

# Issue Paper

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*Arroyo Center*

## Keeping Military Pay Competitive: The Outlook for Civilian Wage Growth and Its Consequences

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Attracting and keeping high-quality personnel has been a challenge for the military services during much of the past decade. In response to growing concerns about military readiness and missed recruiting goals, and recognizing that compensation plays an important part in career decisionmaking, Congress recently approved significant increases in military pay.

Many in the defense community expected that these changes would “solve” recent recruiting and manning problems. However, RAND analysis suggests further challenges ahead. The military faces stiffer competition from higher education as more and more young Americans attend college each year. Meanwhile, the financial returns to college education have been on the rise for 20 years or more. These and other factors, outlined in this issue paper, suggest that more must be done if military pay is to remain competitive in the future.

### OVERVIEW

Recent legislation (PL 106-65) provided for a re-reform of military retirement benefits and increases in special and incentive pays. It also allowed for higher-than-typical increases in basic pay over seven years. A 4.8 percent increase took effect January 1, 2000, followed by a struc-

tural adjustment on July 1, 2000 that increased basic pay in certain year-of-service/pay-grade cells. In the years 2001–2006, military pay will increase half a percentage point more each year than the Employment Cost Index for private-sector wage costs.

While these pay increases represent major progress, several forces are at work to make the military’s job even harder. First, the economic boom has lasted longer and been stronger than anyone expected. Employment is at an all-time high, and unemployment has not been this low—in the 4 percent range—since the 1960s. This means that the military must compete in a job market that offers many alternatives to young people who are making career choices. How long the boom will continue is unknown, but it will continue to pose difficulties for recruiting and retention until it runs out of steam.

Another challenge is that the increased financial benefits of higher education can be expected to attract more high-aptitude high school graduates to college at the same time that the military’s demand for such people can be expected to increase. Wage increases during the economic boom have been greatest for those with four or more years of college, which heightens the incentive for high school graduates to go to college rather than join the military,

even though they might not complete four years. The long-term outlook would not be disturbing if the military could afford to see its traditional market for high-quality recruits shrink. But today's visions of the future force sparkle with claims of technological prowess and information superiority. It is unlikely that the military's demand for high achievers will fall.

Finally, it is also possible that the services will seek not just to meet current recruiting targets, but to increase the number of their personnel. The United States continues to be involved in military operations for humanitarian missions, disaster relief, peace enforcement, and other purposes. This has stressed the military's ability to maintain readiness, forced more personnel to work away from home stations, and, in many cases, increased workloads. An increase in personnel would ease these pressures.

Given these factors, will the pay increases enacted by the FY 2000 legislation be enough to help the services meet their recruiting and retention goals? Will the budgets developed in accord with the pay increases be enough to fulfill plans that require high-quality personnel?

To help answer these questions, our work<sup>1</sup> looks at how military compensation will compare with civilian compensation during the next ten years. This is important because relative pay plays an important part in career decisionmaking and thus is key in recruiting and retention. It is also important because the services must prepare plans, programs, and budgets for future years and meet numerous demands, not the least of which is force modernization.

Our findings suggest that further pay increases will be needed. To meet its manpower challenges, and in particular to be competitive with higher education's pathways to private-sector opportunities, the military may have to adjust compensation further than called for in the FY 2000 pay legislation. We do not know specifically what size and form the increase in military pay should take. However, it seems plausible that if future budgets are based only on the FY 2000 legislation, there may be insufficient funds for personnel and an inability to achieve force plans with the caliber of personnel assumed. The military may also have to develop new views on career paths, in-service education, and transferability of skills.

## WE LOOKED AT PAY IN TWO WAYS

We undertook two kinds of pay comparisons. The first comparisons followed the customary approach of comparing current military and civilian pay for persons with similar characteristics. For example, we compared entry-level pay for military personnel with pay for civilian workers in their early twenties (22–26) who had a high school education. Comparisons such as these, across all groups, also allowed us to compute military/civilian pay gaps.

Current pay comparisons hold education constant and do not allow for the fact that many people return to college, even if they do not stay for four years. So our second pay comparisons considered pay streams for different career paths. These paths varied by occupation and level of education.

For both kinds of pay comparisons, the key is not the value of military versus civilian current pay or career earnings at a single point in time, but how their relative value has changed over time. Change over time is important because under the all-volunteer force the military has always had to offer a "premium"—pay that is higher than average—to attract the quantity and quality of personnel it needs. The question is how the premium has fallen or risen relative to private-sector opportunities. Thus, the comparison between current pay and career pay allows us to ask whether the value of a military career is falling behind that of alternative private-sector careers, even though the military's current pay, when compared with that of high school graduates, may seem as competitive as ever.

Military pay increases for 2001–2006 are mandated by the new legislation to be half a percentage point higher than the annual increase in the Employment Cost Index (ECI). The ECI reflects employment cost growth of the labor force at large. However, the labor force at large does not reflect the composition of military personnel with respect to their age, education, occupation, race/ethnicity, and gender distribution. Recognizing these differences can be important because wages have historically grown at different rates for different demographic groups. If wages for the private-sector groups similar to military personnel grow faster than the ECI, the planned increases in military pay will create less of an edge over private-sector pay.

To predict future wage growth for both military personnel and civilians, we analyzed wage data for full-time, full-year workers from Current Population Surveys for 1983–1998. Within six groups defined by gender and

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<sup>1</sup>The RAND research was sponsored by the Deputy Chief of Staff for Personnel, U.S. Army, and was conducted in the RAND Arroyo Center, a federally funded research and development center sponsored by the U.S. Army. The underlying analysis will be documented in more detail in a forthcoming RAND monograph.

race/ethnicity, we estimated models of average wage as a function of age, occupation, education level, unemployment rate, and time trend.<sup>2</sup> Thus, the wage analysis identified long-term wage trends, the cyclical effect of rising and falling unemployment, and wage differences across groups.

### COLLEGE HAS PAID OFF

Figure 1 shows wages for white males ages 22–26 in six occupational groups, holding education constant (high school graduation). The chart shows that wages differ by occupation, with professional/technical occupations being the highest paid and service occupations the lowest paid.

Figure 2 shows wages for white males ages 27–31 with varying levels of education, holding their occupation constant (professional/technical). The chart shows that wages differ by education, with college-educated workers being the highest paid.

It is well known that wages differ according to education, occupation, age, race/ethnicity, and gender, as illustrated by Figures 1 through 4. However, for military/civilian pay comparisons we are also interested in how wages have changed over time relative to military pay, so information about wage trends is vital. Figure 1 shows that there has been little wage growth for high school

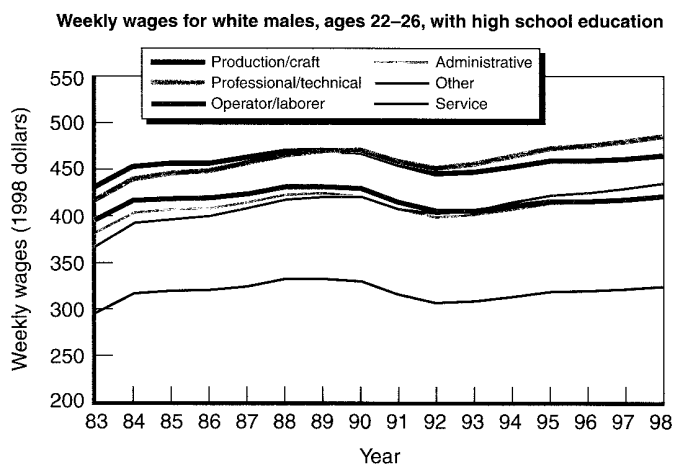


Figure 1—No Wage Growth for Men with High School Education

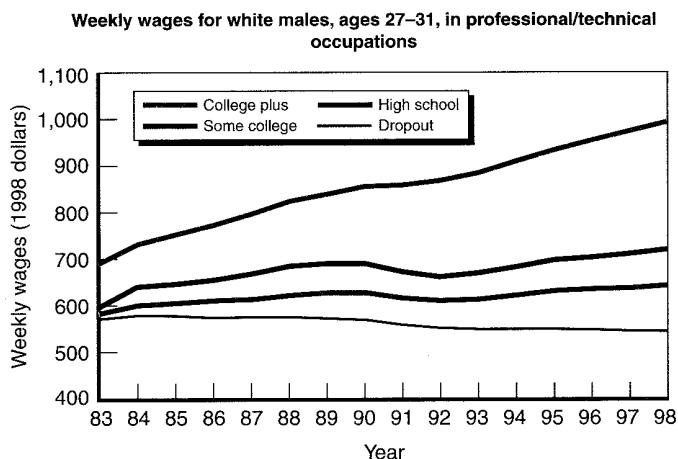


Figure 2—Big Wage Gains Have Come with Four or More Years of College for Workers in Professional/Technical Occupations

graduates; only professional/technical occupations have a positive wage trend, and it is slight. Figure 2 shows that professional/technical occupations have had substantial wage growth for those with four or more years of college but little wage growth at lower levels of education.

Figure 3 summarizes the estimated wage trends for men by race/ethnic group in two occupations (professional/technical and production/craft). Figure 4 does the same for women. The height of the bars represents the average year-to-year change in wages. The wage trends are summarized as a year-to-year change because during the period of analysis the wage trends are typically monotonic and linear, controlling for the business cycle. The other occupational groups have wage trends similar to production/craft and lower than professional/technical.

As seen in Figure 3, men’s wages have declined slightly in production/craft and grown in professional/technical occupations. Women’s wages (Figure 4) have tended to rise regardless of occupation, closing part of the male-female wage gap in the civilian sector. Yet again, the largest increase occurs in professional/technical occupations. Men and women have shared equally in the wage gains for those with four or more years of college in professional/technical occupations.

We used the results of our current wage analysis to compute past military/civilian pay gaps and forecast future gaps. We compared military pay to the past and projected future distribution of civilian wages, showing where military pay stood as a percentile of civilian wages.

To compute military/civilian pay gaps, we created civilian wage and military pay indexes with a common base year and then computed how much one index grew

<sup>2</sup>We deflated wages to 1998 dollars using the Consumer Price Index minus 1.1 percentage points. The latter adjusts for the CPI’s upward bias; a presidential commission reported a range of 0.7 to 1.4 percentage points per year for the bias and suggested the 1.1 percentage point adjustment. In addition, the Bureau of Labor Statistics has created a provisional CPI series to adjust for bias, with the adjustment averaging 0.4 percentage point per year for 1983–1998. We made exploratory estimates with the BLS series and found results substantially the same as with CPI – 1.1.

Average year-to-year change in annual real wages for males, 1983–1998

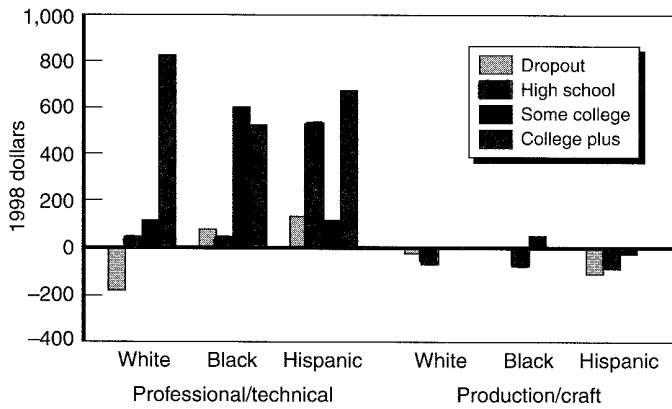


Figure 3—Change in Men’s Real Wages Varied by Occupation

Average year-to-year change in annual real wages for females, 1983–1998

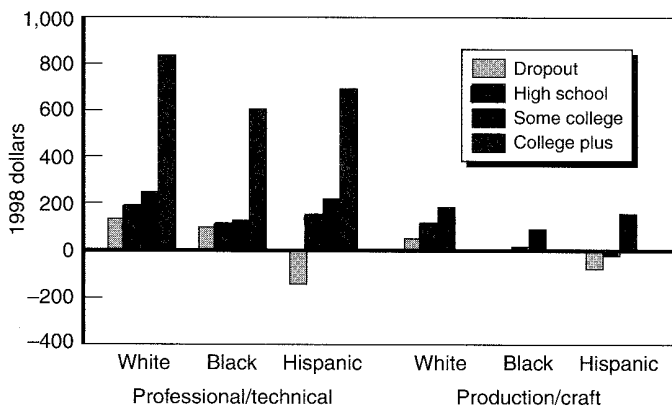


Figure 4—Real Wages Have Increased for Most Women

relative to the other.<sup>3</sup> Our civilian wage index weights the private-sector workforce to have the same age, education, gender, race/ethnicity, and occupation group composition as the 1998 Army personnel. We assume that the demographic composition of the Army will remain the same as in 1998. Small changes in personnel force structure will have little effect on the forecasts, but major changes could affect the forecasts.

We used actual military pay and civilian wages for 1983–1998 and forecast values for 1999–2010. The forecasts depend on the assumptions about future values of the unemployment rate, ECI, and Consumer Price Index (CPI) presented in Table 1.<sup>4</sup>

<sup>3</sup>More specifically, the pay gap equals  $100 \times (\text{military basic pay index} - \text{civilian wage index}) / \text{military basic pay index}$ , where the indexes equal 100 in the base year.

<sup>4</sup>The ECI values come from a forecast by Data Resources Incorporated and were provided to us by the Office of Compensation in the Office of the Secretary of Defense. The Consumer Price Index and unemployment rate forecasts come from the Congressional Budget Office economic outlook.

We used basic pay as representative of military pay.<sup>5</sup> Basic pay forecasts incorporate the provisions of the FY 2000 pay legislation, i.e., the 4.8 percent increase in January 2000, the pay-cell-specific increases in July 2000, and the ECI + 0.5 percentage point increases in 2001–2006. The CPI values must also be considered so that future basic pay is deflated to 1998 dollars in keeping with the civilian wage forecasts. And unemployment rate forecasts allow us to account for the effect of changes in economic activity on civilian wages. For example, the wage analysis found that a decrease in the unemployment rate from 6 percent to 5 percent is associated with a \$10 per week—or \$500 per year—increase in the wages of 22- to 26-year-old, high school graduate, white males who work full time, year round. Forecasts with more dire unemployment futures than the Congressional Budget Office outlook showed slower civilian wage growth and a higher military/civilian wage ratio.

Our civilian wage forecasts assume that the wage trends observed for 1983–1998 will continue. This is a strong assumption. We looked in the economics and business literature for reinforcement of our assumption or evidence that it was erroneous, but we found no other wage predictions for our groups. Still, it should be noted that under certain circumstances wage trends could change. For example, over the long term, changes in relative wages are influenced by changes in relative supplies of workers. This means that if the supply of college-educated

Table 1  
Assumptions for Forecast

| Year      | Growth in ECI (%) | Growth in CPI (1.1%) | Unemployment rate (%) |
|-----------|-------------------|----------------------|-----------------------|
| 2001      | 3.2               | 2.0                  | 4.2                   |
| 2002      | 2.5               | 2.0                  | 4.4                   |
| 2003      | 2.5               | 2.0                  | 4.6                   |
| 2004      | 2.5               | 2.0                  | 4.8                   |
| 2005      | 2.5               | 2.0                  | 4.9                   |
| 2006      | 2.5               | 2.0                  | 5.0                   |
| 2007      | 2.5               | 2.0                  | 5.1                   |
| 2008–2010 | 2.5               | 2.0                  | 5.2                   |

<sup>5</sup>Although basic pay is a less comprehensive measure than Basic Military Compensation or Regular Military Compensation, in practice the change in BMC has been almost the same as the change in basic pay, and this seems likely to be true of RMC in the future. BMC includes basic pay, Basic Allowance for Subsistence, Basic Allowance for Quarters, and an adjustment for the nontaxability of BAS and BAQ. RMC is the same, except Basic Allowance for Housing replaces BAQ. BAH is larger than BAQ. Whereas BAQ did not include the Variable Housing Allowance, BAH in effect subsumes BAQ plus VHA in a new housing allowance schedule. The shift from BMC to RMC occurred in 1998 and gives the misleading appearance of a big increase in military pay at that time. Although BAH is somewhat more generous than BAQ plus VHA, most of the apparent increase in military pay in 1998 comes from the shift to a broader measure of the housing benefit, not a major bump up in military pay.

workers increases, their wages may decline or increase at a lower rate than in the past two decades. And a decrease in the supply of high school–educated workers could possibly stop the decline in their wages and lead to rising wages. In addition, if wages for civilian college graduates increase more slowly than we forecast, then officer pay will hold its own and the gap between officer pay and private-sector pay will close more rapidly than we report below. Also, if wages for the civilian high school graduate rise more rapidly, then the pay gap between civilian high school graduates and enlisted personnel will be smaller.

Finally, we do not adjust for unobserved factors that might affect wage levels or trends. For instance, the rise in college enrollments may deplete the high school-only group of young people with greater aptitude and motivation because they would be among those enrolling in college. This would contribute to the observed decline in the wages of this group because those left in the group presumably would be of lesser aptitude and motivation and so would probably earn less. Similarly, the addition of these greater-aptitude high school graduates to the some-college group might reduce the average aptitude and motivation of the some-college group, leading to a slower increase in wages than if the composition of the group had been held constant.

### JUNIOR ENLISTED PAY IMPROVES THE MOST; OFFICERS GAIN BUT GAP REMAINS

In Figure 5, the bars represent the pay gaps (as defined in footnote 3) between military personnel and their counterparts in the private sector. A negative bar in this graph indicates that pay in the military has grown more slowly than in the civilian sector; a positive bar indicates that it has grown more rapidly. The findings, as illustrated in the graph, confirm earlier RAND research that during the 1980s and 1990s, military pay growth for enlisted personnel kept pace with or outpaced civilian pay growth, relative to a starting point of 1982. Pay growth for officers lagged civilian pay growth, however.<sup>6</sup>

Cyclical effects are also apparent. Civilian wage growth decreased during the economic slowdown at the beginning of the 1990s, causing the pay gap to improve (military pay rose relative to civilian pay). During the economic expansion in the 1990s, civilian pay rose faster than military pay, worsening the pay gap.

Looking to the future, officers' military pay will rise faster than civilian pay, causing the negative pay gap to

diminish, although a negative gap will remain. Pay for enlisted personnel will also rise. The rise will overcome the decline in military pay during the economic boom and then reach still-higher values.

In other results, we found that the pay outlook will improve more for enlisted personnel with five or fewer years of service than for those with more years of service, whom we assume to have the equivalent of some college, e.g., a year or two. Basic pay will grow at the same rate for both men and women, but military pay relative to civilian pay will not rise as rapidly for enlisted women as for enlisted men because the corresponding civilian wages are growing faster for women. Junior and senior officers will have a pay gap pattern similar to that for officers overall, with their current large negative gap diminishing but still remaining negative.

Pay gap forecasts capture the general pay trends relevant to military personnel, but they do not show how military pay compares to the dollar value of civilian pay. For this reason, we also compared the military compensation of junior enlisted personnel and senior officers to the wage percentiles of their civilian counterparts (Figures 6 and 7). In this case, we measured military compensation as basic pay plus housing and subsistence allowances, including the tax advantage that arises because the allowances are not federally taxable. Figures 6 and 7 designate this line as "RMC" (Regular Military Compensation).

For junior enlisted personnel with a high school education, military compensation is projected to exceed the 80th civilian wage percentile during the decade.<sup>7</sup> This increase in military compensation occurs because under

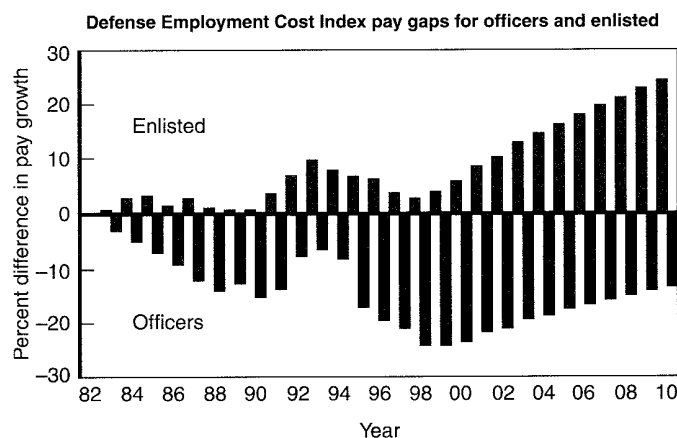


Figure 5—Pay Outlook Is Expected to Improve, Especially for Enlisted

<sup>6</sup>Civilian wages for officers are measured by the wages of persons with four or more years of college working in professional/technical occupations.

<sup>7</sup>The 50th percentile wage is the median wage; half the wage earners have a higher wage and half have a lower wage. At the 70th percentile wage, three in ten workers have a higher wage; seven in ten have a lower wage.

the FY 2000 pay package, military pay will rise faster than the ECI. With low inflation, this will cause real military compensation (i.e., in 1998 dollars) to rise. In contrast, based on our wage analysis, the real wages of civilian male high school graduates are expected to continue their past trend and decline. In addition, the economy is expected to soften, further reducing the pay of civilian male high school graduates.<sup>8</sup>

We should add two caveats. In the late 1990s the wages of high school graduates spurted up along with those of everyone else (thus the wage spike in Figure 6). Although our wage analysis data end in 1998, the strong economy has probably kept the wages of high school graduates unusually high. Our forecasts for 1999 and 2000 are based on the long-term trend and are no doubt below the actual wage values. Further, as mentioned (footnote 5), the shift from BMC to RMC in 1998 falsely exaggerates the increase in military compensation at that time. One can visually adjust for this. Instead of relying on the 1999 and 2000 wage forecasts, we could assume that the 1998 civilian wage peak continues to date. Even with these changes, it remains likely that military compensation is likely to exceed the 80th percentile of wages for civilian high school graduates during the decade.

Military compensation for officers will increase in the next few years, nearing the 70th percentile of the civilian wage distribution and likely remaining there much of the decade. This will help return officer pay to its early-1980s position in the civilian wage distribution. Still, visually adjusting the RMC line places officer compensation below the 70th percentile. As for continued wage growth, during

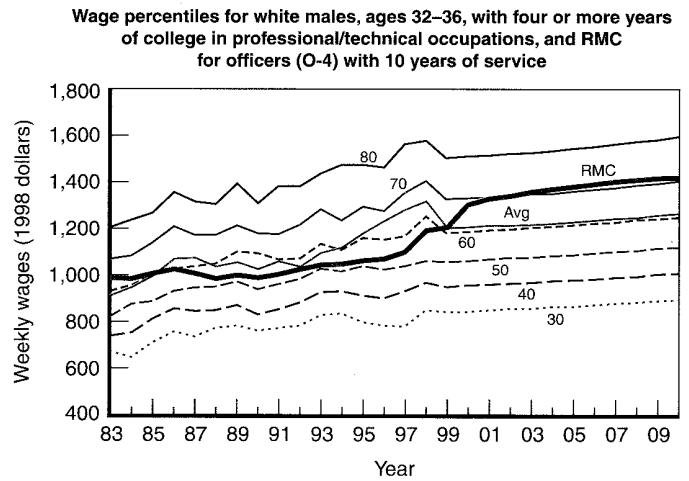


Figure 7—Officer RMC Will Rise, Then Keep Pace with Market Pay

1999 and 2000 actual pay growth has probably remained high, at values implied by a continuation of its trend. The 1999 and 2000 wage forecasts thus may be fairly accurate, rather than low as in the case of junior enlisted personnel. If the college wage trend weakens in the future, RMC will rise to a higher percentile than shown in Figure 7.

### TAKING A LONGER VIEW: COMPARING PAY OVER MILITARY VERSUS CIVILIAN CAREERS

Given these findings, it seems clear that the FY 2000 pay package is a major step toward restoring military pay to levels that will help the services sustain a high-quality enlisted and officer force in the future. But the current pay comparisons may be misleading because they hold education constant and overlook the education-related component of career decisionmaking. For example, if pay at entry is the same in two careers but is expected to grow faster in one career than the other, the higher-paying career is likely to be chosen. A more subtle difference comes from an individual's opportunity to move to a new career track by getting more education. In particular, many of the men and women the military would like to attract and retain are also considering whether, and when, to get additional education. From a policy perspective, it is therefore important to be aware of the incentives for getting further education and understand how they are influencing career choices.

To address this topic, we look at the present value of different education/occupation choices and see how they have changed over time relative to the present value of a military career. We first present some illustrative age-earnings profiles and then show the present values of different careers.

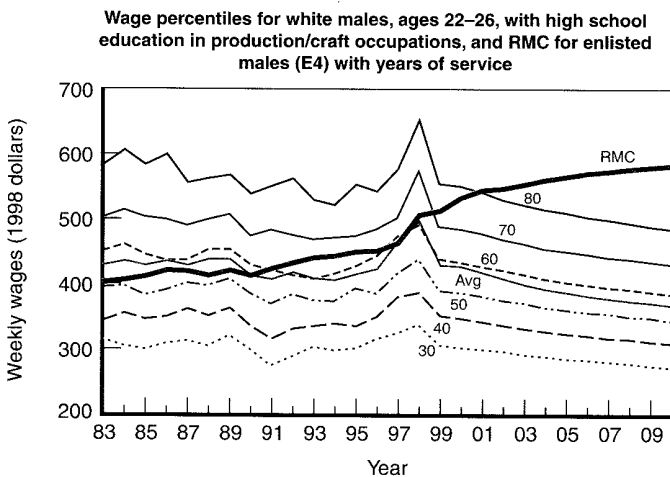


Figure 6—RMC for Junior Enlisted Shows Large Gain

<sup>8</sup>We also considered whether ECI would decline as the economy softened. While that is possible, we found no relationship between ECI and unemployment rate for 1983–1998 after adjusting for the time trend.

Figures 8 and 9 show age-earnings profiles for 20-year careers for three different cohorts: persons age 19 in 1983, 1998, and 2006, respectively.<sup>9</sup> Earnings for the 1983 cohort reflect actual earnings through 1998 and forecast earnings afterward. The future earnings of the 1998 and 2006 cohorts are entirely forecast. The military profiles are based on Army average promotion times for the middle to late 1990s. The 1983 line shows actual BMC to 1998 and forecasted RMC in later years. The forecast includes the FY 2000 pay increases. On the Army chart, there are two 1998 lines: the lower line is the expected pay profile in the absence of the FY 2000 pay boost, and the upper line includes the pay boost. The 2006 line is set when the final element of the FY 2000 pay package has taken effect (Employment Cost Index plus 0.5 percent). For 2007 and beyond, military pay grows by the same percentage as the Employment Cost Index, assumed at 2.5 percent per year.

In Figure 8, on the left, we clearly see the upward shift in the pay profile for a person with four or more years of college in a professional/technical occupation. The upward shift is caused by the growth in returns to college. Military pay for officers has also grown; hence the officer pay lines on the chart on the right shift up too.

Figure 9 depicts age-earnings pay for a production/craft worker with a high school education. Production/craft is the most common occupation for civilian high school-educated male workers. As seen, earnings *decline* from cohort to cohort. In contrast, military pay shifts

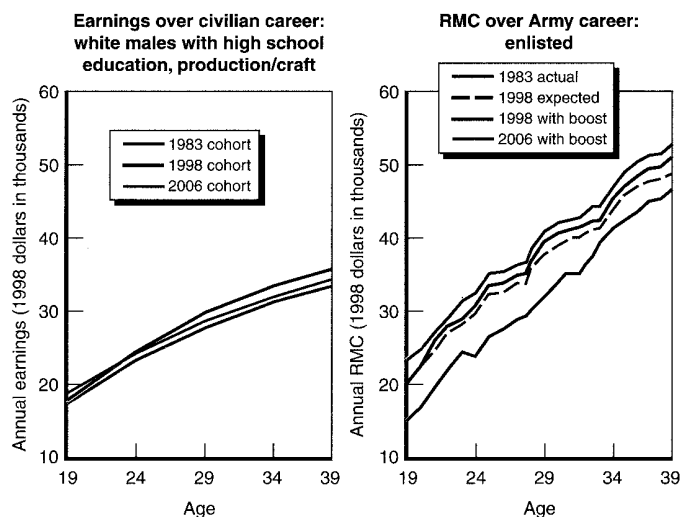


Figure 9—Enlisted Pay Growth Is Steeper Than for High School Graduates in Civilian Jobs

upward and after the first few years of service is well above civilian pay.

Although these results make the military career seem extraordinarily attractive, it would be a mistake to jump to that conclusion.

First, throughout the history of the volunteer force it has been necessary to pay an above-average wage to attract enough high-quality recruits. So, as mentioned above, our analysis emphasizes not just levels of pay but changes in military and civilian pay over time and their relation to each other.

Second, since the military career represents wage growth within a single organization, perhaps wage comparisons should be made to civilian employees who also stay within the same organization. Our data do not track individual workers over time, and we are left with the earnings profile of the average full-time, full-year civilian worker, who can be expected to change employers several times by age 30. Nevertheless, job changes are often accompanied by wage increases; wage growth occurs not only within a firm but also by job change. Therefore, we doubt whether not having civilian wage data on within-firm wage growth leads to much bias.

Finally, workers who start out in production/craft with a high school education may not stay there—they may enroll in postsecondary education and may change occupations. We therefore also estimated the value of other career paths that require additional education beyond high school and possible change of occupation.

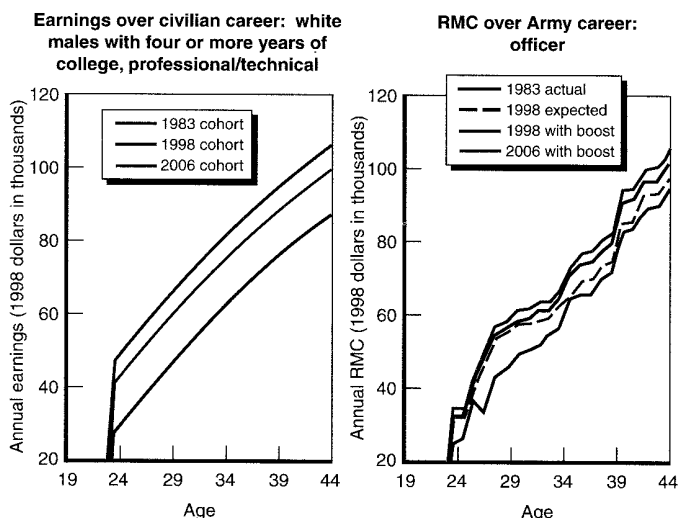


Figure 8—Earnings Start Later and Grow Faster for Military and Civilian College Graduates

<sup>9</sup>Earnings do not include retirement benefits, bonuses, or other special and incentive pays for military personnel or civilian workers.

## THE CHANGING VALUE OF MILITARY VERSUS CIVILIAN CAREERS

For officers in the 1983 cohort, the present value of a civilian career has to date turned out to be greater than that of a military career (Figure 10). We expect this difference in present values to widen for the 1998 and 2006 cohorts. Men and women of officer caliber can expect to earn more today in private-sector jobs than in the military, compared to their predecessors in the 1980s. Pay is certainly not the only thing that motivates a person to become and remain an officer, and many officers will state that pay pales in comparison to duty and patriotism. However, at some point pay makes a difference.

We selected groups with several alternative levels of education and civilian careers for comparison with enlisted personnel:

- High school graduates in production/craft occupations
- Persons with some college in production/craft occupations
- Persons with some college in professional/technical occupations
- Persons with four or more years of college in professional/technical occupations.

This range is useful to illustrate the growing importance of higher education in career decisions. The two most common occupational categories among those with some college are production/craft and professional/technical, whereas most of those with four or more years of college are in professional/technical occupations. This is illustrated in Figure 11.

The first four sets of bars in Figure 12 show the present values of alternative civilian careers for our three age

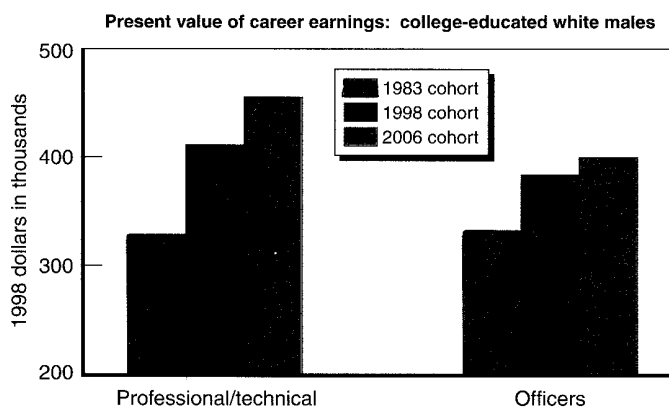


Figure 10—Present Value of Four-Plus Years of College Is Higher and Rising Faster in the Private Sector

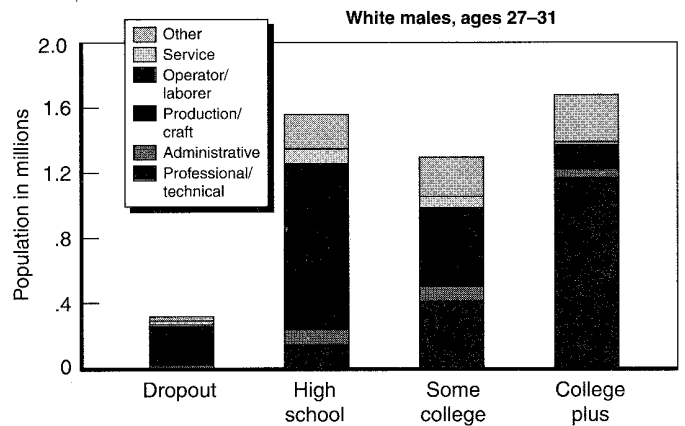


Figure 11—Civilian Occupational Mix Changes as Education Increases

cohorts. The last set of bars shows the present value of an enlisted career<sup>10</sup> for the three cohorts. The present value of a career based on a high school education and a production/craft occupation has declined over time. In contrast, the present value of an enlisted career not only was higher than for the 1983 cohort, but increased substantially for the 1998 and 2006 cohorts. The present value for the 1998 cohort includes the gains attributable to the FY 2000 pay legislation. The gains are noticeable, but even without them the present value of an enlisted career would have been well above that of a high school graduate's civilian career. Again, this reflects the premium needed to attract young recruits to military service.

Figure 12 also shows that the present value of a civilian career based on some college and a production/craft occupation has remained about constant. To some degree, then, the move toward postsecondary education in this occupational area can be seen as a push away from the decreasing benefits of a high school education rather than a pull from the increasing benefits associated with some college. But those who obtain some college and enter a professional/technical occupation find that the value of their expected earnings has risen. It is close to, but less than, the value of the enlisted career.

These present values carry a potentially disturbing implication: if the services are already having trouble recruiting and retaining high-quality high school graduates who do not enroll in postsecondary institutions, then recruiting and retaining those interested in higher education will be all the harder.

<sup>10</sup>Adding enlisted bonuses and educational benefits increases the value of an enlisted career. However, accounting for the increase in nonmilitary financial aid to attend college, the greater access to higher education created by the growth of community colleges, and the arguably greater opportunities for employment while enrolled, reduces the effective cost of college and increases the present value of the college tracks.



Figure 12 also shows the present value of four or more years of college and a professional/technical career. We include this track because it is crucial to understanding the motivation for obtaining some college. Since one or two years of college are a stepping stone to four years of college, the increase in the returns to four years of college has led to an increase in the expected value of enrolling in college. Even for those who do not go on to complete four years of college, this value has an influence on their decision to obtain some college in the first place.

The postsecondary enrollment rate in the year after high school has climbed from about 55 percent in the middle 1980s to near 70 percent in the late 1990s. Our findings suggest several factors among those contributing to this rise:

- The decline in the present value of a career based on a high school education compared with a career based on some college;
- The increase in the present value of a career based on four years of college compared with some college; and
- The increase in earnings in professional/technical occupations.

Equally interesting, as Figure 13 shows, there is a sharp upward trend in the percentage of people completing four-plus years of college. More and more people are adding to their education throughout their 20s and even early 30s, as one would expect since those with some college have greater incentive to complete four years of college.

The process of obtaining higher education is highly selective. The level of education ultimately attained is strongly related to the Armed Forces Qualification Test

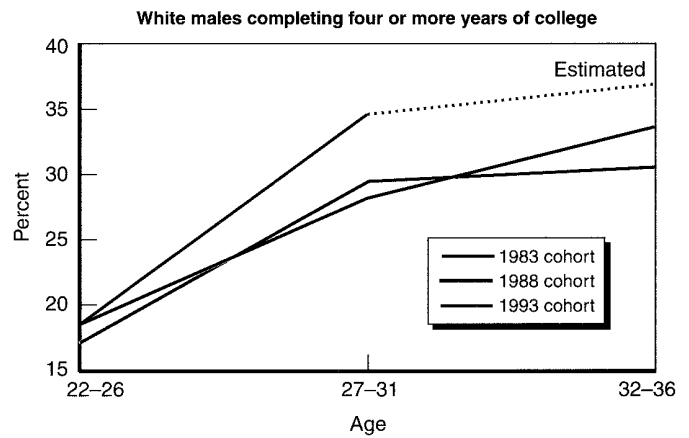


Figure 13—Upward Trend in Completing Four-Plus Years of College

score, which is a composite of mathematical and verbal scores. We have tabulated the average AFQT score by the level of education at age 30, for persons who had obtained a high school degree by age 20 (Figure 14). The average AFQT score for the some-college group is 65, virtually at the borderline between the military's Category IIIA and II and in the middle of high-quality recruit territory.<sup>11</sup>

The rising value of higher education and the selectivity of those seeking higher education may over time have a profound effect on the services' ability to recruit high-quality personnel. Historically, there has been a close relationship between entry-level military/civilian pay and the percentage of high-quality accessions (Figure 15). This is all the more noteworthy given that this tabulation does not control for other factors affecting high-quality recruiting such as the number of recruiters, the generosity of enlistment bonuses and educational benefits, the level of advertising expenditures, and the state of economic activity.

Figure 15 shows that the percentage of high-quality accessions rose in the early 1980s as entry-level military pay rose relative to civilian pay. It leveled off in the late 1980s, then rose again as the economy entered a recession. During the recession, civilian pay growth slowed relative to military pay. As the economy emerged from the recession, relative entry-level military pay fell again, as did high-quality accessions. Civilian wage growth surged upward at the end of the 1990s, helping drive high-quality accessions down to 57 percent. This percentage is in the range seen in the late 1980s yet below the values of the

<sup>11</sup>High school graduation status and Armed Forces Qualification Test score determine the quality of a recruit. High school graduates who score in the 50th percentile or above on the AFQT are deemed "high-quality" recruits.

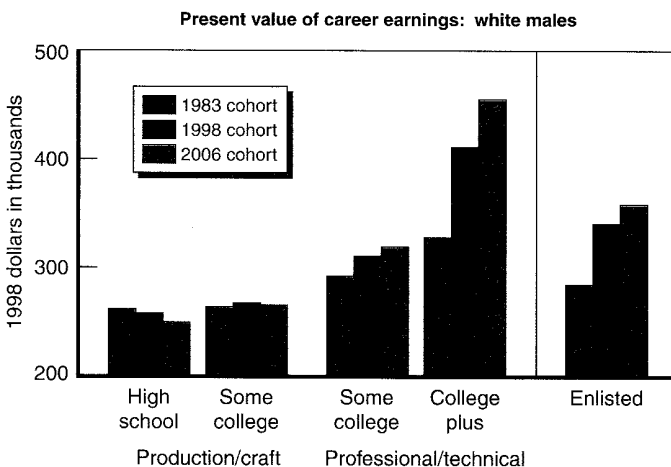


Figure 12—Enlisted Career Seems Competitive with Some College but Probably Is Not

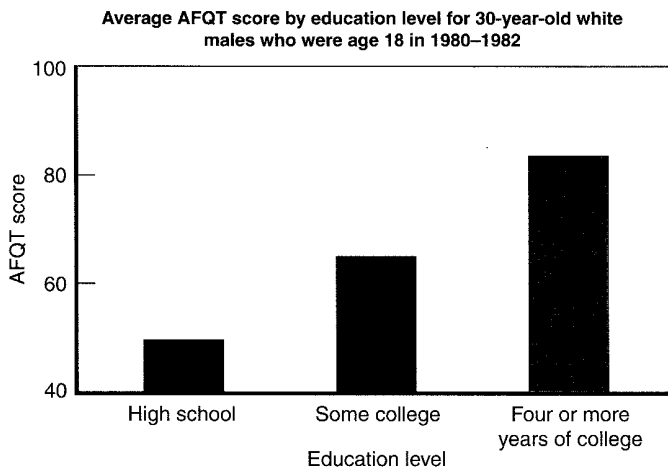


Figure 14—AFQT Is Strongly Related to Education Ultimately Attained

early to middle 1990s. The peak values in the early 1990s perhaps were attainable because the drawdown reduced accession requirements. However, accession requirements have risen in recent years, and at the same time, the college enrollment rate has continued to climb.

It remains to be seen whether the FY 2000 pay increase, along with greater recruiting resources and a possible economic slowdown, will stem the decline in recruit quality. In any event, the growth of interest in higher education has left the services with the choice of trying harder to recruit from a shrinking pool of high-quality youth or figuring out how to accommodate what appears to be a fundamental shift toward higher education.

These considerations also raise the possibility that a common metric for measuring military pay at entry may be losing some of its relevance. Figure 15 shows military compensation as a percentile of pay for civilian males, ages 22-26, with a high school education. But the earlier discussion suggests that many potential recruits who have graduated from high school plan to get more education. Yet it is not enough simply to change the comparison group to males with some college. Overall, the earnings of persons with some college have risen only a bit faster than the earnings of high school graduates. Therefore, if military pay were expressed as a percentile of pay for males ages 22-26 who have some college, the figure would look much the same, with the military pay line rising but at lower percentiles. Again, such current pay comparisons miss the changing value of different career paths, which we have attempted to show through present values.

Given the large increase in postsecondary enrollment rates and the fact that many postsecondary students leave school within a year or two, recruiters are shifting their attention to the two-year college market. The services are providing generous educational benefit packages and considering different ways of attracting persons interested in obtaining some college. These include a bonus for those who enter service with some college, a higher grade at entry, expanded use of in-service voluntary education, a college-first option, and greater use of warrant officer appointments, for instance. That said, our findings point to the importance of some college as a step to more college. Even persons who leave college before completing a year or two may not lose sight of the benefits of a four-year degree, and as seen, young men increasingly return to school to complete four years of college. Evidently, civilian jobs offer the flexibility to combine work with further study.

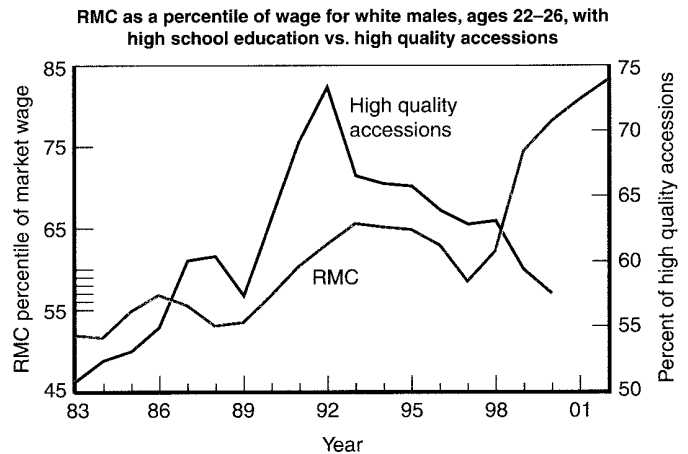


Figure 15—Percentage of High-Quality Accessions Has Fallen Since the Gulf War

### WHAT WILL IT TAKE TO KEEP A MILITARY CAREER COMPETITIVE?

The remarkable technological changes that will characterize the future “revolution in military affairs” will most likely not bring lower skill requirements or reduced demands for high-quality personnel. At the same time, the high and rising benefits of college may continue to frustrate the services’ efforts to recruit and retain high-quality youth. Clearly the services must develop new ways to attract the college-bound market. For retention, they must also consider how to manage more effectively the career paths of a well-trained, technically skilled military workforce. This is not only a question of compensation. High

achievers will want continued access to in-service training and education to stay competitive with civilian opportunities. They will want access to skills, knowledge, and experience that are transferable to, and valued by, civilian employers. That is, they will want military service to offer the richness of opportunity they can find through advanced education and private-sector careers.

Meeting these challenges may call for sweeping changes in military education and training opportunities, more formal education and training during the early and middle career, and higher compensation. By modifying their personnel management systems, the services can hope to hold onto their now-changed market for high-quality youth. In addition, if the services can figure out how to integrate these changes into their training and operations, they may be able to achieve greater capability and versatility deriving from the greater competence of their personnel. Otherwise, the added expenditures for high-quality personnel will unfortunately only be a higher cost of doing business.

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