. Abil. IV	-678	(2.9)	0.110	(5.1)	0.100	(2.4)
Men. Abil. V	-2703	(7.9)	-0.308	(9.8)	0.160	(2.9)
Motivation	89	(2.9)	0.008	(3.0)	-0.016	(3.4)
Hlth. Limits Work	-2419	(6.6)	-0.255	(7.6)	0.210	(3.9)
South Resid.	270	(1.3)	0.044	(2.3)	-0.220	(6.1)
Suburb Resid.	1336	(7.2)	0.112	(6.6)	-0.100	(3.4)
Center City Resid.	968	(5.8)	0.058	(3.5)	-0.140	(4.8)
Black	-2071	(8.1)	-0.212	(9.1)	0.300	(7.3)
Hispanic	-483	(1.5)	-0.019	(0.7)	-0.120	(2.3)
Backgrounds:						
Literature in Home	414	(4.7)	0.031	(3.8)	-0.070	(4.6)
Siblings	27	(0.9)	0.002	(0.8)	0.010	(1.9)
Raised in South	288	(1.4)	0.031	(1.7)	-0.100	(2.9)
No Adult Male	-673	(2.9)	-0.086	(4.1)	0.090	(2.5)
Year = 1978	---	---	---	---	---	---
Year = 1979	944	(2.9)	0.089	(3.0)	-0.010	(0.1)
Year = 1980	104	(0.3)	-0.019	(0.7)	0.200	(3.5)
Year = 1981	284	(0.9)	-0.007	(0.3)	0.290	(5.3)
Year = 1982	169	(0.5)	-0.048	(0.5)	0.400	(6.9)
Year = 1983	-360	(1.0)	-0.062	(1.9)	0.320	(5.4)
R-Squared	0.14		0.140		0.09	
N (Sample)	11,437		11,437		11,596	

Note (a): The dependent variable for unemployment is = $\ln((\text{Wks. Unemp in Year}) - 1)$.

Table A-4. Standardized earnings and unemployment levels
by choice and year since high school for young men

Years Since High School	Choice			
	Civilian	Military w/o Ed. Benefits	Military with Ed. Benefits	College
<u>Earnings</u>				
1	9,248	11,023	11,023	
2	10,459	12,234	12,234	
3	11,459	13,234	13,234	
4	12,273	11,247	11,206	
5	12,924	13,024	11,542	12,229
6	13,437	13,922	12,398	14,921
7	13,837	14,860	13,294	17,324
8	14,149	15,862	14,255	19,462
9	14,396	16,954	15,305	21,359
<u>Unemployment</u>				
1	1.69			
2	1.39			
3	1.23			
4	1.16	2.10	1.97	
5	1.15	1.61	1.86	1.16
6	1.18	1.28	1.39	0.93
7	1.20	0.97	0.99	0.80
8	1.20	0.68	0.62	0.73
9	1.16	0.39	0.29	0.70

Table A-5. Effects of choice-life cycle variables on log-annual earnings for young men

Choice-Life Cycle Variable	Model					
	1		2		3	
	Coeff.	(t)	Coeff.	(t)	Coeff.	(t)
In Military	0.318	(10.1)	0.318	(10.1)	0.318	(10.1)
Discharge Year	0.038	(0.7)	0.038	(0.7)	0.036	(0.7)
Completed Mil. Tour	-0.038	(0.5)	0.008	(0.1)	0.083	(0.5)
Yrs. Since Mil.	0.037	(1.1)	0.047	(1.4)	-0.025	(0.2)
Yrs. Since Mil. Sq.					0.013	(0.5)
College Grad.	-0.155	(2.8)	-0.156	(2.8)	-0.116	(1.1)
Yrs. Since Coll.	0.100	(4.2)	0.100	(4.2)	0.061	(0.6)
Yrs. Since Coll. Sq.					0.008	(0.4)
Yrs. Since H.S.	0.133	(8.3)	0.134	(8.3)	0.176	(4.4)
Yrs. Since H.S. Sq.	-0.009	(4.6)	-0.009	(4.7)	-0.021	(2.0)
Yrs. Since H.S. Cubed					0.001	(1.2)
Ed. Benefits			-0.124	(1.6)	-0.132	(0.8)
Ed. Ben. * Yrs. Since Mil.					0.002	(0.0)

Table A-6. Effects of choice-life cycle and control variables
on annual earnings for prime-age men

Explanatory Variable	Dependent Variable			
	Earnings Coeff.	(t)	Log Earnings Coeff.	(t)
Completed Mil. Tour	-4939	(0.6)	-0.3267	(0.7)
Yrs. Since Mil.	1140	(0.4)	0.0858	(0.6)
Yrs. Since Mil. Sq.	-49	(0.2)	-0.0048	(0.4)
Yrs. Since Mil Cubed	0	(0.0)	0.0000	(0.1)
Coll. Grad. (post-H.S.)	-4436	(0.5)	-0.1067	(0.3)
Yrs. Since Coll. (post-H.S.)	2171	(0.8)	0.0762	(0.6)
Yrs. Since Coll. Sq. (post-H.S.)	-196	(0.8)	-0.0064	(0.5)
Yrs. Since Coll. Cub. (post-H.S.)	7	(0.9)	0.0002	(0.5)
Coll. Grad. (post-mil.)	-3802	(1.5)	-0.1505	(1.2)
Yrs. Since Coll. (post-mil.)	1500	(1.6)	0.0561	(1.2)
Yrs. Since Coll. Sq. (post-mil.)	-43	(0.5)	-0.0016	(0.4)
Coll. Grad. (post-civ.)	-653	(0.3)	-0.0075	(0.1)
Yrs. Since Coll. (post-civ.)	232	(0.3)	0.0083	(0.2)
Yrs. Since Coll Sq. (post-civ.)	-43	(0.5)	0.0014	(0.6)
Yrs. Since H.S.	-12294	(2.1)	-0.4739	(1.6)
Yrs. Since H.S. Sq.	903	(2.2)	0.0353	(1.7)
Yrs. Since H.S. Cubed	-21	(2.3)	-0.0008	(1.7)
Education (age 19)	979	(3.6)	0.0737	(5.3)
H.S. Grad. (age 19)	791	(1.0)	0.0487	(1.2)
H.S. Grad. (post-19)	484	(0.4)	0.0245	(0.4)
H.S. Grad. (post-mil)	-214	(0.1)	0.0228	(0.3)
Know World of Work	128	(4.0)	0.0049	(3.0)
Motivation	142	(3.3)	0.0078	(0.0)
Hlth. Limits Work	-2708	(3.9)	-0.1600	(4.5)
South Resid.	-652	(1.5)	-0.0311	(1.4)
Suburb Resid.	3466	(6.6)	0.1812	(6.7)
Center City Resid.	3676	(7.8)	0.2014	(8.4)
Black	-3221	(4.4)	-0.2140	(5.7)
Background:				
Literature in Home	9	(0.0)	-0.0080	(0.6)
No Adult Male	-1279	(1.6)	-0.0895	(2.2)
Mother Educ.	152	(2.0)	0.0041	(1.0)
M.Ed. Mis.Data	745	(2.0)	0.0057	(0.1)
Constant	48731	(1.7)	10.3420	(7.2)
R-Squared	0.30			0.29
N (Sample)	2,269			2,269

Table A-7. Effects of choice-life cycle variables on
log-annual earnings for prime-age men

Choice-Life Cycle Variable	Model			
	1	2	3	4
	Coeff. (t)	Coeff. (t)	Coeff. (t)	Coeff. (t)
Completed Mil. Tour	0.0607 (2.5)	0.0483 (0.6)	0.0732 (0.9)	-0.3267 (0.7)
Yrs. Since Mil.		0.0009 (0.1)	-0.0009 (0.1)	0.0858 (0.6)
Yrs. Since Mil. Sq.				-0.0048 (0.4)
Yrs. Since Mil. Cubed				0.0000 (0.1)
Coll. Grad.				
(post-H.S.)	0.2150 (8.2)	0.0207 (0.3)	0.0288 (0.3)	-0.1067 (0.3)
Yrs. Since Coll.				
(post-H.S.)		0.0181 (2.5)	0.0205 (2.8)	0.0762 (0.6)
Yrs. Since Coll. Sq.				
(post-H.S.)				-0.0064 (0.5)
Yrs. Since Coll. Cubed				
(post-H.S.)				0.0002 (0.5)
Coll. Grad. (post-mil.)			-0.1201 (1.2)	-0.1505 (1.2)
Yrs. Since Coll. (post-mil.)			0.0408 (2.4)	0.0561 (1.2)
Yrs. Since Coll. Sq.				
(post-mil.)				-0.0016 (0.4)
Coll. Grad. (post-civ.)			-0.0729 (0.9)	-0.0075 (0.1)
Yrs. Since Coll. (post-civ.)			0.029 (2.9)	0.0083 (0.2)
Yrs. Since Coll. Sq.				
(post-civ.)				0.0014 (0.6)
Yrs. Since H.S.	0.0322 (8.5)	0.0714 (2.0)	0.0614 (1.7)	-0.4739 (1.6)
Yrs. Since H.S. Sq.		-0.0014 (1.2)	-0.0011 (1.0)	0.0353 (1.7)
Yrs. Since H.S. Cubed				-0.0008 (1.7)

Table A-8. Standardized annual earnings by choice and years since school for prime-age men

Post High School Choice and Route to College					
Years Since High School	Civ.- No Coll.	Mil.- No Coll.	Civ.- Coll.	Mil.- Coll.	College
10	17,256	17,332	17,176	16,358	20,393
11	17,083	17,630	17,374	17,940	20,785
12	17,354	18,262	18,069	19,771	21,538
13	17,943	19,103	19,138	21,724	22,572
14	18,727	20,029	20,458	23,676	23,808
15	19,581	20,913	21,903	25,500	25,167
16	20,383	21,631	23,351	27,072	26,568
17	21,008	22,057	24,677	28,265	27,933
18	21,333	22,066	25,757	28,956	29,181
19	21,232	21,533	26,468	29,018	30,234

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) The purpose of this study is to assess the extent to which service in the military is a good career investment for young men. Some people believe that the answer is yes, including many young men who are entering the Armed Forces with the anticipation that their training and experiences will enhance their civilian careers. However, many others seem to hold the negative view that skills obtained through military training have little payoff in the civilian labor market. Proponents of the negative view often point to what might be termed		

"low-tech" jobs in the Army, and especially in the combat arms, as being especially disadvantageous.

Data for the study are taken from two cohorts of men sampled as part of the National Longitudinal Surveys of Labor Market Experience (NLS). Three reasons for using the NLS are: They are longitudinal in nature, the data contain a wealth of information about the labor market experiences of the respondents, and the data contain a special military subsample as well as comprehensive and detailed information on the military experiences of all respondents.

The major findings of these analyses are as follows:

- (1) There is a significant earnings advantage for young men in the military relative to their civilian counterparts.
- (2) The earnings of servicemen drop substantially at the time of separation.
- (3) Civilian earnings of former servicemen then rise rapidly and overtake the earnings of their civilian counterparts within one to four years after separation.
- (4) Higher earnings of veterans persist until the end of the period covered by the study.
- (5) Many veterans go back to school to further their education.
- (6) Veterans who obtain college education earn more than men who work in the civilian labor market and then go to college.
- (7) Unemployment trajectories mirror the earnings trajectories.
- (8) Economic returns to military service for minorities are greater than for whites.
- (9) Civilian earnings for Army veterans are lower than other services.
- (10) Small differences exist among those with combat arms, technical, and other types of military service in terms of subsequent civilian earnings.