Veteran Status and Civilian Wages

Jamie Wyeth

Abstract

Does military service affect the subsequent civilian wages and income of those who serve? If it does, is the effect positive or negative? Do those positive or negative effects impact certain groups of veterans more than others? These questions may be more relevant today than ever before. The war in Iraq is the first major extended conflict that has been waged without using conscription to bolster the military rolls. As the United States enters the fourth year of this war, the military is struggling to meet its recruiting targets. Is the compensation package that the all volunteer force offers enough to maintain the troop strength required to win an extended conflict? Training and experience represent a large part of the compensation for military service. Does that training and experience translate into higher civilian wages? This paper analyzes 2003 IPUMS data and finds that overall there are no significant civilian wage differences between male veterans and male non-veterans. However, the data show that veterans with less than a high school education receive a 13.6% wage premium compared to non-veterans with the same level of education while high school graduates receive a 3.8% premium. The data also show that Hispanic veterans receive a 17.9% wage premium compared to non-veteran Hispanics, while Whites suffer a 1.7% wage penalty.

Background

A large number of studies have been done investigating the relationship between service in the military and subsequent civilian earnings. Most empirical research has found that a wage premium exists for veterans of WWII and the Korean War compared to similar non-veterans, while finding a wage penalty for veterans of Vietnam and later service/conflicts. The general consensus among

researchers is that the veteran wage premium that WWII veterans enjoyed has slowly deteriorated and that contemporary veterans do not benefit from any wage premium as a result of their military service (Bryant 28). Veteran wage premiums or penalties when they exist often vary significantly depending upon age, race and level of education.

Weiss analyzed 1960 census data and determined that white veterans aged 18-25 suffered a wage penalty, while all other age groups benefited from a wage premium. De Tray used data from the 1960 and 1970 censuses and found a veteran's wage premium of 10% for whites and 9% for non-whites. Berger studied Vietnam veterans using 1968 – 1978 CPS data and found that they suffered an earnings penalty compared to non-veterans, but that lifetime earnings differences would be small. Bryant used National Longitudinal Survey data to look at full time male workers in 1985. He used techniques to correct for selection bias and found that veterans suffer a wage penalty of 1.7% compared to non-veterans. He also found that whites suffer a greater penalty than non-whites (2.6% vs. 0.36%) and that the wage penalty varies by education level. Veterans in his study with less than a high school education earn a wage premium of 3.7% while vets with a high school education suffer a penalty of 0.97% and vets with more than 12 years of education suffer an even greater wage penalty of 6.9%. Hirsch used data from 1986 and 1992 Reserve Component Surveys and found an overall wage premium of 3% for veterans, with whites suffering a slight wage penalty and non-whites benefiting from modest wage premium.

If there is a wage premium or penalty related to military service, what causes it? Wage differentials could be attributed to discrimination for or against

veterans, the use of veteran status as a productivity screen (signaling), human capital increases or decreases during military service or selection effects. Discrimination has been suspected as part of the cause behind the WWII veterans wage premium and also the Vietnam veterans wage penalty. WWII was a “popular” war, the U.S. was victorious and the veterans were welcomed back as heroes. It has been suggested that WWII veterans were rewarded for their service by receiving higher wages based solely on their veteran status. Angrist & Krueger found that even though WWII vets did enjoy a wage premium, those vets would have earned more than non-vets even if they had not served in the military and that their military service may have actually reduced their earnings. The wage penalty that Vietnam veterans suffered has been partially attributed to the generally unfavorable opinion of that war. Berger and Hirsch find that Vietnam veterans did suffer a small wage penalty between 1968 and 1977, but they attribute that penalty to poor economic conditions and to a relative lack of civilian work experience compared to non-veterans. Although discrimination sounds logical, there is no empirical evidence to support it.

Wage differentials could be attributed to the use of veteran status as a positive or negative productivity screen by employers. This is commonly known as signaling. If veteran status reliably indicates high productivity relative to non-veterans, employers will pay veterans higher wages to compensate for the increased productivity. If veteran status reliably indicates low productivity relative to non-veterans, employers will pay veterans lower wages to compensate for the decreased productivity. De Tray finds that veteran status is valuable to employers as a positive productivity screen because all veterans have passed mental and

physical tests and have met minimum performance and behavioral standards in order to be honorably discharged. However, he finds that the value of the screen changes relative to the proportion of veterans in the civilian population and also decreases with age. If veteran status was a productivity signal, the value of the signal would be highest for younger veterans, but some studies have shown that the youngest veterans bear the greatest share of a wage penalty when one exists.

Selection bias could also be the cause of wage differences between veterans and non-veterans. Military veterans are not a random sample of the working population. Veterans are individuals who selected themselves for military service and some of the characteristics that influence the decision to join the military may cause wage differences regardless of military service. It could be true that individuals with the worst civilian employment opportunities are more likely to join the military and therefore may be over represented in the veteran population, which would negatively impact veteran's wages. That negative impact would be attributed to veteran status in a regression analysis, but that effect is not a result of military service. Veterans are actually double selected because from the group of individuals that volunteer for military service, only those who meet the required physical, psychological, educational and behavioral standards are allowed to serve. For example, 13% of the non-veterans in the IPUMS sample data used for this paper have less than high school education, while only 3% of veterans have not completed high school. That large difference in educational attainment could impact the results of the analysis by attributing some of the benefits of more education to service in the military. Some studies of veteran's wages go to great lengths in attempts to correct for the selection bias inherent in the subject. Angrist

uses draft eligibility status to provide a random sample that attempts to correct for selection bias. His data indicate that white Vietnam vets suffered a 15% wage penalty compared to non-veterans. However he acknowledges that other studies that did not attempt to correct for selection bias arrived at very similar results (Angrist 330). Goldberg and Warner found that attempts to correct for self-selection bias did not substantially affect the results of their analysis (Goldberg 73). Comparisons of other studies have found that the selection bias effect on wages is modest. It could be that self-selection by individuals and the selection process of the military work together to cancel out any bias. The military selection process weeds out individuals on the lower end of the ability distribution while self-selection by volunteers weeds out individuals on the higher end (Hirsch 24). This paper will not attempt to correct or account for selection bias because selection bias has a questionable effect on veteran's civilian wages. Moreover, the techniques used to correct for selection bias are extremely complex, require access to data that is not readily available and may not actually impact the results of the analysis.

Another potential cause of wage differences between veterans and non-veterans results from the training and experience that is received during military service. If time spent on active duty in the military translates directly to the civilian labor market as labor market experience, then there would be no wage difference between veterans and non-veterans with the same number of years in the labor force. But if civilian employers do not consider years of military experience to be equivalent to years of labor market experience, then veterans would suffer a wage penalty. Similarly, if the education and training received while in the military provide skills and productivity enhancements that are valued by civilian employers,

veterans would receive a wage premium. Studies have found that military experience is a close substitute for civilian experience only in occupations where specific training can be transferred to the civilian sector, but general military experience has a negative effect on civilian wages (Bryant 28). Overall the skills, education and training received while in the military do not transfer well to the civilian labor market. Because of that fact, years of military experience are not valued as highly in the labor market as years of civilian labor experience.

Data

This analysis uses cross sectional data from the Integrated Public Use Microdata Series (IPUMS). The IPUMS data consists of thirty-nine samples of the American population drawn from fifteen federal censuses and from the 2000-2005 American Community Surveys. That census and ACS data has been compiled and is distributed by the Minnesota Population Center via its IPUMS-USA website (http://usa.ipums.org/usa/). This sample is drawn from 2003 IPUMS data and includes all adult males between 18 and 65 who were in the civilian labor force and employed full time. Full time students, active duty military, self-employed individuals and individuals with no reported wage or salary earnings were not included in the sample. Females were also excluded because all veteran wage studies that are referenced have looked exclusively at male veterans. In 2003 males made up more than 93% of the veterans in the civilian labor force (BLS). Additionally, female lifetime wage and earning profiles are significantly different from male wage and earning profiles. This sample consists of 38,313 observations, 15.6% of which are veterans. Veterans made up 16.4% of the US male labor force in 2003 according to the Bureau of Labor Statistics, so the ratio of veterans to non-

veterans in this sample is close to the true population. Full summary statistics are presented in table 2.

Model

The following linear regression model was used to analyze the data:

$$\begin{aligned} LnWage_i = {} & \beta_0 + \beta_1 Age_i + \beta_2 Age_i^2 + \beta_3 Veteran_i + \beta_4 White_i + \beta_5 Metro_i + \\ & \beta_6 Union_i + \beta_7 Married_i + \beta_8 Eduba_i + \beta_9 Educol_i + \beta_{10} Edugrad_i + \beta_{11} Eduhs_i + \\ & \beta_{12} REG\_enc_i + \beta_{13} REG\_esc_i + \beta_{14} REG\_m_i + \beta_{15} REG\_ma_i + \beta_{16} REG\_ne_i + \\ & \beta_{17} REG\_p_i + \beta_{18} REG\_sa_i + \beta_{19} REG\_wsc_i + \varepsilon_i \end{aligned} \quad (1)$$

Where LnWage = the natural log of annual wages, Age = age in 2003, Age^2 = Age squared, Veteran, White, Metro, Union and Married are dummy variables indicating veteran status, race, residence in a metropolitan area, union status and marital status respectively. Eduba, Educol, Edugrad and Eduhs are dummy variables indicating the highest level of education achieved. The omitted condition for the education variables is Eduna. REG_enc, REG_esc, REG_m, REG_ma, REG_ne, REG_p, REG_sa and REG_wsc are dummy variables indicating geographic regions of the United States. REG_wnc is the omitted condition for the group of region variables. ε is a stochastic error term. Detailed variable definitions are provided in table 1. A regression was run for the entire data sample and then individual regressions were run by education group, age group and race.

The specification of the model was based on the “standard” wage function with a veteran dummy variable included. The explanatory variables that were chosen are used consistently throughout all of the studies that were referenced and are believed to be the characteristics that are most likely to influence wages. The natural log of wages (semi-log form) was selected because it is the standard form for this type of model, and because it magically transforms the distribution of

income from strongly skewed to normal. The IPUMS data set provides annual wage data. Annual wage data can be an inaccurate reflection of wages because annual numbers may include overtime pay and bonuses and may be more susceptible to reporting error than hourly wage data (Bryant 16). There is a variable in the IPUMS data that specifies the average number of hours worked per week, but attempts to accurately derive an hourly wage for each individual in the sample were not successful so the available annual wage data was used.

Years of labor force experience is a variable that is usually included in the standard wage function, but that information was not available in the IPUMS data set. It would be expected that labor force experience is highly correlated with age, so age is used as a proxy for experience in this model. Studies of civilian earnings profiles have shown that the relationship between years of labor force experience and earnings can accurately be modeled with the equation:

$$\ln Y_i = \alpha_0 + \alpha_1 E_i + \alpha_2 E_i^2 + \mu_i \qquad (2)$$

where Y is equal to earnings and E is equal to years of experience (Goldberg 68). The quadratic form of age is used in this analysis both to proxy labor force experience and to model the concave form of men's age/earnings profiles. The expected sign of the Age variable is positive, while the expected sign of Age^2 is negative. Race is included in the equation because earnings data consistently show higher earnings for whites than for comparable non-whites. The expected sign of the White dummy variable is positive. Residence in a metropolitan area is included as a variable to account for the higher wages that are typical of metro areas as compared to rural areas. Metro areas are characterized by higher costs of living, increased demand for labor and expanded job opportunities, all of which work to

increase wage rates. The expected sign of the Metro variable is positive. Union members and workers that are covered by a collective bargaining agreement would be expected to have higher wage rates than similar non-union workers, so the Union variable is expected to be positive.

Marital status is included as an explanatory variable to account for the wage premium that is commonly associated with married men. This wage premium may exist because the characteristics that determine success in the labor force might be the same characteristics that lead to successfully finding and keeping a spouse (Chiodo 6). The expected sign of the Married variable is positive. The relationship between education and wages is well documented. Wages in the labor market are based on productivity. Education increases human capital, which increases productivity which in turn increases wages. The expected sign of all of the education dummy variables is positive, with the magnitude of the coefficient increasing as the level of education increases. The regional dummy variables are included to account for varying labor market conditions in different regions of the country.

Results

The result of the regression run on the entire sample data set suggests that there was no significant difference between the wages of veterans and the wages of non-veterans in 2003. The data show that veterans in the sample received a wage premium of 0.4% as compared to non-veterans but that result is not statistically significant. Full regression results are presented in table 3.

The regressions run on the sample data separated by education level show that veterans with less than a high school education earn a 13.6% wage premium

compared to non-veterans, while high school graduates earn a 3.8% premium. The impact of veteran status on the wages of individuals with more than a high school education was negative but small and not significant. Regression results by education level are presented in table 4.

Analysis of the sample data separated by race show that white veterans suffer a small but insignificant wage penalty, black veterans and veterans of other races benefit from a small but insignificant wage premium, while Hispanic veterans benefit from a large and significant 17.9% wage premium. Other studies have not looked at Hispanic veterans separately from whites and non-whites. If the large and significant wage premium that exists for Hispanic veterans is present in other data sets, then past studies may have understated the wage penalty for whites and overstated the wage premium for non-whites. Full regression results by race are presented in table 5.

Analysis of the sample data by age group show that 18-25 and 46-55 year old veterans suffer a small and insignificant wage penalty while 26-35 year olds enjoy a small and insignificant wage premium and 36-45 year old veterans suffered a statistically significant 3.3% wage penalty. Surprisingly, the data show that 56-65 year old veterans benefit from a significant 5.7% wage premium compared to non-veterans. The service of veterans aged 56-65 in 2003 almost exclusively took place during the Vietnam War. This result is unexpected because many other studies have found that Vietnam era veterans have suffered a wage penalty. Additionally, you would expect the impact of veteran status on civilian wages to decrease with age as civilian work experience increases. Full regression results by age group are presented in table 6.

Conclusion

This analysis confirms and supports what other studies have found; specifically that general veteran wage premiums or penalties no longer exist and that military service provides the greatest civilian wage benefit to non-white veterans and veterans with the least amount of education. It is important to remember that the military is not a social welfare organization; its mission is to protect and defend this country and the country's interests by force. The skills and training required to achieve that mission will always have limited value in the civilian labor market. However, unless the U.S. legislature reinstates the draft, the military must consider post service outcomes and ensure that they provide enough transferable training to keep veterans on equal footing with their civilian counterparts.

Works Cited

Angrist, Joshua. “Lifetime Earnings and the Vietnam Era Draft Lottery: Evidence from Social Security Administrative Records.” *The American Economic Review*, Vol. 80, No. 3 (Jun 1990): pp. 313-336. JSTOR. 25 February 2007. http://www.jstor.org.

Angrist, Joshua, and Alan B. Krueger. “Why Do World War II Veterans Earn More than Nonveterans?” *Journal of Labor Economics*, Vol. 12, No. 1 (Jan 1994): pp. 74-97. JSTOR. 4 February 2007. http://www.jstor.org.

Berger, Mark C., and Barry T. Hirsch. “The Civilian Earnings Experience of Vietnam-Era Veterans.” *The Journal of Human Resources* 18(4) (1983): 455-479.

Bryant, Richard R., V.A. Samaranayake and Allen Wilhite. “The Effect of Military Service on the Subsequent Civilian Wage of the Post-Vietnam Veteran.” The *Quarterly Review of Economics and Finance*, Vol. 33, No. 1 (Spring 1993): pp. 15-31.

Chiodo, Abbigail J., and Michael T. Owyang. "Marriage, Motherhood and Money: How Do Women’s Life Decisions Influence Their Wages?" *The Regional Economist* (Apr 2003): pp. 5-9. 21 Mar. 2007 http://www.stlouisfed.org/publications/re/2003/b/pages/marriage.html#top.

De Tray, Dennis. “Veteran Status as a Screening Device.” *The American Economic Review*, Vol. 72, No. 1 (Mar 1982): pp. 133-142. JSTOR. 4 February 2007. http://www.jstor.org.

Ehrenberg, Ronald G., and Robert S. Smith. Modern Labor Economics: Theory and Public Policy. 9th ed. Boston, MA: Pearson Addison-Wesley, 2006.

Goldberg, Matthew S., and John T. Warner. “Military Experience, Civilian Experience, and the Earnings of Veterans.” *The Journal of Human Resources* 22(1) (1987): pp. 62-81. Business Source Premier. 12 April 2007. http://search.ebscohost.com.

Hirsch, Barry T., and Stephen L. Mehay. "Evaluating the Labor Market Performance of Veterans Using a Matched Comparison Group Design." *The Journal of Human Resources* 38(3) (2003): pp. 673-700. EconLit. 2 Feb. 2007 <http://www.iza.org/en/webcontent/publications/papers/viewAbstract?dp_id=740>.

Steven Ruggles, Matthew Sobek, Trent Alexander, Catherine A. Fitch, Ronald Goeken, Patricia Kelly Hall, Miriam King, and Chad Ronnander. *Integrated Public Use Microdata Series: Version 3.0* [Machine-readable database]. Minneapolis, MN: Minnesota Population Center [producer and distributor], 2004. http://usa.ipums.org/usa/

U.S. Department of Labor: *Employment Situation of Veterans: August 2003*. Economic News Release Jul 27, 2004. Bureau of Labor Statistics. Washington, D.C. http://www.bls.gov/news.release/archives/vet_07272004.pdf

Weiss, Randall D.. “The Effect of Education on the Earnings of Blacks and Whites.” The Review of Economics and Statistics, Vol. 52, No. 2 (May 1970): pp. 150-159. JSTOR. 4 February 2007. http://www.jstor.org.

Table 1

Variable Definitions

Name	***Definition***
LnWAGE	The natural log (ln) of incwage variable from the IPUMS data. Incwage reports an individual's pre-tax wage and salary income for the previous 12 months. Sources of income include wages, salary, commission, cash bonuses, tips and other money income received from an employer.
AGE	The individual's age in 2003.
AGE_SQ	The individual's age squared.
Dummy Variables:	
BLACK	Equal to 1 if the respondent is black, 0 if non-black.
EDUBA	Equal to 1 if the respondent has completed a bachelors degree, equal to 0 otherwise.
EDUCOL	Equal to 1 if the respondent has completed some college or an associates degree, equal to 0 otherwise.
EDUGRAD	Equal to 1 indicating completion of a masters, professional or doctorate degree, equal to 0 otherwise.
EDUHS	Equal to 1 if the individual graduated from HS or completed their GED, equal to 0 otherwise.
EDUNA	Equal to 1 if the respondent has 0-12 years of schooling completed, but no high school diploma or GED; equal to 0 otherwise.
HISPAN	Equal to 1 if the respondent is Hispanic, 0 if non-Hispanic.
MARRIED	Equal to 1 if married or separated, 0 if single (never married), divorced or widowed.
METRO	Equal to 1 if the individual lives in a metropolitan area, 0 if in a non-metro area.
OTHER	Equal to 1 if the respondent is some race other than black, white or Hispanic, 0 otherwise.
REG_ENC	Equal to 1 if the respondent lives in Illinois, Indiana, Michigan, Ohio or Wisconsin, 0 otherwise.
REG_ESC	Equal to 1 if the respondent lives in Alabama, Kentucky, Mississippi or Tennessee, 0 otherwise.
REG_M	Equal to 1 if the respondent lives in Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah or Wyoming, 0 otherwise.
REG_MA	Equal to 1 if the respondent lives in New Jersey, New York or Pennsylvania, 0 otherwise.
REG_NE	Equal to 1 if the respondent lives in Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island or Vermont, 0 otherwise.
REG_P	Equal to 1 if the respondent lives in Alaska, California, Hawaii, Oregon or Washington, 0 otherwise.
REG_SA	Equal to 1 if the respondent lives in Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia or West Virginia, 0 otherwise.
REG_WNC	Equal to 1 if the respondent lives in Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota or South Dakota, 0 otherwise.
REG_WSC	Equal to 1 if the respondent lives in Arkansas, Louisiana, Oklahoma or Texas, 0 otherwise.
UNION	Equal to 1 if the individual is a union member or covered by a union contract, 0 if there is no union affiliation.
VETERAN	Equal to 1 if individual is a veteran, 0 if a non-vet.
WHITE	Equal to 1 if the respondent is white, 0 if non-white.

Table 2

Summary Statistics

	All Observations		***Veterans***		***Non-Veterans***	
	mean	***s.d.***	***mean***	***s.d.***	***mean***	***s.d.***
AGE	40.09	10.86	47.15	10.13	38.78	10.48
AGE_SQ	1724.95	887.74	2325.35	919.19	1613.61	835.66
BLACK	0.09	0.28	0.11	0.31	0.09	0.28
EDUBA	0.20	0.40	0.17	0.37	0.21	0.41
EDUCOL	0.27	0.44	0.38	0.49	0.24	0.43
EDUGRAD	0.10	0.30	0.09	0.28	0.10	0.31
EDUHS	0.31	0.46	0.34	0.47	0.31	0.46
EDUNA	0.12	0.32	0.03	0.17	0.13	0.34
HISPAN	0.15	0.35	0.06	0.24	0.16	0.37
LnWAGE	10.52	0.74	10.62	0.65	10.50	0.75
MARRIED	0.70	0.46	0.79	0.41	0.69	0.46
METRO	0.78	0.41	0.74	0.44	0.79	0.41
OTHER	0.07	0.26	0.05	0.22	0.08	0.27
REG_ENC	0.13	0.34	0.12	0.33	0.14	0.34
REG_ESC	0.05	0.21	0.05	0.22	0.05	0.21
REG_M	0.12	0.33	0.13	0.34	0.12	0.32
REG_MA	0.11	0.31	0.08	0.27	0.11	0.32
REG_NE	0.10	0.30	0.10	0.30	0.10	0.29
REG_P	0.14	0.35	0.14	0.35	0.14	0.35
REG_SA	0.16	0.36	0.17	0.38	0.15	0.36
REG_WNC	0.11	0.32	0.12	0.32	0.11	0.31
REG_WSC	0.08	0.27	0.08	0.27	0.08	0.27
UNION	0.04	0.20	0.06	0.24	0.04	0.19
VETERAN	0.16	0.36				
WHITE	0.69	0.46	0.78	0.41	0.68	0.47
n	38313		5993		32320	

Table 3

Regression Results

Variable	β	***Std. Error***
AGE	0.079 ***	0.002
AGE_SQ	-0.001 ***	0.000
VETERAN	0.004	0.009
WHITE	0.204 ***	0.007
METRO	0.162 ***	0.008
UNION	0.049 ***	0.015
MARRIED	0.225 ***	0.007
EDUBA	0.729 ***	0.012
EDUCOL	0.433 ***	0.011
EDUGRAD	0.968 ***	0.014
EDUHS	0.278 ***	0.011
REG_ENC	0.069 ***	0.013
REG_ESC	0.008	0.017
REG_M	0.025 **	0.013
REG_MA	0.085 ***	0.013
REG_NE	0.073 ***	0.014
REG_P	0.084 ***	0.013
REG_SA	0.035 **	0.012
REG_WSC	0.026 *	0.014
constant	7.867 ***	0.040
Observations	38,313	
Adj. R squared	0.337	

*** indicates statistical significance at the 1% level

** indicates statistical significance at the 5% level

* indicates statistical significance at the 10% level

Table 4

Regression Results by Educational Group

Variable	***Less than HS***	***High School***	***Some College***	***Bachelors***	***Grad / Prof***
AGE	0.053 ***	0.071 ***	0.096 ***	0.097 ***	0.105 ***
	(0.005)	(0.003)	(0.004)	(0.006)	(0.011)
AGE_SQ	-0.001 ***	-0.001 ***	-0.001 ***	-0.001 ***	-0.001 ***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
VETERAN	0.136 ***	0.038 ***	-0.016	-0.037	-0.023
	(0.045)	(0.014)	(0.015)	(0.023)	(0.035)
WHITE	0.222 ***	0.180 ***	0.198 ***	0.230 ***	0.172 ***
	(0.020)	(0.012)	(0.014)	(0.019)	(0.029)
METRO	0.090 ***	0.099 ***	0.162 ***	0.273 ***	0.327 ***
	(0.023)	(0.012)	(0.014)	(0.021)	(0.035)
UNION	0.195 ***	0.163 ***	0.092 ***	-0.176 ***	-0.255 ***
	(0.060)	(0.023)	(0.025)	(0.044)	(0.056)
MARRIED	0.179 ***	0.214 ***	0.216 ***	0.274 ***	0.257 ***
	(0.020)	(0.012)	(0.014)	(0.018)	(0.031)
REG_ENC	0.026	0.056 ***	0.078 ***	0.056 *	0.092 **
	(0.045)	(0.020)	(0.022)	(0.029)	(0.046)
REG_ESC	-0.086 *	-0.030	0.027	0.064	0.016
	(0.052)	(0.026)	(0.031)	(0.041)	(0.069)
REG_M	0.053	0.017	0.028	0.016	-0.029
	(0.043)	(0.021)	(0.022)	(0.031)	(0.049)
REG_MA	-0.042	0.038 *	0.101 ***	0.125 ***	0.181 ***
	(0.046)	(0.022)	(0.025)	(0.030)	(0.047)
REG_NE	-0.016	0.061 ***	0.043 *	0.102 ***	0.154 ***
	(0.050)	(0.022)	(0.026)	(0.030)	(0.047)
REG_P	0.012	0.068 ***	0.107 ***	0.110 ***	0.076
	(0.041)	(0.022)	(0.022)	(0.029)	(0.048)
REG_SA	-0.020	-0.011	0.049 **	0.046	0.137 ***
	(0.042)	(0.020)	(0.022)	(0.028)	(0.045)
REG_WSC	-0.015	-0.001	0.021	0.051	0.062
	(0.043)	(0.024)	(0.026)	(0.034)	(0.059)
constant	8.538 ***	8.392 ***	7.940 ***	8.063 ***	8.071 ***
	(0.099)	(0.061)	(0.077)	(0.121)	(0.233)
Observations	4,494	12,061	10,160	7,697	3,901
Adj. R sq.	0.124	0.176	0.195	0.148	0.094

Standard errors are in parentheses

*** indicates statistical significance at the 1% level

** indicates statistical significance at the 5% level

* indicates statistical significance at the 10% level

Table 5

Regression Results by Race

Variable	*White*	*Black*	*Hispanic*	*Other*
AGE	0.089 ***	0.057 ***	0.059 ***	0.064 ***
	(0.002)	(0.007)	(0.005)	(0.008)
AGE_SQ	-0.001 ***	-0.001 ***	-0.001 ***	-0.001 ***
	(0.000)	(0.000)	(0.000)	(0.000)
VETERAN	-0.017 *	0.031	0.179 ***	0.020
	(0.010)	(0.028)	(0.034)	(0.041)
METRO	0.185 ***	0.185 ***	0.030	0.069 **
	(0.009)	(0.034)	(0.026)	(0.034)
UNION	0.027	0.122 ***	0.218 ***	0.015
	(0.017)	(0.044)	(0.058)	(0.064)
MARRIED	0.265 ***	0.114 ***	0.150 ***	0.171 ***
	(0.009)	(0.023)	(0.018)	(0.029)
EDUBA	0.693 ***	0.748 ***	0.652 ***	0.817 ***
	(0.017)	(0.042)	(0.031)	(0.046)
EDUCOL	0.401 ***	0.490 ***	0.405 ***	0.486 ***
	(0.017)	(0.037)	(0.023)	(0.046)
EDUGRAD	0.913 ***	0.980 ***	0.950 ***	1.113 ***
	(0.019)	(0.057)	(0.046)	(0.049)
EDUHS	0.248 ***	0.289 ***	0.263 ***	0.364 ***
	(0.016)	(0.036)	(0.019)	(0.044)
REG_ENC	0.063 ***	0.083	0.125 **	0.091
	(0.014)	(0.059)	(0.051)	(0.064)
REG_ESC	0.006	0.046	0.152	0.054
	(0.019)	(0.062)	(0.094)	(0.109)
REG_M	0.008	-0.105	0.070	0.105 *
	(0.014)	(0.079)	(0.045)	(0.057)
REG_MA	0.068 ***	0.132 **	0.089 *	0.258 ***
	(0.015)	(0.060)	(0.049)	(0.058)
REG_NE	0.071 ***	0.165 **	0.025	0.141 **
	(0.014)	(0.074)	(0.060)	(0.069)
REG_P	0.090 ***	0.136 **	0.067	0.152 ***
	(0.015)	(0.067)	(0.044)	(0.048)
REG_SA	0.044 ***	0.074	-0.001	0.089
	(0.014)	(0.055)	(0.047)	(0.059)
REG_WSC	0.013	0.050	0.045	0.114 *
	(0.017)	(0.062)	(0.046)	(0.063)
constant	7.844 ***	8.251 ***	8.463	8.203 ***
	(0.049)	(0.149)	(0.101)	(0.164)
Observations	26,596	3,374	5,567	2,776
Adj. R sq.	0.318	0.218	0.226	0.291

Standard errors are in parentheses

*** indicates statistical significance at the 1% level

** indicates statistical significance at the 5% level

* indicates statistical significance at the 10% level

Table 6

Regression Results by Age Group

Variable	***18 - 25***	***26 - 35***	***36 - 45***	***46 - 55***	***56 - 65***
AGE	0.188 *	0.095 **	0.055	-0.050	0.096
	(0.108)	(0.049)	(0.060)	(0.088)	(0.196)
AGE_SQ	-0.002	-0.001	-0.001	0.000	-0.001
	(0.002)	(0.001)	(0.001)	(0.001)	(0.002)
VETERAN	-0.011	0.033	-0.033 **	-0.019	0.057 **
	(0.060)	(0.021)	(0.017)	(0.016)	(0.024)
WHITE	0.047 **	0.198 ***	0.268 ***	0.229 ***	0.189 ***
	(0.022)	(0.013)	(0.013)	(0.016)	(0.027)
METRO	0.074 ***	0.131 ***	0.187 ***	0.184 ***	0.158 ***
	(0.026)	(0.015)	(0.014)	(0.016)	(0.028)
UNION	0.214 ***	0.063 *	0.029	0.022	0.107 **
	(0.068)	(0.033)	(0.025)	(0.028)	(0.050)
MARRIED	0.145 ***	0.178 ***	0.224 ***	0.242 ***	0.238 ***
	(0.025)	(0.013)	(0.013)	(0.016)	(0.030)
EDUBA	0.391 ***	0.668 ***	0.818 ***	0.807 ***	0.668 ***
	(0.042)	(0.021)	(0.022)	(0.026)	(0.042)
EDUCOL	0.238 ***	0.387 ***	0.499 ***	0.543 ***	0.393 ***
	(0.031)	(0.020)	(0.021)	(0.025)	(0.041)
EDUGRAD	0.559 ***	0.884 ***	1.051 ***	1.065 ***	0.870 ***
	(0.137)	(0.027)	(0.025)	(0.028)	(0.043)
EDUHS	0.210 ***	0.241 ***	0.312 ***	0.360 ***	0.239 ***
	(0.028)	(0.020)	(0.020)	(0.025)	(0.038)
REG_ENC	-0.057	0.066 ***	0.097 ***	0.082 ***	0.039
	(0.040)	(0.024)	(0.022)	(0.025)	(0.048)
REG_ESC	-0.054	-0.026	0.033	0.020	0.065
	(0.054)	(0.033)	(0.029)	(0.033)	(0.062)
REG_M	-0.024	-0.006	0.038 *	0.059 **	-0.023
	(0.039)	(0.024)	(0.023)	(0.026)	(0.048)
REG_MA	-0.112 ***	0.093 ***	0.125 ***	0.098 ***	0.063
	(0.043)	(0.026)	(0.023)	(0.027)	(0.049)
REG_NE	0.052	0.091 ***	0.085 ***	0.070 ***	-0.004
	(0.046)	(0.026)	(0.023)	(0.027)	(0.050)
REG_P	0.014	0.063 ***	0.115 ***	0.101 ***	0.046
	(0.040)	(0.024)	(0.022)	(0.026)	(0.049)
REG_SA	0.002	0.022	0.033	0.059 **	0.021
	(0.039)	(0.023)	(0.021)	(0.025)	(0.046)
REG_WSC	-0.015	-0.002	0.054 **	0.059 **	-0.058
	(0.043)	(0.027)	(0.026)	(0.030)	(0.053)
constant	6.476 ***	7.801 ***	8.275 ***	10.870 ***	7.184
	(1.175)	(0.751)	(1.218)	(2.219)	(5.848)
Observations	4,016	9,760	12,016	9,153	3,368
Adj. R sq.	0.150	0.254	0.295	0.273	0.218

Standard errors are in parentheses

** indicates statistical significance at the 5% level

*** indicates statistical significance at the 1% level

* indicates statistical significance at the 10% level