

**Terrorism and Patriotism: On the Earnings of U.S. Veterans following September 11, 2001**

**Alberto Dávila**

Department of Economics and Finance  
The University of Texas – Pan American  
1201 West University Drive  
Edinburg, TX 78539  
(956) 665-7136; FAX (956) 665-5020  
[adavila@utpa.edu](mailto:adavila@utpa.edu)

and

**Marie T. Mora**

Department of Economics and Finance  
The University of Texas – Pan American  
1201 West University Drive  
Edinburg, TX 78539  
(956) 665-7913; FAX (956) 665-5020  
[mtmora@utpa.edu](mailto:mtmora@utpa.edu)

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# **Terrorism and Patriotism: On the Earnings of U.S. Veterans following September 11, 2001**

Alberto Dávila and Marie T. Mora\*

Shortly following the terrorist attacks of September 11, 2001, the collective mood of Americans seemingly changed. The popular press as well social scientists have reported high Americans' perceptions towards patriotism resulting from the terrorist attacks. Joshua Woods (2011), for example, outlines a series of short- and long-term behavioural shifts in American attitudes (among them an increase in patriotism) following September 11 (henceforth 9/11). Economists have also analyzed post 9/11 labor-market outcomes. This work links 9/11 events to a subsequent Becker-type “distaste” for populations perceived to resemble the cultural makeup of the 9/11 perpetrators. Alberto Dávila and Marie T. Mora (2005) and Neeraj Kaushal, Robert Kaestner, and Cordelia Reimers (2006) provide empirical support for this prediction given their findings on the negative labor market outcomes of Arab Americans following 9/11.

The flipside of the foregoing neoclassical model prediction is that some American populations might have *benefitted* from increases in patriotic feelings, such as U.S. veterans in the workforce. We note that the study of veteran labor markets is fairly robust in the economics literature. In this paper, we add to this and the 9/11 literatures by investigating the impact that the 9/11 events had on the earnings of male U.S. veterans. Our hypothesis is that the surge in patriotism following 9/11 improved the relative earnings of U.S. veterans, but this earnings effect was short-lived. In addition to testing this hypothesis, we further consider whether this effect was equally felt across racial/ethnic groups and along regional dimensions.

## **I. Data and Sample Characteristics**

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\* Dávila: Department of Economics & Finance, University of Texas–Pan American, Edinburg, TX 78539 (e-mail: [adavila@utpa.edu](mailto:adavila@utpa.edu)); Mora: Department of Economics & Finance, University of Texas–Pan American, Edinburg, TX 78539 (e-mail: [mtmora@utpa.edu](mailto:mtmora@utpa.edu)). We appreciate the research assistance of Ms. Nese Nasif.

Our empirical analysis employs the Public Use Microdata Samples of the 2000 decennial census and the 2001-2008 American Community Surveys (ACS) provided by Steven Ruggles et al (2011) in the Integrated Public Use Microdata Series (IPUMS). These data include information on income earned in the year prior to the census, and in the 12 months prior to the ACS questionnaire. We therefore omit the 2002 ACS (which contains 2001 earnings) because the events of 9/11 presumably interrupted the earnings paths and work schedules set pre-9/11.

We construct a synthetic cohort of men who would have been eligible to join the military by the first Gulf War or earlier (i.e., they had been 18 years or older in 1990), and who were not nearing traditional retirement ages during our timeframe. The cohort includes male workers between the ages of 28-54 in 2000, 29-55 in 2001, and so forth, excluding immigrants who migrated to the U.S. after 1990. Only civilians with annual wage and salary income who worked at least 20 hours per week for 27 or more weeks are included.<sup>1</sup>

Of the cohort in the 2001 ACS, Blacks were more represented among male veterans (11.9 percent) than non-veterans (9.5 percent). Hispanics comprised 5.8 percent of veteran men—a smaller share than their 9.2 percent among non-veterans. This gap partly reflects the relatively large share of immigrants of Hispanic non-veteran men (nearly half, compared to 14 percent of Hispanic veterans). This veteran/non-veteran Hispanic representation narrows when considering U.S. natives only (4.9 versus 5.3 percent).

Table 1 provides selected average characteristics of this cohort in the 2001 ACS. Veteran

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<sup>1</sup> We exclude women because they only comprised seven percent of veterans in our cohort. Also, previous studies have found gender-related differences in veteran labor market markets; this topic goes beyond the scope of this study, but it is worthy of future investigation in the 9/11 context. As group quarters were not included in the 2001-2005 ACS, we omit group quarter residents from all years. Moreover, we exclude men who did not speak English at least “well” as they were likely ineligible for U.S. military service, thus representing an inappropriate control group.

men had hourly earnings in 2000 that were 2.8 percent lower on average ( $= 2.863 - 2.891$ ) than non-veterans. This observation is consistent with other studies [such as the work by Mark Berger and Barry T. Hirsch (1983) and Joshua Angrist (e.g., 1990)] on the relative earnings of male veterans in earlier time periods; these studies suggest the loss of civilian labor market experience as a potential explanation. This result could also relate to the relatively high share of workers with a disability among veterans. However, as seen in Table 1, the veteran/non-veteran gap in education was only slight, and veterans had relatively more potential work experience (estimated as age-education-5) as well as a lower share of immigrants.

Table 1: Characteristics of Veteran and Non-Veteran Male Workers in the 2001 ACS

Characteristic	Veterans	Non-Veterans
ln(hourly earnings) in 2000	2.863 (0.603)	2.891 (0.683)
Years of education	13.757 (0.603)	13.868 (2.807)
Years of experience	26.252 (7.951)	21.876 (7.513)
Foreign-born	0.038	0.114
Has a disability	0.090	0.066
N (unweighted)	33,738	138,532
N (weighted)	7,514,794	32,241,507

*Source:* Authors' estimates for the synthetic cohort (described in the text) in the 2001 ACS in the IPUMS.

*Notes:* The parentheses contain the standard deviations for the continuous variables. IPUMS-provided sampling weights are employed. The "N (unweighted)" refers to the actual sample size, and the "N (weighted)" refers to the estimated population size represented by the sample.

In terms of race/ethnicity (not shown to conserve space), unlike the case for non-Hispanic Whites, Black and Hispanic veterans earned more on average than their non-veteran counterparts. A relative premium among non-White veterans has been identified in the literature [examples include Hirsch and Stephen L. Mehay (2003), Angrist (1990), and Dennis De Tray (1982)]. As such, racial/ethnic wage differentials are lower for veterans than non-veterans. The

relative earnings advantage of Black and Hispanic veterans could relate to educational attainment (13.5 years for veterans versus 13.2 years for non-veterans among Blacks, and the corresponding 13.4 years and 12.0 among Hispanics) and relatively wide veteran/non-veteran gaps immigrant shares, particularly among Hispanics. De Tray (1982) suggests that this premium could reflect their educational quality disadvantage over non-Hispanic Whites.

## **II. Empirical Methodology and Results for the Relative Earnings of Veteran Men**

To analyze whether the earnings of veterans in our cohort changed after 9/11, an “unexplained” wage differential is estimated between veterans and otherwise similar non-veterans using the familiar Oaxaca-type wage decomposition method. We first determine an earnings function solely for non-veterans in each year to obtain their structure of wages:

$$(1) \text{Ln}(Earnings)_{non-vet} = \mathbf{X} \mathbf{B} + e,$$

where the term “Ln(Earnings)” refers to the natural logarithm of hourly earnings.<sup>2</sup> The vector  $\mathbf{X}$  includes variables for race/ethnicity, human capital (education, experience, and experience-squared), whether the individual had a disability, was an immigrant, the U.S. tenure of immigrants, and geographic region. The  $\mathbf{B}$  term represents a coefficient vector to be estimated, and  $e$  denotes the normally distributed error term. The estimated coefficients in  $\mathbf{B}$  (which can be obtained from the authors) are then applied to our sample of veterans to estimate how much they should have earned, given their characteristics, if they faced the same wage structure as non-veterans. The difference between their actual earnings and these predicted earnings reflects how veteran status affected labor market income.

Figure 1 presents these unexplained relative earnings of veterans in each year for the entire cohort as well as for Blacks, Hispanics, and non-Hispanic Whites. The larger symbols

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<sup>2</sup> Because the 2008 ACS (which refers to 2007 earnings) has weeks worked in categories, to estimate 2007 hourly wages, we impute a continuous variable for weeks worked using averages per category in the 2005-2007 ACS.

indicate when these earnings significantly differed (at conventional levels) from those accrued in 2000. In that year, male veterans earned 5.1 percent less on average than otherwise similar non-veterans; the statistical significance of this veteran “penalty” was at the one-percent level.

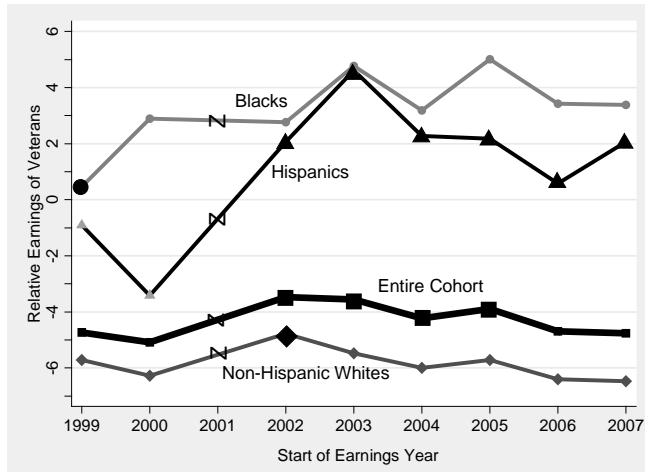


Figure 1: The Relative Hourly Earnings of Male Veterans in the U.S.: 1999 – 2007

*Source:* Authors’ estimates for the synthetic cohort (described in the text) in the PUMS and ACS in the IPUMS.  
*Notes:* The “Start of Earnings Year” refers to the year when the earnings started to be accumulated, such that the earnings year of 2000 is from the 2001 ACS. See the text for how the relative earnings were measured. The enlarged bold symbols indicate when these earnings significantly differed from those in 2000. For the remaining years, the differences in relative earnings from 2000 earnings were not statistically significant at conventional levels.

For the entire cohort, Figure 1 indicates that the relative earnings of male veterans significantly improved shortly after 9/11, as their penalty shrank to 3.5 percent in 2002.<sup>4</sup> Veteran men in this cohort continued to earn more through 2005 than they had in 2000 when controlling for other characteristics. In 2006, however, their relative wages returned to statistically similar levels as those in the year before the terrorist attacks. This apparent short-run improvement in the earnings of veteran men is consistent with standard neoclassical

<sup>4</sup> While a detailed analysis of gender goes beyond the scope of this study (recall Note 1); it is worth noting that when replicating our analysis for women in the same cohort, the relative earnings of female veterans also significantly improved after 9/11. Female veterans earned a statistically insignificant 0.9 percent less than otherwise similar non-veteran women in 2000; however in 2002, veteran women earned a significant premium of 4.5 percent.

discrimination theory, in which a shock leading to more favorable views of patriots (veterans) resulted in short-run higher labor market earnings. As the decade progressed, the effects of this shock appear dissipated.

Racial/ethnic results indicate, however, that this patriot “gain” was uneven. Figure 1 shows that Black veterans earned an average premium of 2.9 percent in 2000, but inconsistent with expectations following a surge in patriotic sentiments, their relative wages did not significantly change post-9/11. The earnings of Native American, Asian, and mixed-race veterans (not shown) also remained statistically unchanged after 9/11. In contrast, Hispanic and non-Hispanic White male veterans had wage penalties in 2000 (of 3.4 percent for Hispanics, and 6.3 percent for Whites), but mirroring the entire cohort, their relative earnings significantly rose after 9/11. In particular, the veteran wage penalty narrowed in magnitude for non-Hispanic Whites (to 4.8 percent), and became an earnings premium for Hispanics (of 2.1 percent) in 2002. However, the relative wage gain for non-Hispanic White veterans lasted one year, while the gain for Hispanic veterans remained through at least 2007.

The findings of a persistent improvement in the wages of male Hispanic veterans, along with the lack of a change in these wages for Blacks following 9/11, do not conform to neoclassical discrimination theory. Perhaps these results stem from a “base group problem”, as the results presented in Figure 1 come from estimating Eq. (1) using the entire sample of non-veteran men (with racial/ethnic identifiers) instead of separate estimations for each racial/ ethnic group. A replication using the latter technique primarily mirrors the information shown in Figure 1. Another possibility is that immigrants (who represent a large share of the civilian Hispanic population) influenced the results, but the findings hold when this groups is omitted.

### **III. An Exploratory Analysis of State-Level Relative Earnings of Veteran Men**

Our results suggest that the relative earnings of veteran men in the U.S. *overall* increased on a short-run basis after 9/11, presumably caused by a surge in patriotic sentiments following the terrorist attacks. An unaddressed issue is whether this improvement occurred evenly across the country. The above results included controls for geographic regions, but post 9/11 changes could have directly stemmed from initial patriotism attitudes in local labor markets.

As an exploratory analysis, we replicate the above empirical work separately for each state plus DC to obtain state-level averages of the relative earnings of veterans in 2000 and 2002. We then regress these averages (using weighted least squares based on the standard deviations of these earnings) on states' labor market conditions [including annual unemployment rates (from the Bureau of Labor Statistics) and the manufacturing-industry share of all workers aged 25-64 (estimated using the ACS)], the veteran share among all adults aged 25-64 in the state (to control for unobserved effects related to the presence of veterans), and attitudinal measures presumably related to states' socio-political indices.

Traditional “conservative” and “liberal” measures exist, but we do not measure *a priori* which regions would be more patriotic as the data do not allow us to do so. This said, we consider four different metrics in this exploratory analysis: (1) “red states” versus “blue states” (i.e., Republican versus Democratic) based on the 2000 Presidential election, (2) the percent of eligible voters before the 2000 election who reported being “conservative” or “extremely conservative” as well as the percent of those reporting being “liberal” or “extremely liberal” in American National Election Studies (ANES) data,<sup>5</sup> (3) voter turnout in the 2000 election, and (4)

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<sup>5</sup> See <http://electionstudies.org/> for more on the ANES. Interview modes were via telephone and in-person; respondents were asked to rate themselves as “extremely conservative”, “conservative”, “slightly conservative”, “moderate”, “slightly liberal”, “liberal”, and “extremely liberal”. A caveat with these nationally representative data is that they might not be representative of states, such that reader should be cautious in interpreting these results.



the state “freedom score” estimated by William P. Ruger and Jason Sorens (2009) based on personal and economic freedom data.

Table 2 presents selected regression results from this exercise for three of these measures (the full set of results can be obtained from the authors). Panel A shows that the relative wages of male veterans in “red states” were significantly lower on average than those in “blue states” in 2000. In 2002, however, veteran men had similar relative earnings in both sets of states.<sup>6</sup> Panel B suggests that neither self-reported conservatism nor liberalism among eligible voters significantly related to state-wide earnings of veterans in 2000, but just two years later, states with higher shares of conservatives had significantly higher average veteran earnings. Moreover, while labor markets in “freer” states (Panel C) paid male veterans significantly less on average than those in other states in 2000, they paid them significantly more in 2002.

Table 2: Selected Empirical Results for the State-Level Relative Earnings of Veterans

Ideology Variable	2000 Earnings	2002 Earnings	Do 2000 & 2002 Sig. Differ?
<u>Panel A: Regression Using “Red” versus “Blue” States (2000)</u>			
Red State (= 1; Blue State = 0)	-0.013* (0.007)	0.009 (0.008)	Yes**
<u>Panel B: Regression Using Percent “Conservatives” and “Liberals”</u>			
Conservative + extreme cons. x 100	0.001 (0.019)	0.076*** (0.020)	Yes***
Liberal + extreme liberal x 100	0.052 (0.024)	-0.014 (0.029)	Yes*
<u>Panel C: Regression Using State Freedom Index</u>			
State freedom index	-0.030** (0.013)	0.027* (0.014)	0.083** (0.041)

\*\*\*, \*\*, \* Significant at the 1, 5, or 10 percent level, respectively.

Notes: These regressions were estimated using weighted least squares. The parentheses contain standard errors. The sample size is 51 per year (= 50 states plus DC), except for in Panel C (which excludes DC). See the text for

<sup>6</sup> We also estimated a fifth regression using the percent of the total votes cast in favor of George W. Bush to test whether the extent of states’ “redness” mattered; this variable was not statistically significant in either year suggesting that stronger rates of “Republicanism” lacked a link to higher veterans’ earnings after 9/11.

other control variables. The tests for the statistical significance of the difference between 2000 and 2002 were estimated by pooling the two years and interacting all variables with a binary variable equal to one for the 2002 sample; z-tests on these 2002-interaction terms provided the significance level of the difference in coefficients.

The other measure we considered—voter turnout (which is presumably more closely aligned with patriotism than political ideology)—did not significantly relate to veterans’ wages in either year (not shown to conserve space). Among the other control variables, only the state unemployment rate was statistically significant; it had an inverse relationship (and remained statistically stable between 2000 and 2002) with veterans’ relative earnings at the state level.

#### **IV. Concluding Remarks**

The results presented here suggest a significant short-term improvement in the relative earnings of U.S. veterans following the events of 9/11. We argue that this earnings effect resulted from a surge in patriotic feelings after these terrorist attacks. In general, this finding supports predictions found in the labor-market neoclassical theory. However, when considering race/ethnicity, this post-9/11 earnings effect occurred among non-Hispanic White and Hispanic men, but not for Blacks and other non-White groups. Moreover, the seemingly persistent gain in the relative earnings of Hispanic veterans suggests a longer-run event than expected.

Some of these racial/ethnic differences might be rooted in economic stratification theory [for an overview, see William Darity (2005)]. If Hispanics and Blacks have been differently stratified into military service than non-Hispanic Whites (yielding a different pool of veterans across these groups), or if these groups’ veterans are differently perceived by society at large, dissimilar labor-market outcomes could occur along racial/ethnic lines in the presence of short-term shocks favoring veterans in general. Future research might yield fruitful insights through more thorough investigations into these potential explanations.

Moreover, on the issue of patriotism, we note that some social scientists [such as Linda J. Skitka (2005)] distinguish between patriotism (more akin to a “love of country” attitude) and

nationalism (which conjures more negative reactions toward the rest of the world, such as an “us versus them” sentiment). While we do not delve into this distinction here, this possibility might help explain some of our results related to differences in post-9/11 veteran earning outcomes across states.

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