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THE EFFECTS OF MIGRATION AND TRAINING
ON POST-SERVICE EARNINGS OF
ALL-VOLUNTEER FORCE VETERANS

by

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THE EFFECTS OF MIGRATION AND TRAINING ON POST-SERVICE EARNINGS OF ALL-VOLUNTEER FORCE VETERANS

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ABSTRACT

This thesis investigated the effects of migration on the post-service civilian earnings of 21-to-27 year-old veterans from the All-Volunteer Force ERA. The National Longitudinal Survey of Labor Market Experience, Youth Cohort, years 1979 to 1984, was used as the source of data. The effects of migration by veterans and civilians between states and between counties were studied using human capital theory. Additionally, this thesis investigated the effects of different branches of service and military training (both formal and on-the-job training) on post-service civilian earnings. When military experience was characterized with a single dummy variable, veterans incurred approximately a five percent earnings penalty for their military service. However, migration between states by veterans was found to increase post-service earnings by nearly ten percent. When the veterans' military experience was characterized by branch of service and the amount of formal and on-the-job training no penalty was associated with military service. Veterans who served in the Air Force received a 1.0 to 1.2 percent earnings premium for each week of formal training they received.

TABLE OF CONTENTS

LIST OF TABLES

I. INTRODUCTION

While the military has been viewed as an institution that provides opportunities for human capital accumulation, the results of research that has compared the military's ability to provide this capital with that of other institutions have been mixed. Previous research regarding the military's influence on post-service earnings has been confined to an analysis of service tenure, amount and/or type of training, and the transferability of acquired skills. An aspect of military service which has not previously been addressed is the influence that the geographic mobility characteristic of military service has on post-service earnings.

This thesis aims to analyze the effects of geographic mobility on the civilian earnings of military veterans. The effects of formal military training, military on-the-job training, and branch of service on post-service earnings are also investigated. Following a review of the current post-service earnings and mobility literature, human capital earnings equations are developed using data from the National Longitudinal Survey of Labor Market Experience, Youth Cohort (NLSY), which is a nationally representative sample of American youth developed to study labor force behavior and trends. This survey has an extensive number of variables related to education, work history, military service, and income. An advantage of using this data set is that survey respondents are from the All-Volunteer Force era which enables current economic forces to be studied.

II. LITERATURE REVIEW

A substantial amount of research has been conducted in an attempt to explain differences in the earnings of veterans and non-veterans. Likewise, researchers have used the human capital model to explore relationships between geographic mobility and variations in earnings. Little prior research has studied the interaction effects of military service and veteran mobility on post-service earnings. The mobility of veterans may have a significant impact on the earnings difference between veterans and non-veterans and should therefore be included in a study of these differences.

A. MILITARY SERVICE

In discussing previous research on the returns to military service, it is helpful to distinguish among studies by the manner in which the military experience was characterized. In what can be referred to as a single dummy variable approach, numerous studies characterize military experience by using a dummy explanatory variable to indicate whether or not an individual served in the military. More complex approaches attempt to disaggregate the single dummy variable by investigating specific aspects of the military experience which may better explain the nature and extent of the human capital accumulated during the military tenure. Such aspects may include length of service, highest rank attained, military occupational specialty or months of formal military training. The following section surveys only a portion of the veterans earnings literature.

Using the National Longitudinal Survey of Labor Market Experience of Young Men (NLSYM) for 1966-1976, Chamarette and Thomas [Ref. 1] investigated the effects of veteran status on the civilian earnings of Vietnam-era veterans using a single dummy variable for veteran status. Veterans were defined as those who had completed at least two years of military service. After controlling for race, years of education and other sociodemographic and educational variables, the authors found that black veterans earned more than their non-veteran counterparts. White veterans, on the other hand, earned less than white non-veterans. These findings are consistent with the argument that the draft policies during the Vietnam era supported the induction of higher quality minorities and lower quality whites.

Berger and Hirsch [Ref. 2] used the March Current Population Survey (CPS) from 1969 to 1978 to compare the earnings of veterans with those of non-veterans. While the CPS is cross-sectional data, the authors felt they were able to do a pseudo-longitudinal study by using the CPS from each of the years. The authors acknowledged that the NLSYM has better data in terms of the number of variables for military training and length of service, but argued that the CPS was better suited for measuring the size and behavior of wage differentials between veterans and non-veterans over time because the sample was much larger with nearly 73,000 observations.

Berger and Hirsch developed a model that allowed the effects of veteran status to vary with birth cohort, age and year of the sample. The sample was also divided into three schooling groups: (1) 8 to 11 years; (2) 12 years; and (3) 13 to 16 years. After controlling for sociodemographic variables such as race, sex, residence in a Standard Metropolitan Statistical Area, and six broad census industry groups, the

authors found that veterans with 12 or more years of school earned approximately two percent less than non-veterans with the same educational attainment. However, veterans who had 8 to 11 years of education earned approximately three percent more than their non-veteran counterparts. This finding lends support to the argument that military service acts as a substitute for primary and secondary schooling.

In another study using the same data, Berger and Hirsch [Ref. 3] tested the hypothesis offered by De Tray [Ref. 4] that military service functions as a screening device for civilian employers rather than as a provider of skills which in turn make the individual more productive and thus better paid in the civilian sector. De Tray argued that as the proportion of veterans increases, the probability that a non-veteran did not qualify for military service is greater and that the earnings of veterans should therefore be higher. To test this hypothesis, Berger and Hirsch created a set of interaction variables which included the proportion of the sample claiming veteran status and race. While they found some weak support for De Tray's hypothesis for white high school dropouts and nonwhites without college, they found no statistically significant evidence that non-veterans were more likely to have been disqualified for military service as the proportion of veterans increased.[1]

Wise and Crane [Ref. 5] compared the earnings of individuals who chose military service with those who went directly into the labor market. In a comparison of sociodemographic characteristics, these two groups appeared similar. Individuals who attended junior colleges, vocational schools, or four year colleges generally had

[1]Berger and Hirsch also cite findings from their 1983 study in which the largest earnings premiums went to peacetime veterans. This is contradictory to De Tray's hypothesis since during war or conflict eras there are larger numbers of veterans and therefore veterans during these eras should have the higher earnings.

sociodemographic qualities which differed from the two groups studied and as such were not considered the appropriate comparison group. Using the National Longitudinal Survey of the High School Class of 1972, Crane and Wise found that an additional year of civilian experience for those individuals who went directly from high school into the labor market yielded a seven percent increase in earnings from the previous year. This difference was only about six percent for those who first went into the military. An additional year of military experience resulted in only a three percent increase in civilian earnings. The authors concluded that the effect on civilian earnings of an additional year of military service is much like that of an additional year of experience in some other civilian job. Very simply, their conclusion was that experience with the current employer is worth more than experience at some other job.

While these studies provide insights into the effects of military service on subsequent civilian earnings, they fail to characterize important attributes of military service. In the following studies, veteran status is disaggregated into attributes which may more fully describe the human capital accumulation associated with military service.

Daymont and Andrisani [Ref. 6] investigated the earnings trajectories of veterans and non-veterans. They used the NLSY to investigate the earnings of veterans soon after discharge, and the earnings of non-veterans soon after either college or high school. The NLS Boys (Prime Age Men) Cohort was used to investigate the long-term effects of veteran status on civilian earnings.

The youth cohort studied was comprised of males who were 18-22 years old in 1979 and 22-26 years old in 1983. They were divided into three groups for analysis. The "military" group consisted of young men who had completed at least a 33-month

tour of duty by the time they were 23 years old. The "college" group consisted of young men who had completed 16 years of schooling by age 23. The "civilian" group was comprised of young men who were not included in either the "military" or the "college" group. To be included as an observation for a given year, the individual must have had wage and salary earnings of at least $1,000 and have been at least 19 years old.

The dependent variable was annual earnings for each group. Civilian respondents were asked how much they received in wages, salaries, commissions, or tips prior to payroll deductions. Military respondents were asked how much total income (including money from special pay and bonuses) they received from the military before taxes and other deductions. To account for the room and board provided to the servicemen, $3,240 was added to the military income.

The data revealed that those in the military had a higher annual income than their civilian counterparts. Upon discharge from the service, however, their earnings dropped below that of their civilian counterparts. The military sample's earnings did, however, rise faster and exceed civilian earnings within two or three years after discharge from the service. Daymont and Andrisani argue that the conditions which generally characterize frictional unemployment such as lack of information regarding civilian job opportunities and wage rates can explain the drop in annual earnings of veterans who were recently discharged.

The long-term effects of veteran status were investigated using the prime age male cohort which was comprised of men who were 29-39 years old in 1981. The data were evaluated in a manner similar to that used for the sample of young men. The dependent variable was annual wage and salary earnings as measured in the 1981

interview. The sample was divided into five groups representing career paths. The military group was comprised of men who had completed at least a 21 month tour in the military by the age of 24. Men who had completed at least 15 years of schooling had to have entered the military before they were 20 to be included in the military sample. The college group was divided into three subgroups. The first group included college graduates (post high school) who graduated by the age of 24. The second group included college graduates (post military) who graduated after completing service in the military. The third group included college graduates (post civilian) who graduated after the age of 24 and did not serve in the military. The civilian group contained those individuals who belonged to neither the military nor to the college groups.

The results indicated that college men earned $5,100 more per year than the men who chose the civilian labor market option. The mean earnings of the men who chose the military option did not differ significantly from those in the civilian group. The military college group's earnings were not statistically different from the college (post high school) group's earnings approximately 14 years after high school. The military college group had a higher annual income than the civilian college group indicating that a tour in the military followed by college is better than working in the civilian labor market and then getting a college degree.

In studying World War II (WWII) veterans, Angrist and Krueger [Ref. 7] hypothesized that the differences in relative earnings between WWII and Vietnam veterans and their civilian counterparts were a function of the selection processes used to draft servicemen. During WWII almost 75 percent of the eligible draft cohort was inducted, whereas evidence for the Vietnam era indicate that many college educated

men from wealthy and middle class families avoided the military. The results of the different selection processes were likely to bias the returns to WWII veteran status upwards and bias the returns to Vietnam veteran status downwards.

To test their hypothesis, Angrist and Krueger used the five percent public use micro sample from the 1980 census. Their sample was limited to men, 51 to 55 years old at the time of the survey, whose weekly wage was between $25 and $5,000. After controlling for other sociodemographic variables, veteran status had a significant and positive effect on earnings.

Angrist and Krueger then tested whether the premiums earned by veterans were due to biases in the selection of conscripts. They noted that individuals born earlier in the year had a higher probability of being drafted. To test for this bias they used a two stage least squares model. The first stage equation models the probability of being a veteran as a function of quarter and year of birth and other sociodemographic variables. The second stage equation attempts to correct for possible selection bias by including as an explanatory variable the probability of being a veteran as modeled in the first equation. The results from this model indicated that veteran status had a significant negative effect on earnings. This result was duplicated using samples from the 1960 Census, 1970 Census, Survey of Income and Program Participation, and 1973 Current Population Survey - Social Security Administration Exact Match.

Angrist and Krueger concluded that the WWII veterans would have earned more than non-veterans even without military service. They also concluded that, in fact, military service probably reduced WWII veterans' earnings due to lost civilian job experience.

Hirschkowitz [Ref. 8] used the 1971 and 1981 segments of the NLSYM to study the earnings growth rates of veterans and non-veterans. The natural log of the difference in annual earnings was modeled as a function of sociodemographic variables, veteran status, transferability of military training, and increase in education. Hirschkowitz concluded that the growth rate of civilian earnings of veterans 29 to 39 years old is 13 percent higher than that of non-veterans. He also concluded that black veterans no longer have an earnings advantage over their non-veteran counterparts. This result is in contrast with previous findings for Vietnam veterans.

Trost and Warner [Ref. 9] studied the effects of military electronics training on veterans' earnings. They divided a sample of 11,941 veterans who left the service in 1969 into four groups. Group one included individuals with military electronics training who took a civilian job. Group two included individuals without military electronics training who took a civilian electronics job, group three included individuals with military electronics training who did not take a civilian electronics job, group four included individuals without military electronics training who did not take a civilian electronics job. To correct for selectivity biases related to the probability of being selected for military electronics training and for the probability of choosing to work in an electronics job after discharge, the authors used a two stage regression technique known as the Heckman procedure.

Trost and Warner concluded that veterans in a civilian electronics job who had military electronics training earned the same amount as those with no military training. This implies that military electronics training provides human capital accumulation equivalent to that provided by civilian electronics training. They also concluded that

veterans with some military electronics training earned more than veterans who received no electronics training.

In a study by Goldberg and Warner [Ref. 10] the effect of service length and military occupation on civilian earnings was investigated using a unique methodology involving grouped data. This methodology was necessary because the Social Security Administration (SSA) could not provide individual earnings data. The records of 24,000 veterans who separated from the military in Fiscal Year 1971 were used to construct a sample of group observations. The authors grouped the individual veterans based on their length of service and two-digit DOD occupation code. From each group 40 individuals were randomly selected.[2] The SSA then provided the mean and standard deviation of all the non-zero reported civilian incomes for each group for the years from 1972 to 1977. The resulting sample contained 3,970 groups (each group constituted an observation).[3]

Goldberg and Warner then modeled annual earnings as a function of years of military service, years of civilian experience, and an interaction variable (years of military service x years civilian experience) for each military occupation. They controlled for percent white and average education of each observation. They found that the returns to military experience in electronic equipment repair, medical, and electrical or mechanical equipment repair and "other technical" specialties were similar

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[2]For groups with less than forty individuals all observations were kept (no cell had fewer than 30 observations).

[3]3,970 observations resulted from taking the 30 most heavily populated two-digit groups partitioned by the four services and eight length of service categories. The data tape contained six years of information resulting in 5,760 total possible observations. However, 1,790 of the possible cells were empty.

to those for civilian experience. In these four occupations, military experience appeared to be a substitute for civilian experience. This result confirms *a priori* expectations that follow from the apparent high skill transferability of these four occupations.

Magnum and Ball [Ref. 11] used All-Volunteer Force era data from the NLSY to investigate the skill transferability of military and civilian training to include its effects on civilian earnings. The authors concluded that with the exception of training provided in a civilian internal labor market, the probability of skill transfer for military training is equivalent to that provided by civilian training and educational institutions.[4] The authors also estimated earnings equations using dummy variables to indicate whether civilian training, military training, or both were transferred to the civilian job. When the military training matched the veteran's civilian job, a 14 percent wage premium was earned when compared with cases in which training did not match the job. However, the match of civilian training with the civilian job provided an eight percent wage premium over those who had no training-job match, this premium was not statistically significant at generally accepted levels.

Bryant and Wilhite [Ref. 12] evaluated the effects of military tenure and military training on civilian earnings using data from the NLSY. Their sample consisted of 5631 full-time workers between the ages of 21 and 30. Their results indicated that as the length of military service increases, the gap between the wages of veterans and non-veterans widens. However, with increases in formal military training, this earnings gap is reduced.

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[4]Training provided in an internal labor market includes both apprenticeship and company and/or employer sponsored training. Training provided in these forums virtually guarantees transferability.

They also concluded that there are differences among the four services with respect to subsequent civilian earnings. Army and Marine Corps veterans suffer an earnings penalty with no compensation for formal training. Navy veterans' civilian wages are negatively associated with length of military service; however, increases in formal Navy training help mitigate this negative association. Service in the Air Force has no significant effects on wages; in fact, Air Force training provides higher wages.

B. MOBILITY

While a more traditional view of human capital accumulation involves looking at the effects of education, training and work experience on earnings, investments in migration can also be studied using the principles of human capital theory. As with other human capital investments, for example in education, investments in migration are aimed at increasing expected future income flows. The extensive geographic mobility which often characterizes military service may provide an opportunity to evaluate the effects of mobility of service members on their subsequent civilian earnings.

Post-service mobility for individuals who served in the military tends to be greater than for otherwise similar civilians for several reasons. The military routinely relocates people during their military career. This often means that someone may leave military service in a geographic location other than his or her original home. Because of their frequent moves, people in the military may accumulate greater information about employment opportunities in the geographic regions in which they have served. A third factor which may enhance the post-service civilian mobility of individuals who served in the military is a higher tolerance of the psychic costs associated with

relocation. While little work has been done on the effect of military mobility on veterans' earnings, there have been a numerous studies which have investigated the earnings effects of migration by civilians in general.[5]

Lansing and Morgan [Ref. 13] investigated the earnings impact of migration between rural and urban areas. The authors used data from two national surveys, one taken in 1960 and the other in 1965. They concluded that people who migrated from rural areas to urban areas enjoyed higher incomes than people who remained in rural areas. However, the individuals who migrated to urban areas earned less than the individuals who had always worked there. An additional conclusion from Lansing and Morgan's work was that individuals who moved out of the deep South experienced higher earnings than the individuals who remained in that region of the country.

Gallaway [Ref. 14] investigated the effects of migration distance and average regional earnings on migration. He used data from the Social Security Administration's One Percent Continuous Work History Sample from 1957 to 1960. His results indicated that people were less likely to make long distance moves; however, this resistance could be overcome by earnings differentials of $600 to $800 per year between regions.

In another study, Gallaway [Ref. 15] investigated both the effects of switching industries and of migration on an individual's earnings. Using the data from his 1967 study, his findings supported the results of Lansing and Morgan's earlier work which indicated that people who migrated from a region generally had higher incomes than

[5]The survey below touches upon only a small sample of studies of migration that use the human capital model. For a survey of the field see: Michael J. Greenwood, "Human migration: Theory, Models, and Empirical Studies," *Journal of Regional Science*, v. 25, (1985), pp. 521-544.

the people who stayed. Additionally, individuals who changed industries had higher incomes than people who remained in the same industry.

Cox [Ref. 16] used the Social Security Administration's One Percent Continuous Work History Sample from 1957 to 1964 to test Gallaway's 1969 work. He restricted his sample to non-Negro males who were between the ages of 25 and 60 in 1960 and had covered employment between 1957 and 1964 inclusive. Employment and earnings data from 1961 to 1964 were used for comparisons in the study.

The workers were classified into four groups based on the following actions which occurred between 1962 and 1963:

1. worked in the same state and did not change industries
2. worked in the same state but in a different industry
3. worked in a different state but in the same industry
4. worked in a different state and industry.

Cox compared the ratio of 1963-1964 mean income to the 1961-1962 mean income among the four groups. He concluded with this simple model that the rates of income growth supported the hypothesis that industrial and geographic mobility increase the incomes of mobile workers.

To summarize, two streams of literature were briefly surveyed above: veterans earnings literature and civilian migration literature. These studies indicate that Vietnam-era veterans suffered earnings penalties as a result of their military service. Angrist and Krueger concluded that WWII veterans did not earn a wage premium for their military service. In fact, WWII veterans may have paid an earnings penalty for their military service. Overall, this indicates that returns to draft era military service

are negative. Returns to military service for All-Volunteer Force veterans are mixed depending on the veteran's branch of service and the amount of training he received from the military. The migration literature treats the migration decision as a form of investment in human capital and, in general, has found that migrants tend to receive higher wages than their counterparts who do not move.

III. MODEL, DATA, AND METHODOLOGY

A. MODEL

As in the studies previously discussed, human capital theory provides the theoretical underpinnings of this study. Human capital theory is based on the assumption that individuals embody a set of attributes for which employers are willing to provide compensation. As the quality or quantity of these attributes increases, the individual is generally assumed to increase the firm's marginal product and thereby receives higher compensation. As with basic investment theory, human capital theory posits that an individual will invest in human capital accumulation provided that the expected discounted income flow is greater than the expected discounted costs of acquiring that human capital.

Easily recognizable costs include tuition and fees for college and trade schools; however, foregone earnings as a result of withdrawal from the labor market to obtain this capital must also be considered. Human capital theory can also be applied to investments in geographic relocation. An analysis of the decision to relocate must take into account not only the increase in wages resulting from the move but also the costs of moving to the new location. These costs include loss of current earnings if employed, shipment of family and household belongings, and the psychic costs associated with leaving family and friends. While not all of these costs and benefits are easily quantifiable, the individual is nevertheless assumed to assign an implicit value to them in process of making a decision.

In developing human capital earnings equations which allow for analysis of the partial effects of various human capital investments, one must also recognize that other factors not associated with human capital may influence an individual's earnings. Earnings differences attributable to such variables as gender and race are generally studied within the framework of discrimination theories; however, these variables must be controlled for when estimating an earnings equation. Other factors not related to an individual's portfolio of personal characteristics which also affect earnings are membership in a collective bargaining unit and residence in an urban area or some particular geographic region.

B. DATA

The data used in this research are taken from the National Longitudinal Survey of Labor Market Experience Youth Cohort (NLSY). The initial survey, conducted in 1979, consisted of 12,686 young men and women aged 14-21 years. The 1982 and 1984 segments of this survey were chosen for the analysis because they contained the questions of interest on migration. As discussed in Bock and Moore [Ref. 17]:

> The NLSY sample consists of three independent probability samples: (1) a cross-section sample designed to represent the non-institutionalized civilian segment of American young people 14 to 21 years old as of January 1, 1979, in their proper population proportions; (2) a supplemental oversample of civilian Hispanic, Black, and economically disadvantaged non-Hispanic, non-Black (poor white) youth in the same age range; and (3) a military sample designed to represent youth aged 17 to 21 as of January 1, 1979 who were serving in the military as of September 30, 1978.

Surveys after 1984 were not used, even though available, because the survey of 1978 military members was discontinued after 1984. Thus, after 1984 the number of veterans in the files dropped dramatically.

The samples were selected in an attempt to compare only those wage earners who had the opportunity to join the military. The following selection criteria were used: the respondent had to be 21 years old, could not have been a full-time student, could not have been currently serving on active duty, must have earned an hourly wage rate greater than $.50, and have had an annual income of over $750. The 1982 segment of the survey was used to study migration between counties. The original sample consisted of 12,195 young men and women who participated in the NLSY in 1982. These criteria reduced the sample to 3,892 observations. The 1984 segment of the survey was used to study migration between states. The 1984 segment consisted of 12,069 young men and women. The selection criteria reduced the 1984 sample to 5,562 observations.

The 1982 survey contained questions relating to the respondent's county of residence. This provided information on whether the respondent had changed counties in the past three years. The respondent's state of residence was not included on the data tape used, therefore, state migration could not be analyzed using this data set.

The 1984 data were merged with the geographical information (GEOCODE) tape to study state migration. The respondents were categorized as migrants if they had changed states since they were age 14 years old. Specific counties of residence at age 14 were not recorded, therefore county migration could not be studied with this data.

The initial list of independent variables was compiled from the literature review. This list was then matched to the NLSY survey questions in order to establish which variables could be used in the analysis. The models developed represented a compilation of previous models that had controlled for veteran status, training, and/or

migration. The same set of explanatory variables were used in the state and county models.

Dummy variables were used to control for the respondent's gender, race (black versus non-black), and marital status (currently married versus not married). Based on the findings of previous research on discrimination, being female or black was expected to negatively affect earnings. *A priori*, being married was expected to have a positive effect on earnings since married individuals generally have greater family responsibilities which require a more stable employment history.

The respondent's years of education, years of work experience, and age were controlled for with two continuous variables. Years of experience was computed by taking the respondent's age and subtracting the years of schooling completed, and then subtracting five additional years representing the years before the respondent started formal schooling. *A priori*, increases in these explanatory variables are expected to increase an individual's wages as they tend to increase an individual's productivity. A squared term for years of experience was used to capture any diminishing returns to increases in this attribute. An additional variable for months of continuous employment (TENURE) with the current employer is included. Increases in this variable are expected to increase an individual's earnings as he gains firm specific knowledge. Also, if an individual belongs to a collective bargaining unit (union), his wages are generally expected to be higher. The dummy variable UNION was used to control for wages being set by a collective bargaining unit.

To control for variations in the respondent's earnings resulting from his area of residence, five variables were included. Four dummy variables (NEAST, NCENTRAL, WEST, and SOUTH (SOUTH was used as the base case)) were used to locate the

region in which the respondent lives. To control for differences between rural and urban areas the dummy variable URBAN was used. Based on previous research findings individuals living in rural areas or in the South are expected to have lower earnings.

The health of an individual will also affect the wages he can expect to earn. If his health limits the amount or kind of work that he can perform, his wages may be reduced. The dummy variable HEALTH was created to control for health limitations. This variable was coded as a one if the respondent indicated that his health limited either the kind or the amount of work that he could perform in the survey year.

Veteran status was characterized using dummy variables representing the individual's military service or branch of service (VETERAN, ARMY, NAVY, AIRFORCE, and MARINE). To be considered a veteran the individual must have completed a tour of duty in the Army, Navy, Air Force, or Marine Corps. A tour was considered to be complete if the veteran did not leave the service before his "end of active obligated service." The months immediately following discharge may not indicate the veteran's true earnings potential since frictional unemployment generally depresses the veteran's earnings. To control for this phenomenon a variable was constructed that measured the number of months since the veteran was discharged.

To determine the effects of military training on wages, the number of weeks of formal training provided by the military was measured using the variables ARMYTRA, NAVYTRA, ARFCTRA, and MARNTRA. In addition to formal training, the military also provides on-the-job training. The number of weeks of military on-the-job training

was measured by the variables ARMYOJT, NAVYOJT, ARFCOJT, and MARNOJT. All military variables were coded as zeros for the non-veteran respondents.[6]

The 1982 model investigates the effect of moving between counties within the three year period, 1979 to 1982. The variables used are MGCTY and MGCTYVET. MGCTY takes the value one if a non-veteran moved between counties within the last three years. MGCTYVET takes the value one if a veteran moved between counties within the last three years. The 1984 model investigates interstate moves between the respondent's fourteenth birthday and 1984. If the non-veteran moved to a different state, MIGSTATE is coded as one. If a veteran moved between states, MIGSVET is coded as one.

The industry and occupation of the respondent also has an effect on his wages. To control for this, a vector of ten occupation and 13 industry dummy variables was created using census three-digit occupation and industry classifications. The veteran's military occupation was also included in the vector. There were 11 military occupational classifications created from the Department of Defense three-digit occupation code.

C. METHODOLOGY

In specifying a statistical model to estimate earnings, it is assumed that the random errors affecting earnings are normally distributed with a mean of zero and variance σ^2. In order to facilitate interpretation of the partial effects of explanatory variables the natural log of the individual's hourly wage is used as the dependent

[6]The variables MILTRA and MILOJT are used to represent average training across the four services or as a generic name for service specific training in the descriptive statistics tables.

variable. With this specification, the coefficients of explanatory variables are interpreted as the percentage change in the hourly wage of the individual given a unit change in the explanatory variable. This model was therefore specified as:

$$\ln(\text{wage}) = b_1 + b_2G + b_3L + b_4J + b_5V + b_6M + b_7I + u;$$

where,

b_i = estimated coefficient or vector of coefficients.
G = a vector of general sociodemographic variables as summarized in Table 1.
L = a vector of location variables summarized in Table 1.
J = a vector of employment variables summarized in Table 1.
V = a vector of military variables summarized in Table 1.
M = a vector of migration variables summarized in Table 1.
I = a vector of industry and occupation variables summarized in Tables 2 through 4.
u = a random error term that is normally distributed with mean zero and variance σ^2.

Table 1 presents the definition of the variables used in the models. In addition, Table 1 presents the hypothesized relationship between each variable and post-service earnings. Tables 2-4 present the industries and occupations that were included in the models.

Five model specifications were used to determine the effects of veteran status, branch of service, formal military training and on-the-job training, time since discharge, and migration on veterans' post-service earnings (see Table 5). The first two models used a single dummy variable for veteran status. The third model disaggregated veteran status using branch of service dummy variables. The fourth model incorporated military training, on-the-job training and time since discharge into the third model. The second and fifth models were continuations of the first and fourth models, respectively,

TABLE 1. VARIABLE DEFINITIONS

VARIABLE	DEFINITION	EXPECTED SIGN
LNWAGE	natural log of respondent's hourly wage	
FEMALE	1 if a female 0 if male	-
BLACK	1 if black 0 otherwise	-
MARRIED	1 if currently married 0 otherwise	+
YRSSCH	continuous variable indicating the highest grade completed	+
URBAN	1 if reside in urban area 0 otherwise	+
NEAST	1 if reside in north east region 0 otherwise	+
NCENT	1 if reside in north central region 0 otherwise	+
WEST	1 if reside in west region 0 otherwise	+
SOUTH	1 if reside in south region (base case) 0 otherwise	
HEALTH	1 if limited in kind or amount of work performed 0 otherwise	-
EXP	number of years work force experience age - YRSSCH - 5	+
EXP**2	square of EXP	-
TENURE	number of months with current employer	+
UNION	1 if wages set by collective bargaining 0 otherwise	+
VETERAN	1 if completed a tour in the Army, Navy, Air Force or Marine Corps 0 otherwise	?
ARMY	1 if Army veteran 0 otherwise	?
NAVY AIRFORCE MARINE	Navy, Air Force, and Marine Corps variables were coded similarly to Army variables	?
ARMYTRA	number of weeks in formal Army training 0 if not an Army veteran	?

TABLE 1. (continued) **VARIABLE DEFINITIONS**

VARIABLE	DEFINITION	EXPECTED SIGN
NAVYTRA ARFCTRA MARNTRA	Navy, Air Force, and Marine Corps variables were coded similarly to Army variables	?
MILTRA	number of weeks of formal military training 0 if non-veteran	?
ARMYOJT	number of weeks of Army OJT 0 if not an Army veteran	?
NAVYOJT	Navy, Air Force, and Marine Corps variables were coded similarly to Army variables	?
MILOJT	number of weeks of military OJT 0 if non-veteran	?
MOSDISCH	number of months since veteran was discharged 0 for non-veterans	+
MOSDISCH**2	square of MOSDISCH	-
MGCTY	1 if non-veteran moved between counties between 1979 and 1982 0 otherwise	+
MGCTYVET	1 if veteran moved between counties between 1979 and 1982 0 otherwise	+
MIGSTATE	1 if non-veteran moved between states between his fourteenth birthday and 1984 0 otherwise	+
MIGSVET	1 if veteran moved between states between his fourteenth birthday and 1984 0 otherwise	+

TABLE 2. CENSUS INDUSTRY CATEGORIES

VARIABLE	INDUSTRIES INCLUDED
AGRICULT	Agriculture, Forestry and Fisheries
MANUFACT	Manufacturing (base case)
MINING	Mining
CONSTRCT	Construction
TRANSPRT	Transportation, Communication, Public Utilities
HOLESALE	Wholesale Trade
RETAIL	Retail Trade
FINANCE	Finance, Insurance and Real Estate
BUSRPSRV	Business Repair Services
PERSERV	Personal Services
ENTREC	Entertainment and Recreation Services
PROFSERV	Professional and Related Services
PUBADM	Public Administration

TABLE 3. CENSUS OCCUPATION CATEGORIES

VARIABLE	OCCUPATIONS INCLUDED
PROFESS	Professional, Technical and Kindred
MANAGER	Managers, Officials and Proprietors
SALES	Sales Workers
ADMIN	Administrative Support or Clerical
SERVICE	Service
FARMING	Farming, Forestry and Fishing
OPMOVG	Operators-Transportation, Material Moving
OPLABOR	Operators-Handlers, Helpers, Laborers
OPMACHIN	Operators-Machine, Assemblers, Inspectors (base case)
CRAFT	Craftsmen, Foreman and Kindred

TABLE 4. MILITARY OCCUPATION CATEGORIES

VARIABLE	OCCUPATIONS INCLUDED
INFANTRY	Infantry, Gun crew
ELECEQUIP	Electronic equipment
COMMUNIC	Communications, Intelligence
MEDDENT	Medical, Dental
TECHNIC	Technical, and Allied
FUNCSUP	Functional support
EQUIPREP	Equipment repair
VCRAFTS	Crafts
SERVSUP	Service Supply
NONOCC	Non-occupational
NOMOS	No MOS given (base case)

TABLE 5. VARIABLES INCLUDED IN MODELS 1 - 5

CONTROL VARIABLES	=	FEMALE, BLACK, MARRIED, YRSSCH, URBAN, NEAST, NCENTRAL, WEST, HEALTH, EXP, EXP2, TENURE, and UNION
MODEL 1S(1C)		
LNWAGE	=	*f*{[CONTROL VARIABLES], MIGSTATE(MGCTY), MIGSVET(MGCTYVET), VETERAN}
MODEL 2S(2C)		
LNWAGE	=	*f*{[CONTROL VARIABLES], MIGSTATE(MGCTY), MIGSVET(MGCTYVET), VETERAN, INDUSTRY/OCCUPATION VECTOR}
MODEL 3S(3C)		
LNWAGE	=	*f*{[CONTROL VARIABLES], MIGSTATE(MGCTY), MIGSVET(MGCTYVET), ARMY, NAVY, AIRFORCE, MARINE}
MODEL 4S(4C)		
LNWAGE	=	*f*{[CONTROL VARIABLES], MIGSTATE(MGCTY), MIGSVET(MGCTYVET),ARMY, NAVY, AIRFORCE, MARINE, ARMYTRA, NAVYTRA, ARFCTRA, MARNTRA, ARMYOJT, NAVYOJT, ARFCOJT, MARNOJT, MOSDISCH, MOSDISCH2}
MODEL 5S(5C)		
LNWAGE	=	*f*{[CONTROL VARIABLES], MIGSTATE(MGCTY), MIGSVET(MGCTYVET), ARMY, NAVY, AIRFORCE, MARINE, ARMYTRA, NAVYTRA, ARFCTRA, MARNTRA, ARMYOJT, NAVYOJT, ARFCOJT, MARNOJT, MOSDISCH, MOSDISCH2, INDUSTRY/OCCUPATION/MOS VECTOR}

and also controlled for the individual's occupation and industry. Each of the five models was run on the 1982 and 1984 samples.

As mentioned above, migration was studied using two different years due to limitations of the NLSY. A crucial assumption for the analysis is that migration between counties by veterans occurred either during or after their military service. This implies that the military made the veterans more mobile and that migration was attributable to military service. Two possible reasons for this mobility are that military stationing was a vehicle for post-service migration and that military travel was a method to gather information on national job markets and the desirability of alternative locations.

The assumption that migration between states is a result of military service is not as supportable as in the case of migration between counties. Migration was said to have occurred if the respondent had moved between states since he was 14 years old. Thus, there is an interval of four years (between age 14 and 18) during which the individual probably migrated as a result of a parental move and not as a result of military service.

IV. DATA ANALYSIS AND EMPIRICAL RESULTS

A. DESCRIPTIVE STATISTICS

Tables 6 through 11 present descriptive statistics of the resulting veteran and non-veteran samples, Tables 6-8 for the 1982 sample, and Tables 9-11 for the 1984 sample. Included in the tables are the means, standard deviations, and the results of means tests and tests of proportions for the variables used in the models. The 1982 sample included 333 Army, Navy, Air Force, and Marine Corps veterans, which comprised 8.6 percent of the total sample.

The average wage of the veteran group in Table 6 was seven percent higher than the non-veteran group. This may be attributed to the different distribution of individuals. The non-veteran group has proportionately more blacks and women, two groups which have historically had lower wages. The average age of the veteran group was nine months higher than the non-veteran group, although both groups ranged in age from 21 to 27 years old. The average experience level of the veteran group was 19 percent higher than the non-veteran group. Increased experience has been shown to result in higher wages.

The veterans were very mobile; 70.6 percent of them had switched counties in the past three years. The non-veterans were significantly and dramatically less mobile; only 38.5 percent of the non-veterans had switched counties during the same three year period. This difference supports the maintained hypothesis of this thesis that military service tends to increase an individual's mobility. Two possible

TABLE 6. COMPARISON OF 1982 DESCRIPTIVE STATISTICS NON-VETERANS AND VETERANS

	NON-VETERANS		VETERANS		
VARIABLE	MEAN	STANDARD DEVIATION	MEAN	STANDARD DEVIATION	TEST STAT
WAGE	5.95	3.13	6.40	2.86	-2.50*
AGE	22.61	1.21	23.36	0.94	-11.11*
FEMALE	0.49	0.50	0.21	0.41	9.81*
BLACK	0.21	0.40	0.17	0.38	1.56***
MARRIED	0.35	0.48	0.41	0.49	-2.25**
YRSSCH	12.53	2.11	12.05	1.00	4.08*
EXP	5.08	2.20	6.31	1.21	-10.05*
EXP2	30.67	27.27	41.31	16.30	-7.00*
NEAST	0.20	0.40	0.17	0.38	1.12
NCENTRAL	0.24	0.42	0.24	0.43	0.33
WEST	0.19	0.40	0.23	0.42	1.60
SOUTH	0.37	0.48	0.36	0.48	0.69
URBAN	0.80	0.40	0.81	0.39	0.45
TENURE	30.76	24.90	16.40	14.80	10.35*
UNION	0.21	0.41	0.23	0.42	0.65
HEALTH	0.04	0.20	0.03	0.17	0.98
MGCTY	0.38	0.49	-	-	11.37+
MGCTYVET	-	-	0.70	0.46	-
MILTRA	-	-	9.35	9.49	-
MILOJT	-	-	5.02	14.16	-
MOSDISCH	-	-	31.91	15.26	-
MOSDISCH2	-	-	1251	1303	-
N		3559		333	

* significantly different at the 0.01 Level
** significantly different at the 0.05 Level
*** significantly different at the 0.10 Level
\+ significantly different from MGCTYVET at the 0.01 Level

TABLE 7. COMPARISON OF 1982 DESCRIPTIVE STATISTICS ARMY AND NAVY WITH NON-VETERANS

	ARMY			NAVY		
VARIABLE	MEAN	STD DEV	TEST STAT	MEAN	STD DEV	TEST STAT
WAGE	6.11	2.78	-0.62	7.26	2.88	-3.41*
AGE	23.24	0.99	-6.33	23.54	0.83	-6.34*
FEMALE	0.26	0.44	5.92*	0.07	0.26	6.94*
BLACK	0.25	0.44	1.31	0.01	0.12	3.98*
MARRIED	0.36	0.48	0.23	0.46	0.50	2.02**
YRSSCH	11.96	0.93	3.45*	12.04	0.95	1.92*
EXP	6.27	1.18	-6.94*	6.49	1.12	-5.31*
EXP2	40.79	15.37	-4.75*	43.39	15.25	-3.86*
NEAST	0.18	0.39	0.51	0.19	0.39	0.17
NCENTRAL	0.22	0.41	0.54	0.26	0.44	0.50
WEST	0.19	0.39	0.25	0.35	0.39	3.16*
SOUTH	0.41	0.49	1.10	0.20	0.41	2.91*
URBAN	0.76	0.43	1.30***	0.83	0.38	0.53
TENURE	16.93	15.09	7.09*	13.65	12.33	5.69*
UNION	0.28	0.45	2.15**	0.16	0.37	1.08
HEALTH	0.02	0.13	1.48***	0.03	0.17	0.50
MGCTYVET	0.71	0.45	8.37*	0.80	0.41	6.94*
MILTRA	8.51	7.93	-	9.23	9.71	-
MILOJT	5.53	14.57	-	5.12	16.16	-
MOSDISCH	32.86	15.08	-	29.20	15.56	-
MOSDISCH2	1306	1295	-	1091	1330	-
N	166			69		

* significantly different than non-veteran at the 0.01 Level
** significantly different than non-veteran at the 0.05 Level
*** significantly different than non-veteran at the 0.10 Level

TABLE 8. COMPARISON OF 1982 DESCRIPTIVE STATISTICS AIR FORCE AND MARINE CORPS WITH NON-VETERANS

	AIR FORCE			MARINE CORPS		
VARIABLE	MEAN	STD DEV	TEST STAT	MEAN	STD DEV	TEST STAT
WAGE	6.77	3.50	-1.76***	5.87	2.17	0.28
AGE	23.62	0.80	-5.70*	23.31	1.05	-4.14*
FEMALE	0.28	0.45	3.07*	0.20	0.40	4.23*
BLACK	0.11	0.31	1.97**	0.20	0.40	0.24
MARRIED	0.51	0.50	2.27**	0.41	0.50	0.97
YRSSCH	12.51	0.83	0.07	11.94	1.27	3.25*
EXP	6.11	1.03	-3.18*	6.37	1.54	2.00*
EXP2	38.32	12.10	-4.20*	42.92	22.70	-3.19*
NEAST	0.13	0.34	1.28	0.16	0.37	0.71
NCENTRAL	0.21	0.41	0.37	0.33	0.48	1.64***
WEST	0.21	0.41	0.30	0.24	0.43	0.73
SOUTH	0.45	0.50	1.02	0.27	0.45	1.45***
URBAN	0.87	0.34	1.33***	0.90	0.30	1.80**
TENURE	18.11	12.68	3.48*	16.82	18.25	3.98*
UNION	0.15	0.36	1.17	0.22	0.42	0.05
HEALTH	0.06	0.25	0.70	0.04	0.20	0.07
MGCTYVET	0.66	0.48	3.79*	0.61	0.49	3.24*
MILTRA	12.04	11.53	-	9.78	11.45	-
MILOJT	5.66	14.66	-	2.65	8.47	-
MOSDISCH	29.60	13.94	-	34.65	16.21	-
MOSDISCH2	1066	1196	-	1458	1379	-
N	47			51		

* significantly different than non-veteran at the 0.01 Level
** significantly different than non-veteran at the 0.05 Level
*** significantly different than non-veteran at the 0.10 Level

TABLE 9. COMPARISON OF 1984 DESCRIPTIVE STATISTICS NON-VETERANS AND VETERANS

	NON-VETERANS		VETERANS		
VARIABLE	MEAN	STANDARD DEVIATION	MEAN	STANDARD DEVIATION	TEST STAT
WAGE	6.40	3.13	7.08	3.12	-4.65*
AGE	23.60	1.76	25.16	1.26	-19.54*
FEMALE	0.50	0.50	0.22	0.42	11.85*
BLACK	0.22	0.42	0.18	0.39	2.08**
MARRIED	0.37	0.48	0.48	0.50	5.06*
YRSSCH	12.66	2.08	12.26	1.07	4.32*
EXP	5.94	2.42	7.90	1.48	-18.00*
EXP2	41.16	31.84	64.67	23.22	-16.25*
NEAST	0.19	0.39	0.19	0.39	0.49
NCENTRAL	0.23	0.42	0.20	0.40	1.34***
WEST	0.19	0.39	0.24	0.43	2.97*
SOUTH	0.39	0.49	0.37	0.48	0.86
URBAN	0.80	0.40	0.82	0.38	1.08
TENURE	46.39	32.33	27.40	23.38	12.93*
UNION	0.18	0.38	0.21	0.42	2.50*
HEALTH	0.04	0.20	0.03	0.17	1.32***
MIGSTATE	0.19	0.39	-	-	9.26+
MIGSVET	-	-	0.36	0.48	-
MILTRA	-	-	10.52	11.34	-
MILOJT	-	-	16.84	25.32	-
MOSDISCH	-	-	43.04	20.99	-
MOSDISCH2	-	-	2292	2141	-
N		5052		510	

* significantly different at the 0.01 Level
** significantly different at the 0.05 Level
*** significantly different at the 0.10 Level
\+ significantly different from MIGSVET at the 0.01 Level

TABLE 10. COMPARISON OF 1984 DESCRIPTIVE STATISTICS ARMY AND NAVY WITH NON-VETERANS

	ARMY			NAVY		
VARIABLE	MEAN	STD DEV	TEST STAT	MEAN	STD DEV	TEST STAT
WAGE	6.69	3.05	-1.37	7.60	3.07	-4.03*
AGE	25.04	1.30	-12.23*	25.40	1.14	-10.60*
FEMALE	0.27	0.45	6.70*	0.11	0.31	8.30*
BLACK	0.27	0.45	1.72***	0.04	0.18	4.83*
MARRIED	0.48	0.50	3.31*	0.47	0.50	2.30**
YRSSCH	12.16	1.05	3.66*	12.24	1.04	2.19**
EXP	7.88	1.46	-12.07*	8.12	1.33	-9.60*
EXP2	64.20	23.59	-10.88*	67.74	22.54	-8.86*
NEAST	0.17	0.38	0.91	0.22	0.42	0.70
NCENTRAL	0.21	0.41	0.66	0.20	0.40	0.62
WEST	0.21	0.41	0.89	0.27	0.45	2.24**
SOUTH	0.41	0.49	0.58	0.31	0.46	1.84**
URBAN	0.79	1.46	0.37	0.85	0.36	1.39***
TENURE	27.06	24.21	8.97*	27.73	20.41	6.13*
UNION	0.24	0.43	2.21**	0.17	0.37	0.38
HEALTH	0.02	0.14	1.50**	0.05	0.22	0.59
MIGSVET	0.33	0.47	5.41*	0.32	0.47	3.40*
MILTRA	9.33	9.93	-	11.17	11.10	-
MILOJT	14.00	25.76	-	19.75	28.85	-
MOSDISCH	46.19	22.35	-	40.92	17.67	-
MOSDISCH2	2631	2371	-	1984	1740	-
N	231			114		

* significantly different than non-veteran at the 0.01 Level
** significantly different than non-veteran at the 0.05 Level
*** significantly different than non-veteran at the 0.10 Level

TABLE 11. COMPARISON OF 1984 DESCRIPTIVE STATISTICS AIR FORCE AND MARINE CORPS WITH NON-VETERANS

	AIR FORCE			MARINE CORPS		
VARIABLE	MEAN	STD DEV	TEST STAT	MEAN	STD DEV	TEST STAT
WAGE	7.54	2.94	-3.25*	7.00	3.45	-1.72***
AGE	25.3	1.22	-8.84*	25.10	1.31	-7.68*
FEMALE	0.34	0.48	2.82*	0.13	0.34	6.61*
BLACK	0.07	0.26	3.27*	0.25	0.44	0.62
MARRIED	0.51	0.50	2.67*	0.48	0.50	2.12**
YRSSCH	12.66	1.02	0.02	12.18	1.15	3.73*
EXP	7.67	1.46	-6.45*	7.92	1.68	-7.41*
EXP2	60.96	21.91	-5.61*	65.45	26.67	-6.91*
NEAST	0.13	0.34	1.34***	0.23	0.42	0.82
NCENTRAL	0.16	0.37	1.46***	0.22	0.41	0.20
WEST	0.33	0.47	3.21*	0.20	0.41	0.37
SOUTH	0.38	0.49	0.26	0.35	0.48	0.79
URBAN	0.88	0.33	1.80**	0.84	0.36	1.02
TENURE	26.26	19.25	5.62*	29.02	28.32	4.86*
UNION	0.22	0.42	0.91	0.28	0.45	2.03**
HEALTH	0.02	0.16	0.78	0.02	0.15	0.79
MIGSVET	0.52	0.50	7.60*	0.35	0.48	3.678
MILTRA	13.32	14.35	-	10.19	11.66	-
MILOJT	22.66	17.60	-	14.99	24.35	-
MOSDISCH	36.96	18.19	-	43.19	22.47	-
MOSDISCH2	1693	1595	-	2364	2276	-
N	82			83		

* significantly different than non-veteran at the 0.01 Level
** significantly different than non-veteran at the 0.05 Level
*** significantly different than non-veteran at the 0.10 Level

reasons for this mobility are that military stationing was a vehicle for subsequent post-service migration or that military travel aided the individual in gathering information on nationwide job markets and alternative locations.

This differential mobility may explain, in part, the higher average wage observed for veterans. However, the effects of mobility may be offset by the non-veteran group's observed higher average tenure and years of schooling. One puzzling statistic in Table 6 is the number of weeks of formal training for veterans. The military desires highly trained personnel, which *a priori* should have caused the average number of weeks of formal training (basic training not included) to be higher than the 9.4 weeks observed in Table 6.

The 1984 sample included 510 Army, Navy, Air Force, and Marine Corps veterans which comprised 9.2 percent of the sample. The veterans in this sample were also more mobile than the non-veterans. In Table 9, 36 percent of the veterans had changed states since their fourteenth birthday compared to only 19 percent for the non-veterans. The comparisons of descriptive statistics between veterans and non-veterans in 1984 are similar to the 1982 comparisons. The 1984 sample however, had a higher average age which lead to higher average years of school completed, experience, and tenure, and the proportion of the sample that was married was also higher. The average number of weeks of formal military training received by veterans increased to 10.5 weeks.

B. MULTIVARIATE ANALYSIS

The estimation results for the state migration model are presented in Tables 12 and 13. The 1984 models that used the single dummy veteran variable method (Table 12) indicate that veterans earn 4.9 to 5.7 percent less than their civilian counter parts. This is consistent with the earlier findings on veteran's earnings of Chamarette and Thomas [Ref. 1], Berger and Hirsch [Ref. 2], and Angrist and Krueger, [Ref. 7]. It is also consistent with the results of Bryant and Wilhite [Ref. 12] who used the NLSY survey to study civilian earnings. The lower wage encountered by veterans was, however, offset if they had migrated between states. The veterans who migrated between states earned 9.8 to 10.4 percent higher wages than those who did not migrate. Thus, veterans who did not migrate suffered lower earnings whereas veterans who did migrate experienced higher earnings than otherwise similar civilians.

The estimates of the coefficients for the remaining variables in the state migration model were consistent with prior human capital models. Women and black workers receive 12 to 20 percent lower wages than men and non-blacks. An increase in years of education, years of work experience, or tenure will result in higher wages. The region of the country and the local area have a significant effect on an individuals' earnings. Also, belonging to a collective bargaining unit increases an individuals' wages by more than 15 percent.

When veteran status was disaggregated by branch of service and training in Table 13, Army veterans paid a 20 percent earnings penalty, Air Force veterans paid a 31 percent penalty, and Marine Corps veterans paid a 29.1 percent penalty for their

TABLE 12. 1984 STATE MIGRATION REGRESSION RESULTS USING VETERAN STATUS (DEPENDENT VARIABLE = LNWAGE)

	MODEL 1S		MODEL 2S	
VARIABLE	COEFF	T RATIO	COEFF	T RATIO
INTERCEP	4.990	(76.04)*	5.193	(78.75)*
FEMALE	-0.201	(-18.72)*	-0.163	(-13.90)*
BLACK	-0.151	(-8.86)*	-0.129	(-8.00)*
MARRIED	0.031	(2.75)*	0.031	(2.92)*
YRSSCH	0.078	(20.92)*	0.063	(16.62)*
URBAN	0.116	(8.57)*	0.111	(8.54)*
NEAST	0.059	(4.00)*	0.069	(4.93)*
NCENTRAL	-0.020	(-1.44)	-0.002	(-0.14)
WEST	0.102	(6.43)*	0.125	(8.35)*
HEALTH	-0.058	(-2.24)**	-0.063	(-2.56)*
EXP	0.069	(8.12)*	0.068	(8.34)*
EXP2	-0.003	(-4.45)*	-0.003	(-5.08)*
TENURE	0.001	(8.98)*	0.001	(7.80)*
UNION	0.230	(16.11)*	0.215	(15.70)*
VETERAN	-0.057	(-1.62)***	-0.049	(-1.47)+
MIGSVET	0.104	(1.65)***	0.098	(1.63)***
MIGSTATE	0.017	(1.26)	0.011	(0.84)
INDUSTRY/ OCCUPATION VECTOR	-NI-		-NP-	
F STATISTIC	104.002		69.492	
R-SQUARE	0.231		0.318	
ADJ R-SQUARE	0.229		0.313	

N=5562

NI vector not included
NP vector included, in Appendix A
* significant at the 0.01 Level
** significant at the 0.05 Level
*** significant at the 0.10 Level
\+ significant at the 0.15 Level

TABLE 13. 1984 STATE MIGRATION REGRESSION RESULTS USING BRANCH OF SERVICE AND TRAINING (DEPENDENT VARIABLE = LNWAGE)

	MODEL 3S		MODEL 4S		MODEL 5S	
VARIABLE	COEFF	T RATIO	COEFF	T RATIO	COEFF	T RATIO
INTERCEP	4.992	(76.03)*	5.900	(76.04)*	5.197	(78.56)*
FEMALE	-0.201	(-18.72)*	-0.201	(-18.74)*	-0.163	(-13.92)*
BLACK	-0.150	(-8.77)*	-0.149	(-8.76)*	-0.129	(-7.95)*
MARRIED	0.031	(2.76)*	0.031	(2.78)*	0.027	(2.97)*
YRSSCH	0.078	(20.90)*	0.078	(20.75)*	0.063	(16.55)*
URBAN	0.115	(8.53)*	0.115	(8.49)*	0.110	(8.39)*
NEAST	0.059	(4.04)*	0.060	(4.09)*	0.070	(5.02)*
NCENTRAL	-0.019	(-1.40)	-0.019	(-1.40)	-0.001	(-0.08)
WEST	0.102	(6.44)*	0.104	(6.52)*	0.126	(8.40)*
HEALTH	-0.058	(-2.24)**	-0.058	(-2.23)**	-0.062	(-2.53)*
EXP	0.069	(8.10)*	0.068	(8.03)*	0.067	(8.20)*
EXP2	-0.003	(-4.44)*	-0.003	(-4.40)*	-0.003	(-4.94)*
TENURE	0.001	(8.99)*	0.001	(9.01)*	0.001	(7.76)*
UNION	0.229	(16.10)*	0.228	(16.02)*	0.214	(15.57)*
ARMY	-0.076	(-1.62)	-0.200	(-1.72)***	0.026	(0.18)
NAVY	-0.005	(-0.08)	-0.152	(-1.06)	-0.005	(-0.03)
ARFC	0.010	(0.12)	-0.310	(-1.95)**	-0.056	(-0.33)
MRCP	-0.096	(-1.46)	-0.291	(-2.32)**	-0.014	(-0.09)
MIGSTATE	0.018	(1.27)	0.088	(1.31)	0.064	(0.98)
MIGSVET	0.085	(1.31)	0.018	(1.27)	0.011	(0.85)
ARMTRA	-	-	0.005	(-0.69)	-0.004	(-0.88)
NAVTRA	-	-	-0.001	(-0.14)	-0.003	(-0.50)
ARFTRA	-	-	0.012	(2.54)*	0.010	(2.12)*
MRPTRA	-	-	0.005	(0.85)	0.003	(0.48)
ARMOJT	-	-	0.001	(0.37)	-0.0002	(-0.11)
NAVOJT	-	-	0.0001	(0.06)	0.001	(0.28)
ARFOJT	-	-	-0.001	(-0.16)	-0.003	(-0.76)
MRPOJT	-	-	0.001	(0.18)	-0.0002	(-0.08)
MOSDISCH	-	-	0.007	(1.79)***	0.002	(0.61)
MOSDISCH2	-	-	-0.0001	(-1.80)***	-0.00003	(-0.88)
INDUSTRY/ OCCUPATION MOS VECTOR	-NI-		-NI-		-NP-	
F STATISTIC	87.667		57.832		43.014	
R-SQUARE	0.231		0.233		0.319	
ADJ R-SQUARE	0.228		0.229		0.312	

N=3892

NI vector not included
NP vector included, presented in Appendix B
* significant at the 0.01 Level
** significant at the 0.05 Level
***significant at the 0.10 Level

military service. These results are consistent with the results of Bryant and Wilhite [Ref. 12] who also used the NLSY. However, when the veteran's occupation and industry were included in Model 5S, veterans' wages were not significantly affected by their military service. Moreover, Air Force veterans received a 1.0 to 1.2 percent wage premium for each week of formal training in their military occupation, which again is consistent with the results of Bryant and Wilhite [Ref. 12].

Disaggregating veteran status by branch of service in Table 13, Model 3S reduced the statistical significance of the veteran migration variable (MIGSVET). Including the formal training and on-the-job training variables reduces its significance and size even further. Introducing the branch and training variables increases the collinearity with the MIGSVET variable, this collinearity probably accounts for the increased standard error and reduced significance of MIGSVET.

The results of evaluating the county migration model are presented in Tables 14 and 15. The 1982 models that used the single dummy veteran variable method (Table 14) indicate that veteran status has no significant effect on civilian earnings. This result is similar to the previous results obtained by Daymont and Andrisani [Ref. 6], who used the NLSY survey.

When veteran status was disaggregated in Table 15, the 1982 model that used dummy variables for branch of service (Model 3C) indicated that Army veterans paid a 12.7 percent earnings penalty and that Navy veterans earned a 15.9 percent earnings premium. The military coefficients in the other county migration models (Model 4C and 5C) in Table 15 were not statistically significant at generally accepted levels. Again, the difference in results is likely to be due to the multicollinearity created when

TABLE 14. 1982 COUNTY MIGRATION REGRESSION RESULTS USING VETERAN STATUS (DEPENDENT VARIABLE = LNWAGE)

	MODEL 1C		MODEL 2C	
VARIABLE	COEFF	T RATIO	COEFF	T RATIO
INTERCEPT	5.269	(49.83)*	5.524	(52.56)*
FEMALE	-0.247	(-18.19)*	-0.210	(-13.55)*
BLACK	-0.097	(-4.46)*	-0.066	(-3.16)*
MARRIED	0.036	(2.54)*	0.041	(3.00)*
YRSSCH	0.059	(9.48)*	0.048	(7.54)*
URBAN	0.076	(4.43)*	0.071	(4.30)*
NEAST	0.065	(3.43)*	0.074	(4.06)*
NCENTRAL	0.041	(2.37)**	0.058	(3.50)*
WEST	0.133	(6.64)*	0.150	(7.79)*
HEALTH	-0.063	(-1.89)***	-0.061	(-1.93)**
EXP	0.052	(4.41)*	0.040	(3.51)*
EXP2	-0.002	(-1.64)	-0.001	(-1.17)
TENURE	0.002	(5.68)*	0.001	(5.21)*
UNION	0.172	(10.59)*	0.152	(9.48)*
VETERAN	-0.057	(-1.06)	-0.064	(-1.25)
MGCTY	0.058	(3.99)*	0.047	(3.41)*
MGCTYVET	0.064	(0.88)	0.063	(0.90)
INDUSTRY/ OCCUPATION VECTOR	-NI-		-NP-	
F STATISTIC	48.906		34.163	
R-SQUARE	0.168		0.247	
ADJ R-SQUARE	0.165		0.240	

N=3892

NI vector not included
NP vector included, presented in Appendix C
* significant at the 0.01 Level
** significant at the 0.05 Level
*** significant at the 0.10 Level

TABLE 15. 1982 COUNTY MIGRATION REGRESSION RESULTS USING BRANCH OF SERVICE AND TRAINING (DEPENDENT VARIABLE = LNWAGE)

	MODEL 3C		MODEL 4C		MODEL 5C	
VARIABLE	COEFF	T RATIO	COEFF	T RATIO	COEFF	T RATIO
INTERCEP	5.268	(49.87)*	5.267	(49.17)*	5.519	(52.38)*
FEMALE	-0.246	(-18.15)*	-0.246	(-18.13)*	-0.209	(-13.45)*
BLACK	-0.094	(-4.31)*	-0.094	(-4.33)*	-0.064	(-3.06)*
MARRIED	0.036	(2.54)*	0.036	(2.52)*	0.041	(2.99)*
YRSSCH	0.059	(9.48)*	0.059	(9.49)*	0.048	(7.56)*
URBAN	0.074	(4.35)*	0.074	(4.30)*	0.069	(4.15)*
NEAST	0.066	(3.55)*	0.067	(3.54)*	0.076	(4.20)*
NCENTRAL	0.042	(2.45)*	0.047	(2.46)*	0.060	(3.61)*
WEST	0.134	(6.66)*	0.135	(6.70)*	0.151	(7.80)*
HEALTH	-0.064	(-1.92)***	-0.065	(-1.96)**	-0.061	(-1.92)***
EXP	0.052	(4.43)*	0.052	(4.41)*	0.039	(3.44)*
EXP2	-0.002	(-1.67)***	-0.002	(-1.65)**	-0.001	(-1.09)
TENURE	0.002	(5.75)*	0.001	(5.77)*	0.001	(5.30)*
UNION	0.173	(10.67)*	0.173	(10.65)*	0.153	(9.52)*
ARMY	-0.127	(-1.86)**	-0.235	(-1.00)	-0.173	(-0.69)
NAVY	0.159	(1.87)***	-0.032	(-0.13)	-0.034	(-0.13)
ARFC	-0.151	(-1.27)	-0.415	(-1.56)	-0.340	(-1.24)
MRCP	-0.094	(-1.06)	-0.328	(-1.25)	-0.210	(-0.76)
MGCTY	0.058	(4.02)*	0.058	(4.02)*	0.048	(3.45)*
MGCTYVET	0.057	(0.78)	0.061	(0.67)	0.077	(0.85)
ARMTRA	-	-	-0.010	(-1.28)	-0.006	(-0.74)
NAVTRA	-	-	0.006	(0.66)	0.008	(0.86)
ARFTRA	-	-	0.015	(1.30)	0.015	(1.27)
MRPTRA	-	-	0.008	(1.01)	0.010	(1.26)
ARMOJT	-	-	0.005	(1.16)	0.005	(1.09)
NAVOJT	-	-	-0.003	(-0.57)	-0.003	(-0.66)
ARFOJT	-	-	-0.009	(-0.84)	-0.007	(-0.64)
MRPOJT	-	-	-0.004	(-0.32)	-0.005	(-0.42)
MOSDISCH	-	-	0.009	(1.04)	0.007	(0.76)
MOSDISCH2	-	-	-0.0001	(-1.23)	-0.0001	(-1.01)
INDUSTRY/ OCCUPATION MOS VECTOR	-NI-		-NI-		-NP-	
F STATISTIC	41.847		27.673		21.434	
R-SQUARE	0.170		0.172		0.251	
ADJ R-SQUARE	0.166		0.166		0.240	

N=3892

NI vector not included
NP vector included, presented in Appendix D
* significant at the 0.01 Level
** significant at the 0.05 Level
*** significant at the 0.10 Level

the branch, formal training, and on-the-job training variables are introduced in Model 4C and 5C.

The non-military estimated coefficients for the 1982 county migration models were consistent with the coefficients for the 1984 state migration model. While migration between counties did not have a significant effect on veterans' earnings, non-veterans who migrated earned 4.7 to 5.8 percent higher wages, consistent with the prior research on civilian migration.

V. CONCLUSIONS

This thesis investigated the wage differential between military veterans' and non-veterans' civilian earnings for young men and women 21 to 27 years old using data from the All-Volunteer Force era. Of particular interest was the effect that migration between states and counties had on veterans' post-service earnings. The veterans' military experience was disaggregated into branch of service, amount of formal training received, amount of on-the-job training received, and the time since discharge from the military.

Veterans' civilian earnings were studied using two data sets from the National Longitudinal Survey of Labor Market Experience, Youth Cohort. The 1982 segment studied the effects of moving between counties during the three year period from 1979 to 1982. The 1984 segment was used to study the effects of moving between states between the respondent's fourteenth birthday and 1984. Five variations of standard earnings equations were specified based on human capital investment theory. The equations were estimated by ordinary least squares to investigate the impact of local (between-county) and long distance (between-state) moves on post-service earnings.

The models defining a veteran's experience using a single dummy variable indicated that All-Volunteer Force veterans are paying a 4.9 to 5.7 percent wage penalty for their service in the military. As previously hypothesized, military veterans are more geographically mobile than non-veterans. This mobility may, in fact, compensate veterans for the earnings penalty paid for their military service: veterans

who moved between states were found to earn 9.8 to 10.4 percent higher wages than those who did not move.

When the veterans' military experience is disaggregated by branch of service, formal and on-the-job training, and time since discharge, and their current occupation and industry are controlled for, no penalty appears to be assessed on their wages. This implies that military service is not detrimental to the post-service earnings of individuals who enlist in the armed forces. The formal training provided by the Air Force increased Air Force veteran's earnings by 1.0 to 1.2 percent for each week of formal training received.

The study of the effects of migration on veterans' post-service earnings requires further research. The definition used for migration between states was not restrictive enough to accurately identify the migration as having resulted directly from service in the military. It was unfortunate that the geographical information (GEOCODE file) was not available for all the years of interest. When this geographical data is acquired, a more in-depth study of the effects migration on veterans' earnings can be completed.

Additional areas of research relating to military service and human capital investment that can be studied are: 1) The effects of migration on veterans from the point of entry into the service to their current location; 2) How the discounted cash flows differ between people who choose military service and those who do not choose military service. If the NLSY continues into the 1990s it will provide a valuable data source for continuing this research.

APPENDIX A

1982 STATE MIGRATION REGRESSION RESULTS USING VETERAN STATUS, INDUSTRY AND OCCUPATION

MODEL 2S (DEPENDENT VARIABLE = LNWAGE)

VARIABLE	COEFF	T RATIO	VARIABLE	COEFF	T RATIO
INTERCEP	5.193	(78.75)*	CONSTRCT	0.069	(2.84)*
FEMALE	-0.163	(-13.90)*	TRANSPRT	0.113	(4.62)*
BLACK	-0.129	(-8.00)*	HOLESALE	-0.061	(-2.12)**
MARRIED	0.031	(2.92)*	RETAIL	-0.178	(-10.27)*
YRSSCH	0.063	(16.62)*	FINANCE	0.040	(1.69)***
URBAN	0.111	(8.54)*	BUSRPSRV	-0.053	(-2.42)**
NEAST	0.069	(4.93)*	PERSERV	-0.270	(-10.10)*
NCENTRAL	-0.002	(-0.14)	ENTREC	-0.107	(-3.05)*
WEST	0.125	(8.35)*	PROFSERV	-0.087	(-4.76)*
HEALTH	-0.063	(-2.56)*	PUBADM	-0.092	(-3.34)*
EXP	0.068	(8.34)*	PROFESS	0.162	(6.70)*
EXP2	-0.003	(-5.08)*	MANAGER	0.260	(8.77)*
TENURE	0.001	(7.80)*	SALES	0.073	(2.78)*
UNION	0.215	(15.70)*	ADMIN	0.016	(0.71)
VETERAN	-0.049	(-1.47)+	SERVICE	-0.007	(-0.30)
MIGSVET	0.098	(1.63)***	FARMING	-0.009	(-0.21)
MIGSTATE	0.011	(0.84)	CRAFT	0.107	(4.63)*
AGRICLT	-0.240	(-5.77)*	OPMOVNG	0.019	(0.60)
MINING	0.201	(4.69)*	OPLABOR	0.011	(0.42)

N = 5562

F STATISTIC	69.492
R-SQUARE	0.318
ADJ R-SQUARE	0.313

* significant at the 0.01 Level
** significant at the 0.05 Level
*** significant at the 0.10 Level
\+ significant at the 0.15 Level

APPENDIX B

1984 STATE MIGRATION REGRESSION RESULTS USING BRANCH OF SERVICE, TRAINING, INDUSTRY, OCCUPATION, AND MILITARY OCCUPATION

MODEL 5S (DEPENDENT VARIABLE = LNWAGE)

VARIABLE	COEFF	T RATIO	VARIABLE	COEFF	T RATIO
INTERCEP	5.197	(78.56)*	MINING	0.201	(4.69)*
FEMALE	-0.163	(-13.92)*	CONSTRCT	0.070	(2.85)*
BLACK	-0.129	(-7.95)*	TRANSPRT	0.114	(4.63)*
MARRIED	0.027	(2.97)*	HOLESALE	-0.060	(-2.10)**
YRSSCH	0.063	(16.55)*	RETAIL	-0.176	(-10.16)*
URBAN	0.110	(8.39)*	FINANCE	0.041	(1.72)***
NEAST	0.070	(5.02)*	BUSRPSRV	-0.052	(-2.35)**
NCENTRAL	-0.001	(-0.08)	PERSERV	-0.270	(-10.08)*
WEST	0.126	(8.40)*	ENTREC	-0.107	(-3.07)*
HEALTH	-0.062	(-2.53)*	PROFSERV	-0.088	(-4.76)*
EXP	0.067	(8.20)*	PUBADM	-0.029	(-3.34)*
EXP2	-0.003	(-4.94)*	PROFESS	0.162	(6.65)*
TENURE	0.001	(7.76)*	MANAGER	0.258	(8.70)*
UNION	0.214	(15.57)*	SALES	0.073	(2.78)*
ARMY	0.026	(0.18)	ADMIN	0.016	(0.72)
NAVY	-0.005	(-0.03)	SERVICE	-0.007	(-0.27)
ARFC	-0.056	(-0.33)	FARMING	-0.009	(-0.20)
MRCP	-0.014	(-0.09)	CRAFT	0.106	(4.59)*
MIGSTATE	0.064	(0.98)	OPMOVNG	0.021	(0.67)
MISVET	0.011	(0.85)	OPLABOR	0.013	(0.50)
ARMTRA	-0.004	(-0.88)	INFANTRY	-0.087	(-0.87)
NAVTRA	-0.003	(-0.50)	ELECQUIP	0.077	(0.39)
ARFTRA	0.010	(2.12)*	COMMUNIC	-0.014	(-0.08)
MRPTRA	0.003	(0.48)	MEDDENT	0.161	(1.01)
ARMOJT	-0.0002	(-0.11)	TECHNIC	-0.102	(-0.61)
NAVOJT	0.001	(0.28)	FUNCSUP	-0.086	(-0.57)
ARFOJT	-0.003	(-0.76)	EQUIPREP	-0.004	(-0.03)
MRPOJT	-0.0002	(-0.08)	VCRAFTS	-0.022	(-0.11)
MOSDISCH	0.002	(0.61)	SERVSUP	-0.200	(-1.65)***
MOSDISCH2	-0.00003	(-0.88)	NONOCC	-0.181	(-0.69)
AGRICLT	-0.241	(-5.78)*			

N = 3892

F STATISTIC	43.014
R-SQUARE	0.319
ADJ R-SQUARE	0.312

* significant at the 0.01 Level
** significant at the 0.05 Level
*** significant at the 0.10 Level

APPENDIX C

1982 COUNTY MIGRATION REGRESSION RESULTS USING VETERAN STATUS, INDUSTRY AND OCCUPATION

MODEL 2C (DEPENDENT VARIABLE = LNWAGE)

VARIABLE	COEFF	T RATIO	VARIABLE	COEFF	T RATIO
INTERCEPT	5.524	(52.56)*	CONSTRCT	0.070	(2.32)**
FEMALE	-0.210	(-13.55)*	TRANSPRT	0.074	(2.37)**
BLACK	-0.066	(-3.16)*	HOLESALE	-0.057	(-1.70)***
MARRIED	0.041	(3.00)*	RETAIL	-0.158	(-6.69)*
YRSSCH	0.048	(7.54)*	FINANCE	-0.046	(-1.47)
URBAN	0.071	(4.30)*	BUSRPSRV	-0.075	(-2.52)*
NEAST	0.074	(4.06)*	PERSERV	-0.269	(-6.80)*
NCENTRAL	0.058	(3.50)*	ENTREC	0.088	(1.59)
WEST	0.150	(7.79)*	PROFSERV	-0.138	(-5.48)*
HEALTH	-0.061	(-1.93)**	PUBADM	-0.220	(-6.00)*
EXP	0.040	(3.51)*	PROFESS	0.075	(2.37)**
EXP2	-0.001	(-1.17)	MANAGER	0.177	(4.28)*
TENURE	0.001	(5.21)*	SALES	0.001	(0.04)
UNION	0.152	(9.48)*	ADMIN	0.015	(0.54)
VETERAN	-0.064	(-1.25)	SERVICE	-0.073	(-2.45)*
MGCTY	0.047	(3.41)*	FARMING	-0.132	(-2.21)**
MGCTYVET	0.063	(0.90)	CRAFT	0.037	(1.31)
AGRICULT	-0.223	(-3.90)*	OPMOVNG	-0.110	(-2.95)*
MINING	0.212	(4.23)*	OPLABOR	-0.057	(-1.75)***

N = 3892

F STATISTIC	34.163
R-SQUARE	0.247
ADJ R-SQUARE	0.240

* significant at the 0.01 Level
** significant at the 0.05 Level
*** significant at the 0.10 Level

APPENDIX D

1982 COUNTY MIGRATION REGRESSION RESULTS USING BRANCH OF SERVICE, TRAINING, INDUSTRY, OCCUPATION, AND MILITARY OCCUPATION

MODEL 5C (DEPENDENT VARIABLE = LNWAGE)

VARIABLE	COEFF	T RATIO	VARIABLE	COEFF	T RATIO
INTERCEP	5.519	(52.38)*	MINING	0.214	(4.27)*
FEMALE	-0.209	(-13.45)*	CONSTRCT	0.069	(2.29)**
BLACK	-0.064	(-3.06)*	TRANSPRT	0.075	(2.39)**
MARRIED	0.041	(2.99)*	HOLESALE	-0.049	(-1.44)
YRSSCH	0.048	(7.56)*	RETAIL	-0.157	(-6.63)*
URBAN	0.069	(4.15)*	FINANCE	-0.044	(-1.41)
NEAST	0.076	(4.20)*	BUSRPSRV	-0.080	(-2.68)*
NCENT	0.060	(3.61)*	PERSERV	-0.270	(-6.82)*
WEST	0.151	(7.80)*	ENTREC	0.090	(1.63)
HEALTH	-0.061	(-1.92)***	PROFSERV	-0.136	(-5.39)*
EXP	0.039	(3.44)*	PUBADM	-0.217	(-5.91)*
EXP2	-0.001	(-1.09)	PROFESS	0.072	(2.28)**
TENURE	0.001	(5.30)*	MANAGER	0.175	(4.22)*
UNION	O.153	(9.52)*	SALES	0.006	(0.20)
ARMY	-0.173	(-0.69)	ADMIN	0.015	(0.55)
NAVY	-0.034	(-0.13)	SERVICE	-0.072	(-2.41)**
ARFC	-0.340	(-1.24)	FARMING	-0.126	(-2.10)**
MRCP	-0.210	(-0.76)	CRAFT	0.042	(1.48)
MGCTY	0.048	(3.45)*	OPMOVNG	-0.106	(-2.84)*
MGCTYVET	0.077	(0.85)	OPLABOR	-0.053	(-1.63)
ARMTRA	-0.006	(-0.74)	INFANTRY	-0.044	(-0.38)
NAVTRA	0.008	(0.86)	ELECQUIP	-0.145	(-0.57)
ARFTRA	0.015	(1.27)	COMMUNIC	-0.052	(-0.24)
MRPTRA	0.010	(1.26)	MEDDENT	0.318	(1.47)
ARMOJT	0.005	(1.09)	TECHNIC	-0.077	(-0.40)
NAVOJT	-0.003	(-0.66)	FUNCSUP	0.075	(0.41)
ARFOJT	-0.007	(-0.64)	EQUIPREP	-0.125	(-1.01)
MRPOJT	-0.005	(-0.42)	VCRAFTS	0.247	(0.03)
MOSDISCH	0.007	(0.76)	SERVSUP	0.144	(-0.76)
MOSDISCH2	-0.0001	(-1.01)	NONOCC	-0.108	(-0.27)
AGRICLT	-0.229	(-3.98)*			

N = 3892

F STATISTIC	21.434
R-SQUARE	0.251
ADJ R-SQUARE	0.240

* significant at the 0.01 Level
** significant at the 0.05 Level
*** significant at the 0.10 Level

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