

FINANCIAL SUCCESS AND BUSINESS OWNERSHIP
AMONG VIETNAM AND OTHER VETERANS

Final Report
on Contract SBA-7210-VA-83
January 1986

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EXECUTIVE SUMMARY

A. INTRODUCTION

The extent to which veterans have been able to return to civilian life and integrate into the mainstream of society has become an important policy issue. Much has been said about the problems faced by Vietnam veterans in adjusting to civilian life after fighting an unpopular war. Difficulties in finding and holding onto well-paying jobs have certainly caused the standard of living for many veterans to fall far behind that of non-veterans. On the other hand, military service has allowed veterans to acquire job skills, job training and job experience not readily available to non-veterans. There has also been a GI Bill that has given veterans the opportunity to acquire a college education at a low cost. The question arises about whether these benefits have allowed veterans to overcome adjustment problems and to attain parity with non-veterans.

This study examines the adjustment of veterans to civilian life in one important dimension - their annual earned income. It compares the veterans of Vietnam to non-veterans with the same age, education, job experience and other characteristics which affect income. It also compares Vietnam veterans to veterans of earlier wars. The study examines important subgroups of veterans, including women, minorities, and the disabled, to determine how

they have fared relative to subgroup members who are not veterans.

The major focus of the study is on the extent to which veterans have become owners of small businesses and how their financial success as business owners compares with non-veteran business owners. Financial success of veterans and non-veterans is compared in terms of self-employment income and wage income. The objective is to determine the degree to which self-employment has provided veterans with a vehicle for attaining economic parity. The study also analyzes the types of occupations and businesses which veterans have chosen.

Veterans of four different war periods are compared to a sample of non-veterans who have the same proportion of individuals at each age as the veterans. The periods are: the Vietnam era, the period between Korea and Vietnam (hereafter "Between"), the Korean war period and the WWII era. The data for the study were drawn from the Public Use Microdata Samples (PUMS) constructed from the 1980 U.S. Population Census. The data on income cover the year 1979.

B. MAJOR FINDINGS

1. Self-employment has not been a particularly important vehicle for veterans of Vietnam or veterans of other wars. The overall rate of self-employment in the general population is low and it is even lower for veterans. For the Vietnam period, the

percentage of people who were self-employed was 8.9 for white male veterans and 13.9 for non-veterans. After controlling for factors such as years of work experience, education, and marital status, the probability of self-employment was estimated to be about 5 percent lower for white male veterans than for white male non-veterans. Similar results were obtained for veterans of other wars.

2. The only group of veterans that was more likely to be self-employed was white males with graduate school education. However, this group accounts for only about ten percent of the working veteran population. Nonwhite male veterans and disabled veterans were less likely to become self-employed than their non-veteran counterparts. For females, there was generally no statistically significant difference in the likelihood of self-employment between veterans and non-veterans.

3. Vietnam veterans have had greater financial success as wage earners than as business owners. Self-employed veterans of Vietnam earned incomes that were on average (statistically) equal to the incomes of non-veterans of the same age. Self-employed veterans of other wars earned more on average than non-veterans of the same age. However, compared to non-veterans with comparable income determining personal characteristics in addition to age (including job experience, education, marital status and geographic location) self-employed veterans of each war had incomes that were (statistically) no different. On the other hand, wage earning veterans of each war had significantly higher incomes than comparable non-veterans.

4. Differences in wage incomes between veterans and non-veterans followed a complex pattern. Among white male Vietnam veterans, the average annual wage income was 3.6 percent less than it was among non-veterans of the same age. However, comparing individuals who had the same income determining personal characteristics (in addition to age), showed that Vietnam veterans earned 6.5 percent more than non-veterans. White male veterans of Korea and WWII earned incomes that were respectively 8.0% higher and 12.8% higher than non-veterans with comparable personal characteristics.

5. The most important income determining personal characteristic which is different for Vietnam veterans is their lower amount of (civilian) job experience. A Vietnam veteran earns less than a non-veteran of the same age, but more than a non-veteran with the same amount of civilian job experience. The study estimated that for the Vietnam era cohort, each year of job experience increased annual wage income by about 5.7 percent. Job experience lost by two years time in the military is expected to lower income by $2 \times 5.7 = 11.4$ percent. Thus, all of the 3.6 percent income difference between Vietnam veterans and non-veterans of the same age can be attributable to lost job experience. Because large gains in income due to job experience accrue only in the early stages of the working life, the effect of lost job experience on the Vietnam veteran's annual income is only temporary. As the effect of lost job experience diminishes, veterans are expected to earn more than non-veterans of the same age.

6. A second important income affecting personal characteristic which differs between veterans and non-veterans is the amount of time spent at work. Veterans tend to work more hours per week and more weeks per year than non-veterans. This reflects the fact that veterans are more frequently holders of full time jobs and are less frequently unemployed. In terms of hourly earnings a white male Vietnam veteran earns 3.7 percent more than a comparable non-veteran while in terms of annual income he earns 6.5 percent more than a comparable non-veteran.

7. There are several possible explanations for the superior performance of veterans. One is that non-veterans are on average less productive workers. This could be the result of a process whereby very unproductive people, such as those with low mental or physical capacities, are rejected from the military and become part of the non-veteran population. This lowers the average productivity of the non-veteran population (or raises the average productivity of the veteran population). The larger the number of people who are rejected by the military, the larger will be the difference between the veteran and non-veteran populations. This explains the higher veterans' premium observed for WWII era veterans, where the majority of the male population was screened by the military, and the small premium in the Between period where a small portion was screened. Another explanation is that the benefits of military service, such as job training and job experience, have allowed veterans to acquire job skills that were not easily acquired by non-veterans. This would allow veterans to acquire higher paying and more stable jobs.

8. Certain subgroups of the wage earning Vietnam veteran population have done extremely well compared to their non-veteran cohorts. These subgroups include disabled males, nonwhite males, females, and white males who did not complete high school. The veterans' premium (i.e. difference in income between veterans and non-veterans who have the same personal characteristics) for these groups ranged between 18 percent and 34 percent for the disabled, between 16 percent and 36 percent for nonwhites and between 6 percent and 35 percent for females. In each case the higher premium is the premium computed in terms of annual earnings and the lower premium is the premium computed in terms of hourly earnings. For high school dropouts, the premium in hourly earnings was 14.2 percent. Except for high school dropouts, higher premiums (compared to white males) were also earned by each subgroup in the other war periods as well, although the difference was not as great as it was for the Vietnam period.

9. In contrast to wage income, none of these veteran subgroups earned any premiums in self-employment. Both veterans and non-veterans in the subgroups tended to be less frequently self-employed compared to white male veterans. Like white male veterans, they tended to have a lower likelihood of self-employment than their non-veteran cohorts.

10. The evidence of a veteran's premium that is greater for minorities and women suggests that military service is a vehicle by which members of these groups can attain parity with the majority population. While small business ownership does not

appear particularly attractive to veterans, as compared to non-veterans, there is convincing evidence that it may be an important vehicle for minorities in general. In comparing white-nonwhite income differentials, this study found them to be much smaller or completely absent in self-employment, whereas in wage income they ranged between 15 percent and 20 percent. Furthermore, the race differentials in wage income were larger for non-veterans in all war periods. This helps explain the failure of self-employment to offer the same relative advantage to nonwhite veterans that was afforded by wage employment. For nonwhites, self-employment already offers a relative advantage over wage income for both veterans and non-veterans. Despite this apparent advantage, self-employment rates for nonwhites are well below those of whites. This suggests that the Small Business Administration should continue to promote business ownership among nonwhites.

11. The analysis of occupations showed that veterans tended to be more than proportionately represented in occupations in which civilian jobs resembled military jobs. Examples include occupations connected with air traffic such as airplane pilots, air traffic controllers, and airplane mechanics and occupations associated with protection service such as police and security guards. Furthermore, veterans' choices of occupations tended to be highly correlated between war periods. This suggests that occupations chosen by veterans are not random, but related in some way to military service. This is consistent with the view that the veterans' premium is related to job training provided by

the military. This study finds that veterans tend to be under-represented in occupations that have high self-employment rates. This suggests that occupations for which job training is provided in the military happen to be areas where opportunities for self-employment are low.

12. In examining the business choices of veterans, the study found additional evidence of a link between military experience and the likelihood of self-employment. Business choices tended to be related to occupation choices. Businesses owned by veterans tended to be proportionally more in industries which employ occupations that are over represented by veterans. The evidence suggests that people first choose an occupation and then become owners of a business which employs people in that occupation. Thus, military job training ultimately influences the veterans' business choice. The highest proportion of veteran-owned (relative to non-veteran-owned) businesses were in industries which included aircraft parts manufacturing, air transportation, and detective and protective services. Businesses owned by veterans were most under represented in agriculture, food processing and religion.

13. There was also evidence that businesses owned by veterans tended to be in industries with the smallest firm sizes. Since military service teaches occupational skills (e.g. auto repair, aircraft piloting) rather than business skills (e.g. finance, marketing), a veteran would be more likely to choose a business where occupation skills are more important than business skills. Businesses which employ a very small number of people fit

this description because the owner will spend little of his time managing the other employees because they are so small in number.

SECTION I

THEORY AND EXPERIMENTAL DESIGN

In this section we discuss the reasons why veterans income levels and self-employment frequencies are likely to differ from those of comparable non-veterans. We then explain the statistical methods and the sample selection procedures used to examine whether income levels and self-employment rates are different. Additional information on these two aspects is contained in Appendix A.

A. Reasons for Differentials in Income and Self-Employment Rates

1. Income Differentials

There is a long research tradition that attempts to identify those factors responsible for the occupational choice and financial success of individuals. Sociologists and economists have offered a number of explanations about why some individuals earn more than others.¹ (all footnotes are at the end of Section VIII) Economists, working primarily in a human-capital framework, have studied how people invest in themselves with the object of earning higher wages. The increase in wages constitutes a return on the human capital investment. An example is tuition and foregone earnings to obtain a college education in expectation of getting a higher-paying job after graduation.

Military experience, from this point of view, should be related to earning ability, insofar as it either affects one's productive capacity or in some other way proves useful in the labor market. However, it is not clear that military service should be considered as the result of an optimal investment strategy since for many veterans, conscription has been their route into the armed services. Despite this, military service may yield significant pecuniary benefits in future labor market participation. The exact mechanism of the veteran earnings premium is unclear. We offer several theories based on the human capital literature plus our own theorizing.

a) Job Training

This hypothesis is in the spirit of traditional human capital research. It views military service as a type of job training or experience, which increases the stock of human capital. In other words, military service teaches skills which make the individual more productive in civilian jobs and increase lifetime earnings. These are skills that are not easily acquired by non-veterans. The nature of these skills could be quite direct, as for example, in the case of military aircraft mechanics who become civilian mechanics. Alternatively, being in military service may lead to a greater ability to carry out orders, making a veteran more productive than a non-veteran with the same education and civilian job experience.

b) Innate Ability

It is likely that the average level of innate ability is higher for the veteran population than for the non-veteran population. This happens because the selection of individuals for military service is not a random process. In order to be inducted into the military, an individual must meet certain minimum standards of mental and physical ability. Since those who fall below these standards are only in the non-veteran population, the average level of innate ability of the non-veteran population will be lower than that of the veteran population. The difference in average abilities between the two populations will be a function of the proportion of the non-veteran population accounted for by individuals who were rejected from military service. The larger the proportion of rejectees in the non-veteran population, the greater the differences in the average ability between the two populations.

In this study we compare veterans from each war period to a separate sample of non-veterans. Each non-veteran sample has the same proportion of people at each age as the corresponding veterans sample. While we don't know the exact proportion of rejectees in each non-veteran sample, we do know that it will be related to the total number of people who either volunteer or were drafted. When most of the male population served in the military, as in WWII, we expect the difference in average level of innate ability of male veterans and non-veterans to be greatest, because most of the non-veteran males will be rejectees. For the between war period, when a small proportion of

the male population served in the military, we expect the difference between it's average innate abilities of veterans and non-veterans to be smallest.

c) Veteran Status as a Credential

Prospective employers expend much time and money trying to determine which individuals are best suited for employment. However, it is often difficult to evaluate an individual's competence until after he has been on the job for some time. In order to make a hiring decision, employers look for indirect clues or indicators. One important indicator is education. Another may be veteran status. Using these observable indicators helps an employer in evaluating certain unobservable productive traits. The employer knows that to qualify for military service requires certain minimum mental and physical competencies, and to receive an honorable discharge requires minimum standards of performance and behavior. Having been a veteran implies that one has met these standards and differs in non-random ways from the general working population. Military services may also indicate to prospective employers an individual's "toughness under pressure." This would be especially true for enlistees.

Knowing that veteran status identifies a worker as having superior innate abilities, employers would be willing to pay the veteran more than a non-veteran with equivalent measurable abilities. Thus, veteran status acts as a screen, or filter, sorting out "good" and "bad" workers.² It is a credential that allows its holder to obtain higher paying jobs. We will use the

term "screening effect" or "credential effect" to describe this result.

If employers pay higher salaries to veterans because they believe these individuals are more productive, then employers would have to find that veterans are indeed more productive for this practice to continue. If veterans are more productive, then they will continue to earn more than non-veterans even after they have been on the job and employers can objectively evaluate their productivity. Therefore, it is expected that veterans will earn more than non-veterans not only at the time they are first hired but throughout their working years.

We further expect that the premium paid to veterans of any age cohort will be higher when the percentage of the population with veteran status is larger. When only a small fraction of a cohort has veteran status, a prospective employer cannot be sure that the job applicant was actually rejected by the military. However, when a very large fraction of the cohort has veteran status, the non-veteran status serves as a clear indicator that the individual was not fit for military service. Therefore, if the veterans' premium is the result of screening, we expect that WWII veterans would have the larger premium and between war veterans would have the smallest premium.³

d) Civilian On-the-Job Training

The innate ability theory and the screening (or credential) theory are closely related. The former must be true in order for the latter to be true, but the latter may be true even if the

former is untrue. That is, in order for veteran status to lead to higher paying jobs, the average ability of veterans must be greater. However, even if the average level of innate ability of veterans is higher employers may not use this information in their hiring decision. The screening theory implies that employers do use this information and that veterans are paid more than non-veterans of equivalent innate ability. The implication is that the non-veteran with the equivalent innate ability has no way of convincing the employer about his true ability. This happens when the employer cannot, at low cost, determine an individual's innate ability on the basis of alternative sources of information such as intelligence tests, diplomas or job interviews. In order for screening to occur, veterans must be hired for jobs where the workers performance on the job cannot be easily observed and where the alternative sources of information on ability are not accurate.

Since both the screening and innate ability hypotheses imply the same pattern of veterans premium in the different war periods, it is difficult to distinguish between them. Therefore, this study will not attempt to test whether both theories are correct. Such a test is a suggested topic for further research.

If veterans do have a higher average level of innate ability, then after they become civilians, they will tend to accumulate further skills and experience on the job at a faster rate than non-veterans. People with above average innate ability will find that they have an advantage in taking jobs with the most opportunities for advancement. Since not all people who take

these types of jobs will in fact advance, those with less innate ability will frequently avoid such jobs. Jobs with the greatest opportunities for advancement often pay lower salaries initially, but much higher salaries later on. If these jobs are more frequently held by veterans, then the incomes of veterans will be lower compared to non-veterans in the early stages of the working life but higher in the later stages.

One should note that the three explanations - innate ability, credential effects and civilian on the job training are related. All three are based on the premise that the average innate ability of veterans is higher.

e) Veteran Status and Minority Income

Military experience may be more significant in raising the income of women and minorities than it is for white males. It could be that veteran status is more indicative of superior ability among the population that has had little formal education. When hiring college graduates, employers can rely on the prestige of the college or the grade received as an indicator of the individual's ability. Employers hiring people with no college would look for some other indicator of an individual's ability--such as military experience. Since women and minorities tend to have less education or education that is more variable in quality, veteran status may be a better indication of superior ability for them than for white males.

We turn next to a discussion of self-employment and veteran status.

2. Self-Employment and Veteran Status

The effect of veteran status on self-employment is less predictable than its effect on income. The determinants of small business ownership have received little attention by economists. One effect may result from the screening process of military training. If veteran status acts as a signal to prospective employers, then veterans will have more employment opportunities than non-veterans. Veterans will thus be less likely to choose self-employment. In other words, by creating opportunities to work as an employee, veterans status may inhibit self-employment. Only those veterans with a very strong preference for the nonpecuniary rewards of self-employment would forgo the premiums of wage employment. Furthermore, while veterans gain job training and work experience in the military, they don't gain business skills or experience operating a business. Job experience inside the military may be less useful than civilian job experience in preparing individuals for self-employment. It is possible that the occupations for which veterans receive job training while in the military have few opportunities for self-employment.

Conjectures can also be made concerning veterans' proclivities toward self-employment. Perhaps the experience of taking orders from a superior causes veterans to seek to be their own boss, and, therefore, seek self-employment. Perhaps it's just the reverse -- order-taking becomes a way of life. It is difficult to identify directly the skills derived from military

experience that would be applicable to small business ownership. Perhaps a capacity to take risks is inculcated in the veteran, leading to greater risk taking in the labor market. This conjecture could be countered with an equivalent self-selection hypothesis: individuals who become veterans (especially enlistees) are greater risk-takers and, hence, veteran status is merely a selectivity criterion indicating a greater innate capacity for risk.

Another factor which may influence the choice of veteran occupation is the GI bill. The GI bill lowers the cost of a college education and makes it more likely that veterans will go to college. It is possible that because college education is often a prerequisite to finding a job, fewer workers without college training find jobs and more seek self-employment as an alternative. This would tend to reduce the proportion of self-employment among veterans.

3. Self-employment and Minority Status

Self-employment may also be a way by which members of minorities can improve their relative economic position. As an employee, they would be subject to whatever discriminatory forces were imposed by firms. Being self-employed, they would face only the effects of consumer discrimination. It is possible that the latter is less significant because employment is an ongoing day-to-day association while the consumer-seller relationship is generally brief. If so, individual prejudice is less likely to

be as determining a factor in the consumer's choice as it is for the employer.

B. EMPIRICAL DESIGN

This study is designed to measure differences in the income, and self-employment frequencies between veterans and non-veterans that can be attributable to military experience. It is not designed to distinguish among the alternative theories mentioned above, that explain how military service lends to differences between veterans and non-veterans. However, in discussing the results of the statistical analysis, we will point out which theories are consistent with the statistical result and which theories are inconsistent.

1. Statistical Technique

Two basic techniques are used. The first is a univariate technique in which average incomes and self-employment rates are compared for groups of veterans and non-veterans. The second is multivariate regression analysis, in which the effect of veteran status on income or the likelihood of self-employment is determined while controlling for a large number of other factors. For the analysis of the likelihood of self-employment we use what are called dummy dependent variable regressions. These are regression equations where the dependent variable can take on

only two values; yes-no, (i.e., 1-0). This is used to study the determinants of self-employment, which is clearly an either/or proposition.

The univariate analysis has the following structure. Three variables are the focus (1) percentage of labor force participants who are self-employed (2) annual wage income of labor force participants who are not self-employed and (3) annual self-employment income of participants who are self-employed. Values for the three variables are computed for each war period for white male, non white males, all females and disabled males. For each of these groups the three variables are analyzed by education level and by age (or experience).

We have selected education and age because they are the most important determinants of earnings. War periods, sex and race categories are used because comparisons between these categories are likely to yield information that will be particularly useful in formulating SBA's policies. There are also other variables such as marital status, geographic location and ethnic background that may also be important in determining income. These are used in the multivariate analysis. We present both the univariate analysis of group means and the multivariate regression analysis because many readers are not familiar with regression and also because the group means may give some insights that are not available from regression. However, in isolating the effect of veteran status from other variables that might affect income and self-employment, the multivariate technique is clearly superior.

2. Regression Analysis of Earnings

The regression analysis of earnings uses the natural log of earnings as the dependent variable, with a number of explanatory variables, one of which is veteran status.⁴ The explanatory variables are as follows:

Productivity Variables

a) Schooling

Clearly, schooling is of paramount importance in the determination of earnings. It is entered as years of schooling so that the coefficient on the schooling variables will represent the rate of return to schooling.

b) Years of Experience

Experience, which reflects on-the-job training, is clearly a major determinant of earnings as well and is entered in years. Thus its coefficient is also a rate of return. Since the census does not report the amount of work experience, it had to be estimated from other data that was reported. A person's experience is computed by subtracting the number of years of schooling plus five from age (i.e., $\text{experience} = \text{Age} - \text{education} - 5$). For veterans, experience is reduced by two years to reflect time in the military. Thus years of experience includes only civilian job experience.

c) Experience Squared

Since it is known that age-earnings profiles rise at a decreasing rate as experience increases, the square of experience is entered. This allows the effect on income of each year of experience to be smaller than the previous year's effect and eventually to be negative. The negative effect would reflect the decline in productivity that comes with advanced age, due either to deterioration of skills, or to lower desired work intensity.

d) Out of the Labor Force

Since we want to measure the premium to veteran status, we should not drop those workers who are reported in the census as out of the labor force. Veterans may be more (or less) likely to find and hold a job or they may get higher paying jobs, compared to non-veterans with the same experience, education etc. In either case, it would lead to higher income for veterans. We wish to be able to determine how much of any income difference is attributable to higher paying jobs and how much is attributable to a greater frequency of holding a job.

e) Marital Status

It is well known that marital status affect earnings. The economics of the family literature analyzes the interaction of market and non-market behavior, concluding that there are important theoretical relationships between marital status and earnings.⁵

f) Weeks Worked Per Year

Veterans may work greater (or fewer) weeks per year than their non-veteran cohorts either because as employees they are less (or more) likely to be layed-off or as self-employed or employees they work overtime. Both of these factors will lead to higher (or lower) income for veterans and we wish to determine how much of the higher income is attributable to each factor, separately.

g) Hours Worked Per Week

The same discussion applies here as in (f). However, here the emphasis is more on sorting out part-time workers, who work, say 20 hours per week, but a full number of weeks per week.

h) Interaction of Weeks Worked and Hours Per Week Worked

It may be that the combined effect on income of weeks worked per year and hours worked per week is greater or smaller than the sum of the separate effects. We use the interaction of these two variables to capture this phenomenon.

Non-productivity Variablesa) Regional Variables

Since earnings is measured in nominal dollars, and the nominal costs of living differ substantially by area of the country (New York vs. Alabama, for example) a system of dummy variables is used to take account of this. These variables all take on two alternative values, 0 and 1.

b) Family Background

These variables could be considered as affecting productivity to some extent, through their impact on language and skills. The variables are composed of ancestry and for immigrants, length of time since immigration. They take on a range of values to account for the number of years since immigration.

c) Type of Firm

Whether or not one works for a private firm is expected to affect earnings⁶. Hence a variable to distinguish workers in the private sector from government workers was used.

d) Race and Sex

To the extent that race and sex are variables influencing income, apart from the productivity variables already captured, they should be included. In regressions that are not estimated separately for race and sex groups, these differences are distinguished by dummy, or (0,1) variables.

e) Sample Size

Table I-1 shows the number of veterans on the PUMS 7 percent sample, between the ages 18 and 65 that were used in this study. The univariate analysis of earnings and self-employment included only individuals who were part of the labor force. Thus we excluded people such as housewives, permanently disabled and people who do not wish to work or were not able to find work and

TABLE I-1

Number of Veterans on PUMS 7% Files¹ and Percent in Labor Force²

	White Male	Nonwhite Male	Disabled	White Female	Nonwhite Female	Total
Vietnam Total	438,980	68,919	42,129	15,113	3,213	568,354
% in Labor Force	96.4	92.5	68.0	73.8	80.6	93.2
Between War	278,118	31,028	31,028	6,734	1,037	341,297
% in Labor Force	96.5	94.7	58.8	77.5	85.5	92.5
Korean War	288,503	27,037	48,119	5,981	696	370,450
% in Labor Force	95.6	93.8	50.9	71.1	81.4	89.2
WWII	492,216	35,092	143,845	17,135	794	689,082
% in Labor Force	87.8	85.4	35.6	58.9	71.5	76.1
Total All Periods	1,517,817	155,428	265,121	44,963	5,740	1,969,183
% In Labor Force	93.5	91.4	46.3	45.6	80.2	86.3

Note:

1. We used a PUMS 5% sample plus two PUMS 1% samples
2. Persons in the Labor Force are those who are employed or unemployed but looking for work. In the univariate analysis of Section II through V below, we use only individuals who are in the labor force. The multivariate analysis uses individuals regardless of labor force status, but controls for labor force participation by including it as a separate independent variable.

stopped looking. The inclusion rates are shown for each of the subgroups that were studied. The inclusion rates were the highest for white males and for the most recent war period. For white males veterans of Vietnam the inclusion rate was 96.4 percent. In the multivariate analysis, all individuals were included in the sample but the effect of their labor force status was controlled by including it as an explanatory variable. However, the analysis was repeated with no control for labor force status and no important changes in the impact of veteran status were observed.

C. OUTLINE OF STUDY

Section II of this study focuses on white males. It analyzes the probability of self-employment of veterans and non-veterans and their financial success as wage earners and as self-employed individuals. One part of Section II analyzes self-employment and financial success using univariate analysis. A second part of Section II covers the results of the regression of self-employment and financial success. In each part we determine whether veterans are more or less likely to be self-employed and whether they are more or less financially successful as wage earners and in self-employment compared to non-veterans. Sections III, IV, and V repeat the analysis for nonwhite males, and women, and the disabled respectively.

Section VI brings together the material from Sections II through V in order to facilitate comparisons between white males,

nonwhite males, women, and the disabled. Section VII contains an analysis of occupational choice. It compares choices of occupation and the frequency of self-employment. Section VIII is an analysis of the industries in which businesses owned by veterans and non-veterans are located.

SECTION II

ANALYSIS OF WHITE MALES

White males account for 76 percent of all veterans and 77 percent of Vietnam veterans. Their performance is critical in assessing the overall progress of the Vietnam veteran. This group will also be a standard to which other groups of veterans are compared.

A. UNIVARIATE ANALYSIS: SELF-EMPLOYMENT RATES BY WAR PERIOD

The univariate analysis is based on a comparison of the veterans of each war period with a sample of non-veterans selected to have the same proportion at each age level as the veteran sample. Since the age distribution of veterans in each war period is different, a separate sample of non-veterans is used in each war period.

Table II-1 shows the percentage rates of self-employment by war for white male veterans and non-veterans. In all cases, non-veterans exhibit significantly higher self-employment rates. For the Vietnam period, 13.89 percent of non-veterans were self-employed while only 8.89 percent of veterans were self-employed. Two points to note about the earlier war periods are (1) the difference between veterans and non-veterans is

Table II-1
 Self-Employment Rates^{1]} (in percent) for White Male Veterans and Non-Veterans by War Period^{6]}

	Vietnam		Between		Korea		WWII	
	$\bar{V}^{2]}$	$\frac{NV^{3]}{V^{4]}}$	\bar{V}	$\frac{NV}{V}$	\bar{V}	$\frac{NV}{V}$	\bar{V}	$\frac{NV}{V}$
Self-Employed	8.89	13.89	13.07	17.72	14.73	19.28	16.99	20.69
N ^{5]}	423,379	139,193	268,455	101,061	275,809	39,212	432,487	35,544

Notes:

1. Does not include individuals listed as "out of the labor force."
2. Veterans
3. Non-veterans
4. Ratio of the non-veterans' self-employment rate to the veterans self-employment rate. All ratios are significantly larger than 1.0 at the .05 level (i.e., all differences between veterans and non-veterans are significantly different from zero).
5. Sample size
6. For all war periods combined, the self-employment rate for veterans was 13.34%.

smaller and (2) the absolute level of self-employment for everyone is higher. Both points are related to the fact that veterans and non-veterans of the earlier wars are older. Individuals generally become self-employed only after they have had some experience working as an employee. Thus, older people are more frequently self-employed than younger people. Compared to non-veterans of the same age, veterans will have had less time as an employee because of time spent in the military. The lost time will become less of a factor for veterans of the earlier wars who are much older and have had time to accumulate experience as an employee before beginning their own business.

1. Self-Employment Rate by Age and Education

Tables II-2 and II-3 analyze white male veteran and non-veteran self-employment by education and age groups. The following five education groups are delineated by years of school completed:

- 1) 0 to 11 years: individuals not completing high school
- 2) 12 years: those who completed high school but did not go to college
- 3) 13 to 15 years: those who started but did not complete college
- 4) 16 years: those who completed college but did not go to graduate school
- 5) more than 16 years: those who completed some graduate school

Three age groups were also formed. However, because the ages of veterans in the different service periods tended not to

Table II-2

Self-Employment Rates (in percent) by Education Level and by Age for White Male Veterans and Non-Veterans by War Period

Education Level (years)	Vietnam		Between		Korea		WWII	
	V ²⁾	NV ³⁾	V	NV	V	NV	V	NV
0-11	7.3	12.6	12.2	15.7	13.3	16.9	14.0	19.1
12	7.3	13.7	11.2	18.2	13.2	20.6	14.9	22.7
13-15	8.1	14.0	11.8	19.0	14.2	21.1	18.6	22.8
16	9.8	13.9	15.4	18.9	17.6	19.7	20.7	20.1
16+	15.8	15.3	19.7	18.4	20.0	21.8	25.8	20.7
Age Group ¹								
Group 1	3.3	6.7	9.3	15.9	12.4	17.5	15.8	19.0
Group 2	6.8	11.4	11.7	17.0	14.8	19.6	16.6	20.6
Group 3	10.7	16.1	14.6	18.5	15.7	19.6	18.2	21.9

Notes:

1 - Age groups are different for each war period

For Vietnam the age groups are:

Age group 1 - 22-26

Age group 2 - 27-31

Age group 3 - 32 up

For Between War the age groups are:

Age group 1 - 32-36

Age group 2 - 37-41

Age group 3 - 42 up

For Korea the Age groups are:

Age group 1 - 41-45

Age group 2 - 46-49

Age group 3 - 50 up

For WWII the Age groups are:

Age group 1 - 49-53

Age group 2 - 54-58

Age group 3 - 59 up

2 - Veterans

3 - Non-veterans

All differences significant at .05 level

Table II-3

Ratio of Self-Employment Rates of Non-Veterans to Self-Employment Rates of Veterans,
by Education, Age and War Period, for White Males

<u>Education Level (years)</u>	<u>Vietnam</u>	<u>Between</u>	<u>Korea</u>	<u>WWII</u>
0-11	1.72	1.29	1.27	1.36
12	1.88	1.63	1.57	1.53
13-15	1.73	1.61	1.48	1.23
16	1.41	1.23	1.12	0.97
16+	0.97	0.94	1.09	0.80
 <u>Age group</u>				
Group 1	2.06	1.70	1.42	1.21
Group 2	1.68	1.44	1.33	1.24
Group 3	1.51	1.27	1.25	1.20

Notes:

1. Calculated as $\frac{\% \text{ self-employed of nonveterans}}{\% \text{ self-employed of veterans}}$
2. See Table II-2 for age groups.
3. All ratios significantly different from 1.0 at the .05 level.

overlap, different age cutoffs were used in each war period. The cutoffs for each age group are shown as a footnote to Table II-2.

The self-employment rates for each group are shown in Table II-2. The ratios of the non-veteran self-employment rate to the veteran self-employment rate are shown in Table II-3. Ratios in Table II-3 above 1.0 indicate that non-veterans are more likely to be self-employed than veterans. Ratios below 1.0 indicate the reverse. For example, a ratio of 1.5 means non-veterans are one and one-half times more likely to be self-employed than veterans. A ratio of 0.5 means that non-veterans are half as likely to be self-employed as veterans.

The effect of age on the ratio of non-veterans to veterans is apparent if one compares the age groups within the four service periods. Looking in Table II-3 at the Vietnam period, the ratio is 2.06 for the youngest group and drops rapidly to 1.51. For the Between War period, it also starts relatively high at 1.7 and falls to 1.27. For Korea, a much earlier period with older workers, the differences between age groups are even smaller, while for WWII there is no significant difference at all. Clearly lack of experience inhibits self-employment to a greater degree in the more recent war period where veterans are youngest.

Looking at the breakdowns by education level yields some additional insights. First, controlling for education does not change the general picture given by Table II-1. Self-employment is still lower among Vietnam and other veterans in all but a few of the groups. Second, there is clear evidence that self-employment increases with education. We can see that for

those who have at least completed high school, the gap between veteran and non-veteran self-employment decreases as education increases. In fact for the highest education level, veterans are more likely to be self-employed than non-veterans in three war periods.

B. MULTIVARIATE ANALYSIS OF PROBABILITY OF SELF-EMPLOYMENT

The univariate analysis using group data indicated that veterans seek self-employment less frequently than non-veterans. Now we wish to see whether controlling for those additional factors described in Section I changes this conclusion.

1. All Wars Together

Table II-4 shows the result of the multivariate analysis of self-employment for all wars together.⁷ The overall result of the univariate analysis is unchanged. The multivariate analysis shows that the probability of a veteran being self-employed is 5.7 percent lower than the probability of a non-veteran being self-employed. It shows that both education and experience have an impact on the probability of self-employment. Each year of education reduces the probability of self-employment by 0.6 percent and each year of civilian job experience raises it by 0.04 percent.

Table II-4

Effects¹ on the Probability of Self-Employment Estimated From Regression Analysis
for White Males in All Wars

Variable

Veteran	-.057** (.0007)
Years in school	-.006** (.0001)
Experience	.0004** (.0001)
Experience Squared	-.0002** (.00002)
Marital Status	.021** (.003)
Weeks Worked	.0005** (.0001)
Atlantic	-.02** (.005)
Midwest	.015** (.004)
N	540,027
R ²	.36

Notes:

1. Entries in table are regression coefficient with standard errors in parenthesis
Each entry, when multiplied by 100, represents the percentage effect of that
variable on the chance of being self-employed.

Dependent variable is = 1 if self-employed, 0 otherwise.

*denotes significant at .05 level

**denotes significant at .01 level

2. Results by War Period by Level of Education

In Table II-5 we present the results of the regression analysis of self-employment which was performed in a manner that allowed us to compute the impact of veteran status at each level of education. The entries in the table show how much the probability of self-employment is higher or lower for veterans, holding other factors constant. It shows, for example, that in the Vietnam period, the probability that a veteran in the lowest education class will be self-employed is 4.0 percent below the probability for a non-veteran with the same education. Most of the time the probability of self-employment is lowered by veteran status. The exception is at the highest level of education where the probability of self-employment is increased for veterans in three of the war periods. This result is consistent with the univariate result.

The conclusion of the univariate and multivariate analysis is that Vietnam, as well as other veterans, are less likely to be self-employed than non-veterans unless they have a graduate school education. Although the univariate and multivariate results agree on the direction of the effect of veteran status on self-employment, they disagree on the magnitude of the effect. We now explain how to interpret the differences between the two sets of results.

Table II-5

Effect of Veteran Status on Probability of Self-Employment¹, by Education Level², by War Period for White Males

<u>Education Level (years)</u>	<u>Vietnam</u>	<u>Between</u>	<u>Korea</u>	<u>WWII</u>
0-11	-4.0** ³	-3.9	-3.9	-3.6
12	-5.2	-7.1	-6.7	-2.3
13-15	-5.3*	-7.6	-7.1	-4.5
16	-4.3*	-3.6	-3.2	0.5
16+	1.13**	1.4	-2.1	3.1
All levels ⁴	-6.3*	-5.8*	-5.8*	-5.1*
N	208,523	142,562	80,605	108,337

Notes:

1. Entries are the difference in the probability of self-employment between veteran nonveterans in percent.

2. These figures are based on regression analysis, and are combinations of coefficients designed to isolate educational groups from one another. Control variables include experience, marital status, region, immigrant status, weeks worked, and language skill in English.

The regression was of the form: $P(SE) = a_0 + a_1E1 + a_2E2 + a_4E4 + a_5E5 + b_0V + b_1VE1 + b_2VE2 + b_4VE4 + b_5VE5$. The variables E1-E5 are education dummies and V is the veterans dummy. The effect of veteran status for education level 3 (i.e., 13-15 yrs.) is the coefficient b_0 . The effect of veteran status at any other educational level is the sum of b_0 plus the coefficient on VE for that level. For example, the effect for level 1 is the sum of $b_0 + b_1$.

3. **Statistically significant at .01

*Statistically significant at .05

4. Estimated following the specification in Table II-4 where education is a continuous variable and the effect of veteran status is constrained to be the same at all educational levels.

3. Comparison of Univariate and Multivariate Results

Table II-5a gives the multivariate result for each war period and compares it to the univariate result. It also gives the effect of veteran status as a percent of the expected self-employment rate.

The first line of Table II-5a gives the actual self-employment rate for veterans in each war period. For Vietnam veterans the rate was 8.9 percent. This rate can be interpreted as the probability that a veteran will be self-employed. The second line gives the predicted difference in the probability of self-employment (probability for a veteran minus probability for a non-veteran) that was generated by the multivariate analysis for each war period. For example, the difference was -6.3 percent for the Vietnam period. By subtracting line two from line one, we obtain the predicted self-employment rate for veterans, had they not been in the military. For the Vietnam period this comes to 15.2 percent as shown in line three. This will not in general be equal to the actual self-employment rate for non-veterans (which is 13.9 percent in line five) because veterans can differ from non-veterans with regard to education, experience, marital status, etc. These factors, as well as veteran status, influence the rate of self-employment. Since the multivariate result gives the difference in the probability of self-employment holding these factors constant, subtracting the predicted difference from the actual self-employment rate gives a useful result. This

TABLE 11-5a

Comparison of Multivariate and Univariate Results
Analyzing Self-Employment Rates of White Male
Veterans, (in percent) by War Period

	War Period			
	<u>V^{1]}</u>	<u>B</u>	<u>K</u>	<u>W</u>
a. Actual SE Rates for Veterans ^{2]}	8.9	13.1	14.7	17.0
b. Predicted Difference in SE rates ^{3]}	-6.3	-5.8	-5.8	-5.1
c. Predicted SE rate (a-b) ^{4]}	15.2	18.9	20.5	22.1
d. Percent change (b/c) * 100	-41.4	-30.8	-28.3	-23.1
e. Actual SE rate for Non-veterans	13.9	17.7	19.3	20.7
f. Difference in Actual SE Rates	-5.0	-4.6	-4.6	-3.7

Notes 1. V = Vietnam, B = Between War, K = Korean War, W = WWII

2. Actual self employment rate is the result of the univariate analysis
3. Predicted by the multivariate analysis. It is also viewed as the difference between the probability that a veteran will be self-employed and the probability that a non-veteran will be self-employed,
4. Self employment rate for individuals with the experience, education, etc. of veterans, but not the military experience.

result can be viewed as the self-employment rate for a non-veteran with the average experience, education, etc., of veterans. Table II-5a shows that for each war period this predicted self-employment rate is higher than the actual self-employment rate of non-veterans shown in line 5. This then is the source of the difference between the univariate and multivariate results. Factors such as experience, education, etc. which are different for veterans, raise their self-employment rate. The multivariate analysis holds these factors constant and shows the effect of veteran status to be larger in magnitude than is indicated by the simple difference in self-employment rates between veterans and non-veterans.

Line 6 of Table II-5a shows the actual difference in self-employment rates between veterans and non-veterans. We see that the predicted difference in line 4 is always higher than the actual difference. Thus, the negative effect of veteran status is larger using multivariate analysis than it is using univariate analysis, although the estimates are close in magnitude and show the same pattern across war periods.

Line 4 of Table II-5a shows the change in the likelihood of self-employment as a percent of the predicted self-employment rate. This can be viewed as the proportional change in the likelihood of self-employment that results from military experience. The Table shows that, on average, veteran status reduces the likelihood of self-employment by one-third. For Vietnam veterans the reduction is even greater.

We turn next to the analysis of earnings.

C. UNIVARIATE ANALYSIS OF EARNINGS

Table II-6 shows the comparison of mean income levels of wage earners and self-employed white male veterans and non-veterans.

The first important result is that wage income is everywhere higher than self-employment income. There are two reasons for this result. First, for tax purposes, self-employment income is self-reported, while wage income is firm reported. The former is undoubtedly under-reported to reduce taxes or because accurate records are not kept. Thus much, if not all, of the difference may be illusory. Secondly, one might conjecture that even with full reporting of all income, self-employment income could be lower because part of the compensation to self-employed people is non-pecuniary. Resolving the issue is not part of this study -- suffice it to say that we will not make any direct comparisons between wage and self-employment income. Our comparisons will always be between veterans and non-veterans (or some other groups) in terms of either wage or self-employment income. The implicit assumption here is that whatever the error in reporting self-employment income, it is the same for both veterans and non-veterans.

Table II-6 shows that Vietnam veterans receive on average \$95, or 1.1 percent per year less in self-employment income and \$639 or 3.6 percent per year less in wage income. In contrast,

Table II-6

Annual Wage Income and Self-Employment Income (in Dollars) for White Male Veterans and Non-Veterans by War Period

Variable	Vietnam		Between		Korea		WWII	
	V	NV	V	NV	V	NV	V	NV
Wage Income ^{1]}	17,035	17,674	21,187	20,391	21,603	19,549	20,865	17,659
% Difference ^{2]}	-3.6*		3.9*		10.5*		18.5*	
N ^{3]}	385,134	119,517	232,938	82,925	234,622	31,542	357,945	28,041
Self-Employment Income ^{4]}	12,546	12,691	13,957	13,455	13,930	13,333	13,930	12,509
% Difference	-1.1		3.7*		4.5*		11.4*	
N	37,630	19,338	35,081	17,906	40,631	7,560	73,478	7,355

Notes:

- For wage earning veterans of all war period combined, the average wage income was \$19,852.
 - % Difference is calculated as $(V-NV)/NV$ and indicates the percentage by which veteran income differs from non-veteran income.
 - Sample size
 - For self-employed veterans of all war periods combined, the average self-employment income was \$13,656.
- * indicates different from zero at .05 level.

veterans from other war periods all earn more than non-veterans. The difference is about \$500, (or 7 percent) for self-employment and \$2,800 (or 14 percent) for wage earners. This suggests that Vietnam veterans are falling behind non-veterans in terms of wages. This lag in wages for Vietnam veterans is in stark contrast to the result for veterans of other wars who are more successful than their non-veteran cohorts. The wage lag is more significant in terms of the overall welfare of Vietnam veterans because only nine percent of them are self-employed.

1. Breakdown by Education

Since education is an important determinant of earnings, we compare wage and self-employment income among veterans and non-veterans with similar education levels in Table II-7.

The analysis of Table II-7 shows that grouping people by education level changes the picture given in the ungrouped comparison. It shows that Vietnam veterans along with Between War and Korean veterans in the highest and lowest education groups have higher wage income than their non-veteran cohorts. But in the middle education groups, which account for the majority, veterans have lower wage income than non-veterans. The full effect of education on the income differential is difficult to understand from Table II-7. Income rises with education and the veteran population is proportionately smaller at both the upper and lower education levels. Education is also inversely related to job experience and experience in turn is positively related to

Table II-7
 Average Annual Wage Income and Self-Employment Income in Dollars
 by Education and War Period for White Male Veterans and Non-Veterans

Education Level	Type ¹⁾	Vietnam			Between			Korea			WWII		
		V	NV	% Dif. ²⁾	V	NV	% Dif.	V	NV	% Dif.	V	NV	% Dif.
0-11	W	12995	12946	0.4	16181	14594	10.9*	16628	14690	13.2*	16257	14047	15.7*
12	W	15577	16399	-5.0*	18792	18896	-0.6	19499	18945	2.9*	19221	17747	8.3*
13-15	W	16423	17665	-7.0*	20704	22313	-7.2*	21951	22383	1.9	22415	21395	4.8*
16	W	20727	21226	-2.4	28112	28296	-0.7	29320	29680	-1.2	20708	28419	4.5*
16+	W	23114	21608	7.0*	28777	27498	4.7*	29526	28722	2.8*	30023	26539	13.1*
0-11	S	9975	10530	-5.3	11351	11097	2.3	11167	11391	-2.0	10689	11015	-3.0*
12	S	10581	11595	-8.7*	11248	12356	-8.9*	11687	12780	-8.6*	11467	12496	-8.2*
13-15	S	10104	10882	-7.1*	11376	11458	-0.7	11519	10046	14.7*	12003	11636	3.2
16	S	11310	11906	-5.0	14200	14013	1.3	14600	14569	0.2	14938	14717	1.5
16+	S	19703	18155	8.5*	22417	20713	8.2*	23625	21493	9.9*	24626	20556	19.8*

Notes: 1. Type:

W = wage earners
 S = self employed

2. % Dif. is calculated as [(V-NV)/NV] * 100

3. * significant at .05 level.

income. The complex interrelation between income, education, and experience can only be established by using a multivariate technique.

With respect to self-employment income, veterans in these three war periods are more successful than non-veterans only in the highest education group. WWII veterans do better than non-veterans at every education level for both self-employment income and wage income.

One strange result is the huge jump in self-employment income but not in wage income between education level four and five. The jump is large for both veterans and non-veterans but is especially large for veterans. Possibly the self-employed of education level five are professionals such as doctors and lawyers whose incomes are significantly higher than those of non-professional small business owners. It could be that these professionals are more than proportionally represented among veterans. If so, a jump in the veteran - non-veteran self-employment income differential would follow because even compared to other people in education level five, doctors and lawyers have incomes that are above average.

2. Breakdown by Experience and Education

In order to compare veterans and non-veterans of similar education and experience, we have grouped individuals into cells. We have created four experience groups, which when combined with the five education groups gives a total of twenty (5x4) cells.

For each cell we have computed the average income of veterans and non-veterans and the percentage difference in average income between veterans and non-veterans. Since the amount of information is so voluminous, it is located in Appendix C in eight tables. Each table covers one war period for the wage earners or self-employed. For wage earners, most of the cells show that veterans have higher incomes than non-veterans. These results are most important for the Vietnam period (Table C.1) because, as discussed above, the ungrouped data in Table II-6 showed that veterans earn less than non-veterans of the same age. In contrast, Appendix Table C.1 shows that in 8 out of 11 cases where the veterans and non-veterans had statistically different average incomes, the veterans had higher incomes than the non-veterans. This means that if we select individuals who have roughly comparable education and years of civilian job experience, the veteran's income tends to be higher than the non-veteran's income.

In the case of self-employment income, the Tables in Appendix C tend to have very few significant differences between veterans and non-veterans. This suggests that among self-employed individuals with roughly comparable education and experience, there is no significant difference between the average income of veterans and non-veterans.

D. MULTIVARIATE ANALYSIS OF INCOME

The univariate analysis is not well suited to isolating the effect of veteran status on income. The major determinants of income are related to each other and to veteran status in a complex way. Both experience and education, for example, increase income. While veterans have less experience than non-veterans, they are proportionally few at both the highest and lowest levels of education. Furthermore, education is inversely related to experience. The relation between income, education, experience and veteran status can only be established with multivariate statistical techniques.

We now discuss the effect of veteran status on income using multivariate regression analysis. Since for most wars, the effect is positive (at least for wage income) we will refer to it as the veterans' premium. Of course, the premium can actually be positive or negative. It is defined as the amount by which a veteran's income can be expected to exceed (or fall short of) the income of a non-veteran with the same education, experience, marital status, etc. The premium is a percentage difference, which is expressed in the tables as a decimal.

1. All Wars Together

Table II-8 contains the analysis of the determinants of income for all wars combined. The left panel analyses wage income and the right panel analyses self-employment income. The analysis

Table II-8

Effects¹ on Wage and Self-Employment Income Estimated from Regression Analysis for White Males for All Wars

<u>Variable</u>	<u>Wage Income</u>		<u>Self-Employment</u>	
	T ²	NI ³	T	NI
Veteran	.052 (.004)	.078 (.005)	-.005+ (.01)	-.04+ (.02)
Years in school	.056 (.0006)	.08 (.0008)	.07 (.002)	.10 (.002)
Experience	.017 (.0006)	.04 (.0004)	.02 (.003)	.04 (.003)
Experience Squared	-.0003 (.00001)	-.0007 (.00002)	-.0004 (.00005)	-.0008 (.00006)
Marital Status	.156 (.004)	.51 (.006)	.20 (.02)	.49 (.02)
N	469,531		81,195	
R ²	.70	.44	.30	.09

Notes:

1. Effects are percentage changes expressed as a decimal (i.e., .052 = 5.2%). Standard errors shown in parenthesis.
2. Effects on hourly earnings. This is estimated by including hours worked per week and weeks worked per year as additional independent variables.
3. Effects on annual earnings. This is estimated by excluding hours worked per week and weeks worked per year from the regression.
4. All coefficients are statistically significant at the .01 level except those marked with +.

is performed in two ways. The first (in columns headed T) includes a control for weeks worked per year and hours worked per week. The second (in columns headed NT) has no control for weeks and hours. The results obtained controlling for weeks and hours can be understood as the effect of veteran status on the hourly rate of compensation. The effect obtained by not controlling for weeks and hours can be understood as the effect of veteran status on the annual rate of compensation. To the extent that shorter hours and few weeks represents involuntary unemployment, the effect of veteran status on the annual rate of compensation is the more useful estimate of how military experience affects economic welfare.

For wage income, the Table II-8 indicates that, holding all other variables constant, veterans earn 5.2 percent more than non-veterans. The other variables have the expected effects on income. Schooling raises wage income by 5.6 percent per year of schooling; married men earn about 15.6 percent more than single men. Experience is non-linear, and affects income by an amount which is high in early years and low in later years. The first year of experience raises income by about 1.7 percent while the tenth year of experience adds only 1.1 percent.

The most important result from Table II-8 is the fact that veteran status lowers self-employment income, but raises wage income, all other variables held constant.

2. Analysis of Wage Income by War Period

Table II-9 contains the results of the regression analysis of wage income by war period. The first point to make is that the effect of veteran status is to raise income by a statistically significant amount ranging from 2.0 percent to 12.8 percent. For the Vietnam period, veteran status raises income by between 3.7 and 6.5 percent. For Vietnam veterans this result is especially significant because it is just the opposite of what was observed in the univariate analysis of income levels in Tables II-6 and II-7. That comparison showed Vietnam veterans on average earning less than their non-veteran cohorts. The fact that the univariate and multivariate results are different suggests that (although Vietnam veterans earn less on average than non-veterans) if compared to a group of non-veterans with the same education, experience, marital status, etc., Vietnam veterans would earn more than non-veterans.

We now seek to gain some insight into how the control variables may be responsible for the difference between the univariate and multivariate results. Two variables that are most important are experience and hours and weeks worked.

a) Effects of Civilian Job Experience

From the analysis so far, we know that civilian job experience is an important source of income differences, especially in the Vietnam war period.⁸ Column one of Table II-9 shows that each year of job experience raises (hourly) earnings in the Vietnam period by 2.5 percent. Since the typical veteran spends two years in the military, hourly income of veterans is

Table II-9

Effects¹ on Wage Income Levels Estimated with Regression Analysis by War Period for White Males in Wage Employment

Variable	Vietnam		Between		Korea		WWII	
	T ²	NT ³	T	NT	T	NT	T	NT
Veteran	.037** (.006)	.065** (.008)	.02** (.007)	.040** (.010)	.056** (.01)	.08** (.015)	.088** (.01)	.128** (.018)
Years of School	.06** (.001)	.096** (.001)	.057** (.001)	.08** (.001)	.05** (.002)	.06** (.002)	.042** (.002)	.049** (.002)
Experience	.025** (.001)	.057 (.001)	-.07** (.002)	.01** (.003)	-.033** (.006)	-.011** (.008)	-.064** (.004)	-.015 (.01)
Marital Status	.135** (.006)	.47** (.008)	.19** (.008)	.51** (.011)	.20** (.012)	.54** (.017)	.26** (.014)	.67** (.02)
Located in South	-.11** (.011)	-.12** (.015)	-.12** (.014)	-.12** (.02)	-.14** (.02)	-.17** (.033)	-.08** (.03)	-.147** (.04)
Located in West	.09** (.01)	.033** (.01)	.09** (.013)	.05** (.018)	.13** (.02)	.09** (.03)	.08** (.02)	-.03 (.04)
N	182,941		119,233		67,093		100,264	
R ²	.62	.33	.67	.39	.70	.43	.77	.53

Notes:

1. Effects are percentage changes in incomes divided by 100 (i.e., .037 =3.7%)
2. Shows effects on hourly earnings (estimated by including weeks and hours as independent variables)
3. Shows effects on annual earnings (estimated by excluding weeks and hours)

Dependent variable is in ln(wage income)

Standard errors are in parenthesis

** - significant at .01 level

expected to be lower by (2×2.5) 5 percent because of lost job experience. If we take the estimated veteran's premium for the Vietnam period of 3.7 percent (Table II-9 col. 1) and subtract the 5 percent effect of lost job experience, we get an adjusted premium of -1.3 percent. The adjusted premium is the veteran's premium that would be obtained if we ignored the lower civilian job experience of veterans. The fact that the adjusted premium is negative indicates that all of the (unadjusted) premium of Vietnam veterans can be attributed to their lower civilian job experience. The negative adjusted premium indicates that if for example we compare a veteran taking his first job after finishing military service with a non-veteran of the same age, but having two years civilian job experience, the veteran is expected to have a lower income. The adjusted premium is close to the result obtained from the univariate analysis.

Both the adjusted and unadjusted premiums are relevant for policy purposes. The adjusted premium is important because it indicates that in the early years of the working life, veterans are earning less than non-veterans of the same age, education and marital status. This is because they have less job experience. But the regression coefficients on experience in the different war periods shows that job experience is an income raising factor only for the younger workers. The unadjusted premium is therefore also relevant because it indicates that ultimately Vietnam veterans will be earning more than comparable non-veterans.

b) Effects of Weeks and Hours Worked

Table II-9 gives some indirect evidence that veterans work more weeks per year and more hours per week than do non-veterans. This evidence comes from comparing the 3.7 percent veterans premium for hourly earnings with the 6.5 percent premium for annual earnings. Since the latter is much lower, it means that veterans work more hours per year.

Direct evidence that veterans work more hours is given in Appendix C, Table 9, which gives the average number of hours per week and the average number of weeks per year worked by veterans and non-veterans. In each war period both average weeks and average hours are greater for veterans. In the Vietnam period, veterans averaged 0.7 hours more per week and 0.3 weeks more per year than non-veterans. The difference in the other war periods were slightly greater for average weeks and slightly lower for average hours.

The impact of civilian job experience in the Vietnam period is also affected by whether or not weeks and hours are included in the regression. When weeks and hours are held constant, each year of job experience raises income by 2.5 percent. When weeks and hours are not held constant, each year of job experience raises income by 5.7 percent. If we use the 5.7 percent figure it means that two years of lost job experience lowers income by 11.4 percent. Adjusting for experience converts the -3.6 percent univariate difference of Table II-6 into a $(-3.6 + 11.4) = 7.8$ percent premium which is closer to the multivariate 6.5 percent premium. Thus adjusting for time on the job and experience again accounts for all the difference between the multivariate and

univariate results. In fact, it accounts for a larger difference between univariate and multivariate results than actually existed. Obviously there are some other control variables that would lower the veteran premium.

Some further analysis of the effects of weeks worked on the veteran premium is in order. It is clear that after controlling for a host of variables, veterans appear to work more hours per week and more weeks per year. It is possible that individuals with better jobs, on average, have the greatest probability of working the entire year. It is also likely that those with more ability get the best jobs. Therefore, the fact that veterans have greater time on the job is consistent with the hypothesis that veterans have greater innate abilities.

c) Effects of Marital Status

Married men earn significantly more than single men. Controlling for time on the job, men who are married earn 26 percent more than single men. Recalling that experience and schooling are the primary determinants of income, the 26 percent represents a marriage premium. The economics of the family might ascribe this to increased specialization within market and non-market spheres that is encouraged by marriage. Simply put, on average, for these age cohorts, a wife stays home and a husband must earn enough to support both people. If the multivariate analysis is performed without control for marital status, the veteran premium becomes slightly larger. In the Vietnam period it

goes from 3.7 percent controlling for marital status to 4.2 percent without.

3. Further Explanation of the Wage Income Premium

There is also an explanation for the veteran premium which is based on the notion of investment in human capital. According to human-capital theory, it is likely that those individuals with greater innate ability will invest larger amounts in education and on-the-job training.⁹ This likelihood is based on the expectation that those with greater ability will find it less costly to acquire a given amount of education and on-the-job training. In later years of the working life people who invested more (i.e. those with more innate ability) will have higher incomes than those who did not invest. But in the earlier years of working life these people will earn less, because investing in on-the-job training generally requires that a person accept a lower income at the time the training or education is being obtained. Examples are apprentices who accept less in order to learn a trade, or students who accept low-paying jobs to support themselves while they are in school. If veterans have, on average, more innate ability (because the very low ability people were rejected from military service) and, if all education and training differences were not accounted for in the regression, the veterans will have unusually low incomes early in life but, unusually high incomes late in life. Therefore differences in current earnings will show up as a large positive premium for

some war periods (e.g., WWII veterans who are the oldest veterans) and small or negative premiums in other war periods (e.g., Vietnam veterans who are the youngest veterans). We are, in fact, observing the current earnings of groups of veterans with the same lifetime income but at different stages of their life. This could explain the high premium in Table II-9 observed for Korea and WWII and the smaller premium for the Vietnam and between War period.

4. Self-employment Income by War Period

Table II-10 contains the analysis of self-employed income. We note that the R^2 statistics in Table II-10 are much lower than those in Table II-9. One explanation is the larger error in reporting self-employment income. A second explanation is that self-employment income has a lot more variation than wage income. This is because self-employment income includes a return on invested (physical) capital as well as a return to labor and human capital. Since we have no information on the amount of physical capital invested, we cannot control for this factor. The most important result in Table II-10 is the negative effect of veterans' status, indicating that self-employed veterans earn less than their non-veteran counterparts. While the effect of veterans status is to lower the level of self-employment income in each war period, the effect is generally not statistically

Table II-10

Effects¹ on Self-employment and Income Levels Estimated from Regression Analysis
War Period for White Males

Variable	Vietnam		Between		Korea		WWII	
	T ²	NI ³	T	NI	T	NI	T	NI
Veteran	-.012 (.033)	-.093** (.03)	-.06* (.03)	-.077 (.04)	-.024 (.04)	-.064 (.05)	.038 (.04)	-.033 (.04)
Years in School	.088** (.004)	.12** (.005)	.07** (.005)	.10** (.005)	.065** (.007)	.084** (.008)	.062** (.006)	.056 (.007)
Experience	.042** (.006)	.064 (.006)	-.014 (.01)	-.006 (.01)	-.045 (.025)	-.009 (.03)	-.03* (.012)	.04* (.017)
Marital Status	.168** (.03)	.49** (.036)	.21** (.04)	.48** (.04)	.33** (.05)	.54** (.06)	.22** (.02)	.57* (.025)
N	25,582		23,328		13,512		18,773	
R ²	.25	.07	.28	.08	.28	.08	.38	

Notes:

1. Effects are percentage changes in incomes divided by 100 (i.e., -.012 = -1.2%)
2. Shows effects on the hourly rate of earnings
3. Shows effects on the annual rate of earnings

Dependent variable is in ln(wage income)

Standard errors are in parenthesis

* - significant at .05 level

** - significant at .01 level

different from zero. This means the veteran premium is essentially zero.

a) Explanations for the Absence of a Premium in Self-employment

It is difficult to understand why veterans would earn more than non-veterans as employees but not as business owners. Factors such as greater ability of veterans and job training which explain wage differences ought to explain differences in self-employment income as well. Thus the absence of a veterans premium in self-employment would have to be viewed evidence that these two factors are not important sources of income differences between veterans and non-veterans. The alternative explanation is the screening hypothesis. However this hypothesis also implies that there are real differences between veterans and non-veterans in terms of average innate ability (and consequently income as well). Otherwise employers would stop using veteran status as a credential to identify the more able workers.

A better explanation is that the job training provided by the military is not useful in self-employment. This would happen if occupations with opportunities for self-employment are not the occupations for which job training is provided. Related to this is the fact that although job training and experience is provided by the military, business experience and business training is not provided.

Although the existence of a veterans premium in wage employment but not self-employment is difficult to explain, it is

consistent with the analysis of the likelihood of self-employment. Recall that the results of that analysis showed veterans less likely to be self-employed. The finding here of a zero premium for self-employed veterans is consistent with that result. Veterans would be less likely to become self-employed because there is a positive veteran premium associated with working for wages, but no premium on self-employment income. The only veterans who would become self-employed would be those with a strong enough preference for the non-pecuniary benefits of self-employment, to be willing to forego the extra income associated with the veteran wage premium. If veterans and non-veterans had a similar distribution of preferences, the percentage of self-employed veterans would have to be lower.

5. Implications for Veterans Adjustment to Civilian Life

The existence of a wage premium which leads to a lower likelihood of self-employment among veterans suggests that business ownership is not the major vehicle by which Vietnam veterans can integrate into the economy.

E. MULTIVARIATE ANALYSIS OF THE VETERANS' PREMIUM BY EDUCATION

The univariate analysis suggested that veterans at the lowest and highest education levels had significantly positive premiums while veterans at the other levels had negative premiums. We pursue this issue here using regression analysis.¹⁰ The premiums in this section refer to hourly rates of earnings.

An explanation for the relative success of veterans in the lowest education level is that military job training or job experience is most useful for those jobs that require little formal education. For example, men becoming auto mechanics might benefit directly from military job training while men becoming nuclear physicists might not. Another possibility is that veteran status may be a more informative signal about the innate intelligence (as opposed to jobs skills) of someone with little formal education than it would be for someone with a lot of education. For example, the fact that a job applicant is a veteran will be a more useful bit of information to the prospective employer of a high school dropout than it would to the prospective employer of a Ph.D. Both of these are explanations for a veterans' premium among the least educated. We have no explanation for the higher premium at the other end of the education spectrum. Therefore, we expect that premium to disappear when the multivariate technique is applied.

Tables II-11 and II-12 present the results of the estimation of the effects of veteran status at each education level. In both

Table II-11

Veteran's Premium¹ on Wage Income for White Males at Each Education Level by War Period

<u>Education Level</u>	<u>Vietnam</u>	<u>Between</u>	<u>Korea</u>	<u>WWII</u>
Base Premium	.055** (.011)	.019 (.0165)	.08** (.02)	.088** (.03)
Increment ² at Level 1 (0-11 yrs.)	.087** (.021)	.067* (.025)	-.003 (.03)	-.22** (.034)
Increment at Level 2 (12 yrs.)	.0024 (.01)	.039 (.019)	-.01 (.03)	.0013 (.034)
Increment at Level 4 (16 yrs.)	-.04* (.018)	-.002 (.02)	-.05 (.04)	.059 (.047)
Increment at Level 5 (16+ yrs.)	-.05** (.018)	.0036 (.02)	.045 (.036)	.186** (.046)
N	182,941	119,233	67,093	100,264
R ²	.63	.67	.71	.77

Notes:

1. Premiums are percentages of hourly earnings expressed as decimals
(i.e. .055 = 5.5%)

2. Increments are with respect to the base premium. Increment at educational level 3 is set to zero and identical to the base premium. To get the premium at any other level add the base premium to the increment for that level. For example, the premium at level 1 is equal to .055 + .087 = .142. The regression specification used is the same as the one described in note 2 of Table II-5, except that the dependent variable is, of course, the log of income. The coefficient b_0 is the estimate of the base premium while the coefficients b_1 through b_5 are the estimates of the incremental premiums at education levels 1 through 5.

*Denotes significant at .05 level

**Denotes significant at .01 level

Table II-12

Veteran's Premium¹ on Self-Employment Income for White Males at Each Education Level by War Period

Education Level	Vietnam	Between	Korea	WWII
Base premium	-.0186** (.063)	-.07 (.08)	-.012 (.09)	-.017* (.09)
Increment ² at Level 1 (0-11 yrs.)	.044* (.13)	.15 (.12)	-.023 (.12)	.029 (.11)
Increment at Level 2 (12 yrs.)	.023* (.08)	.05 (.09)	-.04 (.11)	.12 (.10)
Increment at Level 4 (16 yrs.)	.004 (.10)	-.08 (.11)	-.039* (.15)	-.04 (.15)
Increment at Level 5 (16+ yrs.)	.034** (.04)	.08 (.11)	-.012 (.13)	-.05 (.13)
N	25,582	23,328	13,512	18,773
R ²	.25	.29	.28	.38

Notes:

1. Premiums are percentages expressed as decimals (i.e. -.0186 = -1.86%)
2. Increments are with respect to the base premium. Increment at education level 3 is set to zero. The premium for education level 3 is equal to the base premium. To get the premium for any other level add the base premium to the increment for that level (See note 2 to Table II-12).

Dependent variable is ln (self employment income)
Standard errors in parentheses

*Denotes significant at .05 level

**Denotes significant at .01 level

tables the "time on the job" variables are included in the estimation. The veterans' premium for each level of education that is shown in Tables II-11 and II-12 has two components. The first component is the effect of veteran status that is common to all education groups and the second is an effect that is unique to each group. The premium for any education level is the sum of the common component and the unique component. In the Vietnam period, for example, the veteran premium in Table II-11 for education level 2 is $(.055 + .0024) = 5.57$ percent. While the two components must be added to get the total veteran premium at any education level, comparing the unique components will show how much the veteran premiums at each education level differ from each other. It will also tell the statistical significance of the differences. In estimating these premiums, the incremental premium of education level 3 (some college) is set equal to zero.

1. Wage Income Premiums

Table II-11 shows that Vietnam veterans who did not complete high school have the largest premium (14.2 percent) of any education level in that war period and of any education group in any other war period. This premium is considerably higher than the \$49 premium (which is 0.4 percent) for this group that was observed in the univariate analysis of Table II-7. Thus, controlling for other variables that affect income raises the premium for this group of veterans. The premium is high enough so that even if we disregard the fact that veterans have two years

less civilian job experience and subtract 2.5 percent per year, the premium is still (14.2 - 5.0) 9.2 percent. In other words, for this group the benefits of veteran status are so great that they offset the loss of civilian job experience while in the military. Table II-11 also shows that for Vietnam veterans, the veteran premium decreases consistently with increases in education. For the highest education groups the premium is down to (5.5 - 5.0) 0.5 percent. The pattern of decreasing premium with increases in education holds somewhat for the Between War period but not for WWII. In fact for WWII, the pattern is one of higher premiums for more educated veterans.

The difference between Vietnam and WWII veterans at education level 5 reflects the fact that these are groups at opposite ends of their working lives. Vietnam veterans are at the beginning of their working lives, investing in education and on-the-job training and accepting a low income. WWII veterans are near the end of their working lives and are enjoying the rewards of earlier investments. Both veterans and non-veterans in education level 5 probably engage in this type of activity to a greater extent than individuals of other education levels. Table II-11 suggests that veterans engage in this type of investment activity to a greater extent than non-veterans. This is consistent with the view that veterans as a group have greater innate ability than non-veterans.

2. Analysis of Self-Employment Income by Education Level

The analysis of self-employment income is shown in Table II-12. For Vietnam veterans of education level 1 there is a positive premium which amounts to $(-.0186 + .044) = 2.54$ percent. The premium declines with education, becomes negative at education levels 3 and 4 but rises again in education level 5. Vietnam is the only war period where there is any kind of a pattern. In the other war periods the veteran premiums are mostly not statistically different from zero. The multivariate result for Vietnam veterans education level 5 agrees with the univariate analysis in Table II-7 which also showed a positive premium. However, that premium was 8.5 percent; significantly more than that shown by multivariate analysis.

F. LABOR FORCE PARTICIPATION

One could argue that chronic difficulties in finding a job may cause a disproportionate number of veterans to leave the labor force. Since the veteran premiums were estimated with control for labor force participation, lower income of veterans due to their absence from the labor force would not be counted. However, we have estimated the labor force participation rates for veterans and non-veterans and found them to be almost identical. For the Vietnam period, labor force participation was slightly higher for veterans (96.4 percent) than for non-veterans

(96.1 percent). When the regression analysis was performed without control for labor force participation, the veteran premium on wage income for the Vietnam period increased from 3.7 percent to 4.2 percent.

One may wish to view the higher labor force participation of veterans as a result of military experience. The logic of this view is that those factors which affect income (i.e. greater ability, military job training) also affect labor force participation. If so, then the estimates of the veterans premium in this study will understate the true estimates of the veterans premium.

G. CORRELATION MATRIX AND ANALYSIS OF RESIDUALS

Table II-13 gives a correlation matrix for the regression variables for the Vietnam period. The matrix indicates, as expected, that experience is negatively related to education and veteran status. The highest correlation is between experience and education. Table II-14 shows the average value of the regression residuals obtained from the equation in Table II-9. The residuals are grouped into twenty cells on the basis of years of education and years of experience. In about half the cells the residuals are statistically different for zero at .05. However there appears to be no regular pattern to the residuals and so we conclude that with respect to experience and education, the specification of the regressions are correct. Table II-15

TABLE II-13

CORRELATION MATRIX FOR REGRESSION VARIABLES FOR WHITE MALE WAGE
EARNERS AND SELF-EMPLOYED FOR VIETNAM PERIOD

	<u>INCOME</u>	<u>EXPERIENCE</u>	<u>YRS SCH</u>	<u>VETERAN</u>	<u>MARITAL</u>	<u>WEEKS WORK</u>	<u>HRS WORK</u>
INCOME ²	1.000 1.000						
EXPERIENCE ³	.037 -.045	1.000 1.000					
YRS SCH ⁴	.273 .310	-.476 -.530	1.000 1.000				
VETERAN ⁵	-.019 .018	-.118 -.137	.005 .079	1.000 1.000			
MARITAL ⁶	.217 .123	.167 .146	-.041 -.056	.035 .004	1.000 1.000		
WEEKS ⁷	.435 .254	-.015 -.033	.081 .113	.022 -.006	.201 .150	1.000 1.000	
HOURS ⁸	.307 .144	-.047 .003	.062 .018	.033 -.011	.134 .125	.501 .463	1.000 1.000

Notes:

- 1 upper entry is wage earners, lower entry is self-employed
- 2 annual income
- 3 years experience
- 4 years school
- 5 Veteran Status
- 6 Marital Status
- 7 Weeks worked per year
- 8 Hours worked per week
- 9 The correlation between age and experience among wage earners and self-employed was $r = .902$ for the Vietnam period, $r = .853$ for the between period, $r = .751$ for the Korean period and $r = .721$ for the WWII period.

TABLE II-14

AVERAGE REGRESSION RESIDUALS¹ FOR WHITE MALE WAGE INCOME
FOR VIETNAM, BETWEEN, AND KOREA PERIODS BY EDUCATION BY EXPERIENCE

YEARS OF EXPERIENCE		YEARS OF EDUCATION				
		0 - 11	12	13 - 15	16	16+
0-4	Vietnam	-.109	-.056	.025	.078*	.032
0-15	Between	-.025	-.125	-.162*	-.052	.028
0-25	Korea	.097	-.106*	-.064	.019	.094
5-8	Vietnam	.064	.018	-.053*	-.070*	-.014
16-19	Between	-.011	-.058*	-.058*	.041*	.108*
26-29	Korea	-.007	-.035	-.055	.065	.094*
9-12	Vietnam	.018	-.019	-.032*	-.021*	-.088*
20-23	Between	.003	-.039*	-.034*	.104*	.147*
30-33	Korea	-.020	-.037	-.043	.105*	.124
13+	Vietnam	.017	-.022*	-.022*	.049*	.124*
24+	Between	.036*	-.047*	-.047	.039	-.002
34+	Korea	-.39*	-.013	-.052	-.002	.060

¹ A residual is the difference between a person's actual income and his income predicted by the regression equation (both in natural logs)

² * different from zero at .05

TABLE II-15

AVERAGE REGRESSION RESIDUALS¹ FOR WHITE MALE SELF-EMPLOYMENT
FOR VIETNAM, BETWEEN AND KOREA PERIODS BY EDUCATION BY EXPERIENCE

YEARS OF EXPERIENCE		YEARS OF EDUCATION				
		0 - 11	12	13 - 15	16	16+
0-14	Vietnam	.892	.108	-.079	.064	-.118
0-15	Between	.291	.150	-.274	-.176	.042
0-25	Korea	-.181	-.233	-.218	.090	-.099
5-8	Vietnam	.282	.105	.131	-.334*	.087
16-19	Between	.499	-.071	-.117	.114	.182*
26-29	Korea	-.047	-.024	-.046	.083	.265*
9-12	Vietnam	.136	-.010	-.051	-.123*	.100*
20-23	Between	.023	-.154	-.070	.152	.224*
30-33	Korea	.149	-.172*	-.260*	.083	.412*
13+	Vietnam	.135*	-.057	.115*	.025	.159*
24+	Between	.157*	-.144*	-.175*	.064	.093
34+	Korea	.120*	-.096	-.415*	.167	.444*

¹ A residual is the difference between a person's actual income and his income predicted by the regression equation (both in natural logs)

² * different from zero at .05

shows the residuals from the equations in Table II-10 which also follow no systematic pattern.

H. SUMMARY OF SECTION II

The results of this section have shown that white male veterans as a group are less frequently self-employed than non-veterans. The difference in the self-employment rates is 5.0 percent for Vietnam and 4.3 percent on average for the other periods. Controlling for other determinants of self-employment, the probability of a Vietnam veteran being self-employed is 6.3 percent lower than the probability of a non-veteran being self-employed. For the other war periods, the probability is on average 5.6 percent lower for veterans. When the probability of self-employment is estimated for different education levels, it appears that Vietnam and Between war veterans with some graduate school are more likely to be self-employed than their non-veteran cohorts.

The univariate analysis of wage income reveals that Vietnam veterans as a group earn less than non-veterans while veterans of other wars earn more than non-veterans. However, after controlling for the other determinants of wage income such as experience and education (by using multivariate analysis) veterans of Vietnam earn more than their non-veteran cohorts. The veterans' premium in annual wage income for the Vietnam period is 6.5 percent while for Korea and WWII it is between 8.0 and 12.8

percent. These results indicate that the lower wage income of Vietnam veterans shown by the univariate analysis can be explained by the fact that veterans have less education and have had less civilian job experience than non-veterans. An explanation for the higher wage income of veterans, after adjusting for education and experience, is the military's rejection of persons with low mental and physical capacities which has raised the average ability of the veteran population. More able persons are expected to have higher incomes.

One group of Vietnam veterans, however, have clearly benefitted from military experience - those who have not completed high school. This group earns about fourteen percent more than non-veterans with the same civilian job experience. Even after adjusting for two years civilian job experience lost by being in the military, these veterans are still earning about 9.0 percent more than they would otherwise have earned. We attribute this gain to either the job skills acquired while in the military or to the screening processing which results from military service.

SECTION III

ANALYSIS OF NONWHITE MALES

In this section we repeat the analysis of the previous section for the sample of nonwhite males. We first present the univariate and multivariate analysis of the probability of self-employment and then the univariate and multivariate analysis of wage and self-employment income. In the last part of this section we compare veterans' premiums and race premiums estimated using regression analysis for whites and nonwhites.

A. UNIVARIATE ANALYSIS OF SELF-EMPLOYMENT RATES

Table III-1 shows the rates of self-employment by war period for nonwhite males. As in the case of white males, the rate of self-employment is higher for non-veterans. The third line of Table III-1 shows that the ratio of the self-employment rate of non-veterans to the self-employment rate of veterans is highest for Vietnam and declines as we move to WWII. Vietnam non-veterans were 1.66 times as likely to be self-employed as their veteran cohorts, whereas WWII non-veterans were only 1.1 times more likely to be self-employed. One should keep in mind that since the rate of self-employment is very low for both veterans and

Table III-1

Self-Employment Rates ¹⁾ (in percent) for Nonwhite Male Veterans and Non-Veterans by War Period ⁵⁾

	Vietnam			Between			Korea			WWII		
	$\frac{V^2}{NV^3}$	$\frac{NV^4}{V}$	$\frac{NV}{V}$	$\frac{NV}{V}$	$\frac{NV}{V}$	$\frac{NV}{V}$	$\frac{NV}{V}$	$\frac{NV}{V}$	$\frac{NV}{V}$	$\frac{NV}{V}$	$\frac{NV}{V}$	
Self-Employed	3.16	5.26	1.66	5.72	7.75	1.35	6.54	8.29	1.27	8.04	8.88	1.10
N	63,725	34,530		23,099	19,506		25,367	10,525		29,957	8,523	

Notes:

1. Does not include individuals listed as "out of the labor force."
2. Veterans
3. Non-veterans
4. All differences are significant at the .05 level - that is, all ratios are significantly larger than 1.0.
5. For all war periods combined, the self-employment rate for veterans was 5.21%.

non-veterans, small differences between the rates of self-employment lead to large ratios.

Tables III-2 and III-3 present the self-employment rate for education and age groups. Table III-2 shows the actual rates and Table III-3 shows the ratio of the non-veteran rate to the veteran rate. These tables show that controlling for age and education in this way does not affect the initial conclusion that veterans are less likely to be self-employed. However, in comparing the ratios of Table III-3, one sees that the gap between veterans and non-veterans declines as age increases. This is most evident for Vietnam veterans. The greater decline with age for Vietnam veterans reflects the fact that business experience is lost by serving in the military. But the two years of business experience lost by serving in the military inhibits self-employment less for the older veterans who have had time to catch up. This pattern was evident among white males as well. One other pattern worth noting among education groups is that the gap between non-veteran and veteran self-employment is lowest at education levels 1 and 5 and highest at education levels 2 through 4. This pattern was also observed for white males.

B. MULTIVARIATE ANALYSIS OF THE PROBABILITY OF SELF-EMPLOYMENT

1. All Wars Together

To estimate the probability of self-employment for nonwhite males we use the same estimation technique that was applied for

Table III-2

Self-Employment Rates (in percent) by Education Level and By Age for Nonwhite Males
Veterans and Non-Veterans by War Period

Education Level (years)	<u>Vietnam</u>		<u>Between</u>		<u>Korea</u>		<u>WWII</u>	
	V	NV	V	NV	V	NV	V	NV
0-11	3.29	4.67	5.92	6.05	6.10	6.46	6.65	7.14
12	2.62	4.16	4.61	6.54	5.44	8.23	7.67	12.13
13-15	2.82	5.37	5.34	9.99	6.41	9.59	9.49	10.26
16	4.09	6.89	7.70	12.12	8.82	17.76	11.82	16.20
16+	7.14	8.92	9.39	14.31	11.59	16.77	15.48	16.58

Age Group¹

Group 1	1.32	2.66	5.25	5.84	6.07	7.60	6.91	8.
Group 2	2.29	4.19	5.30	7.21	6.34	8.88	8.36	8.99
Group 3	4.14	6.52	6.08	8.42	7.02	7.93	8.36	9.08

Notes:

¹ Age groups for vietnam are:

Age group 1 - 22-26

Age group 2 - 27-31

Age group 3 - 32 up

For WWII the Age groups are:

Age group 1 - 49-53

Age group 2 - 54-58

Age group 3 - 59 up

For Between War the age groups are:

Age group 1 - 32-36

Age group 2 - 37-41

Age group 3 - 42 up

For Korea the age groups are:

Age group 1 - 41-45

Age group 2 - 46-49

Age group 3 - 50 up

Table III-3

Ratio of Self-Employment Rates of Non-Veterans to Self-Employment Rates for Veterans, by Education, Age and War Period, for Nonwhite Males

<u>Education Level (years)</u>	<u>Vietnam</u>	<u>Between</u>	<u>Korea</u>	<u>WWII</u>
0-11	1.42	1.02	1.06	1.07
12	1.59	1.42	1.51	1.58
13-15	1.90	1.87	1.50	1.08
16	1.68	1.57	2.01	1.37
16+	1.25	1.52	1.45	1.07
<u>Age group</u> ¹				
Group 1	2.02	1.11	1.25	1.21
Group 2	1.83	1.36	1.40	1.08
Group 3	1.57	1.38	1.13	1.09

Notes:

1. Age groups are indicated in Table III-2.

white males. The results for all wars together are in Table III-4. They show that after controlling for experience, education, marital status, etc., the probability of self-employment is lower for veterans. We now consider the probability difference at each education level and for each war period.

2. Results by War Period by Education Level

The effect of veteran status on probability of self-employment is shown in Table III-5 for each war period. The entries in the table, show the difference in the probability of self-employment between a veteran and a non-veteran, in percent, at each of the five education levels. The effects are shown for nonwhites and whites.

a) Nonwhites

For nonwhites the entries in the table are virtually all negative and indicate that these veterans are all less likely to become self-employed than their non-veteran cohorts. For nonwhite veterans, the probability of being self-employed was lowered by 3.6 percent. Since the rate of self-employment in this cohort was only 3.2 percent (see Table III-1), one can estimate that, had they not been in the military the self-employment rate for these individuals would have been $(3.6 + 3.2)$ 6.4 percent. In other words, men with the same civilian job experience, education, marital status, etc., as veterans but not the military experience, would have had a self-employment rate above the

Table III-4

Effects on the Probability of Self-Employment Estimated from Regression Analysis¹
for Nonwhite Males in All Wars

<u>Variable</u>	<u>All Nonwhite Males</u>
Veteran	-.04** (.001)
Years in school	.0016** (.0008)
Experience	.0037** (.0004)
Experience Squared	-.00005* (.00002)
Marital Status	.02* (.004)
Weeks Worked	.0004** (.0001)
Atlantic	-.015* (.006)
West	.01* (.004)
N	104,060
R ²	.20

Notes:

1. Entries in table are regression coefficient with standard errors in parenthesis. Each entry, when multiplied by 100, represents the percentage effect of that variable on the chance of being self-employed.

Dependent variable is =1 if self-employed, 0 otherwise.

* denotes significant at .05.

**denotes significant at .01.

actual rate for non-veterans. The drop of 3.6 percent represents more than a halving of the probability of self-employment.

The effects of veteran status at different levels of education are different in many instances, but there is no strong pattern. For the Vietnam period, for example, the effect of veteran status is to reduce the probability of self-employment less for the highest and lowest levels of education than for the middle levels. However, this pattern does not repeat in the other war periods.

b) Comparing Nonwhites and Whites

Table III-5 shows that for Vietnam and Between, the effect of veteran status on the probability of self-employment is greater for nonwhites than for whites. That is, the tendency of veterans to have a lower probability of self-employment is stronger for whites than for nonwhites in these war periods. However, for Korea and WWII, the pattern is just the opposite. The tendency for a lower probability on veterans self-employment is greater for nonwhites than whites.

c) Ratios of White to Nonwhite Self-employment

Table III-6 gives the ratio of the white self-employment rate to the nonwhite self-employment rate. It compares this ratio among veterans and non-veterans. We see first of all that the ratios are all greater than one, which indicates that whites have higher self-employment rates than nonwhites. For all groups combined the ratio is in excess of 2.0 for both veterans and

Table III-5

Effects of Veteran Status on Probability of Self-employment¹ by Level of Education²,
by War Period for Nonwhite Males and White Males (entries are in percent)

<u>Education Level (years)</u>	<u>Vietnam</u>		<u>Between</u>		<u>Korea</u>		<u>WWII</u>	
	NW ³	W ⁴	NW	W	NW	W	NW	W
All levels	-3.6*	-6.3*	-5.0	-5.8*	-11.4	-5.8*	-9.0	-5.1*
0-11	-0.2**	-4.0**	-0.6**	-3.9**	0.1	-3.9**	-.3	-3.6
12	0.5**	-5.2	-1.5**	-7.1**	-1.2	-6.7**	-3.7**	-2.3
13-15	-1.8*	-5.3*	-2.5*	-7.6*	-1.8	-7.1*	-0.3	-4.5
16	-2.0	-4.3*	-1.6	-3.6*	-8.3*	-3.2**	-3.4	0.5
16+	-0.4	1.11**	-2.5	-1.4**	-3.5	-2.1**	-4.7	3.1

Notes:

1. Entries are differences in probability of self-employment between veterans and non-veterans expressed in percent. Negative values mean veterans have lower probability.
 2. Entries are based on regression analysis. See footnote #2 of Table II-5 for description of the regression specification.
 3. NW=Non-whites
 4. W =Whites
- * different from zero at .05 significance level
 **different from the value recorded for education level 13-15 years at .05 significance level

Table III-6

Ratio of White Male to Nonwhite Male
Self-Employment Rates by Education Level and by War Period

<u>Education Level (years)</u>	<u>Vietnam</u>		<u>Between</u>		<u>Korea</u>		<u>WWII</u>	
	V	NV	V	NV	V	NV	V	NV
All levels	2.81	2.64	2.28	2.28	2.25	2.32	2.11	2.32
0-11	2.23	2.69	2.05	2.60	2.18	2.60	2.10	2.67
12	2.78	3.28	2.42	2.78	2.41	2.50	1.94	1.87
13-15	2.86	2.60	2.20	1.89	2.22	2.19	1.96	2.22
16	2.40	2.01	2.00	1.56	2.00	1.10	1.74	1.24
16+	2.21	1.71	2.09	1.28	1.72	1.29	1.66	1.24

non-veterans. This means that whites are more than twice as likely to be self-employed as nonwhites.

How does military service affect the ratio of white to nonwhite self-employment? For the Vietnam era, the ratio is higher for veterans. This means that the gap between white and nonwhite self-employment is greater among Vietnam veterans than among non-veterans. This occurs because for the Vietnam period, veteran status lowers the self-employment rate more for nonwhites than it does for whites. In the other war periods, veterans status lowers the self-employment rate more for whites than nonwhites. If one views military service as influencing a racial self-employment gap, it follows that for the Vietnam period, military service widened the racial self-employment gap while for the other periods it narrowed (or had no effect on) the self-employment gap.

Table III-6 also shows the white/nonwhite self-employment ratio for education groups. The result is that this ratio is smaller for veterans in the two lowest education groups but greater for veterans in the other education groups. In other words, military service narrows the racial gap for the least educated but widens it for the most educated groups. This occurs in each of the four war periods.

C. ANALYSIS OF EARNINGS FOR NONWHITE MALES

1. Univariate Analysis

Table III-7 shows the average self-employment and wage income for nonwhite male veterans and non-veterans. With respect to self-employment income, veterans earn less than non-veterans in the Vietnam and Between periods but more than non-veterans in the other two war periods. The income difference between veterans and non-veterans is -2.3 percent and -9.2 percent for Vietnam and Between periods and 2.8 percent and 4.4 percent in the Korea and WWII. With respect to wage income, veterans earn more than non-veterans in every period. The difference increases as we move from Vietnam, where it is 8.9%, to WWII where it is 25.7%. We conclude that for nonwhite males, Vietnam veterans are ahead of non-veterans as wage earners but behind as self-employed. But Vietnam wage earning veterans are not as far ahead as wage earning veterans in other war periods.

a) Analysis by Education and Age Groups

Table III-8 shows the comparison between veterans and non-veterans which controls for education. For wage income, controlling for education has little effect. Veterans have higher wages in every group, except the highest education group where there is practically no difference. The veterans premiums are generally smallest for Vietnam veterans and largest for WWII veterans. For self-employment income the premiums for the

Table III-7

Annual Wage Income and Self-Employment Income in Dollars, for Nonwhite Male Veterans and Non-Veterans by War Period

Variable	<u>War Period</u> ^{2]}							
	<u>Vietnam</u>		<u>Between</u>		<u>Korea</u>		<u>WWII</u>	
	V	NV	V	NV	V	NV	V	NV
Wage Income	13,215	12,125	16,616	13,576	16,214	12,884	14,771	11,755
% Difference ^{1]}	8.9*		22.4*		25.8*		25.7*	
N	61,485	32,449	21,702	17,864	23,613	9,569	27,414	7,702
Self-Employment Income	10,124	10,363	11,431	12,592	11,836	11,511	11,369	10,891
% Difference		-2.3		-9.2*		2.8		4.3
N	2,014	1,815	1,322	1,512	1,659	872	2,409	757

Notes:

1. % Difference is calculated as $(V-NV)/NV$ and indicates the percentage by which veteran income differs from non-veteran income.

*Denotes significantly different from non-veteran income at .05 level.

2. For veterans of all wars combined, the average wage income was \$14,610 and the average self-employment income was \$11,146.

Table III-8: Average Wage Income and Self-Employment Income for Non-white Males by Education Level - by War Period

Education Level	Type	Vietnam				Between				Korea				WWII		
		V	NV	% Dif.	V	NV	% Dif.	V	NV	% Dif.	V	NV	% Dif.	V	NV	% Dif.
0-11	W	10275	9458	8.6*	13077	10709	22.1*	13427	10751	24.9*	12747	10452	21.9*	12747	10452	21.9*
12	W	12464	11855	5.1*	15599	13764	13.3*	15667	13894	11.3*	15192	13073	16.2*	15192	13073	16.2*
13-15	W	13456	12212	5.6*	16873	15455	9.2*	17268	14880	16.0*	16904	13935	21.3*	16904	13935	21.3*
16	W	16727	16237	3.0*	20861	18993	9.8*	20773	18932	9.7*	20485	17991	13.8*	20485	17991	13.8*
16+	W	18378	18552	-0.9	23315	23396	-0.3	23855	24215	1.5*	22923	21736	5.4*	22923	21736	5.4*
0-11	S	7922	8002	-0.1	9602	9460	1.5	10033	8874	13.0	9270	8348	11.0	9270	8348	11.0
12	S	9215	8708	5.8	9963	9660	3.1	9888	9858	0.3	10020	11757	-14.7*	10020	11757	-14.7*
13-15	S	8996	9250	-2.7	10636	11869	-10.4	10959	11977	-8.5	10204	9800	4.1	10204	9800	4.1
16	S	9761	11577	-15.6	9848	10946	13.6	11082	13854	-20.0	11395	14857	23.3	11395	14857	23.3
16+	S	16695	17158	-2.6	18564	23194	-20.0*	21253	20264	4.9	22851	23435	2.5	22851	23435	2.5

1] W = wage income, S = self-employment

* significant at .05 level.

education groups are mostly negative for the Vietnam and Between periods and mostly positive for Korea and WWII. As in the case of wage income, the most educated veterans do not do as well, relative to non-veterans, as the less educated veterans. Otherwise, the breakdown by education in Table III-8 does not alter the conclusion drawn from the ungrouped data in Table III-7.

D. MULTIVARIATE RESULTS OF NONWHITE MALE EARNINGS

1. All War Periods Combined

This section presents the results of the regression analysis of earnings for nonwhite males. The statistical techniques employed are identical to those used for white males.

Table III-9 has the results for all wars together. The pattern observed before for white males is repeated, but exaggerated. Veteran status has a negative effect on self-employment income and a positive impact on wage income with both effects larger in magnitude for nonwhite males than for white males. Schooling and experience are positively related to both self-employment and wage income, as the univariate analysis indicated. As in the case of white males, marital status is a powerful predictor of income. Finally, the effect of the time variables is very striking. Controlling for weeks and hours worked lowers the veteran premiums for wage earners. It also lowers the rate of return on

Table III-9

Effects¹ on Wage and Self-Employment Income Estimated from Regression Analysis -
Nonwhite Males for All Wars

<u>Variable</u>	<u>Wage Income</u>		<u>Self-employment</u>	
	T ²	NT ³	T	NT
Veteran	.169** (.013)	.33** (.02)	-.134 (.07)	-.11 (.09)
Years in school	.047** (.0015)	.10** (.002)	.07** (.007)	.13** (.009)
Experience	-.0023 (.005)	.02** (.002)	.022* (.01)	.046** (.01)
Experience Squared	.000036 (.00003)	-.0002** (.00004)	-.0003** (.0001)	-.0006** (.0002)
Marital Status	.166** (.01)	.69** (.016)	.12 (.07)	.45** (.08)
South				
N	97,579		6,477	
R ²	.76	.43	.44	.13

Notes:

1. Effects are percentage change in income expressed as decimal.
 2. Shows effects on hourly rate of pay.
 3. Shows effects on annual rate of pay.
- **denotes significant at .01
*denotes significant at .05

education and marriage premium for both wage earners and the self-employed.

2. Results by War Period for Wage Income

Table III-10 presents the analysis of wage earnings by war period and confirms both the univariate analysis and multivariate analysis for all wars combined. It shows that nonwhite wage-earning veterans receive more than their non-veteran counterparts and that there are few differences between wars. Controlling for weeks and hours worked (i.e. looking at effects on the hourly rate of compensation) the veterans' premium ranges between 16 percent and 20 percent. Without control for weeks and hours, the premium jumps to between 30 percent and 36 percent. The jump indicates that veterans work significantly longer during the year. The indication is that the jobs held by veterans are "better" than those held by non-veterans in the sense that they are more often full time jobs and they are less likely to be interrupted by periods of unemployment.

The effect of marital status is again large and even larger without control for time on the job. The percentage of the variation in income explained by the regression (R^2 statistic) is quite high and nearly doubles when there is control for time on the job.

Table III-10

Effects¹ on Wage Income Levels Estimated with Regression Analysis by War Period for NonWhite Males

Variable	Vietnam		Between		Korea		WWII	
	T ²	NT ³	T	NT	T	NT	T	NT
Veteran	.16** (.02)	.36** (.03)	.17** (.03)	.35** (.04)	.16** (.03)	.30** (.05)	.20** (.03)	.33** (.05)
Years in School	.05** (.002)	.13** (.004)	.04** (.003)	.089** (.005)	.04** (.004)	.08** (.007)	.03** (.004)	.05** (.007)
Experience	-.0012 (.003)	.03** (.004)	-.03** (.007)	-.023** (.01)	-.07** (.01)	-.08** (.02)	-.12** (.02)	-.19** (.03)
Marital Status	.15** (.015)	.71** (.02)	.17** (.02)	.66** (.03)	.18** (.03)	.64** (.04)	.20** (.03)	.63** (.04)
Located in South	-.11** (.011)	-.12** (.015)	-.12** (.014)	-.12** (.02)	-.14** (.02)	-.17** (.033)	-.08** (.03)	-.147** (.04)
Located in West	.09** (.01)	.033** (.01)	.09 (0.13)	.05** (.018)	.13** (.02)	.09** (.03)	.08** (.02)	-.03 (.04)
N	46,317		27,909		14,214		14,139	
R ²	.75	.40	.75	.41	.77	.43	.80	.51

Notes:

1. Effects are percentage changes in wage incomes expressed as decimals (i.e. .16 = 16%)

2. Effects on hourly rate of pay

3. Effects on annual rate of pay

**Denotes significant at .01 level

3. Results for Self-employment Income

Turning to Table III-11, and the analysis of self-employment income, the effect of veteran status is insignificant in all but two cases, and in these cases it is negative. In fact all but one of the point estimates is negative. This is consistent with the earlier finding that nonwhite veterans are significantly less likely to enter self-employment.

Controlling for hours and weeks again raises the effect of education in each war and suggests that men with more years of schooling work more per year. This is inconsistent with the "better jobs" hypothesis. A case was made in the previous section for a link from more education to better jobs, and hence more hours to better jobs. Since the effect of veteran status on self-employment income is statistically equal to zero, the case for linkage is not damaged much. Also there are surely other important determinants of self-employment income that are unmeasured in census data. A key unmeasured variable is parents' occupational background - presumably more important in the self-employment world, where businesses are often passed from one generation to the next, than in the wage earning world. At any rate, the R^2 statistics are lower for self-employment than for wage earning, indicating at the very least considerably more randomness.

In comparing wars, it appears that Vietnam veterans get the largest premium though it is still not statistically significant.

Table III-11

Effects ¹ on Self-employment Income Estimated with Regression Analysis by War Period for NonWhite Males

Variable	Vietnam		Between		Korea		WWII	
	T ²	NT ³	T	NT	T	NT	T	NT
Veteran	.04 (.14)	-.10 (.17)	-.33* (.16)	-.34 (.2)	-.07 (.17)	-.06 (.22)	-.24 (.15)	-.04 (.19)
Years in School	.07** (.015)	.15** (.018)	.07** (.01)	.13** (.02)	.06** (.02)	.11** (.03)	.03 (.02)	.049* (.02)
Experience	.017 (.021)	.03 (.03)	-.05 (.03)	-.06 (.04)	-.07 (.06)	.004 (.08)	-.16* (.08)	-.12 (.11)
Marital Status	.28** (.11)	.63** (.135)	.09 (.13)	.38* (.16)	-.28 (.17)	.11 (.21)	-.002 (.15)	.35* (.19)
N	2,301		1,802		1,165		1,209	
R ²	.40	.13	.44	.13	.46	.09	.45	.15

Notes

1. Effects are percentage changes expressed as a decimal
2. Effects on hourly rate of pay
3. Effects on annual rate of pay

*Denotes significant at .05 level

**Denotes significant at .01 level

significant. In addition, the marriage premium is much smaller in self-employment.

One point to note is that the rates of return to schooling are lower for wage earners than for self-employed. If portions of self-employment income were not unreported, the difference would be larger still, since inclusion of the missing income would boost the effect of education on self-employment income. In a competitive market, rates of return on education should be equalized, and thus one might suspect a lack of competition. If competitive forces are absent, one would think it would affect the ability to establish a small business. Recall also that there are probably greater risks of small business ownership, compared to working as an employee in a large business. If so, it is expected to lead to a higher return on education and training used in self-employment, even under a hypothesis of competition.

We turn next to Tables III-12 and III-13 in which we estimate the impact of veterans status on income at each level of education. The veterans premium is shown in each table as having two components. The first is a base premium common to all education levels and the second is an increment at each education level. Both components are percent changes in income due to veteran status expressed as decimals. In both tables there are no significant differences in the veterans' premium between educational levels. The premium to wage earning veterans as a group remains high and statistically significant. The self-employed sample sizes are all small and many variables contain too much dispersion to permit statistically significant

Table III-12

Veterans' Premium¹ on Wage Income for NonWhite Males at Each Level of Education by War Period

<u>Variable</u>	<u>Vietnam</u>	<u>Between</u>	<u>Korea</u>	<u>WWII</u>
Base Premium	.17** (.03)	.186** (.06)	.20** (.07)	.26** (.07)
Increment ² at Level 1	.055 (.06)	.07 (.08)	-.046 (.08)	-.07 (.10)
Increment at Level 2	.033 (.04)	.004 (.07)	.021 (.09)	.017 (.11)
Increment at Level 4	-.14* (.07)	-.14 (.11)	.04 (.13)	.05 (.16)
Increment at Level 5	-.06 (.07)	.08 (.10)	-.02 (.12)	-.14 (.16)
N	46,317	22,909	14,214	14,139
R ²	.75	.76	.77	.80

Notes:

1. Premiums are percentages of hourly earnings expressed as a decimal
2. Increment at Level 3 is set to zero. See Table II-11 note 2 and Table II-5 note 2 for a description of the specification of the regression used to estimate the premiums.

* Denotes significant at .05 level

**Denotes significant at .01 level

Table III-13

Veterans' Premium¹ on Self-employment Income for Nonwhite Males at Each Education Level by War Period

<u>Variable</u>	<u>Vietnam</u>	<u>Between</u>	<u>Korea</u>	<u>WWII</u>
Base Premium	.057 (.26)	.035 (.30)	-.12 (.37)	.18 (.43)
Increment at Level 1	.47 (.46)	-.16 (.46)	-.17 (.46)	-.44 (.47)
Increment at Level 2	.09 (.34)	-.42 (.41)	.68 (.47)	-.53 (.51)
Increment at Level 4	-.27 (.50)	-.97 (.54)	-.54 (.69)	-.40 (.67)
Increment at Level 5	-.26 (.43)	-.39 (.53)	-.61 (.55)	-.33 (.59)
N	2,301	1,802	1,165	1,209
R ²	.44	.45	.47	.45

Notes:

1. Percentage of hourly earnings expressed as decimal
2. Increment at Level 3 is set to zero

All coefficients are insignificant

estimates. We conclude from this that while nonwhite veterans earn premiums in wage employment, there is no systematic relationship of premium to educational level. Although the univariate analysis does indicate a relationship between education and veteran's premium, the multivariate analysis suggests that it is not a statistically significant one.

E. COMPARING VETERANS PREMIUMS FOR WHITES AND NONWHITES

The univariate presentation indicated clearly that whites earn more than nonwhites. We would expect that controlling for education will attenuate the differences observed in the aggregated table, but we continue to find a gap which varies from insignificance upwards. The task here is not to explain that differential - which is a difficult task - but rather to get some feeling for how veteran status affects the differential.

1. Wage Income

Table III-14 compares the multivariate analysis of wage income for whites and nonwhites. We can clearly see the difference in the magnitude of the veterans' premiums. Controlling for time on the job, the premium is 16 percent for nonwhite Vietnam veterans compared to 3.7 percent for white Vietnam veterans. With no control for time on the job, nonwhite Vietnam veterans enjoy a 36 percent premium while whites get only

Table III-14

Comparison of Wage Income Effects¹ for White and Nonwhite Males by War Period

<u>Variable</u>	<u>Vietnam</u>		<u>Between</u>		<u>Korea</u>		<u>WWII</u>	
	W ²	NW ³	W	NW	W	NW	W	NW
Veteran	.037** (.006)	.16** (.02)	.02** (.007)	.17** (.03)	.056** (.01)	.16** (.03)	.088** (.01)	.20** (.03)
Years of School	.06** (.001)	.05** (.002)	.057** (.001)	.04** (.003)	.05** (.002)	.04** (.004)	.042** (.002)	.03** (.004)
Experience	.025** (.001)	-.0012 (.003)	-.0007 (.002)	-.03** (.007)	-.033** (.006)	-.07** (.01)	-.064** (.009)	-.12** (.02)
Marital Status	.135** (.006)	.15** (.015)	.19** (.008)	.17** (.02)	.20** (.012)	.18** (.03)	.26** (.014)	.20** (.03)
N	182,941	46,317	119,233	22,909	67,093	14,214	100,264	14,139
R ²	.62	.75	.67	.75	.70	.77	.77	.80

Notes:

1. Effects are percentage changes in (hourly) wage income divided by 100
2. White Males
3. Nonwhite Males

Standard errors are in parenthesis
 * Denotes significant at .05 level
 **Denotes significant at .01 level

a 6.5 percent premium. This means the differences between veterans and non-veterans in job stability are larger among nonwhites. We find this phenomenon in all war periods but it is most pronounced for Vietnam.

2. Self-employment Income

A comparison of the white and nonwhite veterans' premium estimated from the multivariate analysis of self-employment income can be found in Table III-15. Since the veterans' premiums are generally not statistically significant for either nonwhites or whites, we cannot expect to report with much confidence about differences. The most general statement is that premiums are probably non-existent for either group. However the point estimates of the premiums are almost always negative for both whites and nonwhite and this consistency cannot be ignored. Also the point estimates of the negative veterans' premiums are generally very much larger for nonwhites. Thus we conclude that relative to nonwhite non-veterans, nonwhite veterans are even less financially successful at self-employment. We further conclude that military service is not a significant factor in moving nonwhite males toward parity with whites when veterans become business owners. One explanation for this is that small business ownership is competitive enough that it already affords greater equality to nonwhite than is the case for wage employment. We pursue this issue in the next section.

Table III-15

Comparison of Self-Employment Income Effects¹ for White and Nonwhite Males by War Period

Variable	Vietnam		Between		Korea		WWII	
	W ²	NW ³	W	NW	W	NW	W	NW
Veteran	-.012 (.033)	.04 (.14)	.025 (.04)	.34 (.20)	.06 (.03)	.07 (.17)	.038 (.04)	-.024 (.15)
Years of School	.088** (.004)	.07** (.015)	.065** (.007)	.13** (.02)	.07** (.005)	.06** (.02)	.062** (.006)	.03 (.02)
Experience	.042** (.006)	-.017 (.021)	-.045* (.025)	-.06 (.04)	-.014 (.01)	-.07 (.06)	-.03* (.012)	-.16* (.08)
Marital Status	.168** (.03)	.28** (.011)	.33** (.05)	.38* (.16)	.21** (.04)	-.28 (.17)	.22** (.02)	-.002 (.15)
N	25,582	2,301	23,328	1,802	13,512	1,165	18,773	1,209
R ²	.25	.44	.28	.44	.28	.46	.38	.45

Notes:

1. Effects are percentage changes in (hourly) self-employment income divided by 100
2. White Males
3. Nonwhite Males

Standard errors are in parenthesis
 * Denotes significant at .05 level
 **Denotes significant at .01 level

F. COMPARING RACE PREMIUMS BETWEEN WAGE AND SELF-EMPLOYMENT

So far this study has been concerned mainly with comparisons between veterans and non-veterans. We have been studying whether veterans earn more than non-veterans in self-employment and wage income. We have seen that veteran status raises both white and nonwhite incomes. By comparing the veterans' premium between races, we have judged that military training was helping nonwhites to move toward parity with whites. Now we wish to compare the differentials between white and nonwhite incomes in terms of wages and self-employment earnings. Are race premiums (i.e., higher incomes for whites) larger or smaller among the self-employed than among wage earners? This will help us judge the extent to which small business ownership provides a vehicle for nonwhites to move toward parity with whites.

1. Discrimination and Self-employment

To the extent that the premiums to white workers reflect the existence of racial discrimination, comparisons of the premium in different areas of the economy can show where the discriminatory effects are smallest. There are several reasons to believe the effects of discrimination on income may be greater for employees selling their labor than for business owners selling their product. First, in order for discrimination to affect incomes, there must be a lack of competition in the market. White owned or

white managed firms hiring black workers may have more monopsony power than white customers buying the product of black owned firms. Secondly, employment generally involves more steady social contact than buyer-seller relations in the product market. White employers may discriminate because they or their white employees may wish to avoid social contact with nonwhites. Social contact is less intense in the product market, than it is in the labor market. (For example, my contact with the owner of a clothing store comes only when I buy clothes, while my contact with my colleagues on the job is steady.) Therefore, the ability and incentive will be greater for whites to discriminate in hiring nonwhite workers than to discriminate when purchasing the product of a nonwhite owned firm.

2. Univariate Analysis of the Race Premiums

Table III-16 compares the income differences between white and nonwhites for self-employment and wage income. Two samples were used, one composed only of veterans, the other composed only of non-veterans. For both the veterans sample and the non-veterans sample, the race premiums are much greater in wage income than they are in self-employment income. In fact race premiums in wage earnings are huge compared to those in self-employment in each war period and for both the veteran and the non-veteran samples. For example, in the Vietnam cohort of non-veterans, the race premium is 20.2 percent in self-employment income but 37.2 percent in wage income. For WWII non-veterans,

Table III-16

Comparison of Average Incomes for White and Nonwhite Males by Veteran Status, Income Type and War Period

War	Non-Veterans				Veterans			
	Self-Employment Income		Wage Income		Self-Employment Income		Wage Income	
	White	Nonwhite	White	Nonwhite	White	Nonwhite	White	Nonwhite
Vietnam	12691	10363	17674	12125	12546	10124	17035	13211
% difference	20.2%		37.2%		21.4%		25.3%	
Between	13455	12592	20391	13572	13957	11431	21187	16616
% difference	6.6%		40.1%		19.8%		24.2%	
Korea	13333	11511	19549	17884	13930	11836	21603	16214
% difference	14.7%		41.0%		16.3%		28.5%	
WWII	12509	11775	17659	10891	13930	11369	20865	14771
% difference	6.0%		47.4%		20.2%		34.2%	

Notes:

All differences are significant at the .05 level.

the premium is 6.0 percent in self-employment and 47.4 percent in wage income.

The contrast between the self-employment market and the wage market is greatest among older cohorts (i.e., earlier wars). Also the magnitude of the white premium for wage income increases as we move from younger to older cohorts. On the other hand, the magnitude of the premium for self-employment income is unchanged (in the veterans sample) or decreases (in the non-veterans sample). This suggests that the effects of discrimination are greater among older workers. This could result if discrimination was greater in the past than in the present and if the vestiges of past discrimination affect the current income of older workers more than they affect younger workers.

a) Comparison of Race Premiums by Veteran Status

One can also see the effect of veteran status on the white/nonwhite differentials and how it is different for wage and self-employment income. If we compare the wage differentials, they are far larger in the non-veteran sample than in the veteran sample. The average wage differential for the four war periods is 41.4 percent for non-veterans and only 28.1 percent for veterans. The average self-employment differential is 11.1 percent for veterans and 19.4 percent for non-veterans. This confirms the evidence offered before that veterans status helped nonwhites more than whites, mainly when they are wage earners.

3. Multivariate Analysis of Race Premiums

Because income determining characteristics such as experience, education, hours worked, etc., may differ between nonwhites and whites, the multivariate analysis offers more accurate estimates of income differentials. The same regression equations that were used to compute the veterans premium were applied to combined samples of whites and nonwhites. This allows a determination of the race premium, holding the other determinants of income constant.

The results of estimating the race differential from a combined sample of veterans and non-veterans is shown in Table III-17. They confirm the univariate analysis. For each war period, the premium to white workers is greater for wage income than for self-employment income. In two war periods, Between and Korea, the race premiums for self-employment incomes have a negative sign, (which means nonwhites do better than whites) although they are not statistically different from zero. This means that whites and nonwhites in those war periods have parity in self-employment.

The magnitude of the white race premium is smaller for the multivariate estimates than it is for the univariate estimates. This is expected since more factors have been held constant in the multivariate analysis. However the magnitude of the differences between the self-employment race premium and wage race premium are about the same in the univariate and multivariate samples. It is the magnitude of these differences

Table III-17

White/Nonwhite Income Differentials ¹ (in percent) for Wage Earners and Self-Employed by War Period

	<u>Wage Income</u>	<u>Self-Employment Income</u>
Vietnam	21.6** (0.7)	15.0** (5.0)
Between	19.3** (0.9)	-11.0 (5.6)
Korea	19.6 (1.2)	-3.5 (7.0)
WWII	14.1** (1.5)	9.6** (2.3)

** Significant at .01 level

1. Estimated using regression analysis with the same variables as were used in Table III-15. The differential is the regression coefficient of a dummy variable which takes on the value 1 if the individual is white. The differential is the difference in income between a white and a nonwhite who have the same income determining personal characteristics.

which offer confirmation that race differentials are indeed lower in self-employment.

We conclude that nonwhites do better relative to whites as self-employed than as wage earners. To the extent that this reflects a more competitive market with less discrimination, it means that business ownership offers nonwhites an important vehicle for attaining parity with whites. It is still a puzzle as to why self-employment rates are so much lower for non whites than for whites. Perhaps nonwhites are much less able to raise capital for business ownership.

G. SUMMARY OF SECTION III

For nonwhite males, as well as white males, being a veteran tends to lower the likelihood that a person will become a small business owner. The effect of veteran status in lowering the probability of self-employment is stronger for nonwhites in the Korea and WWII periods but weaker in the Vietnam and Between War periods. For Vietnam cohorts, being a veteran lowers the probability of self-employment by 3.6 percent for nonwhites and 6.3 percent for whites. Given that the rate of self-employment among nonwhite Vietnam veterans is only 3.2 percent, the reduction by 3.6 percent represents more than a cutting in half of the likelihood of self-employment. For whites the drop represents a cut by one-third in the likelihood of self-employment. For WWII cohorts, being a veteran lowers the probability of self-

employment by 9 percent for nonwhites and 8 percent for whites. This represents a cut of about one-third for both groups.

In the analysis of financial success, veteran status increased wage income but lowered self-employment income of nonwhites. In all war periods, the veterans' premium on wage income was very much larger for nonwhites than it was for whites. For the Vietnam war period, the nonwhite veterans' premium was between 16 and 36 percent as compared to the premium for whites which was between 3.7 and 6.5 percent. The evidence indicated that veterans hold more stable jobs in the sense that they are more often full time jobs and they are less likely to be interrupted by layoffs. One explanation for the greater premium for nonwhite veterans is that job training provided by the military is more useful for nonwhites. Since they probably have fewer opportunities for alternative forms of job training, it seems reasonable to expect that military job training would be more useful to nonwhites.

In contrast to the large premiums received by wage earning nonwhite veterans, the financial success of self-employed nonwhite veterans has been slightly below that of self-employed non-veterans. The difference between veteran and non-veteran income was not statistically different from zero, but the sign of the difference was consistent in each period. In this regard the performance of the self-employed nonwhite veteran resembled that of his white counterpart.

We have also investigated the magnitude of racial income differences in self-employment as compared to wage employment. We

have found them to be much smaller in self-employment, which indicates that business ownership affords more equality for nonwhites.

We conclude that military service has raised incomes of nonwhites even more than it has raised the income of white veterans. In this sense military experience has been a vehicle for wage earning nonwhites to attain parity with whites. Self-employment has been a similar vehicle for nonwhites in general, but less so for nonwhite veterans.

SECTION IV

ANALYSIS OF FEMALES

The objective of this section is to compare self-employment rates and financial success of female veterans and non-veterans. A second objective is to compare women with men in both dimensions. We have already seen that for males, veteran status is associated with lower self-employment rates and with greater financial success as an employee and roughly equal financial success as an employer. We now wish to see whether the association between veteran status and financial success is stronger or weaker among women as compared to men. Does the greater financial success of veterans in wage employment extend to self-employment for female veterans? The answers to these questions are relevant to the broader issue of whether military experience and/or business ownership help women attain financial parity with men.

A. UNIVARIATE ANALYSIS OF FEMALE SELF-EMPLOYMENT

This sub-section will discuss the rate of self-employment among women. The univariate analysis will break down women into white and nonwhite categories. All women are grouped together in the multivariate analysis.

1. Ungrouped Data

Table IV-1 presents the ungrouped self-employment rates for white and nonwhite females. It shows that, for both races, there is generally a higher frequency of self-employment among non-veterans. The difference is substantial in the Vietnam period, but it declines as we move to the earlier wars. Both white and nonwhite WWII veterans are, in fact, more frequently self-employed than non-veterans. A smaller difference between veteran and non-veteran self-employment for cohorts of the earlier wars was observed for males as well. However for males, even WWII veteran self-employment was below non-veteran self-employment. One explanation for this difference between males and females is that many of the females in the older cohort are those who have returned after an absence from the labor force due to child raising. It is possible that these veterans are far more inclined toward self-employment than their non-veteran cohorts.

As compared to males, the gap between veteran and non-veteran self-employment among women is smaller. Furthermore, not all differences among females are statistically significant. This is in part due to the relatively small number of self-employed female veterans in the population (and in the sample). The frequency of self-employment for females is about one-third to one-half the frequency for males. The frequency with which females enter the military is even lower.

Table IV-1

Self-Employment Rates (in percent) for Female Veterans and Non-Veterans by Race and by War Period

	<u>Vietnam</u>		<u>Between</u>		<u>Korea</u>		<u>WWII</u>	
	V	NV	V	NV	V	NV	V	NV
Whites	3.30	4.35	5.7	6.56	6.37	7.00	7.41	7.10
Ratio (NV/V)		1.32*		1.15*		1.10		.96
No. Obs.	11153	9906	5015	4298	4253	3643	10077	8574
Non Whites	1.04	1.98	1.48	3.26	3.53	2.86	6.16	4.58
Ratio (NV/V)		1.90*		2.20*		.81*		.74*
No. Obs.	2590	2320	877	829	567	454	568	459
All Races ^{1]}	2.87	3.90	5.07	6.03	6.04	6.54	7.34	6.97
Ratio (NV/V)		1.35*		1.18*		1.08		1.05
No. Obs.	13743	12226	5892	5127	4820	4097	10645	9033

Notes:

*Denotes significantly different from 1.0 at .05 level.

1. The self-employment rate for all races in all wars combined is 5.03%.

2. Breakdown by Education and Age

Tables IV-2 and IV-3 show self-employment rates by education and by age groups. Because of the small numbers of nonwhite, self-employed female veterans, the group results are shown only for whites. Table IV-2 shows the rates for veterans and non-veterans and Table IV-3 gives the ratio of the non-veteran self-employment rate to the veteran self-employment rate.

Except for the Vietnam period, the differences in female self-employment rates between age groups are small. This contrasts with the tendency for self-employment rates among males to rise with age within each war period. This difference between men and women indicates that work experience may be less a factor in determining self-employment among women. Also absent for females, is the tendency for the differential between veterans and non-veterans to diminish with age. This suggests that the lag in accumulation of business experience due to time in military service, is less of a factor for female veterans than it is for males.

The tendency of the veteran self-employment rate to catch up with non-veteran rate as we move to earlier wars and to exceed the non-veteran rate in WWII is apparent in most of the age and education groups. It is most visible in the youngest age group and the lowest education groups. In the highest education group, veterans self-employment exceeds non-veterans self-employment in each war period.

Table IV-2

Self-Employment Rates (in percent) for White Female Veterans and Non-Veterans by Education, Age and War Period

Education level (years)	<u>Vietnam</u>		<u>Between</u>		<u>Korea</u>		<u>WWII</u>	
	V	NV	V	NV	V	NV	V	NV
0-11	2.24	4.11	5.31	6.58	6.03	6.52	6.86	6.27
12	3.42	4.41	5.53	6.09	5.86	7.23	7.53	6.54
13-15	2.70	4.31	4.92	6.84	7.10	6.84	6.84	9.94
16	4.28	4.65	8.59	9.14	7.90	7.36	9.58	8.96
16+	4.64	4.17	7.02	5.87	5.92	7.25	7.33	6.30
<u>Age Group</u> ¹								
Group 1	1.65	1.79	5.91	7.68	6.67	6.35	9.84	5.89
Group 2	2.61	4.62	5.19	6.19	6.26	7.60	6.94	7.08
Group 3	5.02	6.02	6.15	6.59	6.33	6.78	7.57	7.38

Notes:

1. For Vietnam the age groups are:

Age group 1 - 22-26

Age group 2 - 27-31

Age group 3 - 32 up

For WWII the Age groups are:

Age group 1 - 49-53

Age group 2 - 54-58

Age group 3 - 59 up

For Between War the age groups are:

Age group 1 - 32-36

Age group 2 - 37-41

Age group 3 - 42 up

For Korea the Age groups are:

Age group 1 - 41-45

Age group 2 - 46-49

Age group 3 - 50 up

Table IV-3

Ratio¹ of Self-Employment Rates for Non-Veterans to Self-Employment Rates for Veterans by Education, Age and War Period for White Females

<u>Education Level (years)</u>	<u>Vietnam</u>	<u>Between</u>	<u>Korea</u>	<u>WWII</u>
0-11	1.83*	1.24	1.08	0.91
12	1.29	1.10	1.23	0.87
13-15	1.60*	1.39*	0.96	1.45*
16	1.09	1.06	0.93	0.94
16+	0.90	0.84	1.22	0.86
<u>Age Group²</u>				
Group 1	1.08	1.30*	0.95	0.60
Group 2	1.77*	1.19	1.21	1.02
Group 3	1.20	1.07	1.07	0.97

Notes:

1. Calculated as $\frac{\% \text{ self-employed of Non-Veterans}}{\% \text{ self-employed of Veterans}}$

2. See table IV-2 for age groups.

3. * denotes significantly different from 1.0 at .05 level.

The difference between the education groups is consistent with the view that higher self-employment rates among WWII veterans represents the effect of older women returning to the labor force. Highly educated women are less likely to have left the labor force, (since they have prepared for a career) so the effect will be small for them. The general conclusion here is that grouping by education and age does not change the basic result observed in the ungrouped data.

B. MULTIVARIATE ANALYSIS OF FEMALE SELF-EMPLOYMENT

Table IV-4 shows the effects of veteran status on the probability of self-employment. It indicates that only for the WWII cohort was there a statistically significant difference in the probability of self-employment between veterans and non-veterans. In this group, the probability of self-employment is one percent higher for a veteran than a non-veteran with the same experience, education etc. Although the effect of veteran status in the other periods was not statistically significant, it was nevertheless positive in each period.

The general conclusion from Table IV-4 is that after controlling for experience, education etc., the likelihood of self-employment among females is slightly higher for veterans. However, except for WWII, the differences were statistically insignificant. This is different from the univariate results which showed veterans less likely to be self-employed except for

Table IV-4

Effects of Veteran Status, Years of School and Race on the Probability of
Self-Employment (in percent) for Females

	<u>Vietnam</u>	<u>Between</u>	<u>Korea</u>	<u>WWII</u>
Veteran, All levels	0.4	0.4	0.3	1.0*
Veteran, E-level 1 ¹	-0.3	-0.5	-4.0	1.4
Veteran, E-level 2	0.3	0.2	-6.5**	1.5
Veteran, E-level 3	0.9	-0.7	-2.7*	0.0
Veteran, E-level 4	0.2	-3.1	-3.4	-0.9
Veteran, E-level 5	1.0	-5.2	-9.5**	-0.8
Years of School	0.3*	0.1	0.2	0.3*
Race	1.5	2.7*	2.6*	1.5*
N	21,251	9,021	7,595	20 172
R ²	.013	.02	.02	

Notes:

1. E-level = Education level

* Denotes the effect is different from zero at .05 significance level

**Denotes the effect is different from E-level 3 effect at .05 significance level

the WWII veterans. Differences in the effect of veterans status between education levels were not, in general, statistically significant. The tendency, observed in the univariate analysis, for the self-employment rates of veterans to exceed those of non-veterans in the highest education group, is not confirmed in the multivariate analysis. We do observe, however, that education alone has a significant effect on the probability of self-employment. Each year in school raises the probability of self-employment by 0.3 percent. The effect of race is significantly positive indicating that whites are more likely to be self-employed than non whites. This was visible in the univariate analysis and is confirmed here.

1. Comparison of Female and Male Self-employment Rates

As has been noted, women have significantly lower self-employment rates overall than men. This is true for veterans and non-veterans, white and non white. There is no surprise in this result. However, there is a significant difference that was entirely expected. Veteran men, both white and non white, are less inclined to enter self-employment than non-veteran men. Veteran women, on the other hand, are equally or slightly more inclined, on average, to enter self-employment than non-veteran women. This result, though not clearly predictable, is not quite as surprising, once one realizes that women who become veterans are quite likely more inclined to work to begin with. The selection mechanism by which individuals are selected for

ilitary service operates differently on men as compared to

UNIVARIATE ANALYSIS OF INCOME

1. Aggregate Data

Table IV-5 shows the wage and self-employment income for male veteran and non-veterans by war period. Separate figures are shown for whites and nonwhites. It is clear that incomes of male veterans are far greater than those of female non-veterans. White veterans earn more than white non-veterans, both as employees and as business owners, and they do so in each war period. Nonwhite veterans earn more as wage earners than nonwhite non-veterans in each war period and as business owners in all but one period. The veteran premium in wage income is about 10 percent for Vietnam veterans, about 27 percent for Between War veterans, and over 30 percent for Korea and WWII veterans. For self-employment income, the premiums are often greater, though they are far more erratic. Again, the small sample sizes for white self-employed make the estimates for them less accurate.

2. Breakdown by Education

Table IV-6 shows the incomes of veterans and non-veterans by level of education. The large veterans premiums observed in the

Table IV-5

Average Annual Wage Income and Self-Employment Income (in dollars) for Female Veterans and Non-Veterans by Race and by War Period

	<u>Vietnam</u>		<u>Between</u>		<u>Korea</u>		<u>WWII</u>	
	V	NV	V	NV	V	NV	V	NV
<u>Wage Income</u>								
Whites	9509	8518	11035	8655	12261	9098	11983	9067
% difference		11.6*		27.5*		31.1*		36.2*
No. Obs.	10711	9347	4673	3935	3915	3320	9208	7804
Non Whites	8649	7843	11183	8771	11215	8617	11336	8412
% difference		10.2*		27.5*		30.1*		34.1*
No. Obs.	2537	2232	858	787	547	434	532	432
All Females ^{1]}	9136	8388	11058	8674	12132	9042	11874	9033
% difference		8.9*		27.4*		34.1*		31.5*
No. Obs.	13248	11579	5531	4722	4462	3754	9800	8236
<u>Self-Employment Income</u>								
Whites	6969	4392	6795	5869	8485	4549	7525	5810
% difference		58.7*		15.3		86.5*		29.5*
No. Obs.	368	431	286	282	271	255	747	609
Non Whites	10191	6745	2732	5484	5863	3861	6615	5238
% difference		51.1		-50.1		86.5		29.5
No. Obs.	27	46	13	27	20	13	35	21
All Females ^{2]}	7189	4619	6618	5835	8304	4516	7485	5791
% difference		55.6*		13.4*		83.9*		29.2*
No. Obs.	395	477	299	309	291	268	782	630

Notes:

*Denotes % difference is significant at .05 level

1. For all wage earning Female veterans in all wars combined, the average annual wage income is \$10,674.
2. For all Female self-employed veterans in all wars combined the average annual self-employment income is \$7,407.

Table IV-6

Average Annual Wage Income and Self-Employment Income (In Dollars) by Education Level for White Female Veterans and Non-Veterans by War Period

Education Level	Type	Vietnam			Between			Korea			WW II		
		V	NV	% Dif.	V	NV	% Dif.	V	NV	% Dif.	V	NV	% Dif.
0-11	W	7393	6255	18*	8676	6908	26*	9256	7133	30*	9338	7252	28*
12	W	8385	7575	11*	9972	7916	25*	11138	8647	28*	10875	8884	22*
13-15	W	8926	8472	5*	11082	9901	12*	12343	9688	27*	11818	10089	18*
16	W	11767	10250	14*	13775	9565	44*	15206	10555	44*	14074	11775	19*
16+	W	14018	12049	16*	16128	12431	29*	17773	15920	12*	17235	14977	15*
0-11	S	7150	2263	216*	4889	6089	-19	7248	4235	71*	4384	5737	-23*
12	S	5938	4297	38*	5161	4886	6	7656	4670	63*	7482	5208	44*
13-15	S	5772	4799	20*	4559	6236	-27*	8312	3226	157*	7240	6077	19*
16	S	7655	4838	58*	8361	3437	143*	12777	6101	109*	10000	5538	80*
16+	S	11074	5260	110*	17958	13127	37*	9580	6439	49*	9106	10038	-9

W = wage Income S = Self-employment Income

* denotes % Difference is significant at .05 level

Table IV-7

Effects on Wage and Self-Employment Income for Females for All War Periods
(Entries are percentages expressed as decimals)

Variable	(a)		(b)	
	Wage Income		Self-employment	
	T ¹	NT ²	T	NT
Veteran	.09** (.01)	.29** (.03)	.28* (.14)	.20 (.19)
Years in School	.06** (.002)	.13** (.004)	.05** (.02)	.56** (.026)
Experience	-.0001 (.001)	.0008* (.003)	-.011 (.018)	.059** (.025)
Experience Squared	.00003 (.0006)	.00015 (.00006)	.0003 (.0003)	-.0009 (.0004)
Marital Status	-.11** (.01)	-.40** (.02)	-.45** (.11)	-.56** (.15)
Race	.00086 (.015)	.03 (.03)	-.15 (.21)	-.12 (.30)
N	58,112		2,349	
R ²	.93	.69	.56	.18

Notes:

1. Includes effects of hours and weeks worked.
2. Excludes effects of hours and weeks worked.

Standard errors are in parenthesis

- * Denotes significant at .05 level
 ** Denotes significant at .01 level

previous tables are observed in each of the education groups, although there is some tendency in the Korean and WWII periods for the differences to be smaller among the more educated women. The smaller veterans premiums for more educated women is consistent with the notion that part of the female veteran premium can be attributed to a self-selection process where more career-oriented women join the military. We suspect that career-oriented women are less likely to leave the labor force for extended periods and more likely to have full time jobs. More highly educated women are also more likely to have these attributes than less educated women. To the extent that veterans status and education overlap as indicators of career orientation, the difference between veterans and non-veterans will tend to be smaller for more educated women

The positive veterans premium for self-employment income generally holds up in each of the education groups, however, the small number of self-employed women veterans cause comparisons between groups to have limited value.

D. MULTIVARIATE ANALYSIS OF WOMEN'S EARNINGS

1. All Wars Together

Table IV-7 presents results of the multivariate analysis for wage and self-employment income for all wars together. For wage income, veterans earn significantly more than non-veterans and

this confirms the univariate results. Accounting for time worked makes a big difference for women, since the veterans' premium is 29 percent of annual earnings but only 9 percent of hourly earnings. The control for time worked also significantly lowers the positive impact of education, and the negative impact of marital status. The fact that the effect of marriage is negative by itself is very interesting because it is exactly the opposite of what was observed for men. Men received large earnings premiums from being married, while women sacrifice significant income possibilities when married. The interpretation of the smaller negative impact on the hourly rate of pay is that married women work less per year than unmarried, all else constant. This result is not unexpected.

Looking at self-employment income in Panel (b) of Table IV-7, veterans again earn more than non-veterans holding constant other variables. The estimates of the veterans premium are less robust than for wage earners and only the estimate obtained while controlling for time on the job is statistically significant. However, that estimate of the veterans premium on self-employment income is 28 percent and is higher than the 9 percent premium on wage income. The positive veterans premium among the self-employed is consistent with the earlier finding than among women, veterans are more likely to enter self-employment than non-veterans. This contrasts with the finding for veteran men, who were less likely to enter self-employment, and received no premium when they did.

The marriage effect is again large and negative, a finding

that this time is not significantly altered by accounting for time worked. One might gather from this that married, self-employed women are involved in quite different and lower paying occupations than their unmarried counterparts.

Overall, the effect of race is insignificant in all cases, though the sign is negative among the self-employed. If significant, this would indicate that women who are nonwhite and self-employed earn more than white women.

2. Results by War Period: Wage Income

The results by war are in Table IV-8. When time worked is not controlled the effect of veteran status is to raise wage income by between 22 percent and 35 percent. The effect is largest for Vietnam. Looking at hourly earnings, the impact of veteran status on wage earnings is much smaller -- between 6 percent and 10 percent. It is smaller for Vietnam than for WWII or Korea.

The R^2 figures are high, but much of the variance is explained by differences in weeks and hours on the job. Even without time variables, however, it is clear that these equations explain female wage incomes well.

3. Results by War Period for Self-Employment Income

The regression results for self-employment income are in Table IV-9. The sample sizes are quite small, and thus many

Table IV-8

Effects on Wage Income for Females by War Period
(Entries are percentages expressed as decimals)

Variable	Vietnam		Between		Korea		WWII	
	T ¹	NT ²	T	NT	T	NT	T	NT
Veteran	.06** (.02)	.35** (.056)	.006 (.04)	.22* (.08)	.067 (.04)	.23** (.08)	.10** (.03)	.25** (.05)
Years of School	.07** (.003)	.17** (.007)	.07** (.005)	.13** (.01)	.044** (.0057)	.097** (.01)	.06** (.004)	.10** (.0077)
Experience	.005* (.002)	-.017** (.006)	-.02** (.007)	.016 (.014)	-.07** (.017)	-.14** (.03)	-.13** (.02)	-.21** (.04)
Marital Status	-.03 (.017)	-.36** (.04)	-.13** (.03)	-.43 (.06)	-.16** (.03)	-.43** (.06)	-.18** (.019)	-.43** (.037)
Located in South	.67* (.33)	.80 (.50)	-.25 (.52)	-.06 (.67)	.83 (.51)	1.20* (.66)	-.12 (.30)	-.03 (.40)
Located in West	-.15 (.25)	-.05 (.40)	.31 (.43)	-.21 (.55)	.16 (.41)	-.04 (.53)	-.10 (.25)	.15 (.34)
Race	-.30 (.31)	-.53 (.50)	.07 (.51)	.07 (.70)	-.10 (.66)	.20 (.84)	.14 (.44)	.19 (.60)
N	20,618		8,639		7,259		19,242	
R ²	.93	.60	.92	.68	.93	.73	.93	.75

Notes:

1. Includes effects of weeks and hours worked.
2. Excludes effects of weeks and hours worked.

Standard errors in parenthesis

* - denotes significant at .05 level

** - denotes significant at .01 level

Table IV-9

Effects on Self-Employment Income for Females by War Period
(Entries are percentages expressed as a decimal)

Variable	Vietnam		Between		Korea		WWII	
	T ¹	NT ²	T	NT	T	NT	T	NT
Veteran	.43 (.27)	-.27 (.42)	-.29 (.38)	-.58 (.50)	.94* (.40)	1.63** (.51)	.19 (.21)	.17 (.29)
Years of School	.08** (.03)	.13** (.05)	.04 (.05)	.03 (.07)	.02 (.06)	.04 (.08)	.026 (.034)	-.020 (.046)
Experience	.004 (.03)	.07 (.05)	-.13* (.07)	.04 (.10)	-.09 (.18)	.06 (.23)	.19 (.17)	.43 (.23)
Marital Status	-.53* (.20)	-1.10** (.30)	-.28 (.33)	-.39 (.43)	-.78** (.33)	-.73 (.40)	-.40 (.17)	-.35 (.23)
Located in South	.67* (.33)	.80 (.50)	-.25 (.52)	-.06 (.67)	.83 (.51)	1.20* (.66)	-.12 (.30)	-.03 (.40)
Located in West	-.15 (.25)	-.05 (.40)	.31 (.43)	-.21 (.55)	.16 (.41)	-.04 (.53)	-.10 (.25)	.15 (.34)
Race	-.30 (.31)	-.53 (.50)	.07 (.51)	.07 (.70)	-.10 (.66)	.20 (.84)	.14 (.44)	.19 (.60)
N	633		405		359		953	
R ²	.66	.18	.45	.18	.50	.20	.61	.26

Notes:

1. Includes effects of weeks and hours worked.
2. Excludes effects of weeks and hours worked.

Standard errors in parenthesis

* - denotes significant at .05 level

** - denotes significant at .01 level

coefficients are insignificant. With time variables controlled veteran premiums for Korea and Vietnam are significant or close to significance. Korea and Vietnam also show large veterans premiums, but since the sampling error is large, very low and very high premiums both fall within the conventional confidence intervals.

We conclude from Table IV-9 that there is evidence of a positive premium for self-employed female veterans. This evidence was not found for white or nonwhite males.

Comparison to Males

Male and female earnings differ in one obvious respect -- women earn less than men. This is due, in part, to different weeks and hours worked. The average woman works about half the number weeks per year and hours per week as the average man. The incidence of part-time work and spells of unemployment are greater for women than men. Differences between women in this respect are likely to account for a greater portion of income difference than would be the case for men.

Table IV-10 gives a summary of the veteran premiums for white males and all females. For wage income, veteran women earn larger premiums than veteran men. There is also a much larger effect of time worked on the veterans premium for women, indicating that veteran women work much longer relative non-veteran women than veteran men do relative to non-veteran men. As pointed out above, this probably reflects a selection mechanism, wherein women, who are always volunteers for military service, (as opposed to men who are often drafted) have different

Table IV-10

Comparison of Veterans' Premium¹ (in percent) for White Males and Females by War Period

<u>Period</u>	<u>Hourly Earnings</u> ²		<u>Annual Earnings</u> ³		<u>Hourly Earnings</u>		<u>Annual Earnings</u>	
	<u>Men</u>	<u>Women</u>	<u>Men</u>	<u>Women</u>	<u>Men</u>	<u>Women</u>	<u>Men</u>	<u>Women</u>
All Wars	5.2*	9.0*	7.8*	29.0*	-0.5	28.0*	-4.0*	20.0
Vietnam	3.7*	6.0*	6.5*	35.0*	-1.2	43.0	-5.3	-27.0
Between	2.0*	0.6	4.0*	22.0*	-2.5	-29.0	-6.4	-58.0
Korea	5.6*	6.7	8.0*	23.0*	-6.0*	94.0*	-7.7	163.0*
WWII	8.8*	10.0*	12.8*	25.0*	3.8	19.0	-3.3	17.0

Notes:

1. Estimates are derived from the multivariate analysis
 2. Includes effects of weeks and hours worked
 3. Excludes effects of weeks and hours worked
- * Denotes significant at .05 level

job aspirations than non-veteran women.

For self-employment income comparing Tables IV-9 and II-10, white veteran men earn (insignificantly) negative premiums, while in the "all wars" category, veteran women tend to earn a positive premium. Although the positive premium for female veterans is not statistically significant in most of the individual war periods, it is significant in the estimates for all wars combined. Small sample size is likely to be responsible for the insignificance of the individual war coefficients for self-employed women.

E. SUMMARY OF SECTION IV

We have seen that veteran women are less likely to be self-employed than non-veteran women after controlling for education, experience, etc. However, the differences between veterans and nonveterans are statistically significant only for WWII where veterans were more likely to be self-employed. We have also seen that women veterans earn higher incomes than their non-veteran cohorts. Controlling for time worked, the veterans premium is 9 percent for wage income and 29 percent for self-employment income, in all wars combined. The wage premium was about 6 percent for Vietnam and Korea and 10 percent for WWII. A premium was also observed for self-employment income, though it was not statistically significant in each war period, in part because of the small sample sizes. For all wars combined, however, the premium was marginally significant. In virtually

every case the veterans premium for women was larger than for men. To the extent that this premium results from job training or screening provided by the military, its existence signifies that military experience is especially helpful to women. It provides a vehicle by which women can attain better jobs and move toward income parity with men. However, we caution that because women always volunteer for military service, the large veterans' premium for women could be the result of a self-selection process.

SECTION V

ANALYSIS OF THE DISABLED

This section covers disabled white and nonwhite males as a group. The number of disabled female and nonwhite veterans was too small to allow a separate analysis by sex and race. Therefore the analysis below only considers male disabled.

Unlike race and sex, disability is not a homogeneous classification. Since the extent of disability varies from person to person, comparisons between groups of disabled persons must be interpreted with caution. Our comparison of disabled veterans and non-veterans is valid only to the extent that the average disabilities in each group have the same effect on income and self-employment.

A. UNIVARIATE ANALYSIS

1. Aggregate Data

Table V-1 shows the self-employment rates of disabled male veterans and non-veterans. The figures follow the same pattern observed in previous groups. Veterans are less frequently self-employed than non-veterans but move closer to parity the earlier the war. For Vietnam, the self-employment rate is 9.5

Table V-1

Self-Employment Rates (in percent) for Disabled and Non-disabled Male Veterans^{1]} and Non-Veterans by War Period

	<u>Vietnam</u>		<u>Between</u>		<u>Korea</u>		<u>WWII</u>	
	V	NV	V	NV	V	NV	V	NV
<u>Disabled Males</u> ^{2]}								
% Self-employed	9.5	13.7	13.2	17.9	15.6	21.4	19.4	23.2
Ratio NV/V	1.44*		1.36*		1.37*		1.19*	
N	28,646	9,047	18,259	6,903	24,487	4,082	51,247	4,169
<u>Nondisabled</u> ^{3]}								
% Self-employed	8.1	12.2	12.5	16.1	14.1	17.0	16.4	18.4
Ratio NV/V	1.51*		1.29*		1.21*		1.12*	
N	452,390	173,119	61,863	120,210	300,525	49,543	461,246	43,8

Notes:

1. Includes white and nonwhite males
*Denotes significantly different from 1.0 at .05 level
2. For disabled veterans in all wars combined, the self-employment rate is 15.4%
3. For non-disabled male veterans in all wars combined, the self-employment rate is 12.7%

percent for veterans compared to 13.7 percent for non-veterans. This means that veterans are only two-thirds as likely to be self-employed as non-veterans. For WWII, the self-employment rates for veterans and non-veterans are respectively 19.4 percent and 23.2 percent.

2. Comparison of Disabled and Non-disabled

Most of this study deals with comparisons of veterans and non-veterans. However it is worthwhile at this point to compare all disabled and all non-disabled. In Table V-1 we can see the self-employment rates for disabled males and for non-disabled males. This allows us to compare the average self-employment rate of the disabled to the non-disabled. We observe that for both veterans and non-veterans, the self-employment rates of the disabled are higher than those for the non-disabled. In other words, disabled individuals are more likely to be self-employed than non-disabled. This pattern holds in each war period but it is stronger in the earlier war periods.

Apparently business ownership is a more preferred option for the disabled. One explanation is that self-employment gives more flexibility in adjusting to one's disability. An example of this would be an individual who works out of his home because his disability limits his travel.

3. Breakdown by Education

Table V-2 breaks down self-employment by education and age. First we see that for both veterans and non-veterans, self-employment rises with education and with age. Also, differences between the self-employment rate of veterans and non-veterans diminish as education increases in all war periods. For Vietnam, the difference (as indicated by the ratio NV/V in Table V-1) also diminishes with age. The most important point is that grouping by age and education does not change the conclusion, drawn from the ungrouped data, that veterans are less likely to become self-employed.

B. MULTIVARIATE ANALYSIS OF SELF-EMPLOYMENT

1. Disabled Veterans and Non-veterans

Table V-3 contains the results of the multivariate analysis of the probability of self-employment. It shows that veteran status clearly inhibits self-employment. In the Vietnam, Between and Korea periods, the probability of a veteran being self-employed is about 5 percent below the probability of a non-veteran being self-employed. For the WWII period, the same probability is below by 2.5 percent. These results are quite consistent with the univariate results which shows differences in self-employment rates of a similar magnitude and with a similar

Table V-2

Self-Employment Rates (in percent) for Disabled Veterans and Non-Veterans by Education, Age and War Period

<u>Education Group</u>	<u>Vietnam</u>		<u>Between</u>		<u>Korea</u>		<u>WWII</u>	
	V	NV	V	NV	V	NV	V	NV
0-11	8.49	12.44	12.21	16.63	14.43	20.13	18.15	21.94
12	8.50	13.87	12.42	19.67	15.17	23.25	18.45	26.10
13-15	9.33	14.29	12.93	17.67	15.67	22.10	20.17	22.58
16	12.09	14.56	17.16	21.02	17.03	25.44	23.12	30.47
16+	13.53	15.39	16.41	17.93	19.94	20.83	25.85	20.11
<u>Age Group</u> ¹								
Group 1	4.11	6.85	1.63	13.97	13.59	18.62	17.56	21.63
Group 2	7.61	11.37	12.63	16.52	15.86	20.38	18.59	23.34
Group 3	10.95	15.62	13.75	19.27	16.00	23.11	21.19	23.75

Notes:

1. For Vietnam the age groups are:

Age group 1 - 22-26

Age group 2 - 27-31

Age group 3 - 32 up

For WWII the age groups are:

Age group 1 - 49-53

Age group 2 - 54-58

Age group 3 - 59 up

For Between War the age groups are:

Age group 1 - 32-36

Age group 2 - 37-41

Age group 3 - 42 up

For Korea the age groups are:

Age group 1 - 41-45

Age group 2 - 46-49

Age group 3 - 50 up

Table V-3

Effects¹ on the Probability of Self-Employment Estimated from Regression Analysis for All Disabled Males

<u>Variable</u>	<u>Vietnam</u>	<u>Between</u>	<u>Korea</u>	<u>WWII</u>
Veteran	-.053 (.004)	-.055 (.005)	-.050 (.005)	-.025 (.003)
Years school	.004 (.0004)	.0017 (.0006)	.002 (.0007)	.003 (.0006)
Experience	.00001* (.0006)	.0024 (.001)	.0050 (.002)	.010 (.003)
Marital	.048 (.0037)	.050 (.004)	.045 (.005)	.045 (.004)
Race	.040 (.004)	.043 (.006)	.046 (.007)	.042 (.005)
N	22,188	18,508	15,755	32,667
R ²	.22	.23	.24	.20

Notes:

1: Effects are percentages expressed as a decimal (i.e. -.053 = -5.3%), all effects are statistically significant at .05 except those indicated by an asterisk.

Effects are regression coefficients estimated using the equation described in footnote #4 of text (all notes are at the end of Section VIII).

Standard errors in parentheses

trend between war periods. They suggest that veteran status reduces the likelihood of self-employment by about a third.

In all cases increased education positively affects the rate of self-employment. An interesting result suspected in earlier discussions, is the importance of labor force experience. In Vietnam, experience is unimportant in determining self-employment, all else constant. However, in the three earlier wars, it is increasingly important, and statistically significant. The older the disabled worker, all else constant, the more likely he is to take self-employment.

If one is married, there is a strong positive influence toward self-employment that is consistent across wars. Finally, white males are more likely to enter self-employment than nonwhites.

2. Comparison of Veteran's Effect for Disabled and Non-disabled Males

Comparing multivariate results in Table V-4, the veteran's effects are similar across wars for disabled and non-disabled, excepting WWII, where the negative impact is greater for the non-disabled. Thus a lower likelihood of self-employment of veterans relative to non-veterans exists for both the disabled and non-disabled. The magnitude of the impact is about the same in each case. This suggests that disabled and healthy veterans find self-employment an equally less attractive alternative compared to their non-veteran cohorts.

Table V-4

Effects¹ of Veteran Status on the Probability of Self-Employment for Disabled and Non-disabled Males by War Period

<u>Variable</u>	<u>Vietnam</u>	<u>Between</u>	<u>Korea</u>	<u>WWII</u>
Nondisabled White Males	-.063 (.0014)	-.058 (.002)	-.058 (.0024)	-.051 (.0022)
All Disabled Males	-.053 (.004)	-.055 (.005)	-.05 (.005)	-.025 (.003)

Notes:

1. Effects are percentages expressed as a decimal (i.e., -.063 = 6.3%)

Standard errors in parenthesis

All effects are significant at the .01 level

C. UNIVARIATE ANALYSIS OF INCOME

1. Aggregate data

Table V-5 shows the wage and self-employment income for disabled veterans and disabled non-veterans. For wage income, veterans earn more in each war period. The difference is 10.3 percent in the Vietnam period and rises in each war period, reaching 24.4 percent for WWII. For self-employment income, veterans earn slightly less than non-veterans in the Vietnam and Between periods, but substantially more in the Korea and WWII periods. These results show no evidence that disabled Vietnam veterans have fallen behind their non-veteran wage earning counterparts. In self-employment they are slightly behind, but no more than non-disabled veterans lag non-disabled non-veterans (see Table II-6).

2. Breakdown by Education

Table V-6 shows the breakdown of wage and self-employment income by education groups. The higher wage income for veterans is attenuated when education is held constant. Veterans continue to show higher incomes at the lower education levels, but they have lower incomes in the middle levels and only slightly higher wage income at the higher levels. The pattern is the same in each

Table V-5

Average Annual Wage and Self-Employment Income (in Dollars) of All Disabled Veterans and Non-Veterans by War Period

	<u>Vietnam</u>		<u>Between</u>		<u>Korea</u>		<u>WWII</u>	
	V	NV	V	NV	V	NV	V	NV
Wage Income ^{1]}	12,511	11,340	14,605	12,777	14,734	12,713	14,502	11,657
% difference	10.3*		14.3*		15.8*		24.4*	
N ^{2]}	25,683	7,687	15,686	5,567	20,425	3,138	40,714	3,123
Self-Employment ^{3]} Income	8,173	8,318	9,217	9,334	9,243	8,504	9,179	8,110
% difference	-1.7		-1.3		8.7*		13.1*	
N	2,714	1,236	2,417	1,239	3,821	874	9,960	96

Notes:

*Indicates % difference is significantly different from 1.0 at .05 level.

1. For all war periods combined, the average annual wage income of veterans is \$14,065.
2. N = sample size
3. For all war periods combined, the average annual self-employment income of veterans is \$9,052.

Table V-6

Average Annual Income from Wages and Self-Employment (in Dollars) for Disabled Male Veterans and Non-Veterans by Education and by War Period

<u>Wage Income</u>	<u>Vietnam</u>		<u>Between</u>		<u>Korean</u>		<u>WWII</u>	
	V	NV	V	NV	V	NV	V	NV
<u>Education Group</u>								
0-11	9,597	7,956	11,329	9,246	11,657	9,712	11,572	9,261
12	11,801	10,985	13,639	13,376	14,073	14,113	14,467	13,206
13-15	12,448	13,069	14,706	15,408	15,455	16,395	16,116	14,774
16	15,758	16,716 ^{fe.}	19,065	21,273	20,245	22,181	21,156	20,550
16+	17,714	17,109	21,099	20,969	21,832	21,001	22,437	22,496
<u>Self-Employment Income</u>								
<u>Education Group</u>								
0-11	7,291	7,759	7,573	8,238	7,790	7,560	7,678	6,868
12	7,358	7,904	8,642	9,494	8,742	8,882	8,701	9,523
13-15	7,532	8,414	8,370	8,660	8,658	10,068	9,000	8,708
16	9,356	7,627	10,304	11,091	12,994	5,850	10,814	9,903
16+	12,063	11,302	14,247	14,370	13,022	14,160	15,527	12,258

war period reinforcing the similarities by war encountered in the discussion of self-employment rates. In fact, the patterns with respect to wage income levels and self-employment rates are so similar that one might consider all disabled as drawn from the same sample.

Considering self-employment income, veterans do worse in more categories than not. Interestingly, college graduate veterans (level 4) do consistently better than non-veterans. Recall that non-veteran self-employment rates were highest in this category. Notice that the income levels at education level 1 are constant across wars, while for education level 5 they are rising. This is the expected result, discussed in the section on white males.

D. MULTIVARIATE ANALYSIS OF INCOME

1. All Wars Combined

Table V-7 presents results of the regression analysis of wage and self-employment income for all wars combined. For wage income, the veterans premium is positive and fairly large in size, 15 percent in terms of hourly earnings and, 25 percent in terms of annual earnings. In this regard, veterans who are disabled display the pattern of all previous groups; they work longer per year (in wage employment) than their non-veteran counterparts. There is a large positive premium in wages due to being married

Table V-7

Effects on Wage and Self-Employment Income Estimated from Regression Analysis for All Disabled Males for All Wars

Variable	Wage Income		Self-Employment	
	T ²	NT ³	T	NT
Veteran	.15** (.03)	.25** (.05)	.011 (.068)	-.064 (.08)
Years in school	.039** (.002)	.079** (.003)	.024** (.009)	.055** (.01)
Experience	-.015** (.002)	-.016** (.004)	-.005 (.01)	.009 (.01)
Experience Squared	.0001 (.00004)	.00007 (.00006)	-.00009 (.0002)	-.00036 (.0002)
Marital Status	.24** (.015)	.55** (.02)	.11 (.07)	.56** (.09)
Race	.09** (.02)	.35** (.03)	.07 (.06)	-.27 (.18)
N	79,553		9,565	
R ²	.82	.62	.52	.25

Notes:

1. Effects are percentage effects on income expressed as decimals (i.e. .15=15%)
2. Effects on hourly earnings.
3. Effects on annual earnings.

Standard errors in parenthesis

*Denotes significant at .05 level

**Denotes significant at .01 level

that is larger still in terms of annual earnings. Race is also significant in this equation. Whites who are disabled earn more than nonwhites; 9 percent if time worked is accounted for, 35 percent otherwise. The larger effect for race without control for time worked means that whites worked more per year than nonwhites. Finally, the rate of return to education is measured here as a modest 3.9 percent.

The results for self-employment income are less conclusive. As with the other male groups, there is no significant veteran's earnings premium in self-employment.

2. Results by War Period

Tables V-8 and V-9 contain the results by war. Table V-8 contains the results of wage earnings regressions. All else constant, veteran disabled earn much more than non-veteran disabled. The premium is largest for Between, and Vietnam where it ranges between 18 and 34 percent. In terms of hourly earnings WWII has the lowest premium at 12 percent. Table V-8 confirms the univariate analysis in showing positive veteran wage premiums.

The premium in annual wage earnings is higher than the premium in hourly wage earnings in all war periods but Korea. This means that Korean War disabled veterans tend to work fewer hours than their non-veteran cohorts. This could be a cohort effect, with Korea just entering a period of relatively declining health among the veteran disabled. Recall, we have no data on the

Table V-8

Effects¹ on Wage Income Levels Estimated from Regression Analysis by War Period for All Disabled Males

Variable	Vietnam		Between		Korea		WWII	
	T ²	NT ³	T	NT	T	NT	T	NT
Age	.18** (.03)	.34** (.05)	.21** (.04)	.30** (.06)	.15** (.04)	.10 (.06)	.12** (.03)	.22** (.04)
Age in	.04** (.003)	.09** (.005)	.033** (.004)	.077** (.006)	.04** (.005)	.077** (.007)	.04** (.004)	.064** (.0064)
Experience	-.013** (.004)	-.015 (.007)	-.03** (.009)	-.06** (.014)	-.03** (.017)	-.08** (.026)	-.08** (.02)	-.20** (.03)
Age at	.25** (.028)	.64** (.04)	.25** (.03)	.51** (.05)	.19** (.03)	.55 (.05)	.22** (.02)	.50** (.04)
Age at	.077** (.035)	.44** (.053)	.11 (.04)	.42** (.07)	.07 (.05)	.35** (.07)	.10* (.04)	.26** (.06)
	20,224		16,444		13,900		31,036	
	.83	.62	.84	.63	.84	.63	.79	.57

Effects are percentage changes in income expressed as a decimal

Effects on hourly earnings.

Effects on annual earnings.

Standard errors in parenthesis

*notes significant at .05 level

**notes significant at .01 level

Table V-9

Effects¹ on Self-Employment Income Estimated from Regression Analysis by War Period for All Disabled Males

Variable	Vietnam		Between		Korea		WWII	
	T ²	NT ³	T	NT	T	NT	T	NT
Veteran	-.096 (.17)	-.20 (.20)	-.25 (.17)	-.16 (.21)	-.17 (.15)	-.08 (.20)	.16 (.12)	-.08 (.15)
Years in School	.019 (.02)	.05* (.02)	.01 (.01)	.05* (.02)	.03 (.02)	.07* (.03)	.025 (.019)	.03 (.02)
Experience	-.018 (.02)	-.02 (.02)	.046 (.04)	.03 (.05)	-.10 (.08)	-.16 (.10)	-.13 (.09)	-.17 (.11)
Marital Status	-.05 (.15)	.51** (.17)	-.037 (.15)	.67** (.19)	-.08 (.16)	.34 (.21)	.17 (.14)	.59** (.17)
Race	.16 (.13)	.33 (.29)	-.59 (.39)	-.38 (.37)	.04 (.29)	-.22 (.37)	-.19* (.09)	-.40 (.30)
N	1962		2063		1854		3686	
R ²	.45	.23	.52	.26	.53	.22	.53	.26

Notes

1. Effects are percentage changes in income expressed as a decimal
2. Effects on hourly earnings.
3. Effects on annual earnings.

Standard errors in parenthesis

* Denotes significant at .05 level

**Denotes significant at .01 level

extent of the disability per worker. Years of school again have a positive impact on earnings, though the coefficients are low. The rates of return to disabled schooling should be lower, since investments in schooling were largely done before injury, and hence optimal ex post schooling levels would have been lower as well. Again, highly educated disabled work longer hours.

Experience has an interesting effect. All else constant, it is negative, indicating that disability increases with age. The effect is larger the earlier the war. This is consistent with the results for all wars combined where experience lowered income, but at a decreasing rate.

The coefficient on marital status is again large and positive. And finally, white workers who are disabled earn more, and appear to work longer hours.

This last observation supports a favorite theme - in this case with a twist. It has been argued that better jobs are held by those who work longer hours, all else constant. Thus the effect of the time worked variables are critical. In Table V-8, white males work longer (since the race effect is greater for annual earnings), and it is very likely the case that they have the better jobs, for a host of reasons. This lends support to the view expressed earlier that veterans hold the better jobs, all else constant, and are thus either better trained, within educational category, more able or both.

Turning to the analysis of self-employment income in Table V-9, we receive confirmation of the univariate analysis - veteran

coefficients are all negative, save WWII. However because of the small samples, the results are not statistically significant.

Schooling has a positive, though again, insignificant effect, while again, experience has a negative influence. Marital status has a mixed effect, as does race.

Generally, the self-employment equations have a difficult time explaining very much because of sample size problems.

3. Comparison of Income Disabled and Non-disabled

We have seen that disabled veterans earn more in wage income, all other things constant, than disabled non-veterans. We now consider how the income premium for disabled veterans compares to the income premium of non-disabled veterans. Table V-10 compares the veteran's premiums for disabled males and non-disabled white males, by war period and for all wars together. These premiums were all estimated using regression analysis.

Comparing wage incomes, the disabled benefit more from military service relative to non-disabled. For all wars together, the premium in both hourly and annual earnings is roughly three times as large for the disabled. The effect of including time variables is therefore the same for both groups. By war the results are similar, except for large differences in the Between war group, where disabled premia are eight to ten times larger than for non-disabled. This probably is related to the lack of actual combat in this period. Finally, for non-disabled veterans,

Table V-10

Comparison of Veterans Income Premium (in percent) for Disabled and Non-Disabled White Males by War Period

Period	<u>Wage Income</u>				<u>Self-Employment Income</u>			
	<u>Hourly</u> ¹		<u>Annual</u> ²		<u>Hourly</u>		<u>Annual</u>	
	Non-Disabled	Disabled	Non-Disabled	Disabled	Non-Disabled	Disabled	Non-Disabled	Disabled
All Wars	5.2*	15.0**	7.8**	25.0**	-0.5	1.1	-4.0*	-6.4
Vietnam	3.7**	18.0**	6.5**	34.0**	-1.2	-9.6	-5.3	-20.0
Between	2.0**	21.0**	4.0**	30.0**	-2.5	-25.0	-6.4	-16.0
Korea	5.6**	15.0**	8.0**	10.0**	-6.0*	-17.0	-7.7	-8.0
WII	8.8**	12.0**	12.8**	22.0**	3.8	16.0	-3.3	-8.0

Source:

Notes:

*Denotes significant at .05 level

**Denotes significant at .01 level

1. Includes effects of weeks and hours worked

2. Excludes effects of weeks and hours worked

the premiums are larger the earlier the war, while for disabled veterans the premiums are smaller the earlier the war.

For self-employment income, all premiums are insignificant except for a small negative impact on self-employment income among the non-disabled when time worked is not accounted for, in the All Wars sample. The point estimates, however, are all negative, except for WWII time-included samples.

The conclusion drawn from this comparison is that veteran status has a greater impact on wage income of disabled workers than non-disabled workers. Rather than lagging behind, Vietnam veterans in this group are far outperforming their non-veteran disabled counterparts.

E. SUMMARY OF SECTION V

Disabled veterans and non-veterans are more inclined toward self-employment than healthy persons. However veterans in both groups are less likely to be self-employed than non-veterans. The lower likelihood for veterans holds more for Vietnam veterans than for those of WWII.

Disabled veterans earn more as employees than do disabled non-veterans. The veteran's premium is greater for Vietnam and Between war veterans than it is for WWII veterans. For Vietnam veterans, the premium is between 18 percent and 34 percent. The veteran's premiums for disabled veterans were two or three times larger than the premiums for veterans who were not disabled.

In terms of self-employment income, there are no statistically significant differences between veterans and non-veteran performance. Thus wage employment, as opposed to business ownership, has been the more financially rewarding alternative for disabled veterans.

SECTION VI

SUMMARY COMPARISON OF ALL GROUPS

This section will bring together regression results for all demographic groups in a final comparison. Tables VI-1 and 2 contain the income effects for all wars combined for the four demographic groups. Table VI-1 contains the effects on wage earnings. All equations indicate sizable positive veteran premiums-- ranging from a low of 5.2 percent for white males when weeks and hours are held constant to 33 percent for non-white males when weeks and hours are not controlled. Comparing the premium when weeks and hours are controlled, white males earn the lowest veteran premium, while non-white males earn the highest. Disabled males and females are in between. Thus it is clear that the veteran premium is larger for minority groups than for white males. Not controlling for weeks and hours causes the veterans premium to almost double and frequently to more than double for the three minority groups. This indicates that veterans work more per year and per week than non-veterans, all else constant. As discussed, it may be evidence that veterans, in fact, get the "better" jobs, on average.

Another difference between the groups is the marital coefficient. It is positive large, and significant for all males, and negative, large, and significant for women. The

Table VI-1

Comparison of the Effects¹ on Wage Income Between Sex, Race and Disability Groups for All War Periods Combined

Variable	White Males		Non-White Males		All Females		Disabled Males	
	T ²	NT ³	T	NT	T	NT	T	NT
Veteran	.052** (.004)	.078** (.005)	.169** (.013)	.33** (.02)	.09** (.01)	.29** (.03)	.15** (.03)	.25** (.05)
Years in School	.056** (.0006)	.08** (.0008)	.047** (.0015)	.10** (.002)	.06** (.002)	.13** (.004)	.039** (.002)	.079** (.003)
Experience	.0173** (.0006)	.04** (.0004)	-.0023 (.0015)	.02** (.002)	-.0001** (.001)	-.008** (.003)	-.015** (.002)	-.016** (.004)
Experience Squared X 100	-.030** (.001)	-.070** (.002)	.004 (.003)	-.020** (.004)	.003 (.063)	.015* (.006)	.010* (.004)	.007 (.006)
Marital Status	.156** (.004)	.51** (.006)	.166** (.01)	.69** (.016)	-.11** (.011)	-.40 (.02)	.24** (.015)	.55* (.02)
Race					.00086 (.015)	.03 (.03)	.09** (.02)	.35 (.03)
N	540,030		104,064		58,112		79,553	
R ²	.70	.44	.76	.43	.93	.69	.82	.62

Notes

1. Effects are percentage effects on income expressed as a decimal
2. Effects on hourly earnings.
3. Effects on annual earnings.

Standard errors in parenthesis

*Denotes significant at .05 level

**Denotes significant at .01 level

negative effect of marital status for women results because unmarried women are unlikely to have left the labor force to raise children. It also reflects a division of labor between married couples for which men have the primary responsibility for earning income and women have the primary responsibility for working in the home and caring for children.

Finally, the explanatory power of the female equation is higher than it is in the other groups, indicating that the included variables account for more of the variance female wage earnings.

Table VI-2 presents the combined wars results for self-employment income. The veteran effects are generally negative and insignificant, except for women where there is a large, but barely significant premium to veteran status. Thus we conclude that veterans do not do as well as non-veterans, or at least do no differently from non-veterans with the possible exception of females. For white males, the R^2 figures are lowest, indicating more unexplained variance. No doubt the variety of reasons for white male self-employment exceeds that for the other groups.

Tables VI-3 and VI-4 present comparisons of veteran coefficients for all groups by war. We will use white males as a standard for comparison as we have throughout the study. White males earn larger wage premiums in earlier as compared to later wars. Also, the premium for hourly

Table VI-2

Comparison of Effects¹ on Self-Employment Income Between Sex, Race and Disability Groups for All War Periods Combined

Variable	White Males		Non-White Males		All Females		Disabled Males	
	T ²	NT ³	T	NT	T	NT	T	NT
Veteran	-.005 (.01)	-.04* (.02)	-.134* (.07)	-.11** (.09)	.28* (.14)	.20 (.19)	.011 (.068)	-.064 (.08)
Years in School	.07** (.002)	.10** (.002)	.07** (.007)	.13** (.009)	.05** (.02)	.056* (.026)	.024* (.009)	.055** (.01)
Experience	.02** (.003)	.04 (.003)	.022* (.01)	.046* (.01)	-.011 (.018)	.059* (.025)	-.005 (.01)	.009 (.01)
Experience Squared	-.0004 (.00005)	-.0008 (.00006)	-.0003** (.0001)	-.0006** (.0002)	.0003 (.0003)	-.0009* (.0004)	-.00009 (.0002)	-.00036 (.0002)
Marital Status	.20** (.02)	.49** (.02)	.12** (.07)	.45** (.08)	-.45** (.11)	-.56** (.15)	.11 (.07)	.56** (.09)
Race					-.15 (.21)	-.12 (.30)	.07 (.06)	-.27 (.18)
N	81,195		6,480		2,349		9,565	
R ²	.30	.09	.44	.13	.56	.18	.52	.25

Notes

1. Effects are percentage effects on income expressed as a decimal
2. Effects on hourly earnings.
3. Effects on annual earnings.

Standard errors in parenthesis

*Denotes significant at .05 level

**Denotes significant at .01 level

Table VI-3

Comparison of the Veteran's Premium in Wage Income Between Sex, Race and Disability Groups by War Period.

<u>Variable</u>	<u>Vietnam</u>		<u>Between</u>		<u>Korea</u>		<u>WWII</u>	
	T ¹	NT ²	T	NT	T	NT	T	NT
White Males	3.7** (0.6)	6.5** (0.8)	2.0** (0.7)	4.0** (1.0)	5.6** (1.0)	8.0** (1.5)	8.8** (1.0)	12.8** (1.8)
Non-White Males	16.0** (2.0)	36.0** (3.0)	17.0** (3.0)	35.0** (4.0)	16.0** (3.0)	30.0** (5.0)	20.0** (3.0)	33.0** (5.0)
Females	6.0** (2.0)	35.0** (5.6)	0.6 (4.0)	22.0* (8.0)	6.7 (4.0)	23.0** (8.0)	10.0** (3.0)	25.0** (5.0)
Disabled Males	18.0** (3.0)	34.0* (5.0)	21.0** (4.0)	30.0** (6.0)	15.0** (4.0)	10.0 (6.0)	12.0** (3.0)	22.0** (4.0)

Notes

1. Effects on hourly earnings.
2. Effects on annual earnings.

Standard errors in parenthesis

*Denotes significant at .05 level

**Denotes significant at .01 level

Table VI-4

Comparison of Veterans' Self-Employment Income Premium (in percent) Between Sex, Race and Disability Groups by War Period

<u>Variable</u>	<u>Vietnam</u>		<u>Between</u>		<u>Korea</u>		<u>WWII</u>	
	T ¹	NT ²	T	NT	T	NT	T	NT
White Males	-1.2 (3.3)	-5.3 (3.0)	-2.9 (4.0)	-6.4 (5.0)	-6.0 (3.0)	-7.7 (4.0)	3.8 (4.0)	3.3 (4.0)
Non-White Males	4.0 (14.0)	-10.0 (17.0)	-33.0* (16.0)	-34.0 (20.0)	-7.0 (17.0)	-6.0 (27.0)	-24.0 (15.0)	-4.0 (19.0)
Females	43.0 (27.0)	-27.0 (42.0)	-29.0 (38.0)	-58.0 (50.0)	94.0* (40.0)	163.0** (51.0)	19.0 (21.0)	17.0 (29.0)
Disabled Males	-9.6 (17.0)	-20.0 (20.0)	-25.0 (17.0)	-16.0 (21.0)	-17.0 (15.0)	-8.0 (20.0)	16.0 (12.0)	-8.0 (15.0)

Notes

1. Includes control for weeks and hours
2. Excludes control for weeks and hours

Standard errors in parenthesis

*Denotes significant at .05 level

**Denotes significant at .01 level

earnings is roughly one-third to one-half of the premium for annual earnings. Comparing non-white males to white males, the premium is much larger for the former group. The impact of time worked is larger, much larger in absolute terms--as much as 20 percent--and larger in proportional terms as well. Unlike the case of white males, there is no relationship between war period and premium for nonwhites.

Next we take females and compare them to both male groups. In this case a major difference is seen. In terms of hourly earnings, women get fairly small premiums -- not much more than white males, and much less than non-white males. However, in terms of annual earnings the premium for women is large. As discussed above, this is probably an indication that veteran women are different than non-veterans in several important and unmeasured ways. They are much more likely to be involved in full-time employment, which is probably an indication of a different set of attitudes and motivations. The notion that a "career minded" woman is more likely to volunteer for military duty could explain this result.

Finally, disabled males (who are almost entirely white males) have premiums for veteran status that are closest in magnitude to non-white males. They are considerably larger than those for white males. In contrast to white males, whose premiums rise the earlier the war, those for disabled males fall as one goes back in time. Comparing to other minorities -- non-white men and all women, the impact of

time worked on the veteran premium for the disabled is much smaller. In fact, the proportional difference between the disabled veterans premium with and without the time effect is closer to the pattern for white males.

Summing up the discussion of wage income, the three minority groups benefit more, overall, from veteran status than do white males. The benefit is largely accounted for by the positive impact on time worked of veteran status, which in some sense might be considered an additional benefit of veteran status. In fact, the two facts of higher income and more stable (longer time) jobs are quite consistent with one another. If one thinks of veterans as having either greater human capital or greater ability and then as being able to choose higher paying jobs, it is predictable that they will also choose more stable, "better" jobs (all else constant). In other words, from the perspective of a Hedonic model of wages, one would expect additional resources available to veterans to be "spent" to some extent on all available commodities. Wages and working conditions are those two commodities here.¹¹

Turning to the comparative results for self-employment income in Table VI-4, it is clear that veteran status is generally negatively related to self-employment earnings. However, many coefficients are insignificant, thus we conclude that there is not much statistical relation between the two variables. This finding is consistent with the findings that veterans are less frequently self-employed

than non-veterans, and paid significant premiums in wage employment. The story is, therefore, internally consistent, the upshot of it being that veterans improve their economic standing to the extent that they are employees, and that minorities improve themselves even more than do white males.



SECTION VII

ANALYSIS OF OCCUPATION CHOICE AND SELF-EMPLOYMENT

In this section we consider several issues related to veteran's choice of occupation and its effect on income and the likelihood of self-employment. First, we wish to identify which occupations veterans select and which they avoid. This could provide support for the theory that the higher income of veterans results from job training provided by the military. If the theory is correct, we expect that veterans will be clustered in those occupations where the skills in military jobs match the skills needed in civilian jobs. Second, we have shown in the previous section that holding constant age, education experience etc., veterans are less likely to be self-employed than non-veterans. Now we wish to determine the extent to which the lower likelihood of self-employment results from lower opportunities for self-employment in those occupations for which veterans have been trained. If occupational opportunities for self-employment are held constant, are veterans still less likely to be self-employed?

The previous sections have also demonstrated that financial success at self-employment is generally lower for veterans. At the same time income from wages is generally higher for veterans. To what extent are these differences

attributable to veterans choice of occupation? Since levels of non-pecuniary income differ by occupation, holding occupation effects on income constant may offer additional insight into the income differential between veterans and non-veterans.

A. ANALYSIS OF OCCUPATION CHOICE

1. Measuring Occupation Choice

We measure veterans' choice of occupation by comparing the percentage of all veterans in a given occupation with the percentage of all non-veterans in that occupation. We do this for each occupation by computing the following ratio:

$$\text{Ratio} = \frac{\% \text{ of veteran population in occupation}}{\% \text{ of non-veteran population in occupation}}$$

The numerator of this ratio is the fraction of the veteran population in the occupation and the denominator is the fraction of the non-veteran population in the occupation. When the ratio is greater than one, it means that in comparison with all other occupations, this occupation is more frequently chosen by veterans than by non-veterans. When the ratio is less than one, it means that the occupation is relatively less frequently chosen by

veterans. Hereafter we will refer to this ratio as the measure of "veterans' relative occupational choice." We have computed this measure for white males in each of 503 occupations identified by the census. The results are in Appendix B-1 and B-2.

In interpreting these tables one should keep in mind that the measure of relative occupational choice tells only how veterans' choices compare with non-veterans' choices. It does not tell whether the actual number of veterans in an occupation is large or small. Thus in many instances an occupation which measures high in terms of relative choice will account for only a small fraction of the total population of employed veterans.

2. Occupations Most and Least Chosen by Veterans

Table VII-1 shows a list of the ten relatively most and least chosen occupations from the 503 occupations of Appendix B. These are the ten occupations with the highest and lowest values of relative occupational choice. A separate list is shown for each war period.

Among the relatively most chosen occupations are those associated with aviation - namely air traffic controllers, airplane pilots and mechanics and atmospheric scientists. Air traffic controllers appear on the list of most chosen in each war period and pilots appear in all but WWII. Other types of occupations most chosen are those associated with

Table VII-1

Veteran's Most Chosen and Least Chosen Occupations by War Period

<u>War</u>	<u>Most Chosen</u>	<u>% Self-Employed</u>	<u>Least Chosen</u>	<u>% Self-Employed</u>
Vietnam	Air Traffic Controllers	0.0	Psychology Teachers (College)	0.0
	Airplane Pilots	4.1	Podiatrists	75.8
	Aircraft Engine Mechanics	1.3	Parking Lot Attendants	1.3
	Data Processing Equip. Reporters	0.4	Law Teachers (College)	0.0
	Apprentice Plumbers	0.0	Theology Teachers (College)	0.0
	Mail Carriers, Postal Services	0.0	Pressing Machine Operators	1.1
	Aircraft Mechanics (exc. engines)	4.3	Mathematical Scientists NEC	0.0
	Postal Clerks	0.0	Foreign Language Teachers	0.0
	Electrical Technicians	1.2	Elevator Operators	0.0
	Rail Vehicle Operators NEC	<u>0.0</u>	Chemistry Teachers (College)	<u>0.0</u>
	Average % Self-Employed	0.6	Average % Self-Employed	7.8

Table VII- (continued)

Veteran's Most Chosen and Least Chosen Occupations by War Period

<u>Period</u>	<u>Most Chosen</u>	<u>% Self Employed</u>	<u>Least Chosen</u>	<u>% Self Employed</u>	
Between War	Air Traffic Controller	0.0	Folding Machine Operators	0.0	
	Airline Pilots	3.4	Kindergarten Teachers	0.0	
	Physicians Assistants	1.1	Auctioneers	84.6	
	Computer Peripheral Operators	0.0	Shoe Machine Operators	0.0	
	Telegraphers	6.2	Pressing Machine Operators	0.5	
	Supervisor, Guards	0.0	Walters	4.0	
	Correctional Officers	0.0	Assistant Washers	0.0	
	Protective Service Workers NEC	7.5	Elevator Operators	0.0	
	Data Processing Equip. Repairers	0.7	Shoe Repairers	56.8	
	Agricultural Engineers	0.0	Textile Sewing Operators	3.6	
	Average % Self-employed	1.9	Average % Self-employed	15.0	
	Korea	Postmasters	0.0	Mathematical Scientists NEC	0.0
		Mail Carriers	0.0	Theology Teachers	0.0
		Tool Programmers	0.0	Private HH Cleaners	0.0
		Air Traffic Controllers	0.0	Farm Workers	0.0
Airplane Pilots		4.5	Graders, Sorters	0.0	
Trade Industrial Teachers		0.0	Paving Equipment Operators	0.0	
Physicians Assistants		5.1	Tailors	8.1	
Therapists NEC		0.0	Upholsterers	49.1	
Atmospheric Scientists		25.0	Shoe Repairers	59.1	
Agricultural Engineers		0.0	Milling Machine Operators	0.0	
Average % Self-Employed		3.5	Average % Self-Employed	11.6	

Table VII-1 (Continued)

Veteran's Most Chosen and Least Chosen Occupations by War Period

Period	Most Chosen	% Self Employed	Least Chosen	% Self Employed
WWII	Mining Engineers	3.8	Cementing Machine Operators	0.0
	Statisticians	2.3	Pressing Machine Operators	16.7
	Dentists	89.5	Food Batchmakers	11.9
	Podiatrists	100.0	Tailors	17.6
	Therapists NEC	3.7	Paving Equipment Operators	16.6
	Economics Teachers	0.0	Graders, Sorters	0.0
	Air Traffic Controllers	0.0	Miscellaneous Food Preparation	2.7
	Masonry Supervisors	16.6	Dieticians	0.0
	Statistical Clerks	5.0	Assistant Waiters	3.8
	Police (Supervisors)	0.0	Dress Makers	3.6
	Average % Self-Employed	22.1	Average % Self-Employed	22.2

Source: Appendix A. Occupations with less than 40 veterans and non-veterans combined were not considered for this list.

1) occupation wide

police work. These include police supervisors, corrections officers and security guards. All of these most chosen are occupations where military experience is likely to provide skills useful in civilian jobs. This supports the theory that the veterans income premium results from job training provided by the military. Another type of occupation appearing in all war periods is work at the U.S. Postal Service. This includes mail carriers, postal clerks and postmasters. The high frequency of veterans in this occupation could be the result of preferential hiring given to veterans.

The relatively least chosen occupation is theology teaching, which appears on the least chosen list in two war periods. This result may be related to the fact that divinity students, who might ultimately become theology teachers, are often exempted from military service. Another group of least chosen occupations are those associated with the clothing industry. These include tailors, sewing machine operators, pressing machine operators, shoe repairers and dress makers. Other occupations that are least preferred are ones associated with food preparations. These include waiters, assistant waiters, food batchmakers, miscellaneous food preparers and dieticians. Farm workers and elevator operators also appear more than once on the lists of least preferred occupations.

A number of teaching professions appear on the list of least preferred occupations for the Vietnam period but not

Table VII-2 a

Relative Occupational Choice and Self-Employment Rates -
Vietnam and Between War Periods

DESCRIPTION	GROUP	Vietnam			Between		
		CHOICE	SE VETS	SE NVETS	CHOICE	SE VETS	SE NVETS
	ALL	1.000	0.081	0.119	1.000	0.122	0.159
Executives & Managers	1	0.958	0.058	0.083	1.164	0.071	0.106
Management Related Fields	2	1.143	0.063	0.105	1.467	0.107	0.153
Scientists and Engineers	3	0.867	0.050	0.038	1.095	0.072	0.965
Doctors and Dentists	4	1.027	0.686	0.700	1.132	0.862	0.796
Other Health Services	5	0.919	0.066	0.082	0.987	0.077	0.109
College Teachers	6	0.488	0.000	0.000	0.657	0.000	0.000
Teachers Exe College	7	0.522	0.034	0.054	0.874	0.042	0.031
Social Scientists	8	0.597	0.091	0.076	0.648	0.178	0.111
Lawyers and Judges	9	0.639	0.227	0.216	1.033	0.344	0.328
Artists Entertainers	10	0.709	0.258	0.283	0.959	0.317	0.296
Health Technicians	11	1.439	0.063	0.003	1.458	0.025	0.179
Science Technicians	12	1.463	0.011	0.022	1.559	0.014	0.036
Other Technicians	13	1.453	0.035	0.034	1.967	0.062	0.055
Sales Representatives	14	0.970	0.132	0.190	1.272	0.249	0.260
Sales Workers	15	0.986	0.130	0.143	1.111	0.213	0.244
Supervisors-White Collar	16	1.023	0.055	0.076	1.217	0.081	0.109
Computer Operators	17	1.499	0.002	0.005	2.084	0.000	0.010
Secretaries-Clerks	18	0.964	0.029	0.026	1.079	0.048	0.033
Office Machine Operators	19	0.581	0.000	0.000	0.411	0.000	0.000
Telephone Operators	20	1.124	0.000	0.042	1.509	0.000	0.054
Postal Workers	21	2.679	0.000	0.012	2.541	0.022	0.000
Recording Clerks	22	1.227	0.002	0.005	1.110	0.001	0.000
Adjusters-Investigators	23	1.390	0.038	0.028	1.757	0.074	0.055
Misc Administrative Support	24	0.969	0.009	0.012	1.354	0.015	0.017
Private HH Service	25	0.478	0.500	0.200	0.165	0.000	0.200
Police-Fire Supervisors	26	1.727	0.000	0.000	2.062	0.000	0.000
Police-Fire Workers	27	2.101	0.012	0.004	2.247	0.022	0.003
Restaurant Workers	28	0.594	0.036	0.051	0.537	0.068	0.124
Dental and Nurses Aides	29	1.053	0.000	0.007	0.842	0.000	0.009
Cleaning & Building Service	30	0.864	0.030	0.054	0.655	0.077	0.058
Personal Service	31	0.732	0.129	0.146	0.861	0.149	0.180
Farm Operators	32	0.511	0.635	0.659	0.519	0.635	0.628
Farm Supervisors	33	0.650	0.056	0.103	0.640	0.000	0.137
Agriculture & Forestry Workers	34	0.567	0.091	0.078	0.399	0.195	0.167
Fishers & Hunters	35	0.713	0.271	0.264	0.470	0.269	0.383
Motor Vehicle Mechanics	36	1.231	0.051	0.079	0.973	0.089	0.100
Other Mechanics	37	1.863	0.072	0.103	1.613	0.099	0.134
Construction Workers	38	1.074	0.143	0.169	0.847	0.197	0.193
Extractive Workers	39	1.158	0.009	0.020	0.806	0.042	0.094
Metal Working Trades	40	1.077	0.047	0.042	0.977	0.098	0.072
Wood Working Trades	41	0.863	0.159	0.175	0.713	0.185	0.251
Textile Working Trades	42	0.585	0.367	0.187	0.386	0.508	0.298
Other Precision Workers	43	0.876	0.075	0.085	0.768	0.137	0.115
Power Plant Operators	44	1.625	0.005	0.010	1.632	0.006	0.011
Machine Operators	45	0.896	0.019	0.026	0.709	0.028	0.030
Handworkers	46	1.034	0.056	0.060	0.857	0.060	0.070
Motor Vehicle Operators	47	1.029	0.045	0.059	0.884	0.065	0.000
Other Vehicle Operators	48	1.609	0.024	0.014	0.378	0.008	0.000
Material Moving Operators	49	0.978	0.041	0.046	0.667	0.041	0.056
Hand Laborers	50	0.858	0.012	0.023	0.596	0.025	0.031
Blue Collar Supervisors	51	1.024	0.023	0.060	1.105	0.026	0.063

NOTES: SE=Self-Employment Rate Choice = (# Vets/Total Vets)/(# Nonvets/Total Nonvets)

Table VII-2 b

Relative Occupational Choice and Self-Employment Rates -
Korean and World War II Periods

DESCRIPTION	GROUP	Korea			World War II		
		CHOICE	SE VETS	SE NVETS	CHOICE	SE VETS	SE NVETS
	ALL	1.000	0.154	0.172	1.000	0.137	0.165
Executives & Managers	1	1.363	0.084	0.117	1.507	0.103	0.122
Management Related Fields	2	1.750	0.141	0.140	1.821	0.155	0.177
Scientists and Engineers	3	1.534	0.080	0.084	1.501	0.073	0.074
Doctors and Dentists	4	0.847	0.786	0.784	1.648	0.844	0.821
Other Health Services	5	1.298	0.158	0.039	1.281	0.147	0.124
College Teachers	6	0.805	0.000	0.000	1.227	0.000	0.000
Teachers Exe College	7	1.446	0.036	0.051	1.568	0.064	0.047
Social Scientists	8	0.536	0.178	0.177	0.594	0.114	0.119
Lawyers and Judges	9	1.419	0.332	0.368	2.799	0.354	0.318
Artists Entertainers	10	1.076	0.287	0.406	1.213	0.309	0.339
Health Technicians	11	1.443	0.023	0.046	0.852	0.046	0.141
Science Technicians	12	1.671	0.021	0.045	1.383	0.032	0.057
Other Technicians	13	1.985	0.061	0.044	1.852	0.074	0.029
Sales Representatives	14	1.418	0.246	0.289	1.594	0.273	0.292
Sales Workers	15	1.026	0.239	0.256	1.227	0.218	0.230
Supervisors-White Collar	16	1.306	0.088	0.118	1.378	0.111	0.114
Computer Operators	17	1.917	0.000	0.000	1.626	0.000	0.250
Secretaries-Clerks	18	0.981	0.112	0.031	1.004	0.044	0.017
Office Machine Operators	19	1.506	0.067	0.000	0.834	0.067	0.000
Telephone Operators	20	1.096	0.000	0.000	1.357	0.111	0.167
Postal Workers	21	2.953	0.000	0.024	2.168	0.012	0.012
Recording Clerks	22	1.176	0.017	0.012	1.163	0.018	0.013
Adjusters-Investigators	23	1.875	0.069	0.104	1.676	0.073	0.083
Misc Administrative Support	24	1.333	0.014	0.009	1.242	0.007	0.038
Private HH Service	25	0.210	0.000	0.200	0.232	0.000	0.200
Police-Fire Supervisors	26	2.789	0.000	0.000	3.280	0.011	0.000
Police-Fire Workers	27	2.163	0.024	0.001	1.504	0.002	0.001
Restaurant Workers	28	0.481	0.095	0.114	0.488	0.144	0.124
Dental and Nurses Aides	29	0.781	0.007	0.009	0.631	0.025	0.009
Cleaning & Building Service	30	0.675	0.095	0.057	0.623	0.094	0.053
Personal Service	31	1.040	0.164	0.175	0.791	0.222	0.193
Farm Operators	32	0.508	0.757	0.618	0.361	0.669	0.699
Farm Supervisors	33	0.544	0.056	0.213	0.731	0.094	0.092
Agriculture & Forestry Workers	34	0.311	0.139	0.113	0.310	0.126	0.092
Fishers & Hunters	35	0.470	0.622	0.378	0.506	0.316	0.280
Motor Vehicle Mechanics	36	0.900	0.097	0.106	0.945	0.108	0.068
Other Mechanics	37	1.507	0.127	0.166	1.262	0.152	0.156
Construction Workers	38	0.887	0.227	0.185	0.960	0.202	0.196
Extractive Workers	39	0.603	0.029	0.042	0.928	0.048	0.081
Metal Working Trades	40	0.855	0.043	0.081	0.928	0.087	0.075
Wood Working Trades	41	0.817	0.351	0.328	0.785	0.192	0.203
Textile Working Trades	42	0.283	0.426	0.305	0.398	0.459	0.284
Other Precision Workers	43	0.774	0.117	0.116	0.833	0.138	0.104
Power Plant Operators	44	1.324	0.008	0.027	1.284	0.007	0.010
Machine Operators	45	0.669	0.022	0.032	0.738	0.034	0.023
Handworkers	46	0.800	0.053	0.065	0.839	0.063	0.054
Motor Vehicle Operators	47	0.770	0.068	0.090	0.809	0.083	0.093
Other Vehicle Operators	48	1.159	0.023	0.013	0.966	0.009	0.015
Material Moving Operators	49	0.664	0.064	0.053	0.749	0.053	0.046
Hand Laborers	50	0.527	0.045	0.032	0.519	0.039	0.039
Blue Collar Supervisors	51	1.137	0.050	0.061	1.310	0.057	0.058

in other periods. These include chemistry teachers, law teachers, psychology teachers and foreign language teachers. This result may be explained by exemptions to military service given to teachers during the Vietnam war.

(a) Self-employment rates in the Most and Least Preferred Occupations

Table VII-1 also shows the occupation wide self-employment rates in each of the occupations listed. It shows that almost half of the occupations on both lists are ones where there is no opportunity for self-employment. However, among the remainder, there are far more occupations with high rates of self-employment on the least preferred than on the most preferred list. As a result, the average occupational self-employment rate is much lower for those occupations on the most chosen list than on the least chosen list. Furthermore, the average rate of self-employment for occupations on the most preferred list is far below the economy wide self-employment rate which is roughly 10 percent. To the extent that preferred occupations are those for which military experience offers the greatest training, the evidence of Table VII-1 suggests an explanation for the lower likelihood of veteran self-employment observed in the previous sections. The explanation is that military service provides job training for occupations where there are few opportunities for self-employment.

3. Aggregating Occupations into Groups

The list of the ten most and least chosen occupations gives only a limited picture of veterans choices. Because it focuses on the extremes in choice, it ignores the overwhelming majority of occupations. On the other hand, the large number of different occupations listed in Appendix B makes it difficult to generalize about which types of occupations are most chosen by veterans. Table VII-2 combines the 503 occupations into fifty-one occupation groups. The groups are formed by combining many similar occupations. For example, there are twenty-nine different types of college teaching occupations in Appendix B. These are combined into one occupation group in Table VII-2 (group 7). There are also twenty-nine categories of scientists and engineers in Appendix B and they are combined into another group (group 3). Generally, adjacent occupations in Appendix B were combined and so the order of occupations in Table VII-2 follows the order of occupations in Appendix B. Thus one can determine the individual occupations in Appendix B that comprise the occupation groups of Table VII-2 by following its order and the order of Appendix B.

Table VII-2 shows the measure of relative occupational choice and self-employment rates for 51 occupation groups in each of the four war periods. The groups for which veterans show the greatest preference are police and fire workers (groups 26 and 27) and postal workers (group 21). In these

occupations the percentage of the veteran population in the occupation is more than twice the percentage in the non-veteran population. A second group of occupations that are most frequented by veterans are technical and mechanical occupations. These include health, science and other technicians (groups 11-13) and other mechanics (group 37, which includes large numbers of airplane mechanics). For police and fire work, the physical combat training provided in the military clearly gives job skills for the civilian occupation. For the technical and mechanical fields, the experience in operating and maintaining weapons systems would again provide skills for technical jobs outside the military. Another group which ranks high on the scale of veterans choice is power plant operators. These again would probably require technical skills that could be acquired for the military. On-the-whole, Table VII-2 supports the conclusion drawn from lists of occupations in Table VII-1 that higher earnings of veterans are in part the result of job skills acquired in the military that would not be possessed by non-veterans with the same education and civilian job experience.

Inspection of the self-employment rates of the occupations in Table VII-2 with high values of relative occupation choice (columns headed CHOICE) reveals that all have a low self-employment rate. Health technicians, science technicians and other technicians have self-employment rates in the Vietnam period of 6.3 percent, 1.1 percent and 3.5

percent respectively. This compares to an all occupation average for that war period of 8.1 percent. Other mechanics have a self-employment rate of 7.2 percent but police and fire supervisors have self-employment rates of zero. Power plant operators have a self-employment rate of less than 1 percent.

Occupations with the lowest preference by veterans were private household service workers (25), textile working trades and farm operators (32) and farm workers (groups 32 and 34). These are all occupations where the percentage of the veteran population in the occupation was less than half the percentage of the non-veteran population. They are low paying occupations which could be avoided by individuals with skills to enter higher paying occupation.

(a) Differences Across War Periods

In all of the groups mentioned so far, the relative choice of veterans has been roughly constant in all war periods. However, there were some occupations in Table VII-2 for which the choice of veterans was far below non-veterans in the Vietnam period, but increased over the other periods to the point where veterans' choices far exceeded non-veterans' choices in the Korea and WWII periods. Examples of this are lawyers and judges (9) and college teachers (6). Another example was scientists and engineers (3). These are all occupations which require larger amounts of formal education. Because of time spent in the military

veterans may lag behind non-veterans in entering these occupations. The fact that for the older cohorts, veterans' choice of these occupations was higher than non-veterans suggests the military experience may have ultimately given veterans some advantage in these areas. The fact that the G.I. bill allowed veterans to obtain an education at a lower cost could be one source of the advantage. However, an alternative explanation for the low representation of Vietnam veterans in occupations requiring large amounts of formal education is the availability of student deferments during the Vietnam War. This allowed many students to escape the draft by remaining in school. As a result, those who were not academically inclined were over represented among Vietnam veterans.

4. Correlation of Occupation Choice Across War Periods

To what extent are the occupations that are relatively most (or least) chosen by veterans in one war period also relatively most (or least) chosen in other war periods? To answer this question, veterans relative occupational choice was correlated between war periods. Six correlation coefficients were computed for the six possible pairs of war periods. The correlations, which are shown in Table VII-3 range between .31 and .69, indicating that veterans' relative preferences for occupations were generally consistent across war periods, though far from identical.

Table VII-3

Correlation of Veterans Relative Occupational Choice
in Different War Periods (N = 503)

	<u>Vietnam</u>	<u>Between</u>	<u>Korea</u>	<u>WWII</u>
Vietnam				
Between	.63			
Korea	.50	.69		
WWII	.32	.50	.31	

Table VII-3 shows that the highest correlation is for Vietnam and Between war and Korea and Between war. These are time adjacent war periods and we expect the correlation to be highest for them. WWII has the lowest correlation. This suggests that veterans' preferences among the other war periods were more similar to each other than WWII. The consistency of veterans' occupational choices across war periods is evidence that military experience does influence occupational selection. It supports the notion that the veterans' income premium is due to job training provided by the military.

B. OCCUPATIONAL CHOICE AND SELF-EMPLOYMENT RATES

We wish to focus again on the question of whether or not veterans have lower self-employment rates because they have been trained for occupations with few opportunities for self-employment. For this purpose, the measure of veterans' relative occupational choice is compared for occupations classified by the occupation wide self-employment rate. We can then determine the extent to which the veterans relative choice is high in occupation with low self-employment rates.

Table VII-4 shows the average of the veterans' relative occupational choice in four self-employment classes. It shows that in all periods except WWII, the average relative choice is below unity in those occupations with the highest self-employment rate, increases monotonically as the

Table VII-4

Average Relative Occupational Choice of Veterans by
Occupation Self-Employment Rate by War Period

Occupation Self- Employment Rate	War Periods				
	All	Vietnam	Between War	Korea	WWII
All	1.000 ^{1]}	1.000	1.000	1.000	1.000
Greater than 40%	.958 (32) ^{2]}	.699** (32)	.831* (32)	.970 (32)	1.331 (32)
20% - 40%	1.000 (55)	.867** (55)	.909 (55)	.979 (55)	1.246* (55)
4% - 20%	1.182** (120)	.957 (120)	1.151 (120)	1.348** (120)	1.271** (120)
Less than 4%	1.186 (273)	1.052 (295)	1.125* (294)	1.382** (283)	1.325** (280)

** Different from 1.000 at .01 significance level

* Different from 1.000 at .05 significance level

1] Although the relative choice for all occupations combined is 1.0 by definition, the average of the occupation relative choices does not necessarily have to be 1.0.

2] Number of occupations in each cell is shown in parenthesis

self-employment rates decrease and is above unity for those occupations with the lowest self-employment. Clearly veterans are less likely to choose occupations with high self-employment rates. For the Vietnam period, the veterans' choice is 30 percent below average in the highest self-employment class and 5 percent above average in the lowest self-employment class. For the Between Wars period, the veterans' relative choice is below average by 17 percent in the highest self-employment class and above average by 12.5 percent in the lowest self-employment class. Table VII-4 confirms the evidence offered in Tables VII-1 thru VII-3, that occupations chosen by veterans have below average opportunities for self-employment. We view this as evidence supporting the view that job training received in the military is mainly for occupations with few opportunities for self-employment.

1. **Regression Analysis of Likelihood of Self-Employment**

Since it appears that veterans are more likely to enter occupations with low opportunities for self-employment, we wish to repeat the regression analysis of the likelihood of self-employment of the previous sections with some control for occupation. One way to do this is to stratify the sample by occupations with high and low opportunities for self-employment, and then to estimate a model to explain the

probability of self-employment within each strata. The model we estimate here is the same model that was used in the previous sections. Unfortunately we do not have any independent information on the opportunities for self-employment and so we use the actual occupation wide self-employment as a proxy. Thus each individual in our sample is placed into one of five strata according to the self-employment rate of his occupation.

We acknowledge that this procedure has some limitations. The problem is that even within each strata, it is likely that the opportunities for self-employment will differ between occupations and any tendency for veterans to enter occupations with the lower opportunities for self-employment will lead to a lower likelihood of veteran self-employment in each strata. In other words, this method provides only a limited control for occupation. Nevertheless we expect the results to be useful to contrast with the unstratified regressions previously reported.

The five self-employment rate categories used for stratification were: 2-5 percent, 5-10 percent, 10-20 percent, 20-30 percent and 30-100 percent. Occupations for which the rate of self-employment was below 2 percent were not included in the analysis. The stratification was done for white males in each war. The results are in Table VII-5.

All the coefficients are negative and all but one (WWII, group 2) are significant. This means that after controlling for differences (among occupations) in

Table VII-5

Effects¹ of Veteran Status on the Probability of Self-employment for White
Males by War By Occupation Self-employment Group²

<u>Self-employment</u> <u>rate group</u>	<u>War Period</u>			
	<u>Vietnam</u>	<u>Between</u>	<u>Korea</u>	<u>WWII</u>
1	-.009** (.0009)	-.007** (.001)	-.008** (.001)	-.006** (.001)
2	-.022** (.004)	-.018** (.005)	-.017* (.007)	-.008 (.007)
3	-.044** (.005)	-.03** (.006)	-.026** (.008)	-.02* (.008)
4	-.023* (.01)	-.05** (.007)	-.04** (.009)	-.033** (.009)
5	-.041** (.008)	-.063** (.008)	-.084** (.01)	-.12** (.009)

1. Effects of percentages expressed as decimal (i.e. -.009 = -0.9%)

2. The self-employment (SE) groups are as follows:

1. 2-5%
2. 5-10%
3. 10-20%
4. 20-30%
5. 30-100%

Standard errors in parenthesis

* - significant at .05 level

** - significant at .01 level

opportunities for self-employment, the likelihood of self-employment is still lower for veterans. The pattern is very consistent; as the rate of self-employment in the occupation increases veteran status reduces the likelihood of self-employment by a greater amount. As we move from the lowest to the highest self employment group, the magnitude of the effect of veteran status increases roughly in proportion to the average occupation wide self-employment rate. Thus, as a percent of the self-employment rate, the effect of veterans status is roughly constant. The only exception is Vietnam, which may simply be a cohort effect again - the occupations with higher self-employment rates may simply be those for which time is needed prior to entering. In fact while there are no other strong cross-war trends within self-employment groups, there is a strong rise in the absolute value of the negative coefficients for group 5, from Vietnam back to WWII.

2. Additional Control for Occupation Effects

An alternative method of analyzing the likelihood of self-employment is to simply count the number of occupations in which the veterans' self-employment rate exceeds the non-veterans' self-employment rate. This method provides more complete control for occupation effects than does the regression analysis within strata or the breakdown of relative choice by occupation self-employment (in Table

VII-4). In both of these techniques veterans' preferences for self-employment can determine their choice of occupation. Thus occupation choice is not really held constant. However, by comparing self-employment rates within each occupation, the effect of veterans preferences is held constant.

The disadvantage of this technique is that it does not control for the other determinants of likelihood of self-employment, education, experience etc., which is controlled in the regression. However, the R^2 statistic in the regressions were rather low and so the variables that would be uncontrolled are probably not that important. On the other hand, rates of self-employment differ dramatically between occupations. Since veteran and non-veteran self-employment rates within occupations are highly correlated, the effect of occupation on self-employment is probably much greater than the effect of veteran status on self-employment.

Table VII-6 shows the number of occupations for which the self-employment rate of veterans was greater, equal to, or less than the self-employment rate of non-veterans. The numbers are given for four classes of occupations determined by the occupation average self-employment rate (i.e. average of veterans and non-veterans self-employment rate). They are also given for each war period and for all wars combined. The table shows that for all occupation classes and all wars combined, veteran self-employment exceeds non-veteran self-employment in 156 occupations while it was below

Table VII- 6

Number of Occupations where the Veterans Self-Employment Rate is Higher, Lower or Equal to the Non-Veterans Self-Employment Rate, by Class of Occupation

Class of Occupation Self-Employment Rate	Vietnam			Between War			Korea			WWII		
	Higher	Lower	Equal	Higher	Lower	Equal	Higher	Lower	Equal	Higher	Lower	Equal
All (N = 503)	108	252	143	117	233	153	142	201	160	171	166	166
Greater than 40% (N = 32)	14	17	1	20	10	2	15	14	3	20	9	3
20% to 40% (N = 55)	17	35	3	22	33	0	23	32	0	27	28	0
4% to 20% (N = 120)	34	83	3	40	74	6	49	63	8	51	58	11
Less than 4% (N = 296)	43	117	136	35	116	145	55	92	149	73	71	152

Table VII-6 (Continued)

Number of Occupations where the Veterans Self-Employment Rate is Higher, Lower or Equal to the Non-Veterans Self-Employment Rate, by Class of Occupation

Class of Occupation Self-Employment Rate	All Wars.		
	Number of Occupations Higher	Lower	Equal
ALL (N = 503)	156	243	104
Greater than 40% (N = 32)	17	14	1
20% to 40% (N = 55)	21	34	0
4% to 20% (N = 120)	48	70	2
Less than 4% (N = 296)	70	125	101

non-veteran self-employment in 243 occupations. In the remaining 104 occupations, veterans and non-veterans self-employment rates were equal. These were mainly cases of zero self-employment. The result for all occupations indicates that holding occupation constant, veteran self-employment is less likely than non-veteran self-employment. However, the table also shows that in the higher self-employment classes, the frequency with which the veterans self-employment rate exceeds the non-veteran rate is far higher than it is in the other classes. In fact, in the high self-employment classes, the most common case is that the self-employment rate for veterans exceeds that for non-veterans. In other classes the reverse is true. Since most occupations have low self-employment rates, these dominate when all occupations are considered together.

The tendency for veterans to have lower self-employment rates than non-veterans within each occupation is strongest in the latest war periods and becomes progressively weaker in the earlier war periods. For WWII, veterans have higher self-employment rates in more occupations than do non-veterans. The differences between the classes of occupations are greater in the earlier war periods.

3. Technical Skills vs. Business Skills

We have presented some evidence that veterans enter self-employment at a later age than non-veterans. This

suggests that in preparation for self-employment in most occupations, time spent in the military is not a good substitute for time spent working at a civilian job. One explanation is that military training and experience teaches technical skills but not business skills. Thus, for example an individual who was an auto mechanic in the military would have considerable knowledge about how to repair automobiles but little experience in operating an auto repair business. Business skills such as marketing, finance and accounting are unlikely to be acquired in the military. Since the military does not operate as a profit-seeking business, one should not expect job experience in the military to provide much business experience.

The absence of business training in the military would also explain the tendency for self-employment rates of veterans to exceed self-employment rates of non-veterans only for occupations where self-employment rates are very high. The latter are no doubt areas where the average size of firm is very small. This follows because, if all of the individuals in the occupation are business owners (i.e. self-employed), then few are employees. The larger the firm size, the higher the ratio of employees to employers. Self-employment within a very small firm is a case where business skills are likely to be less important than the technical skills. When firms are very small, (e.g. one person firms), the firm owner spends most of his time practicing the occupation and little of his time managing

his business. It is only where the business has a number of employees that the owner will spend most of his time with business problems. For example, a self-employed auto repairman with no employees might spend 95% of his time fixing cars. The same individual with 5 employees will spend little time fixing cars and most of his time at tasks such as talking with customers, bookkeeping, dealing with the bank and directing the five employees.

Inspection of the data in Appendix B revealed that the occupations with the highest self-employment are professions such as law, medicine and architecture. These are definitely areas where business skills are less important than technical skills. The results for this group also confirm the analysis of self-employment by educational strata that was carried out in previous sections. There it was observed that in the highest educational strata, veterans had a higher likelihood of self-employment. Appendix B also shows that occupations with the second highest rate of self-employment are highly skilled trades such as cabinet making, stone cutting, and auto repair. These are again areas where technical skills are more important than business skills. It is also worth noting that the tendency of veteran self-employment to exceed non-veteran self-employment is greater in this group than it is in the highest self-employment class. This second highest self-employment class probably includes more cases where technical skills learned in the military are directly useful in civilian jobs.

C. ANALYSIS OF INCOME BY OCCUPATION

The analysis in the previous sections has demonstrated that veteran status affects income. We now wish to determine whether the income effects hold up even after controlling for occupation differences between veterans and non-veterans. The need to control for occupations arises because monetary income is only part of the total compensation paid to individuals. Nonpecuniary benefits are also an important part of an individual's total compensation. Examples of nonpecuniary benefits are prestige, pleasant working conditions and flexible hours. There are also differences between occupations in nonpecuniary disadvantages which include risks of injury, job related health hazards and risk of unemployment.

It is likely that these nonpecuniary benefits and costs are associated with occupation income levels. Occupations that have above average nonpecuniary benefits are likely to have below average incomes. Occupations with above average nonpecuniary costs are likely to have above average income. Therefore, by grouping occupations by average income we are likely to group occupations that are more homogeneous in terms of nonpecuniary benefits and costs.

1. Analysis of Income from Self-Employment

Table VII-7

Veterans Premium (in decimals) from Self-employment Income in Occupation Strata by
War Period for White Males

Occupation Self-Employment Income Strata	<u>Vietnam</u>		<u>Between</u>		<u>Korea</u>		<u>WWII</u>	
	T ²	NT ³	T	NT	T	NT	T	NT
	1	-.38 (.23)	-.55* (.26)	.10 (.28)	-.11 (.32)	-.06 (.30)	-.10 (.31)	-.17 (.30)
2	-.09* (.04)	-.13* (.05)	-.04 (.24)	-.11* (.057)	-.12* (.06)	-.18* (.07)	.04 (.05)	.008 (.07)
3	-.04 (.06)	-.07 (.06)	-.08 (.07)	-.06 (.07)	-.11 (.07)	.07 (.08)	-.002 (.06)	-.07 (.07)
4	.0013 (.11)	-.13 (.12)	-.18 (.13)	-.12 (.15)	-.30 (.17)	-.29 (.19)	.26 (.18)	.21 (.22)
5	.09 (.06)	.15* (.07)	-.14* (.06)	-.10 (.07)	-.04 (.10)	.07 (.11)	-.19 (.12)	-.33* (.14)

Notes:

1. Strata are based on occupation self-employment income: Strata 1, 0-20th percentile; Strata 2, 21-34th percentile; Strata 3, 35-50th percentile; Strata 4, 51-78th percentile; Strata 5, 79-100th percentile.

2. Premium in Hourly earnings.

3. Premium in Annual Earnings.

Standard errors in parenthesis

* - significant at .05 level

** - significant at .01 level

Table VII-7 contains the analysis of self-employment income for five income groups, classified according to the average self-employment income of all (self-employed) individuals in each occupation. The groups were constructed so that if each individual earned the occupational average income, group one would contain men earning up to the 20th percentile of income; group two would contain the next 14 percentiles; group three, the next 16 percentiles; group four, the next 18 percentiles and group five, the last 32 percentiles. The entries in Table VII-7 show the percentage increase or decrease in income that can be attributed to being a veteran, controlling for time on the job and not controlling for time on the job. In no case is the effect of veterans status positive and statistically significant. In the overwhelming majority of groups in Table VII-7, the effect of veterans status is to reduce self-employment income. However, in most cases the effects are not statistically significant. Since the effects in the groups are generally smaller than the effects for all groups combined shown in the previous sections, it appears that some of the difference between veteran and non-veteran income is related to occupation. As in the earlier analysis of all groups combined (in Sections II and III) not holding constant time on the job magnifies the effect of veteran status. We conclude that even after controlling for

occupational choice, veterans are still slightly less successful at self-employment than non-veterans.

2. Income from Wages

Tables VII-8 and VII-9 show the veteran's premium for groupings of men by wage income, for whites and nonwhites respectively. The percentile breakdowns are as follows - group one is 0-15 percent, two is 16-30 percent, three is 31-45 percent, four is 46-55 percent, five is 56-70 percent, and six is 71-100 percent.

Table VII-8 indicates a clear pattern, common to all wars. Premiums to veteran status are large for the lowest two income groups, and decline to insignificance as one goes to the higher income groups. This supports the hypothesis that military training gives the greatest wage premiums for jobs at the lowest level of income (e.g. high school dropouts) and only a marginal premium at the higher levels of income.

An interesting break with previous patterns is the effect of the time variables for income group one in Table VII-8. In previous analyses of wage income, veterans were revealed to work longer hours than non-veterans. Therefore, the effect of veteran status on annual income was larger than its effect on hourly income. However, in group one, the opposite is true. The veterans premium is higher for hourly income indicating that veterans work shorter periods per

Table VII-8

Veterans' Premium (in decimals) from Wage Income in Occupation Strata by War Period for White Males

Occupation Wage Income Strata	Vietnam		Between		Korea		WWII	
	T ²	NT ³	T	NT	T	NT	T	NT
	1	.15** (.03)	.07 (.039)	.20** (.04)	.04 (.05)	.19** (.04)	.096 (.06)	.13** (.04)
2	.20** (.02)	.31** (.03)	.09* (.03)	.18** (.04)	.06** (.03)	.124** (.04)	.09* (.03)	.12** (.04)
3	.021 (.016)	.037 (.02)	.03 (.02)	.065* (.027)	.05 (.028)	.07* (.037)	.07* (.03)	.037 (.034)
4	.06** (.014)	.065* (.02)	.025 (.02)	.04 (.023)	.006 (.02)	.02 (.03)	.5 (.028)	.04 (.04)
5	.16 (.01)	.002 (.02)	-.01 (.01)	-.03 (.02)	.003 (.02)	-.03 (.02)	-.012 (.025)	-.016 (.037)
6	.0026 (.01)	-.007 (.012)	.0065 (.012)	-.013 (.015)	.013 (.015)	.015 (.02)	-.002 (.02)	.002 (.03)

Notes:

1. Strata 1: 0-15 percentiles, strata 2: 16-36 percentiles, strata 3: 37-45 percentiles, strata 4: 46-55 percentiles, strata 5: 56-70 percentiles, strata 6: 71-100 percentiles.

Standard errors in parenthesis

*significant at .05 level

**significant at .01 level