

CBO PAPER

WHAT DOES THE MILITARY
"PAY GAP" MEAN?

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NOTE

Numbers in the text and tables of this paper may not add up to totals because of rounding.

PREFACE

According to widely reported estimates, a "pay gap" of more than 13 percent exists between the pay of military personnel and that of workers in the civilian economy. This paper examines how the reported pay gap is calculated and what information it provides to policymakers concerned with setting military pay levels.

The paper is the third of three reports looking at various aspects of the military pay system that the Congressional Budget Office (CBO) has prepared at the request of the Chairman and Ranking Minority Member of the Subcommittee on Personnel of the Senate Committee on Armed Services. The first of the three papers, *Military Pay and the Rewards for Performance* (December 1995), examined proposals for restructuring the table of military basic pay. The second, *Housing Prices, Housing Choices, and Military Housing Allowances* (October 1998), discussed the rationale for a new system of calculating housing allowances that the Congress established in 1997 and problems that could be encountered in implementing it.

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SUMMARY

According to widely published reports, a gap of more than 13 percent separates the pay of military personnel from that of workers in the civilian sector. Although the reports are not always clear about what they mean by "pay gap," many people apparently accept the term at face value as an indication that service members earn less than workers in similar civilian jobs or less than they could earn as civilians. The reported pay gap permeates discussions about military pay policy and may lead to a decision to substantially increase military pay.

This paper examines whether the reported pay gap provides policymakers with useful information for their deliberations on military pay and concludes that it does not. The reported pay gap does not indicate whether the nation is treating military personnel fairly in the sense of offering them a standard of living comparable with that of other Americans. Nor does it indicate what the Department of Defense (DoD) must pay to meet its requirements for well-qualified personnel. Moreover, the very notion of a gap between military and civilian pay levels is not helpful in determining an appropriate level of military pay.

Although it is called a "pay gap," the commonly reported figure of more than 13 percent is not based on a comparison of military and civilian pay levels. Instead, it represents one approach to comparing the change in military and civilian pay over time. The comparison begins from a starting point that is essentially arbitrary—right after the large military pay raise of fiscal year 1982. The choice of that point is not based on a careful study of military and civilian pay levels in 1982; DoD justified its request for a large military pay raise at that time on the basis of recruiting and retention difficulties. Thus, the reported pay gap is simply a measure of the change in relative pay between the military and the civilian sector since 1982.

WEAKNESSES OF THE REPORTED PAY GAP

Even as a measure of the change in relative pay, the reported pay gap is flawed in three respects: it accounts for only one source of change in military pay, relies on a measure of change in civilian pay that does not reflect the unusual characteristics of the military workforce, and measures changes in military and civilian pay over different periods.

In measuring changes in military pay, the reported pay gap focuses on military basic pay only, ignoring changes in the three other components of pay that are common to all service personnel. In addition to basic pay, members of the military receive allowances for food and housing—or their in-kind equivalents—and a tax advantage because the allowances are not subject to federal income tax. Together, basic pay, the two allowances, and the tax advantage are known as regular military compensation (RMC). (Despite the term "compensation," RMC does not include many benefits, such as retirement pay and health care, that are part of the overall military compensation package.) In addition, the reported gap considers only changes in pay for individual pay grades; pay for enlisted members in midcareer has not risen as rapidly because they are not rising through the grades as quickly as in the past.

In measuring changes in civilian pay, the reported pay gap relies on an index that covers a very broad sample of civilian workers, even though civilian workers are older, on average, than military personnel and are more likely to have a college degree. That index, the employment cost index (ECI), has played an informal role in the annual process for determining military pay raises. Because it does not reflect the unusual characteristics of the military workforce, however, it cannot be expected to indicate what raises are necessary—over any lengthy period—for the military to maintain its competitive position in the market for the workers it seeks to attract and retain. During the 1980s and 1990s, the pay of college-educated workers in the civilian sector generally rose faster than that of workers with a high school education only, and the pay of older workers generally rose faster than that of younger workers. As a result, military pay did not have to rise as rapidly as the ECI to remain competitive.

The reported pay gap compares changes in military and civilian pay over different periods because it mirrors the procedures for determining annual military pay raises, which have inherent limitations. In deciding on the raise for fiscal year 2000, for example, policymakers cannot be guided by changes in civilian pay during 1999; to plan for the raise, they must rely on data for an earlier period. After-the-fact analyses of pay changes are not affected by that limitation; they can compare pay changes over the same period. Yet the reported pay gap continues to rely on the old data that were available when each pay decision was made.

Adjusting for those various factors yields a very different picture of how changes in military and civilian pay compare since 1982. For officers, military pay may indeed have fallen relative to the pay of college-educated civilians with a similar age distribution—by about 6 percent to 12 percent, depending on the pay grade. In contrast, pay for enlisted personnel rose relative to that of high school graduates of the same age. For personnel in their first enlistment term, relative pay rose by about 10 percent; for more senior personnel, it rose by about 3 percent.

LIMITATIONS OF PAY COMPARISONS

Although the pay-gap calculation can be improved, the message of this analysis is more fundamental: any measure of the change in relative pay between military personnel and civilian workers, cumulated over many years, is not a useful guide for pay policy. The measured change in relative pay is highly sensitive to its underlying assumptions, as the figures above indicate. More important, pay is not the only factor that affects the military's ability to attract and retain well-qualified personnel. Over any lengthy period, other factors are bound to have changed. For example, in comparison with the situation in the early 1980s, the military today requires fewer new recruits and officers each year but expects them to be capable of operating and maintaining more complex weapons and other systems. Instead of forestalling a Soviet invasion of Western Europe, the military is deploying to trouble spots around the world. Restoring military pay to the relationship it had with civilian pay in 1982 could be inadequate, or wasteful, for the military of the 21st century.

Because so many factors influence the decision to serve in the military, a comparison of absolute levels of military and civilian pay, rather than changes in pay, would not be useful either. At best, a comparison of pay levels might indicate whether the nation was treating military personnel fairly—either in the sense of offering them a lifestyle roughly comparable with that of civilian workers or of paying them about what they might expect in civilian jobs. Some people would argue that asking military personnel to work for less than they could earn as civilians is unfair, even if a sense of duty and patriotism allowed the military to meet its personnel needs.

The results of a comparison of pay levels might surprise some observers. Enlisted personnel earn more than about 75 percent of U.S. male high school graduates of the same age. Similarly, officers' pay falls at about the 75th percentile among male college graduates of the same age. For those who reach the higher ranks, where promotions are most competitive (E-8 and E-9 for enlisted personnel and O-6 and above for officers), pay rises to well above the 75th percentile among civilian workers. Those findings do not imply that military pay is too high; one could argue that service members deserve high pay because of their exceptional quality and devotion to duty and the sometimes arduous and dangerous conditions in which they work. Alternatively, the military may simply have to offer good pay in order to meet its needs for well-qualified personnel.

Pay is only one factor that distinguishes military from civilian employment. The military also competes in terms of employee benefits—some similar to those prevalent in the civilian world and others less common. Perhaps more important, military service offers some unusual opportunities and makes unusual demands. For example, the military offers vocational training, travel and adventure, and an unusual degree of responsibility to personnel early in their career. Travel also means family

separations, however, and military personnel are never free from the requirements of strict military discipline. Risk of life is a basic feature of the military mission, even for personnel whose formal occupation might sound like an office job in the civilian world.

Because people must consider other factors besides pay in considering military service, pay comparisons cannot answer the most pressing question that DoD's pay policy must address: Are current pay levels appropriate to meet the military's personnel requirements? Military pay appears to compare favorably with civilian pay levels, but that may simply attract the better-than-average people that the services feel they need to operate and maintain their complex systems. Or higher pay may simply be the price that the military must pay to fill a dangerous occupation that makes family life difficult.

MAKING DECISIONS ABOUT MILITARY PAY

If comparisons of military and civilian pay levels or of changes in pay over a lengthy period of time are not a good guide for policy, what approach can DoD and the Congress use in setting pay? The answer may lie in thinking of the problem as consisting of two parts. One part is the traditional concern of deciding on a military pay raise each year. The second part is determining, in a periodic examination of the military's personnel needs, how well pay levels support those needs.

For a periodic examination of military pay levels, the most effective approach may be to ask whether retention patterns allow the military to achieve its long-run requirements for experienced personnel. If DoD is consistently failing to attract and retain well-qualified personnel across a wide range of occupations, then increases in military pay relative to civilian pay may be warranted. If retention or recruiting is a problem only for some services, occupations, or years of service, then other solutions—higher bonuses, for example, or adjustments in the pay table—will probably be more cost-effective than across-the-board pay increases. In the case of recruiting, studies have consistently shown that additional recruiters, more advertising, or greater enlistment incentives are less costly than pay increases for attracting well-qualified personnel.

From one year to the next, some simple rule of thumb for adjusting pay may be necessary; changes in retention can be too subtle—or too ambiguous—to guide pay decisions. If no clear trend in retention is apparent, matching the recent one-year increase in civilian pay—as measured by the ECI or by some other measure tailored to reflect the demographic characteristics of military personnel—could be appropriate. Even though no measure of changes in civilian pay can perfectly capture the long-run trends relevant to the military, from one year to the next the ECI or some other measure can indicate roughly the raise necessary to hold relative pay constant. If

nothing else changes (such as DoD's personnel needs, the attractiveness of the military lifestyle to young people, or unemployment rates), holding relative pay constant might hold the supply of manpower to DoD constant as well.

The pay-gap approach of comparing changes in military and civilian pay over many years turns a reasonable rule of thumb into an absolute criterion for the adequacy of military pay. But over time, the errors inherent in any rule of thumb for matching increases in civilian pay can add up, as they did during the 1980s and 1990s. More important, when the cumulation extends beyond a few years, the basic assumption of the rule of thumb—that nothing else important is changing—is almost certain to prove false. Although the relationship between military and civilian pay that existed in the early 1980s may have served the needs of the military then, that is no assurance that the same relationship will serve the military's needs today. Looking at the past can yield useful lessons, but only current conditions can answer the important question for pay policy: Are the military services able to meet their long-term requirements for experienced, well-qualified personnel?

CHAPTER I

INTRODUCTION

According to widely reported estimates, a "pay gap" of more than 13 percent exists between what military personnel and workers in the civilian economy earn. Newspapers that serve military personnel characterize the gap as a simple fact: "Pay Gap Could Grow in 1998," a headline trumpets.¹ Indeed, the existence of a pay gap is so widely accepted that one candidate in the 1996 Presidential race, calling for higher pay for military personnel, said that service members' pay was "13 percent below comparable civilian levels."² More recently, the Chairman of the Joint Chiefs of Staff also called for higher pay for military personnel, citing the pay gap, and the Senate majority leader listed "options to close the 'pay gap'" as one of four personnel areas that deserve the Congress's attention.³

The reported pay gap had its origins in the 1980s. A new Administration took office in 1981 with a pledge to increase defense spending. The President requested an extra "catch-up" raise for military personnel in that year, which the Congress combined with the regular pay raise scheduled for fiscal year 1982. The raise amounted to 14.3 percent, but it was followed by a succession of pay raises that fell short of measured increases in average civilian pay levels. The cumulative shortfall in military pay increases—what became known as the "pay gap"—passed the 10 percent mark before the end of the decade.

By the early 1990s, some observers had begun to question what the reported pay gap measured and what it implied for military pay policy. The military had become increasingly successful in attracting and retaining well-qualified young men and women despite the reported pay gap. To resolve that paradox, the top manpower official for the Department of Defense (DoD) in 1990 asked analysts at RAND (a well-known federally funded research center) to examine the issue. RAND concluded that the index employed to track civilian pay growth covered too broad a range of civilian workers to accurately reflect the relevant pay trends for a youthful military workforce. In 1995, the Secretary of Defense voiced concern about the accuracy of the standard "pay-gap" measurement. "I'm not satisfied," he said, "that

1. *Army Times*, November 4, 1996, p. 3.

2. "Dole Decries State of Military Pay," *Navy Times*, September 2, 1996, p. 6.

3. "Senate Leader Calls for Military Pay Fixes," *Navy Times*, September 7, 1998, p. 6.

this is the best measure, or even a very effective measure, to determine whether military people's compensation is adequate."⁴

The doubts expressed by DoD officials did little to dispel the perception that military pay was too low. Throughout the 1990s, the *Army*, *Navy*, and *Air Force Times* regularly reported the latest "pay-gap" figures. In 1998, the Chairman of the Joint Chiefs of Staff brought the chiefs together for a briefing that reportedly described "the size, extent and long-term cost of letting military pay fall behind civilian compensation."⁵ Only the high cost of a large pay raise, apparently, discouraged the chiefs from pushing for a major pay initiative.

Concerns about the reported pay gap reflect the importance of military pay both as a factor affecting the military's ability to compete with civilian employers and as a major cost element in the defense budget. A military that needs to attract 10 percent or more of the young men who graduate from high school (as well as many young women) and to retain a skilled career force cannot rely on patriotism alone. But it cannot afford to pay more than necessary to meet its personnel needs—military pay accounts for more than one-quarter of the defense budget, and each 1 percent raise in pay increases annual costs by more than \$500 million.

THE PURPOSE AND MAIN FINDINGS OF THIS PAPER

This paper examines how the reported pay gap is calculated and what it means. It concludes that the 13 percent figure commonly cited as the "pay gap" is not a useful guide for military pay policy. That figure does not indicate whether the nation is treating military personnel unfairly by paying them substantially less than what workers of similar age and educational background earn in the civilian sector. Nor does it indicate what DoD must pay to meet its requirements for skilled, experienced personnel.

The analysis notes that although the 13 percent figure is called a measure of a pay gap, it is not based on a comparison of civilian and military pay levels. Instead, it reflects a comparison of changes in military and civilian pay over an essentially arbitrary time period. That measure says nothing about how the level of military pay compares with what civilian employers offer. In addition, the pay gap, as commonly calculated, does not even provide an accurate comparison of changes in pay over time. A more careful assessment reveals, for example, that since 1982, the growth

4. Quoted in Tom Philpott, "Perry Doubts Pay-Gap Accuracy of Index," *European Stars and Stripes*, April 7, 1995.

5. "Shelton Urges Crusade for Better Pay," *Army Times*, June 1, 1998, p. 3.

in pay for enlisted personnel has outpaced the growth in pay for civilian workers with similar education and experience by between 3 percent and 10 percent.

A comparison of the level of pay for military personnel with that for civilians could provide policymakers and other observers with some useful information as they make their own subjective evaluations of whether DoD is treating military personnel fairly. Some would argue that a fair wage is not the same as one that allows DoD to meet its manpower goals. Asking military personnel to work for less than they could earn in private-sector jobs could be unfair, even if a strong sense of duty or patriotism induced a sufficient number to serve. People who are concerned about low military pay, however, might be surprised to learn that military personnel are paid more than about three-quarters of civilian workers of the same age and educational background.

Yet the central finding of this analysis is not that DoD needs to develop a better measure of a pay gap, whether based on levels of pay or on changes in pay over time. Instead, the main lesson is that no matter how carefully military and civilian pay or changes in pay are compared, such comparisons do not provide useful guides for DoD over the long run as it seeks to meet its requirements for well-qualified personnel. Many factors other than pay affect DoD's ability to meet its needs. Over time, the attractiveness of military service can change, civilian employment opportunities can improve or worsen, and indeed, the military's personnel needs can change.

Provided that DoD is meeting its personnel goals, it does not matter whether, in the past, military pay rose more slowly than pay in the civilian sector. In fact, DoD experienced increasing success in recruiting and retaining personnel during the mid-1980s—the period in which the reported pay gap grew most rapidly. Conversely, if DoD is experiencing problems today in recruiting and retaining personnel, the finding that the growth in enlisted pay outpaced that of civilian pay since 1982 does not imply that enlisted pay should not rise further.

What approach can policymakers use in choosing a level of pay for the military? Over the long run, the most effective approach may be to ask whether the military is able to meet its requirements for high-quality, experienced personnel. On a year-to-year basis, however, determining whether retention is slipping or whether observed changes reflect normal year-to-year variations can be difficult. If no clear trend is evident, it may be appropriate to set a particular year's military pay raise equal to the recent one-year increase in some measure of change in civilian earnings, such as the employment cost index. Matching civilian pay growth is reasonable in the short run because if nothing else changes (including the attractiveness of the military lifestyle to young people, or civilian unemployment rates), holding relative wages constant might hold constant the supply of personnel to the military as well. But the pay-gap approach—in which changes in military and civilian pay are cumulated over a number of years—ignores both the shortcomings of any pay

measure and the inevitable changes in other factors that affect the military's ability to attract and retain good people.

For long-run decisions about pay, there probably is no substitute for addressing directly the important issue of whether the level of pay is adequate to support the military's personnel needs yet not so high as to waste scarce resources. If personnel shortages are widespread—affecting many occupations and pay grades and among both junior and senior personnel—a large across-the-board pay raise may be appropriate. If shortages are more limited, however, then targeted adjustments—increasing enlistment or reenlistment bonuses, for example, or assigning more personnel to occupations in which frequent overseas deployments have created particular stresses—will tend to achieve the desired results at lower cost than a general pay raise. In examining such issues, policymakers have little reason to ask how military and civilian pay levels compare or whether military pay has risen faster or more slowly than civilian pay in the past.

THE STRUCTURE OF MILITARY PAY

Misunderstandings about the nature of military pay and benefits may explain part of the confusion surrounding comparisons of military and civilian raises and pay levels. The military pay system differs in many respects from the systems offered to civilians in private industry, in part because of the special nature of military service. Such service requires a high degree of loyalty to the military, acceptance of a strict hierarchical structure, limits on personal freedom, and a willingness to relocate frequently or to deploy for unknown periods under dangerous conditions. It places a high premium on youth and vigor. DoD has found that one way to perpetuate the military culture and to ensure uniformity in training is to train and develop its own personnel, relying on promotion from within rather than hiring from outside to fill senior positions.

Arguably, the current structure of military pay and benefits reflects in part the military's special needs. It supports the military hierarchy by ensuring that people in higher ranks are paid more than those in lower ranks—largely irrespective of occupation. The food and housing allowances (or the equivalent in-kind benefit) may ease the strain of frequent moves and, according to some military leaders, encourage a sense of community and loyalty. The military retirement system, with an immediate annuity at 20 years of service, provides a strong incentive to remain with the military throughout a 20-year career and at the same time supports the requirement for youth by encouraging members who are eligible for retirement to leave voluntarily. These features of military pay and benefits, described below and more fully in Appendix A, are important for DoD but complicate efforts to make simple comparisons between military and civilian pay.

Regular Military Compensation

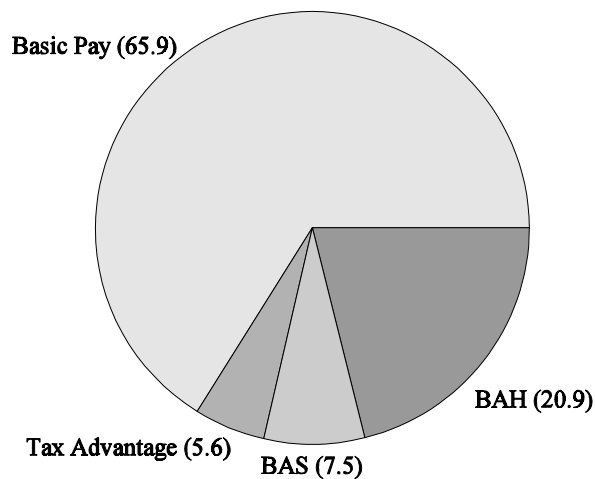
Unlike most civilian workers, military personnel receive at least four distinct forms of pay: basic pay, a housing allowance, a subsistence allowance, and a tax advantage associated with the allowances. Together, those four forms of pay are known as regular military compensation (RMC). The concept of RMC, which the Congress formally defined in 1974, was developed to provide a rough basis for comparison with the pay of civilians.

- o Basic pay, the largest component of RMC, is a cash payment that depends on the service member's pay grade (closely tied to military rank) and years of service. On average, it accounts for about two-thirds of RMC (see Figure 1).
- o The housing allowance is the second-largest component of RMC. Members who rent or own private housing receive a cash allowance—not subject to federal income tax—that varies depending on the member's pay grade, the local cost of housing, and whether the member has dependents. For the purposes of determining RMC, members who live in housing provided by the government (including most unmarried junior enlisted personnel and about one-third of all married personnel) are assumed to receive the value of the housing allowance in kind, although in fact the value of the government housing they receive may be somewhat more or less than the allowance.
- o The basic allowance for subsistence is the third component. Like the housing allowance, it is not subject to income taxation and can be paid either in cash or in kind (in the form of free meals in government dining facilities). The allowance is paid at one rate for enlisted personnel and at another (lower) rate for officers.
- o The federal tax advantage, the fourth component of RMC, is equal to the amount of additional federal income tax that a service member would have to pay if his or her housing and subsistence allowances were not tax-free.⁶ Although the tax advantage is an implicit rather than an actual cash payment, it must be considered when comparing civilian and military earnings.

6. The actual tax advantage for a particular service member depends on many factors: the person's marital status, the number of dependents (if any), the total household income, and so forth. The Department of Defense calculates a typical tax advantage for each pay grade and dependency status (with or without dependents) using certain simplifying assumptions, among them that the service member's military pay is the household's only income.

In 1998, RMC for enlisted personnel ranged from about \$19,000 a year for a new recruit (pay grade E-1) without dependents to about \$56,000 for the most senior enlisted member (pay grade E-9) with dependents. RMC for officers ranged from about \$32,000 a year for a newly commissioned O-1 without dependents to more than \$135,000 for the highest-ranking officer. Of course, relatively few enlisted members and officers reach the highest ranks. Typical enlisted members might expect to reach pay grade E-6 or E-7 (with an RMC of about \$40,000) by the time they were eligible to retire with 20 years of service; officers might expect to reach the rank of O-5 with an RMC of about \$80,000. (Under the military's "up or out" promotion system, enlisted personnel who fail to achieve promotion to E-6 are generally not allowed to remain until retirement; officers generally must leave before retirement if they do not reach grade O-4.)

FIGURE 1. DISTRIBUTION OF REGULAR MILITARY COMPENSATION AMONG ITS COMPONENTS (In percent)



SOURCE: Congressional Budget Office using data from the Department of Defense.

NOTES: BAH = basic allowance for housing; BAS = basic allowance for subsistence.

The tax advantage is the amount of additional tax that typical personnel would pay if the subsistence and housing allowances were subject to federal income tax.

Data are for 1998 and are averages for all personnel.

Special and Incentive Pays

Unlike civilian pay systems, the military system provides only limited scope for pay differences among occupations. As a result, the military can experience shortages in occupations that are highly paid in the civilian economy and still have surpluses in other occupations whose civilian counterparts are not highly paid. In part to address that issue, the military offers some special and incentive pays—including enlistment and reenlistment bonuses—that provide variation in pay among people with the same rank and years of service. Such pays contribute less than 5 percent to total military pay costs. Nonetheless, they are an important component of pay for service members in some occupations, such as doctors, pilots, and nuclear-qualified personnel.

Additional Employment Benefits

DoD provides military personnel with a wide range of additional benefits, including a health care and retirement system that might appear relatively generous by civilian standards. Those systems are designed in part to meet the special needs of military service. Military members, whose duties require them to remain in good physical condition, have free access to health care in military hospitals and clinics. The military retirement system, which provides for retirement after 20 years of service with an immediate annuity, helps to ensure a youthful force. The system provides for no annuity for members who retire with less than 20 years of service. That feature, which would be illegal in a private retirement system, ensures that relatively few military personnel leave in the years approaching retirement eligibility, helping the military to meet its requirements for senior personnel from within.

Other benefits reflect the military's traditional sense of community and may—in the view of some military leaders—help to foster loyalty and trust. Those benefits include subsidized day care, low-cost shopping in commissaries and exchanges, and postservice education benefits through the GI Bill. Although such benefits have a cash value that is uncertain and can vary widely among service members, they are an important aspect of the total compensation package and affect the level of cash compensation that DoD must provide to attract and retain personnel.

CHAPTER II

UNDERSTANDING THE REPORTED PAY GAP

The reported military pay gap is often described as a difference between the pay levels of military and civilian workers. For example, an article in the *Navy Times* begins: "With the estimated gap between military pay and salaries in the private sector at 12.9 percent and growing" ¹ Such reports seem to suggest that researchers have measured a 13 percent difference between what service members are paid by the military and what they might earn in similar civilian jobs. This chapter examines the reported pay gap—what it compares and how well it makes the comparison.

Two main findings emerge from examining the reported pay gap. First, the commonly cited 13 percent figure is not based on a comparison of pay levels. Instead, it reflects a comparison of pay increases in the military and civilian sectors since 1982—an essentially arbitrary starting point. ² Thus, contrary to what many press reports suggest, the pay gap does not indicate whether military personnel are paid more or less than workers in comparable jobs in the civilian sector. Indeed, the measure of civilian pay used for the calculation—the employment cost index (ECI) produced by the Bureau of Labor Statistics—is an index of change only; it does not measure pay levels.

The second finding is that the method used to produce the 13 percent figure provides neither a precise nor a reliable comparison of changes in military and civilian pay. It selects a starting point for the comparison without a sound analytic basis, measures changes in military and civilian pay over different periods, ignores important sources of change in military pay, and does not account for differences in the demographic composition of the military and civilian labor forces. Those shortcomings may help explain why in the early 1980s, when the so-called pay gap was growing rapidly, the Department of Defense was increasingly successful in attracting and retaining well-qualified young men and women.

1. "Closing the Pay Gap," *Navy Times*, March 24, 1997, p. 3.

2. The two agencies that routinely produce estimates of a military pay gap make available the data underlying their calculations. The Directorate for Compensation within the Office of the Secretary of Defense begins its comparison in 1982. The Retired Officers Association (TROA), whose estimates appear most often in press reports, actually begins its comparison in 1972. For the period from 1972 to 1982, however, the TROA calculations show cumulative increases in military and civilian pay that are virtually identical. Thus, the calculations can be interpreted as beginning from a base of 1982.

Although the weaknesses of the pay-gap calculation are sufficient to make the reported 13 percent figure a poor guide for military pay policy, the very concept of a military pay gap has more fundamental flaws. As the next chapter discusses, even the most carefully constructed comparisons of military and civilian pay—whether based on trends over time or actual levels—are not useful for considering major changes in military pay.

CALCULATING THE REPORTED PAY GAP

The procedure for calculating the reported pay gap is straightforward. It begins after the military pay raise of fiscal year 1982—an increase that became effective on October 1, 1981, and averaged 14.3 percent (see Figure 2).³ The procedure compares the increase in military basic pay each year with the increase in an index of pay in the civilian sector. The reported pay gap for each year is the cumulative difference between the two increases, expressed as a percentage of the cumulative growth in military pay.

To understand how the procedure works, consider the reported pay gap for 1983. The military pay raise in that year was 4.0 percent, and the civilian pay increase was 8.1 percent. For simplicity, both military and civilian pay are set to an arbitrary value of 100 in 1982. After the 1983 pay raise, the index of military pay stood at 104.0 and the civilian index at 108.1. That yields a reported pay gap of 3.9 percent for 1983: $(108.1 - 104.0) \div 104.0 = 0.0394$.

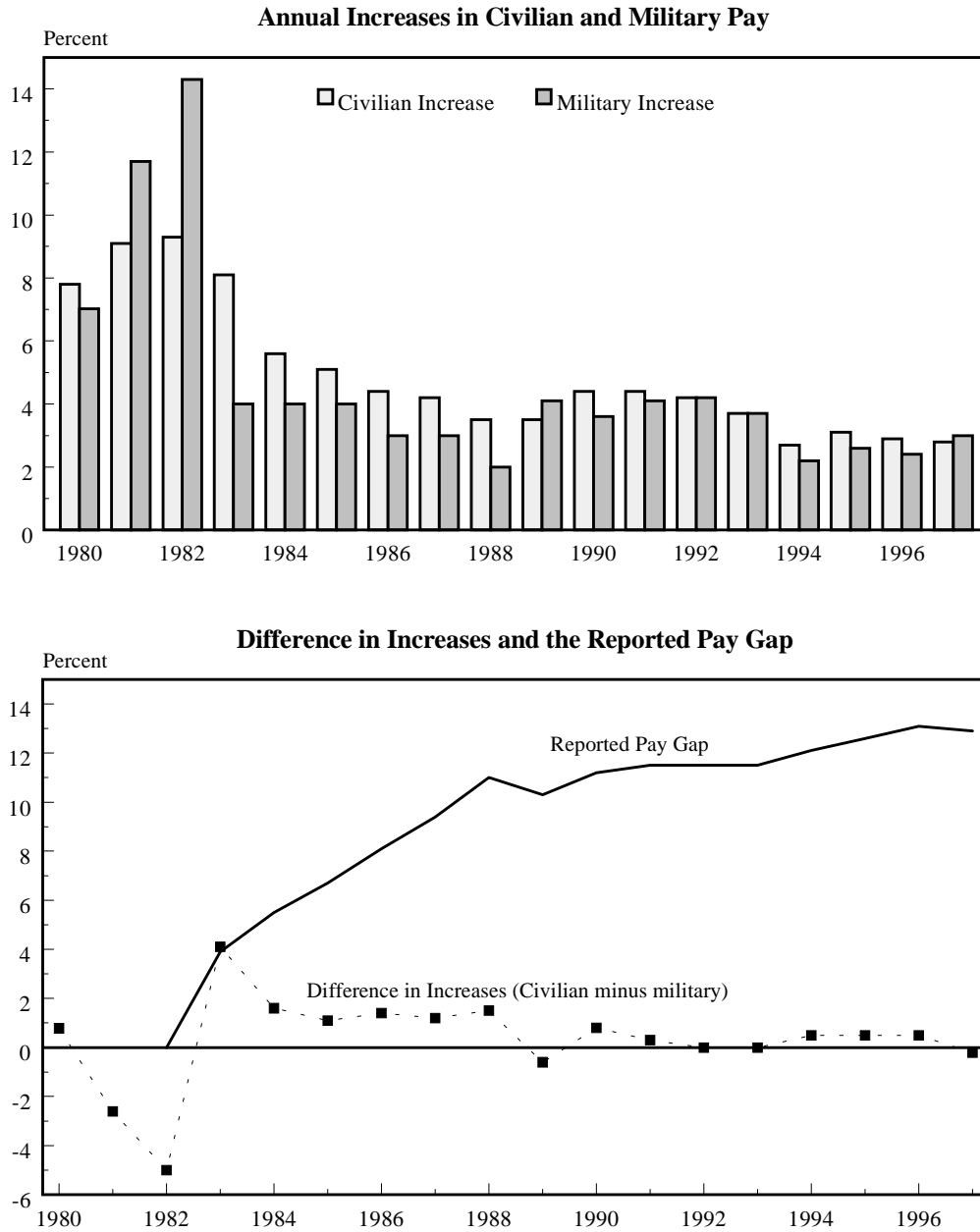
The procedure then compares cumulative growth in military and civilian pay through subsequent years. In 1984, for instance, another military pay increase of 4.0 percent raised the index of military pay to 108.2, but the civilian index rose to 114.2, resulting in a reported pay gap of 5.5 percent. By 1988, the reported gap had reached 11 percent; military pay had risen by a total of 21.7 percent and civilian pay by 35.1 percent: $(135.1 - 121.7) \div 121.7 = 0.1101$.

SHORTCOMINGS OF THE REPORTED PAY GAP

The pay gap calculated following the above approach suffers from four major shortcomings that make it an inaccurate and unreliable indicator of trends in relative pay:

3. All officers received an increase of 14.3 percent; senior enlisted personnel (grades E-7 through E-9), 17 percent; and the lowest three enlisted grades, about 10 percent.

FIGURE 2. CALCULATING THE REPORTED PAY GAP (By fiscal year)



SOURCE: Congressional Budget Office using data from the Department of Defense.

- a. The civilian increase shown is a one-year change in the employment cost index as that change is reported by the Directorate for Compensation, Office of the Assistant Secretary of Defense (Force Management Policy).
- b. The military increase is the raise in basic pay only.

- o It compares military pay growth over one time period with a measure of civilian pay growth over a somewhat different period.
- o It selects a starting point for the comparison without a sound analytic basis, yet the results of the pay-gap calculation are very sensitive to changes in that starting point.
- o It ignores important sources of change in military pay.
- o It does not take into account differences in the demographic composition of the civilian and military labor forces.

Measuring Military and Civilian Pay Growth over Different Periods

The calculation of the reported pay gap compares the growth of military pay over one period with the growth of civilian pay over a different period. To determine the pay gap in 1997, for example, the procedure computes civilian pay growth from March 1981 through September 1995 (with one six-month period counted twice) but measures military pay growth from October 1981 through January 1997 (see Figure 3). In addition, the procedure uses two different indexes of civilian pay growth. Through most of the 1980s, the measure of pay growth is for civilian workers including those in state and local governments; in later years, the measure covers private-sector workers only.

Although it may seem odd that the reported pay gap measures military and civilian pay growth over different periods, that feature reflects the pay-raise process. In that process, lags are inevitable. For example, basing the military pay raise for fiscal year 2000 on the increase in civilian pay during that year would be impractical because of the lag in the availability of data about civilian pay and because the Administration and the Congress must make decisions and budget for raises well in advance. When policymakers planning for the military pay raise that will become effective in January 2000 examine trends in civilian pay, they will look at the change (as measured by the ECI) that occurred between September 1997 and September 1998—a 12-month period ending more than 15 months before the military raise becomes effective. (See Box 1 for a discussion of the ECI.)

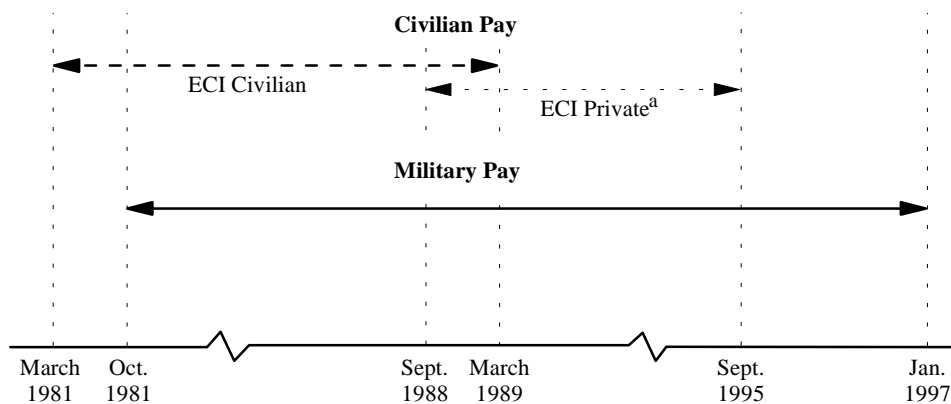
After-the-fact analyses of trends in civilian and military pay need not be affected by the requirements of the pay-raise process. Military and civilian increases could be measured over the same period for such analyses. Yet the pay-gap calculation continues to rely on the old data that were available when decisions on each raise were made. Although it might seem that such a minor difference in the measurement of military and civilian pay changes would not have a significant effect on the reported pay gap, that is not the case. The pay-gap procedure includes several

months of very rapid increase in civilian pay rates from 1981, in effect substituting them for recent months of more modest pay inflation.

Selecting a Starting Point

The reported pay gap does not begin to track growth in military and civilian pay until immediately after the large military pay raise of fiscal year 1982. Starting the comparison either earlier or later results in a much lower estimate of the pay gap (see Figure 4). For example, selecting 1980 as the starting point yields a pay gap for 1997 of 5.5 percent; selecting 1990 yields a figure of 1.6 percent. Yet there is no sound analytic basis for starting the comparison in 1982 rather than earlier or later. Although some people apparently think that the pay raise of 1982 created comparability between military and civilian pay levels, no studies exist to support that belief (see Appendix B). The most that can reasonably be claimed is that military pay was "about right" for DoD's needs in that year. That same reasoning, however, would support starting the comparison much later in the 1980s.

FIGURE 3. TIME LINES OF CHANGES IN CIVILIAN AND MILITARY PAY THAT THE REPORTED PAY GAP COMPARES



SOURCE: Congressional Budget Office.

NOTE: ECI = employment cost index.

a. Excludes employees of state and local governments.

BOX 1.
THE EMPLOYMENT COST INDEX

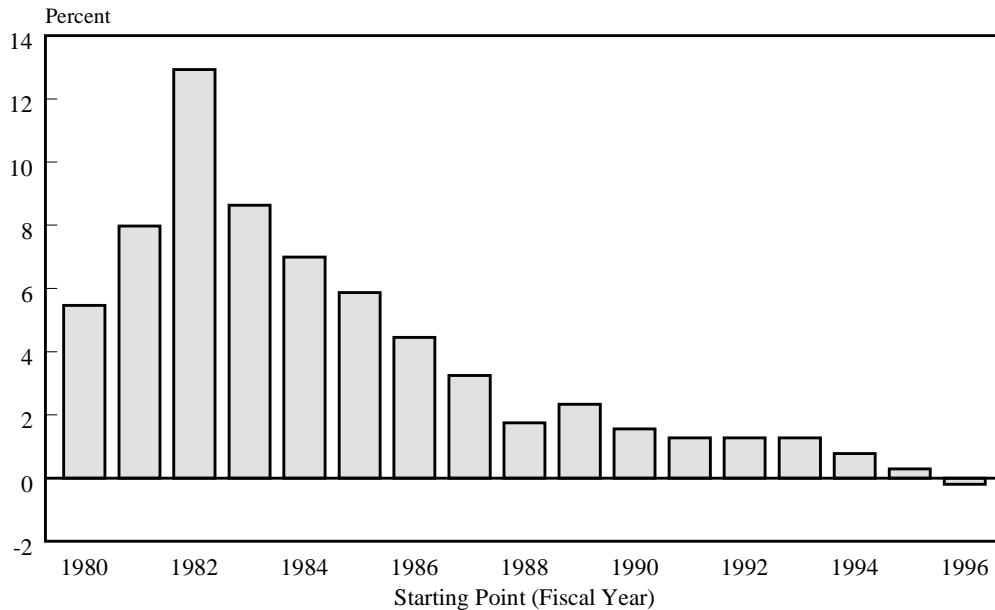
The employment cost index (ECI), produced by the Bureau of Labor Statistics, is a quarterly measure of the rate of change in compensation per hour worked. The index consists of data series for workers in private industry, for workers in state and local governments, and for civilian workers (combining the first two) as well as detailed series for individual occupation and industry groups and other subdivisions. When first published in 1976, the ECI was limited to wage and salary changes in private industry. Data on employee benefits were added in 1980, and data on the state and local government sector were added in 1981. The ECI relies on fixed employment weights, updated periodically, to free the index from the effects of employment shifts among industries and occupations.

The wages and salaries component of the ECI is derived from estimates of average straight-time hourly earnings in an occupation. Those earnings are before deductions, excluding premium pay for overtime, weekend, and late-shift work. They include production bonuses, commissions, and cost-of-living allowances but exclude tips and payments in kind. Earnings of salaried workers and workers paid under incentive systems are converted to an hourly basis.

The earnings estimates for the ECI come from a survey of about 4,400 private nonfarm establishments and 1,300 state and local government establishments, covering nearly 23,000 occupations in the private sector and 8,800 in government. The ECI survey covers more than 90 percent of U.S. workers, excluding only farm, household, and federal government employees.

Two series of the ECI have been involved in the military pay-raise process. During the 1980s, the Senate Committee on Armed Services tracked the increase in the ECI for wages and salaries of civilian workers over the March-to-March period preceding each year's raise. From the early 1980s through 1990, the Department of Defense (DoD) used that increase to assess military pay raises. Following the passage of the Federal Employees Pay Comparability Act of 1990, DoD switched its comparison to the ECI for wages and salaries of private-industry workers—the series specified in that act for determining civil service pay increases—and used the increase in that series over the September-to-September period ending 15 months before each raise. The private-industry series became the basis for the Administration's recommendations on the annual military pay raise and was used in Congressional deliberations. Through the 1980s, the series for civilian pay generally rose faster than the series for pay in private industry—by about 1 percent in total over the first five years following the inception of the civilian series in June 1981 and by another 1 percent over the next five years.

FIGURE 4. WHAT THE REPORTED PAY GAP FOR 1997 WOULD BE IF DIFFERENT STARTING POINTS WERE USED



SOURCE: Congressional Budget Office using data from the Department of Defense.

Ignoring Sources of Change in Military Pay

The reported pay gap compares changes in the ECI with changes in military basic pay, even though growth rates for the other components of regular military compensation—the housing and subsistence allowances and the tax advantage—can differ from the growth rate for basic pay. As a result, the reported pay gap provides an inaccurate assessment of trends in military pay. Moreover, because the growth rates of some components of RMC have differed for service members in different pay grades, no single measure accurately describes the growth in military pay for all categories of personnel.

Until 1998, the Congress effectively controlled the size of annual military pay raises. Typically, the Congress annually enacted specific percentage increases for basic pay, the basic allowance for quarters (since replaced by the basic allowance for housing), and the basic allowance for subsistence. Although the three percentages were often the same, on several occasions in the 1980s and 1990s the Congress gave a larger increase to the housing allowance. Since 1998, the Congress has directly controlled only the size of the annual increase in basic pay. DoD sets rates for the subsistence and housing allowances under provisions in law linking them to

measures of food and housing prices.⁴ As a result, the growth rate of RMC will match that of basic pay only by coincidence.

Congressionally mandated raises are not the only source of change in RMC. Changes in tax rates affect the value of the federal tax advantage. Although year-to-year changes in the tax advantage are generally small, the Tax Reform Act of 1986 substantially cut marginal tax rates. Military personnel, like their civilian counterparts received an increase in take-home pay. Yet the lower tax rates reduced the tax advantage that military members receive because their food and housing allowances are not taxable. (See Appendix C for a more detailed discussion of the change in the tax advantage.)

Changes in promotion policies are another indirect source of change in RMC. Promoting people earlier or later or changing the percentage of people who are promoted to the next pay grade affects the pay that a typical service member can expect to receive in a particular year of service. Specifically, when the services reduced their reliance on first-term personnel during the 1980s and 1990s, promotions of enlisted personnel slowed. As a result, the average pay level at, say, the 10th year of service did not rise as rapidly as did the rate of pay for any particular pay grade in the 10th year of service. (More detailed results appear in Appendix C.)

Reflecting the Characteristics of the Military Population

Although the ECI is widely used as an indicator of civilian wage growth, its use in the pay-gap calculation leads to a distorted picture of trends in military pay relative to civilian pay. The ECI measures wage growth for a broad sample of the civilian workforce. Yet compared with civilian workers, military personnel are very young—about one-third are under age 25, a majority are under 30, and fewer than one in 10 are over 40. In addition, the military relies heavily on people who have a high school education only—college degrees are uncommon outside the officer corps, and officers account for only about 15 percent of all personnel. Since 1982, average pay levels among older workers in the civilian sector have risen faster than among younger workers, and average pay among college graduates has risen faster than among high school graduates. Thus, military pay could remain competitive without rising as quickly as the ECI.

4. The provisions creating the basic allowance for housing state that the allowance should cover 85 percent of the "cost of adequate housing" for each group in the military, on the basis of pay grade and whether the service member has dependents. Because the year-to-year growth in the program is limited, however, the Congress must provide additional funding for the BAH if the 85 percent rate is to be achieved. Thus, the Congress will retain a role in adjusting housing allowances until such time as the target rate is reached.

To clarify trends in military and civilian pay, RAND constructed an index of civilian earnings that reflects the demographic characteristics of military personnel. RAND's index, which it calls the defense employment cost index (DECI), takes into account the distribution of military personnel by age, education, and occupation—three important determinants of workers' earnings.⁵ In most years, the DECI rose by less than the ECI (see Figure 5).⁶ From 1981 to 1993, the ECI increased by a total of 63 percent and the DECI by only 44 percent. The DECI is not without its limitations (see Box 2 on page 20). Nonetheless, it demonstrates that a pay-gap measure computed using wage growth for the civilian labor force as a whole may not accurately reflect the trends in military and civilian pay that are relevant to service members.

THE PAY GAP AND TRENDS IN RECRUITING AND RETENTION

Trends in recruiting and retention during the 1980s are consistent with the view that the pay gap, as conventionally measured, does not accurately reflect wage trends. DoD was very successful in meeting its requirements for new recruits and experienced personnel throughout the 1980s. Yet those are the years in which the reported pay gap grew most rapidly (see Figure 2 on page 11). By 1987, the measured pay gap had already reached nearly 10 percent. In more recent years, growth in the pay gap has been relatively modest.

If military pay had fallen dramatically in the 1980s relative to pay in the civilian sector, analysts might have expected recruiting to have become difficult. In fact, recruiting statistics suggest that the opposite happened (see Figure 6). Despite a drop in the number of young people of enlistment age, the number of so-called high-quality enlistments rose steadily, from 132,000 in 1982 to a peak of 181,000 in 1987—an increase of more than one-third. (High-quality recruits are those who graduated from high school and scored above the median on the military's general aptitude test, measured against the general youth population.)

As personnel cuts in the 1990s reduced the need for new recruits, the trends in recruiting lost usefulness as indicators of the change in military pay relative to pay

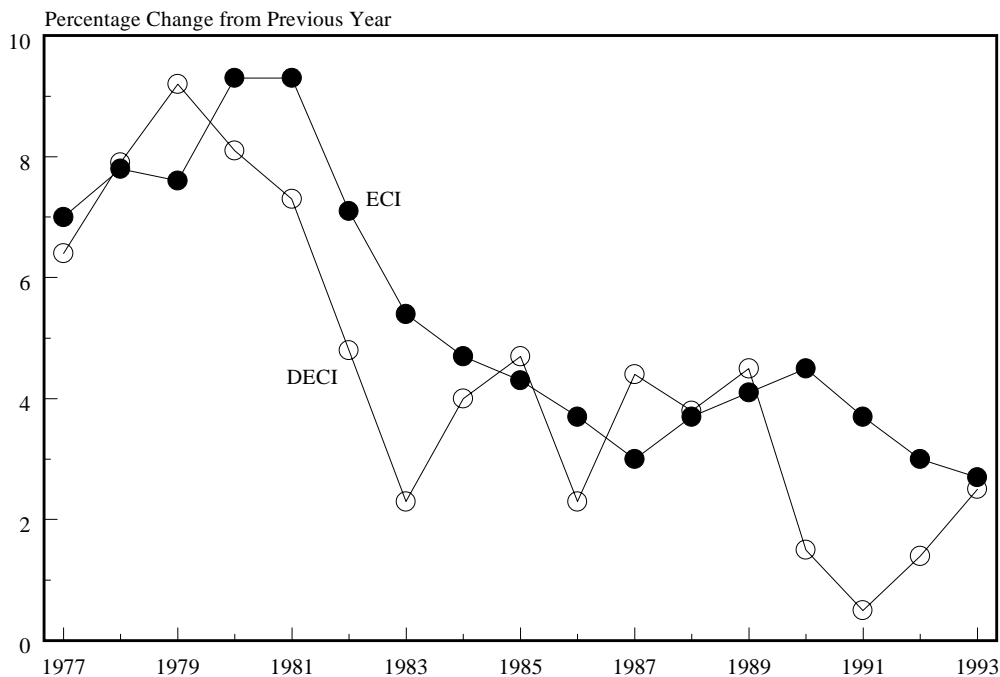
5. See James R. Hosek and others, *A Civilian Wage Index for Defense Manpower*, R-4190-FMP (Santa Monica: RAND, 1992). RAND later expanded the set of characteristics on which it based the DECI, adding sex and ethnic group. The additional characteristics help the DECI to better explain trends in recruiting and retention, but policymakers might be uncomfortable about basing pay decisions on an index that would respond to changes in earnings differences among ethnic groups and between males and females. In this analysis, CBO used the original index rather than the expanded version.

6. Although RAND called the index the “defense employment cost index,” it bears little relationship to the ECI. Whereas the ECI derives from a survey that asks employers about their labor costs, the DECI is based on workers' earnings as reported in the annual earnings supplement to the Current Population Survey.

in the civilian sector. The number of high-quality recruits fell along with the total. The percentage of high-quality recruits as a share of the total, however, rose sharply; with fewer total recruits needed, more effort could be focused on the most desirable recruits. Not until 1997 did the high-quality percentage fall to its level in the best years preceding the personnel cuts.

Like trends in recruiting, trends in the retention of enlisted personnel do not seem to support the claim that pay rose more slowly in the military than in the civilian sector during the 1980s. Measuring the military's success in retaining personnel can be difficult because retention depends both on the willingness of

FIGURE 5. ANNUAL CHANGES IN THE EMPLOYMENT COST INDEX AND THE DEFENSE EMPLOYMENT COST INDEX, CALENDAR YEARS 1977-1993

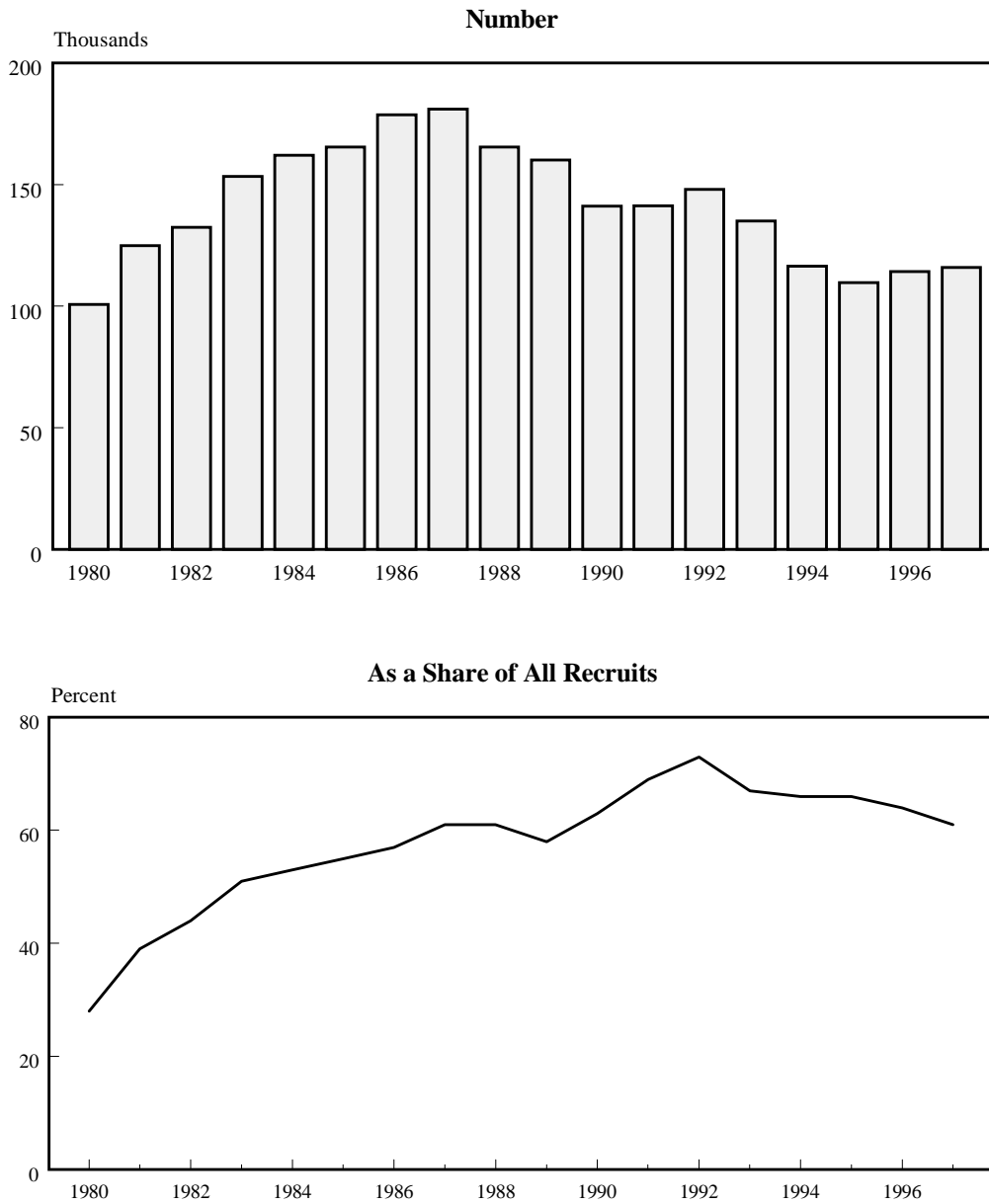


SOURCE: Congressional Budget Office using data from the Bureau of Labor Statistics and RAND.

NOTES: The ECI is the employment cost index for wages and salaries of private-sector workers. ECI data are for June of each year.

The DECI is the defense employment cost index, which was developed by RAND. The DECI is based on the earnings, as reported in the March earnings supplement of the Current Population Survey, of workers who match the military population in terms of age, education, and occupation. RAND has also produced a DECI that adds sex and ethnic group to the set of population characteristics. DECI data represent calendar year averages.

FIGURE 6. HIGH-QUALITY RECRUITS, FISCAL YEARS 1980-1997



SOURCE: Congressional Budget Office using data from the Defense Manpower Data Center.

NOTES: High-quality recruits are defined as people who have earned a high school diploma and have scored 50 or above on the Armed Forces Qualification Test. Data are for recruits who have no prior military service.

Figures are Congressional Budget Office tabulations and may differ slightly from official statistics.

BOX 2.
LIMITATIONS OF THE DEFENSE EMPLOYMENT COST INDEX

The research behind the so-called defense employment cost index (DECI) reveals the weaknesses of the employment cost index (ECI) as a basis for comparing the growth in pay in the military and civilian sectors. The DECI, however, cannot fully answer the basic question of how the military's competitive position has changed, for two reasons.

First, the divergent trends in civilian earnings revealed by the DECI mean that no single index is adequate for the task. Military pay raises that are sufficient to attract well-qualified high school graduates to the enlisted ranks may be too small to be competitive in the market for college graduates to fill the officer ranks. For similar reasons, a pay policy that focuses on recruitment problems can lead to unexpected losses of career personnel if pay for experienced workers in the civilian economy increases faster than entry-level pay.

The second difficulty in using a DECI-like index to assess competitiveness is that the personal characteristics on which it relies may not be sufficient to describe the civilian earnings prospects of military personnel. That is true whether the index covers all personnel or is specific to some subgroup, such as young enlisted personnel. Evidence of the problem is apparent in the enlisted ranks. In recent years, a large majority of recruits have received scores on the military aptitude test that place them above the median for the general youth population. Moreover, the military attracts many recruits who expect to attend college in the future. In addition, military pay is well above the average for civilian workers of the same age and education. The DECI does not reflect those factors.

Factors absent from the DECI calculation may have caused the index to understate the growth in pay for civilian workers who were truly comparable with the military population. The lack of an aptitude measure, for example, may have caused the DECI to miss a rapid rise in pay that high school graduates who were capable of handling more technical occupations received, if that rise occurred. The DECI must also rely on the actual characteristics of service members rather than on the characteristics they might have if they were not in the military. For example, the DECI for enlisted personnel does not reflect the growth in pay for college graduates because few enlistees have college degrees. For recruits who choose the military over college, however, expected earnings after college are clearly relevant to their enlistment decisions—that is, it is not just their earnings at the time of enlistment that are important but also their expected future earnings. Personnel who leave the military to attend college—perhaps using GI Bill benefits—may also compare prospective earnings in the military with what college graduates are paid.

BOX 2. (Continued)

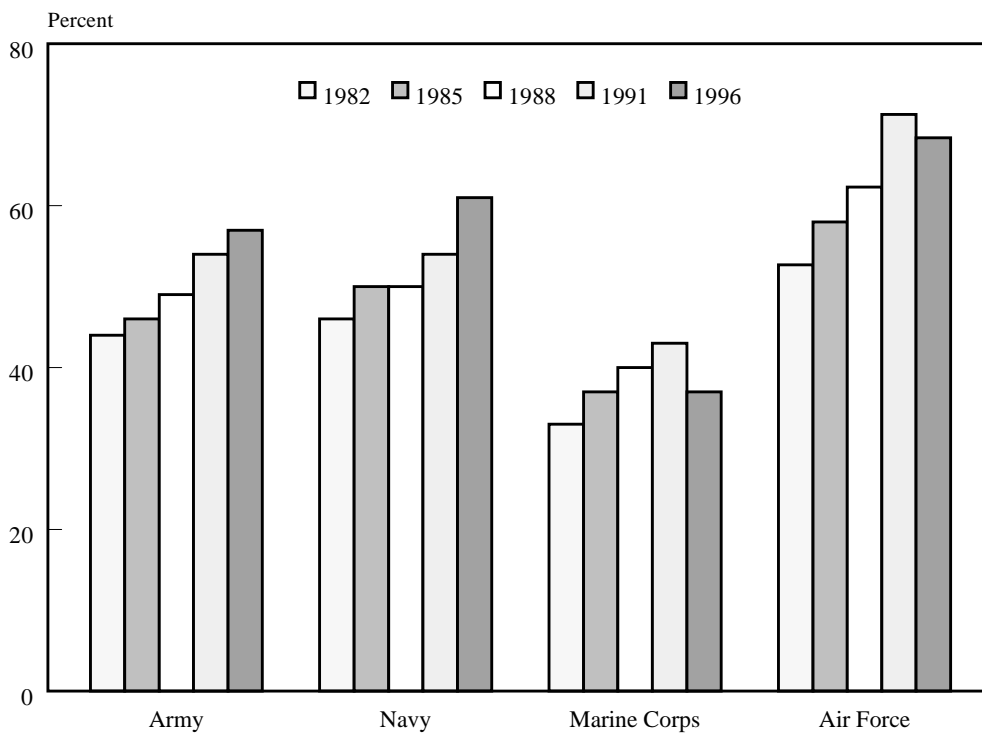
Missing factors would not be of concern if military pay roughly matched the average for civilian workers of the same age and education, but it does not. Pay of enlisted personnel falls at about the 75th percentile of pay for civilian workers with a high school education only, and pay of officers falls at about the same percentile for workers with a college degree. That may simply indicate that the military must pay a premium to attract people, but it could also reflect the missing factors of aptitude and educational aspirations—at least for enlisted personnel. Regardless of which explanation is correct, if military personnel earn higher-than-average wages, the DECI should, perhaps, focus on a different point in the civilian pay distribution. Although the DECI methodology calculates changes in mean earnings, the underlying data would permit the index to be based on the 75th percentile of civilian earnings instead.

Concerns about the DECI's use of average earnings seem to be supported by data on earnings growth for college-educated workers during the 1980s and early 1990s but not by data for high school graduates. Between 1981 and 1993, mean pay for male civilians ages 21 through 25 with only a high school education rose slightly more than pay at the 75th percentile. Only among older high school graduates did pay at the 75th percentile rise faster than the mean, by just a few percentage points (3 points for ages 36 through 40). Among college graduates, faster growth for the 75th percentile was more apparent. The largest difference was for workers early in their careers; among males ages 26 through 30, for example, earnings at the 75th percentile rose by 7 percentage points more than mean earnings.

Although the DECI may be an imperfect measure of how rapidly the civilian earnings prospects of military personnel have risen, it can still be a useful tool. Two points are important here. First, the question of how increases in military and civilian pay compare is too complex to be answered with a single number. Since 1982, the relative earnings of different groups in the civilian economy—older workers versus younger, or college-educated workers versus high school graduates—have changed markedly. During the same period, relative pay for such groups within the military has changed very little. Comparisons of pay growth that rely on broad averages can hide divergent trends, suggesting that decisions about pay should focus on specific groups within the military workforce. Second, the limitations of the DECI may cause it to understate the growth in pay of private-sector workers who are comparable with personnel in the enlisted ranks. DECI-based comparisons indicate that military pay has risen faster than necessary for the services to remain competitive in the market for well-qualified high school graduates. However, for the broader pool of prospective recruits that includes many college-bound youth, military pay may not have kept up.

personnel to remain in the military and on the services' decisions about whom to retain. Still, data on experience levels within the enlisted forces suggest that efforts to promote retention were very successful during the period when military pay raises reportedly lagged behind civilian pay increases. Through the mid- and late 1980s, all four military services were able to reduce their reliance on personnel in their first enlistment tour. In 1982, for example, 44 percent of Army enlisted personnel had completed at least four years of service; six years later, that fraction had reached 49 percent (see Figure 7). The other services experienced similar gains. Although further increases occurred in the 1990s, they resulted from the services' strategies for achieving personnel reductions and so may not reflect any increased willingness of personnel to remain in the military.

FIGURE 7. ACTIVE-DUTY ENLISTED PERSONNEL WITH MORE THAN FOUR YEARS OF SERVICE, SELECTED FISCAL YEARS 1982-1996



SOURCE: Congressional Budget Office using data from the Defense Manpower Data Center.

NOTE: Data are for the end of the fiscal year.

One explanation for the pattern of the 1980s—rapid growth in the reported pay gap along with increased success in recruiting and retention—is that weaknesses in the pay-gap measure make it an unreliable indicator of trends in relative pay. Relative pay may not have declined in the way that the reported gap indicates.

MEASURING TRENDS IN RELATIVE PAY

Many of the shortcomings that make the reported pay gap an inaccurate measure of trends in relative pay can be corrected. One that cannot is the sensitivity of the pay-gap measure to the choice of a starting point (see Figure 4 on page 15). To illustrate the effects of the other shortcomings, this section accepts the 1982 starting point. It presents a series of alternative measures of the change in relative pay since 1982, correcting successively for weaknesses in each of the other three areas—the comparison of military and civilian pay growth over different periods, the focus on the change in only one component of military pay, and the reliance on a measure of change in civilian pay that does not reflect the unusual characteristics of the military workforce. The adjusted measures and the conventional pay-gap measure provide very different pictures of how increases in military and civilian pay compare.

For all personnel together, the adjustments indicate that pay increases for military personnel roughly matched those for comparable civilian workers (see Table 1). The largest adjustments result from measuring military and civilian pay changes over the same period and from using the DECI to account for the unusual characteristics of the military workforce.

The focus on overall averages that is implicit in the pay-gap calculation ignores important differences among groups within the military. The pay of enlisted personnel, for example, appears to have risen relative to that of comparable civilians, whereas the pay of officers appears to have fallen. Most of that difference arises from comparing pay increases for each group with increases for comparable civilians—changes in enlisted pay with those among younger civilian workers with only a high school education and changes in officer pay with those among somewhat older, college-educated workers. In addition, the cuts in income tax rates reduced the tax advantage for both officers and enlisted personnel, but the effect was greater for officers.

Less obvious than the different trends for officers and enlisted personnel, but also important, were differences between junior and senior personnel, especially in the enlisted ranks. The occasional extra increases given to housing allowances generally favored junior personnel because more of their pay comes in the form of those allowances. More important, slowdowns in promotions—which primarily affected enlisted personnel—tended to reduce the pay that typical personnel could expect to receive in midcareer. As a result, pay for enlisted personnel in their first

five years of service rose by about 10 percent relative to that for comparable civilian workers, whereas pay increases for personnel with more than five years of service barely outpaced those for comparable civilians.

Although the adjusted measures help to explain why recruiting and retention improved when the reported pay gap was developing, they also have some shortcomings and are not necessarily accurate indicators of trends in relative pay. Like the conventional estimate of the pay gap, the adjusted measures depend heavily on the time period that is examined and do not consider elements of compensation not included in RMC—the special and incentive pays, for example, or health and retirement benefits. Moreover, because the change in relative pay has varied among

TABLE 1. ESTIMATES OF THE CHANGE IN RELATIVE PAY SINCE 1982

	Enlisted Personnel	Officers	All Personnel
Reported Pay Gap	a	a	13
Measure Military and Civilian Pay over the Same Period ^b	a	a	8
Include Food and Housing Allowances	5 to 7	6	5 to 7
Include Tax Advantage	7 to 11	8 to 14	7 to 14
Use DECI to Measure Change in Civilian Earnings ^c	-8 to -4	6 to 12	-6 to 1
Account for Later Promotions ^d	-10 to -3	n.a.	n.a.

SOURCE: Congressional Budget Office.

NOTES: The change in relative pay is the difference between the increase in civilian pay and the increase in military pay, expressed as a percentage of the index of military pay (October 1981 = 1). Positive values indicate that the increase in civilian pay was greater; negative values indicate that the increase in military pay was greater.

Where ranges are shown, they cover pay grades E-2 through E-8 and O-1 through O-6, including values both for members with dependents and for those without dependents. Grades E-1 and E-9 were omitted because pay for those grades was strongly affected by one-time events.

n.a. = not applicable.

- The reported pay gap is a single number. No distinction is made between officers and enlisted personnel.
- The employment cost index for wages and salaries of private-sector workers is the measure of the change in civilian pay. Since 1991, that measure has been used to calculate the reported pay gap.
- The defense employment cost index (DECI) is a measure of change in civilian pay developed by RAND that reflects the characteristics of military personnel in terms of age, education, and occupation. Values of the change in relative pay for officers and enlisted personnel reflect separate DECI's based on the characteristics of those two groups. Values for all personnel reflect a DECI that is based on the characteristics of all personnel together.
- Military pay is measured by the change in average pay for personnel in each year of service. The figure of -10 percent compares a weighted average of changes in military pay for years of service one through five with a DECI based on the characteristics of personnel in those years. The figure of -3 percent covers years of service six and above.

groups of military personnel, no single measure is accurate for all groups. In part, the attempt to develop accurate measures of trends in relative pay highlights the uncertainty surrounding such estimates. Rather than try to develop better measures of trends in relative wages since 1982, it might be appropriate to ask first whether even a very accurate measure of such trends would in fact be a useful guide for pay policy.

CHAPTER III

IS THE PAY GAP A USEFUL CONCEPT?

The concept of a pay gap, which seems to provide a simple guide for decisionmaking, has an obvious appeal for officials who must set military pay policy. The previous chapter showed, however, that the reported pay gap does not represent a comparison of pay levels in the military and civilian sectors and is not accurate even as an indicator of changes in relative pay since 1982. Moreover, the analysis cast doubt on the feasibility of developing a truly reliable measure of trends in relative pay.

This chapter examines whether the concept of a pay gap—defined in terms of either differences in pay levels or differences in pay growth over time—is useful in choosing pay policies that are both effective and fair. An effective pay policy is one that allows the Department of Defense to meet its requirements for skilled, experienced personnel without imposing unnecessary budgetary costs. A fair pay policy requires a subjective evaluation and is not so easily defined, but one criterion that many people might consider appropriate is that military personnel should not be paid substantially less than similar workers in the civilian sector even if a sense of patriotism or duty might induce them to serve nonetheless.

The examination of the pay-gap concept leads to two main conclusions.

- o The notion of a pay gap is not a useful guide for policymakers concerned about effective pay policies. Pay is only one of many factors that differentiate military and civilian employment. Even if pay levels in the military and civilian sectors, or changes in pay over a period of years, could be compared with complete accuracy, those comparisons would not indicate whether DoD could meet its requirements for well-qualified personnel.
- o To the extent that comparisons of pay levels are useful, their usefulness is as a guide to the fairness of military pay rather than its effectiveness in serving DoD's manpower goals. The results of such comparisons, however, may not be what people concerned about fairness and the reported pay gap would anticipate.

THE PAY-GAP CONCEPT AND EFFECTIVE PAY POLICY

The notion of a military pay gap implies that there is one level of military pay relative to pay in the civilian sector that marks the difference between success and failure for military personnel policies. Defined in terms of a comparison between military and civilian pay levels, the pay-gap concept suggests that the relationship between the two should be one of equality—higher military pay would be wasteful and lower pay inadequate to support the military's needs. Defined in terms of differences between pay increases in the military and civilian sectors since some base year—the principle of the reported figure of 13 percent—the pay-gap concept assumes that the relationship that existed between military and civilian pay levels in the base year should be preserved indefinitely.

The view that military pay levels should match those in the civilian sector or that they should maintain a fixed relationship over time might be reasonable if pay was the only consideration when people thought about joining or remaining in the military and if DoD's requirements for personnel never changed. In fact, many factors contribute to decisions about military service because it differs from civilian employment in many respects, and DoD's personnel needs have indeed changed over time.

Differences Between Military and Civilian Employment

Before making a decision about military service, a person must consider not only pay but also the employer-sponsored benefits (such as health care and retirement) and a variety of less quantifiable features (including the conditions and nature of the work) that make service in the military different from employment in the civilian sector. Both areas—benefits and conditions of work—have features that might tend to make the military look particularly attractive, at least to some people, and other features that could tend to make military service look unattractive. If the attractive features predominate, the military might be able to offer lower pay than civilian employers; if the unattractive features predominate, it might have to pay a premium to meet its personnel needs.

Why DoD Might Be Able to Pay Less Than Civilian Employers. The military offers a highly competitive package of employee benefits that might, in the absence of other factors, allow DoD to pay less than civilian employers. Those benefits include a noncontributory retirement program with an immediate annuity after 20 years of service, a health plan that treats service members without charge and their dependents at low cost, subsidized day care, and—something not found in the civilian world—subsidized grocery and general-merchandise stores in which service personnel (and military retirees) pay no state or local sales taxes. In addition, the military provides free vocational training to its enlisted personnel and affords many officers the

opportunity to obtain advanced degrees—either in military or civilian institutions—while still being paid.

Many aspects of military service could induce some people to enter or remain in the armed forces. The challenge of flying an F-15 is something that only the military can offer. More broadly, the military provides an opportunity for travel and adventure and a sense of belonging to an organization with an important mission. In addition, it gives unusual independence and responsibility to its personnel, often very early in their career. Indeed, when recruits are asked why they enlisted in the military, few cite pay as the primary consideration.

Why DoD Might Need to Pay More Than Civilian Employers. It is easy to find reasons not to serve in the armed forces. The military puts unusual strains on families, regularly transferring personnel from one location to another and sending service members to places where their families cannot join them. Service members are never completely free from military obligations; they can be recalled from vacations, required to work long hours and on weekends, and sent overseas with little or no notice. In addition, military personnel are subject to a separate code of criminal law and can see their military career cut short for offenses that would scarcely be noticed in the civilian world. And, of course, they may be required to risk their lives in combat.

The Effects of DoD's Personnel Requirements on Military Pay

The size of the military force also plays an important role—along with people's attitudes and taste for military service—in determining how much DoD needs to pay in comparison with civilian employers. Individuals place different values on each of the features (noncash benefits and the less tangible conditions of work) that distinguish military service from civilian employment. One person might be attracted to the military because of the opportunity for travel, but another might see travel as the military's greatest drawback. To some, the military's discipline may be a positive feature; to others, a negative. People differ. Thus, some would choose to serve even if the pay was much lower, others would serve provided that military pay was relatively attractive, and still others would never volunteer almost regardless of how much they were paid.

A small peacetime military might get by with very low pay by drawing only from the group that is most attracted to military service. But the military will have to pay its personnel more than they could earn in civilian jobs if it must also attract some people who, if pay levels were equal, would tend to choose civilian over military employment. And because the military is in fact a very large employer, taking in 10 percent or more of the young men graduating from high school each year

(as well as many young women), the change in pay that might be needed to bring in and retain significantly more personnel is not small.¹

The importance of nonpay factors does not mean that pay is irrelevant. Other things being equal, the more well-qualified young men and women the military wants to attract and retain, the more it must pay. Yet the importance of noncash benefits and the conditions of military service means that setting military pay to match civilian pay scales may not ensure that DoD can meet its manpower requirements. The importance of noncash factors also raises the question of whether an increase in pay is necessarily the least-cost solution when DoD experiences personnel shortages. In some cases, changing other aspects of military service—reducing the number of unscheduled deployments, for example, or providing health care that better meets the needs of military families—might reduce shortages at less cost than a pay raise.

COMPARISONS OF PAY LEVELS AS AN INDICATOR OF FAIRNESS

Some observers would argue that military pay policy should be fair to service members as well as effective in meeting DoD's personnel requirements. Although fairness is a subjective concept, one possible criterion is that military personnel should not be expected to work for substantially less than what workers of a similar age and educational background earn in the civilian sector. That is, people driven to serve by patriotism or a strong sense of duty should not have to suffer a sharp financial loss as a result.

Comparisons of pay levels in the military and civilian sectors can help policymakers form their own subjective judgments about whether the nation is treating its military personnel fairly. Accurate assessments of what a specific person might earn in civilian employment are difficult to make. Broad comparisons of military and civilian earnings may be the most useful, however, depending on the notion of fairness. For example, it may be unfair to ask a college-educated officer to accept lower pay than most similarly educated civilians in the United States. But fairness may not require that DoD pay the pilots to whom it has provided valuable training as much as that training would bring them in the civilian sector.

The results of a broad comparison of pay levels might surprise people who are concerned about the fairness of military pay levels and people who believe—perhaps because of the reports of a pay gap—that military personnel are paid substan-

1. Researchers have been examining the effects of pay and other factors on military recruiting and retention for decades. One of the earliest studies predates the end of conscription. The Gates Commission, which President Nixon established to determine what would be required to support a purely volunteer military, tried to estimate by how much entry pay would have to increase if conscription was ended.

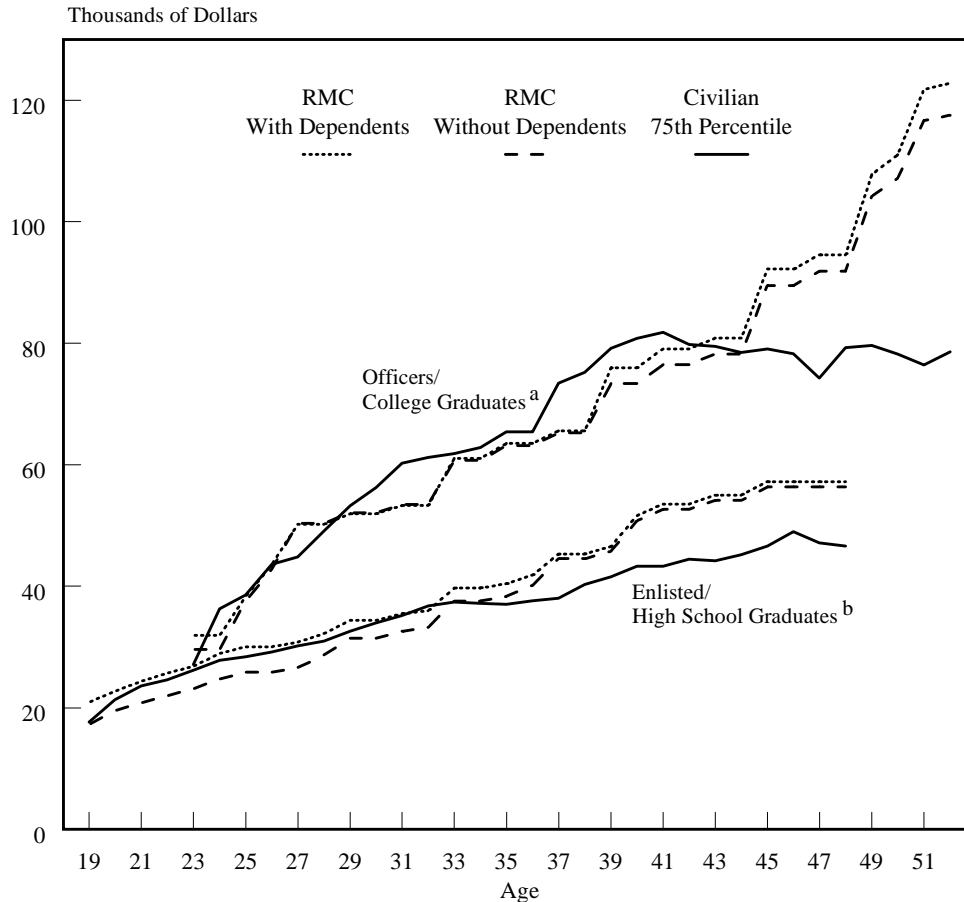
tially less than civilian workers of a similar age and educational background. Throughout the course of a typical military career—in either the enlisted or officer ranks—military pay falls at about the 75th percentile of pay among comparable civilian workers (see Figure 8). In other words, a new recruit's pay is greater than the pay received by roughly three-quarters of all 19-year-old male civilian workers with only a high school degree. Similarly, the pay of new officers is higher than that of about three-quarters of 23-year-old male college graduates in civilian jobs. Enlisted personnel who progress through the ranks at the typical pace continue to earn more than about three-quarters of their civilian counterparts. For officers, pay falls short of the 75th-percentile mark for a time in midcareer—most notably, the long period between promotion to pay grade O-3 (captain or Navy lieutenant) and O-4 (major or lieutenant commander)—but remains well above the average among civilians.²

The data in Figure 8 suggest that DoD may in fact pay many personnel a premium to attract and retain them in a profession that involves frequent moves and potential danger. The need for such a premium could explain why, with pay at the 75th percentile, DoD could nonetheless be reporting problems in recruiting and retention. Another explanation for the apparent premium might be that the military seeks particularly well-qualified personnel and simply matches what they could earn in civilian jobs. In either case, the data would seem to rule out at least one possibility—namely, that people who choose military service must accept earnings that are substantially lower than those available to civilian workers generally.

A comparison like that in Figure 8 provides useful information for people who would define fairness on the basis of a similarity between military and civilian pay levels. Yet because fairness is a subjective notion, the comparison may not satisfy all observers. Some might argue that a fair system would require an even larger premium because of the sacrifices that military service entails. Others might contend that the eligibility of some service families for food stamps is a clear sign that military pay is unfairly low, even though most of those families qualify only because the rules governing eligibility for food stamps do not consider all of their

2. Critics of the simple comparison in Figure 8 might argue that service members' pay should rise relative to the average among civilians of the same age as those members survive an increasingly selective promotion process. Selectivity only ensures, however, that people who reach the higher ranks are the best among those who remain in the military; it does not imply that they are more capable than the people who choose to leave earlier. Nonetheless, military pay does rise to well above the 75th percentile among civilians for military personnel who reach the higher ranks—E-8 and E-9 for enlisted personnel and O-6 (colonel or Navy captain) and above for officers. Moreover, even for personnel who do not reach those ranks, the promise of military retired pay at an unusually young age adds to their total compensation long before civilian retirement plans have a similar effect.

FIGURE 8. ANNUAL EARNINGS IN 1997 OF TYPICAL OFFICER AND ENLISTED PERSONNEL COMPARED WITH THE 75TH PERCENTILE OF EARNINGS FOR MALE COLLEGE GRADUATES AND HIGH SCHOOL GRADUATES



SOURCE: Congressional Budget Office using data from Bureau of Labor Statistics, Current Population Survey (March 1998). The timing of promotions for military personnel is based on data in Department of Defense, *Report of the Seventh Quadrennial Review of Military Compensation* (August 21, 1992).

NOTES: Regular military compensation (RMC) consists of basic pay, allowances for food and housing, and the tax advantage that personnel receive because the allowances are not subject to federal income tax.

Military pay levels after age 37 for enlisted personnel and age 45 for officers reflect the typical timing of promotions to the senior pay grades. Most personnel, however, do not achieve those grades.

Civilian data reflect the 75th percentile of earnings at each age and exclude fringe benefits. Because the civilian data exhibit wide variation from one age to the next, they have been smoothed by taking moving averages over five years.

Military data assume that enlisted personnel in their first year of service are 19 years old and that officers are 23. The data series stop when such personnel would complete 30 years of service, the maximum allowed for all but a few personnel.

a. Includes all people with at least a bachelor's degree.

b. Excludes people with some college education.

military pay.³ Any particular approach to comparing military and civilian pay levels cannot address all of the arguments that might be raised.

THE PAY-GAP CONCEPT AS A GUIDE TO POLICY

Because fairness is subjective, this chapter's central finding deals only with the usefulness of the pay-gap concept as a guide to effective pay policy. Specifically, efforts to compare civilian and military pay levels or to track changes in relative wages over a long period do not provide a useful guide for DoD as it seeks to meet its needs for well-qualified personnel. That conclusion is forcefully illustrated by the fact that comparisons of both wage levels and wage growth over time (after adjusting for some of the shortcomings in the conventional pay-gap measure) indicate that enlisted personnel overall are faring very well relative to their civilian counterparts. If those pay-gap indicators were used to guide policy, DoD might actually reduce enlisted pay—possibly with very unfortunate consequences for retention.

3. The value of government-supplied housing is not considered part of the service member's income under Food Stamp regulations. For the lowest-paid personnel, the housing allowance (in cash or in kind) accounts for 25 percent or more of total pay. The regulations also do not consider the tax advantage that service personnel receive because their housing and subsistence allowances are not subject to federal income tax, which accounts for another 4 percent to 6 percent of pay among lower-paid married personnel.

CHAPTER IV

LESSONS FOR PAY POLICY

A review of the process that determines military pay raises reveals many similarities between that process and the calculation used to produce the 13 percent pay-gap figure. As a result—even though the reported pay gap is not a useful guide for policy—this paper's review of its shortcomings yields some important lessons about the pay-raise process and the misleading perceptions that it can create. In addition, the discussion of why the reported pay gap is not a good guide for policy casts some light on what might be a more appropriate guide.

THE PAY-GAP CALCULATION AND THE PAY-RAISE PROCESS

The calculations that underlie the reported gap mirror the annual pay-raise process as it has developed over the past 30 years. That relationship is most evident in the way the calculation compares each year's military pay raise with the change in the employment cost index for an earlier period. But the pay-raise process has also shaped the pay-gap calculation, and through it perceptions about military pay, in two other ways: the change in basic pay, rather than in regular military compensation, has increasingly been viewed as the military pay raise; and the employment cost index has gained acceptance—without any formal decision—as the appropriate measure of changes in civilian pay.

The practice of regular annual military pay raises has been firmly established since the late 1960s, although the process for determining those raises has evolved over time. The current process typically focuses on some percentage raise in basic pay that applies to all military personnel. The Administration proposes a percentage increase for basic pay in the budget it submits to the Congress, and the Congress enacts an increase—sometimes different from that proposed by the Administration—in the annual defense authorization act. Since 1998, the Department of Defense has adjusted the subsistence and housing allowances annually in accordance with measures of the changes in food and housing prices; previously, the Congress adjusted those allowances as well.¹

1. Before 1998, the housing allowance consisted of two parts: a variable housing allowance, which DoD set for each locality in the United States on the basis of estimates of local housing costs, and a basic allowance for quarters, which the Congress adjusted. On average, the variable allowance accounted for about one-quarter of the total housing allowance nationwide.

The process for determining military pay raises that is actually followed makes no formal connection between those raises and the employment cost index or any other measure of changes in pay among workers in the civilian sector. An informal connection exists through a provision in law requiring the President, whenever the pay of federal white-collar workers is increased, to increase military pay by the same percentage; white-collar raises, in turn, are based partly on recent increases in the ECI. In practice, the Congress regularly waives the provision for an automatic military pay raise and enacts one instead. Nonetheless, changes in civilian pay clearly play a role in both the Administration's proposal and the Congress's action. Raises may be described as "ECI minus one-half"—meaning the change in the ECI minus 0.5 percentage points—or "full ECI."

The Focus on Basic Pay

The exclusive focus on basic pay in the military pay raise is a relatively new feature of the pay-raise process. When the Congress created the first formal procedures for regular increases in military pay in 1967, it established the principle that the percentage increase should apply to overall pay—that is, to the sum of the components of pay that make up regular military compensation. That principle was gradually lost, however, beginning in 1974 when the Congress excluded the tax advantage from the pay-raise calculation.

During the 1980s and 1990s, the Congress made periodic adjustments in the allowances that were always in addition to an agreed-upon pay raise rather than funded within it. Little evidence exists that the effect of those adjustments on the size of the overall raise was even considered in the Congressional deliberations on allowance adjustments, although the effect of those adjustments on budgetary costs undoubtedly was. Finally, in the National Defense Authorization Act for Fiscal Year 1998, the Congress formalized the concept of the annual pay raise as the increase in basic pay rather than the increase in RMC. It did so by creating cost-based adjustment mechanisms for the subsistence and housing allowances and by removing any mention of allowances from the law specifying pay-raise procedures.

The departure from the earlier concept of the pay raise helps to support the view that increases in basic pay alone should match increases in civilian pay levels—a notion reflected in the calculation of the 13 percent pay-gap figure. In effect, RMC has been relegated to the role of informing individual service members about the pay that civilian jobs would have to offer to match their military pay. Although future changes in housing and food prices may drive RMC up faster, or more slowly, than the rate at which basic pay increases, those changes will not be readily apparent to the policymakers who determine the size of each year's pay raise. Indeed, only the Department of Defense will have the information needed to calculate the average increase in RMC among all pay grades.

Using the ECI to Measure Growth in Civilian Pay

The perception that military pay is too low because its growth has not kept pace with the rise in the ECI stems at least in part from the ECI's role in the process for determining military pay raises. That role has never been formal, however, and perhaps as a result, the usefulness of the ECI in the process has received little attention.

The ECI first became a factor in setting military pay in the early 1980s. As noted above, federal law provides for an automatic raise for military personnel whenever the pay of federal white-collar workers is increased. In 1983, the Senate Committee on Armed Services (SASC)—dissatisfied with the measure of private-sector pay that was used in determining federal civilian pay raises—turned to the ECI as a guide for military pay raises because that index covered a broader range of civilian occupations. The Congress never acted, however, to replace the link between military and federal civilian pay raises with one tying military raises directly to the ECI or any other measure of pay changes among civilian workers outside the federal government.

The role of the ECI in decisions about military pay grew without any apparent consideration of whether that role was appropriate. In the 1980s, it simply seemed superior to the measure of change in civilian pay that was then employed. In the 1990s, a change in the law governing pay setting for federal civilians introduced the ECI into that process, which seemed to give the index greater legitimacy.² In the civilian pay process, however, the change in the ECI (minus 0.5 percentage points) merely serves to establish a floor for pay raises under a system in which rough equality with private-sector pay levels, achieved through a locality-specific component of pay, is the underlying principle. Thus, the policymakers who developed the process did not need to determine whether the ECI was an appropriate tool for setting overall pay raises, either for federal civilians or for military personnel.

2. The new law also shifted attention from the ECI for all civilian workers, including employees of state and local governments (the index that the SASC had been monitoring), to the ECI for private-sector workers only. The pay-gap calculation followed that shift, although there is no obvious reason to think that the private-sector index is a better guide for setting military pay than the civilian index. The absence of a clear rationale for the change further illustrates the lack of scrutiny that the ECI has received as a tool for setting military pay.

AN ALTERNATIVE FOCUS FOR PAY POLICY

How can policymakers devise an effective pay policy for the military? This paper has shown that the reported pay gap—indeed, the very concept of a pay gap between the military and civilian sectors—does not provide a useful guide for policymakers seeking to set pay levels that are adequate to support the military's personnel needs without wasting scarce resources. The pay-gap comparison looks at only one of the considerations in decisions to join or remain in the military; over any substantial period of time, other important factors almost certainly will change. Thus, no matter what one assumes about the starting point for the pay comparison, and no matter how carefully the comparison is made, it cannot indicate whether military pay is at an appropriate level today. Tracking past pay changes is no substitute for looking at current conditions.

The answer to the problem of devising an effective pay policy may lie in thinking of the problem as consisting of two parts. One part is the traditional concern of deciding on a military pay raise each year. In that decision, some simple rule of thumb—matching a recent one-year change in the ECI or some other measure of change in civilian pay—may be adequate. The second part of the problem is to determine, in a periodic examination of the military's personnel needs, how well pay levels support those needs. Such an examination would look not only at overall conditions but also at particular areas—among midcareer enlisted personnel, for example—in which personnel problems might warrant some realignment of pay rates.

Decisions About Pay Raises in the Short Run

From one year to the next, determining whether personnel problems are developing or whether some observed change—a fall in retention, for example—reflects normal variations can be difficult. When no clear trends are apparent, setting a particular year's military pay raise equal to the recent one-year change in some measure of civilian pay may seem appropriate. That approach can provide a rough short-run approximation of an effective pay policy because in the absence of changes in such things as civilian unemployment rates or the attractiveness of the military lifestyle to young people, a policy that held relative pay constant would tend to hold the supply of personnel to the military constant as well. If, in addition, the military's personnel needs did not change, the policy would also leave unchanged the military's ability to meet those needs.

Would the defense employment cost index or some other index of changes in civilian pay designed to capture changes relevant to the military provide a better guide than the ECI for year-to-year decisions? As yet, the DECI seems more a tool of researchers than a useful guide for annual military pay raises; it cannot be produced in as timely a manner as the ECI and tends to exhibit wide swings that

could yield unsettling variations in raises from one year to the next. If the short-run goal is only to approximate an effective pay policy, however, the measure of change in civilian pay need not be exact. Thus, continuing to rely on the ECI could be appropriate.

Whatever measure of change in civilian pay is used to guide year-to-year decisions about military pay raises, the process cannot focus on basic pay alone if the military pay raise for a particular year is to match the recent change in civilian pay levels. Under current law, DoD adjusts the allowances for subsistence and housing each year to keep pace with changes in the prices of food and housing. If policy-makers ignore those adjustments by applying the chosen raise only to basic pay, they may not achieve the desired result of matching changes in military pay to changes in civilian pay. When food and housing prices rise rapidly, the increase in overall pay will be greater than necessary to keep pace with civilian pay changes; when those prices rise slowly, the overall increase will be smaller than necessary. An alternative approach would be to calculate the increase in basic pay *after* the allowance adjustments were determined, so that the overall raise would be the desired size.

The short-run strategy of matching the increase in some measure of change in civilian pay levels cannot be expected to yield appropriate long-run results. Nor should the measure selected be viewed as a perfect guide. No measure can perfectly capture the relevant changes in civilian pay or account for changes in nonpay factors. Over the long run, both the overall level of pay and the relative rates of pay for different groups within the military will need significant periodic realignments. Cumulative comparisons of pay changes in the military and civilian sectors cannot substitute for a direct evaluation of the effectiveness of military pay in serving the military's personnel needs.

Pay Policy over the Long Run

Although determining whether the current level of military pay is appropriate is beyond the scope of this paper, the basic signs for deciding whether a significant realignment in military pay relative to civilian pay is warranted are fairly clear. Equally clear is that not all personnel problems need to be addressed by an across-the-board increase in military pay.

Indications That the Level of Pay Needs to Be Realigned. The most obvious sign that a substantial across-the-board increase in pay is needed would be if the services were experiencing retention rates that were too low to support their needs for experienced personnel in the higher ranks. Because it promotes only from within, the military cannot offset low retention by luring experienced workers away from other employers. A second indication, which could be more difficult to assess with any precision,

would be if the services were losing too many of their better people, so that the quality of personnel in the higher ranks was not as high as the services wanted.

Assuming that one or both of those signs were present, the question would then be: What tool—higher overall pay, more bonuses, greater fringe benefits, improved quality of life, and so forth—would achieve the desired result at the lowest cost?

A general pay raise is a very blunt and expensive tool for dealing with personnel problems. It encourages all personnel, not just those whom the services most want to keep, to stay in the military. For that reason, a large adjustment in overall pay levels would be justified by personnel problems only if those problems were apparent across the board—among officers and enlisted personnel, among personnel who are early in a career and those eligible for retirement, in recruiting and retention, and among all or most of the services.

Situations in Which an Across-the-Board Increase Might Not Be Needed. The current pay process and pay-gap calculation encourage a focus on across-the-board increases in basic pay. Yet such an increase is an expensive solution for most recruiting and many retention problems. Situations in which an increase in basic pay is likely to be proposed, but unlikely to prove cost-effective, include the following:

- o *Shortfalls in the number or quality of recruits.* A well-respected and comprehensive body of empirical studies demonstrates that increases in basic pay are a relatively expensive way to attract additional high-quality recruits. Pay raises are about four to five times as expensive as offering greater postservice education benefits, assigning more personnel to recruiting duties, or increasing advertising expenditures. They are about twice as expensive as offering larger enlistment bonuses.³
- o *Shortfalls of experienced personnel in specific military occupations.* Unlike civilian pay systems, the military system does not provide for extensive pay differences among occupations. As a result, shortages of experienced personnel in occupations that are well paid in the civilian sector—including doctors and pilots—are as inevitable as surpluses of personnel in low-paying occupations. Again, empirical studies suggest that bonuses tied to additional years of service are often a cost-effective way of addressing those problems; increases in

3. Beth J. Asch and Bruce R. Orvis, *Recent Recruiting Trends and Their Implications: Preliminary Analysis and Recommendations*, MR-549-A/OSD (Santa Monica: RAND, 1994). The figures assume that the pay increase is limited to personnel in their first term of enlistment.

basic pay or retirement benefits that must be paid to the entire force are not.

- o *Shortfalls of personnel that are limited to a specific service.* For instance, the Navy seems traditionally to have had more difficulty retaining trained enlisted personnel than the Army and the Air Force. Special pays targeted toward the service that is experiencing difficulties, such as career sea pay, are likely to be more cost-effective than an increase in basic pay for all services.
- o *One-time shortfalls that are restricted to particular pay grades but are seen across a wide spectrum of occupations.* Such shortfalls can arise from shocks to the personnel system. For example, when the services cut back heavily on recruiting to accommodate the post-Cold War personnel reductions, they created unusually small cohorts that will move through the personnel system—carrying shortages with them—for a 20-year period. Reenlistment bonuses targeted toward the small cohorts are one option to address that problem.
- o *Chronic shortfalls in particular pay grades that result not from a shock to the personnel system but from a pay profile that does not provide the retention incentives needed to support DoD's demand for experienced personnel.* Changes in the structure of the table of basic pay or in the retirement system might address such chronic shortfalls.

The discussion above identifies special and incentive pays and changes in the pay table as alternatives to across-the-board increases in basic pay. Still other alternatives might include better access to health care, efforts to reduce the number of unscheduled deployments, and improved family housing. Although all of those options might have a significant effect on retention—and might in some situations be cost-effective alternatives—they would not change the "pay gap" as it is commonly reported.

CONCLUSIONS

Because the reported pay gap focuses on the past rather than on the problems faced by today's military, it is not a useful guide for policymakers concerned about the military's ability to meet its personnel requirements. Nonetheless, documenting retention problems that are persistent, widespread, and sufficiently severe to warrant a major pay adjustment can be difficult. The lack of objective criteria may explain why comparisons of past trends continue to play a role in pay decisions despite evidence that such comparisons are prone to inaccuracies and despite the argument that no matter how accurate they are, they are irrelevant.

As the Administration and the Congress wrestle each year with the question of how large a military pay raise to grant, they cannot undertake the detailed examination of retention patterns and the services' long-term needs that would provide guidance on overall levels of pay. Thus, in the short run, if DoD is not experiencing any clear problems, a measure of the growth in pay among civilian workers may provide a necessary and reasonable guide for military pay policy.

But although such a measure may be useful in any single year, cumulated differences in the growth of military and civilian earnings over a number of years are not a good guide for any periodic realignment in pay that might be necessary. Pay is only one factor that affects DoD's long-run ability to recruit and retain military personnel. Moreover, no single measure of trends in relative pay can be appropriate for all groups.

The military's success in meeting its personnel requirements is the best indicator of the adequacy of the overall level of military pay and of the need to realign pay levels among different groups in the military. Although this paper's review finds that the pay of enlisted personnel has risen relative to that of comparable civilians since 1982, a significant pay increase for enlisted personnel could still be justified if DoD is in fact unable to meet its retention goals for enlisted personnel today. Similarly, although the pay of officers has fallen relative to that of comparable civilians, an increase in their pay is justified only if DoD is experiencing widespread problems retaining officers. Measures that look at past pay raises cannot help policymakers evaluate the adequacy of DoD's current pay policies.

APPENDIX A

THE STRUCTURE OF MILITARY PAY

Part of the confusion surrounding comparisons of military and civilian pay appears to stem from misunderstandings about exactly what constitutes military pay. Most policymakers and others concerned with military pay probably know that the pay of service personnel, unlike that of most employees of civilian firms, can consist of many elements. Some observers may not realize, however, that military basic pay is not the only element common to all personnel and that other common elements make up a substantial portion of service members' pay throughout their military career.

Military personnel receive at least four distinct forms of pay each month: basic pay, an allowance for housing (paid either in cash or as government-supplied bachelor or family housing), an allowance for food (paid either in cash or as meals in military dining facilities), and an implicit payment—called the federal tax advantage—because the food and housing allowances are not subject to federal income tax. In addition, personnel serving in certain hazardous or arduous positions may qualify for special pays, and bonuses and other incentive pays help attract and retain people in occupational specialties that would otherwise be hard to fill.

Basic pay depends on a service member's pay grade (based on military rank) and years of service. In general, increases based on years of service come every two years, although each pay grade has a point at which increases stop.¹ Enlisted personnel generally begin their service in grade E-1, reach grade E-4 by the time they complete four years of service (a typical initial commitment), and most commonly are in grade E-6 or E-7 when they reach 20 years of service and are eligible to retire. Officers begin in grade O-1 (except in the health field and certain other professions), reach grade O-3 at about four years of service, and then typically receive only one or two more promotions before they complete 20 years of service. Promotion to grade O-6, at about 22 years of service, is as high as most officers can expect to advance; the flag ranks (general or admiral) cover grades O-7 through O-10. Between the enlisted and officer grades are five warrant officer pay grades, which account for relatively few service members—none at all in the Air Force.

The *basic allowance for housing* (BAH), which replaced two separate housing allowances in 1998, depends on members' pay grade, whether they have dependents, and where they are assigned. The military provides family housing for

1. For a more complete discussion of basic pay and the relative importance of promotions and longevity in determining pay, see Congressional Budget Office, *Military Pay and the Rewards for Performance*, CBO Paper (December 1995).

roughly one-third of personnel with dependents stationed in the United States; the rest live in private housing and receive the BAH. (They may be placed on waiting lists for available government housing.)² Although assignments to family housing units depend on how many dependents service members have, housing allowances do not. Single officers generally may elect to receive a BAH, and most do so. Most single enlisted personnel in grade E-6 and above have the same choice; most junior enlisted personnel without families are expected to live in military barracks.

All officers and many enlisted personnel receive a *basic allowance for subsistence* (BAS). The BAS does not depend on a member's pay grade, except that officers are paid at a lower rate than are enlisted personnel. Single enlisted personnel in the junior pay grades (E-1 through E-4) generally eat for free in government dining facilities and so do not receive a BAS. Enlisted personnel serving on ships at sea also usually receive free meals rather than a cash allowance.

In 1998, the Department of Defense began to adjust BAH and BAS rates annually to reflect changes in the cost of housing and food. Previously, rates for the basic allowance for quarters (the larger of the two allowances that the BAH replaced) and the BAS were adjusted annually along with basic pay—usually through Congressional action and by the same percentage as basic pay. Rates for the variable housing allowance, which provided the locality-specific allowance that is now part of the BAH, were adjusted annually in accordance with changes in housing costs. Chapter III discusses those adjustments more fully.³

The *federal tax advantage* is the additional amount that service members would have to be paid to give them the same after-tax income they would receive if their subsistence and housing allowances or in-kind payments were subject to federal income tax. (Although the allowances are also not subject to Social Security taxes and state and local income taxes, calculations of the tax advantage generally ignore the effect of those exclusions.) Because the tax advantage is an implicit payment, it does not appear on service members' pay stubs, nor does its cost appear in the defense budget. The tax advantage adjusts, of course, whenever the rates of the subsistence and housing allowances change, but it also responds to changes in income tax rates. The change in tax rates in the mid-1980s substantially reduced the tax advantage for most service members (see Appendix C).

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2. The formal policy of the Department of Defense is that military family housing should be built only in locations where adequate and affordable private housing is not available. In practice, however, the availability of military housing is dictated mainly by historical building decisions.
 3. For an explanation of the reasons for the change in the housing allowance program and a description of how the locality-specific rates are calculated, see Congressional Budget Office, *Housing Prices, Housing Choices, and Military Housing Allowances*, CBO Paper (October 1998).

Together, the four common elements of military pay are called *regular military compensation* (RMC). The concept of RMC, which the Congress defined in 1974, helps military personnel compare their pay with what they could earn in a civilian job—a task that might otherwise be difficult because some members receive food and housing in kind and others receive cash allowances and because the tax advantage is an implicit payment. A service member's RMC is not, however, considered to be his or her income for purposes of qualifying for federal assistance programs. When members apply for food stamps, for example, both the tax advantage and the value of in-kind housing payments are ignored, which helps explain why some members qualify for the program.

As military personnel progress through the pay grades, both their RMC and the fraction of RMC accounted for by basic pay rise (see Table A-1). Enlisted recruits without families start at about \$19,000 a year. If they marry, they will typically earn nearly \$27,000 by the time they complete an initial four-year enlistment tour and roughly \$40,000 by the time they are eligible to retire after completing 20 years of service (grade E-6 or E-7—most do not reach grade E-8). Officers start at \$32,000 to \$35,000 a year; most reach about \$80,000 by the time they are eligible to retire.

Although the housing and subsistence allowances and the related tax advantage decline in importance as military personnel advance, those components account for a substantial portion of pay throughout a career. They make up more than 40 percent of RMC for a young enlisted member with a family and generally more than one-quarter of the total even for higher-paid officers. The housing allowance, which is the next largest component after basic pay, gradually declines in importance because it is based on typical spending patterns—as their income rises, people generally spend a smaller fraction on housing. The subsistence allowance falls in importance even more rapidly because it does not rise with a member's pay grade.

Service personnel also receive fringe benefits, some of them similar to benefits available in civilian employment and others more unusual. Among the former are health and retirement benefits, reimbursement for moving expenses, and subsidized day care. The military retirement plan can appear particularly generous, offering people an immediate lifetime annuity at 50 percent of their basic pay—indexed for inflation—after they complete 20 years of service (benefits peak at 75 percent of basic pay after 30 years of service).⁴ Because the benefit is based only on

4. For people who entered the military before September 8, 1980, the benefit is based on their final basic pay; for later entrants, it is based on their highest 36 months of pay. In addition, people who entered after July 31, 1986, have their benefit reduced by 1 percent of basic pay for each year short of 30 that they complete (the reduction is eliminated when they reach 62 years of age) and receive only partial protection against inflation.

TABLE A-1. AVERAGE REGULAR MILITARY COMPENSATION IN 1998 AND ITS DISTRIBUTION AMONG COMPONENTS OF PAY, BY PAY GRADE AND DEPENDENCY STATUS

Pay Grade	Typical Year of Service ^a	RMC (Dollars)	Percentage of RMC			
			Basic Pay	BAH	BAS	Tax Advantage
Personnel Without Dependents						
E-1	1	18,714	55	24	13	7
E-2	1	21,304	58	23	13	6
E-3	2	22,394	60	22	12	6
E-4	4	24,922	64	19	11	5
E-5	8	29,222	67	19	9	5
E-6	13	34,059	70	17	8	5
E-7	17	39,788	70	16	7	7
E-8	20	47,172	70	16	6	8
E-9	25	55,571	73	15	5	8
O-1	2	31,788	71	18	6	5
O-2	3	42,729	72	16	4	7
O-3	7	54,345	73	16	3	8
O-4	14	66,859	73	17	3	8
O-5	20	79,470	75	15	2	7
O-6	24	95,059	78	13	2	7
Personnel With Dependents						
E-1	1	19,629	53	30	13	4
E-2	1	22,401	56	26	12	6
E-3	2	23,734	57	25	11	6
E-4	4	26,863	60	24	10	6
E-5	8	31,629	62	24	9	6
E-6	13	36,607	65	23	7	5
E-7	17	41,650	67	22	7	5
E-8	20	47,518	69	20	6	5
E-9	25	56,094	72	19	5	4
O-1	2	35,317	67	23	5	5
O-2	3	44,545	72	20	4	4
O-3	7	54,724	74	19	3	4
O-4	14	66,646	73	18	3	5
O-5	20	81,471	73	17	2	7
O-6	24	97,105	76	15	2	7

SOURCE: Congressional Budget Office using data from the Department of Defense.

NOTE: Regular military compensation (RMC) is the sum of basic pay, the basic allowance for housing (BAH), the basic allowance for subsistence (BAS), and the tax advantage that accrues to service members because the allowances are not subject to federal income tax.

a. Median years of service for personnel in the pay grade, based on 1990 data. (Data for more recent years are distorted by the effects of personnel reductions made in the 1990s.) The pay data are averages over all years of service.

basic pay, however, it replaces less than 40 percent of a service member's RMC after 20 years of service, and those who leave before completing 20 years receive no retirement benefit at all. (Private plans must vest their workers much earlier.) Unusual benefits include the military's subsidized grocery and general-merchandise stores (commissaries and exchanges, respectively) and postservice education benefits (the GI Bill).

The military pay system provides only limited scope for pay differences among occupations, operating from a basic principle that service members with the same level of responsibility should be paid the same. Special and incentive pays provide large differentials for some occupations, but they contribute less than 5 percent to the military's total pay costs. The largest supplements go to officers in the health professions and to pilots and nuclear-trained personnel who agree to lengthy service obligations beyond their initial term. For the enlisted ranks, the services use selective reenlistment bonuses primarily at the first and second reenlistment points (generally at about four and eight years of service), regularly adjusting the bonuses as particular occupational specialties experience personnel shortages. In addition, enlistment bonuses and enhancements to the basic GI Bill benefit help channel enlisted recruits into specialties that are hard to fill. The timing and probability of promotions also create some occupational differences—enlisted personnel in the Air Force, for example, are generally promoted later than their counterparts in the other services because a larger fraction of them choose to stay beyond their initial service commitment.

APPENDIX B

THE RELATIONSHIP BETWEEN MILITARY AND CIVILIAN PAY IN 1982

As Chapter II showed, the commonly reported pay-gap figure is very sensitive to the selection of a starting point. Yet no careful study of pay levels in 1982 exists to support designating that year as an appropriate point at which to begin comparing increases in military and civilian pay. This appendix shows that the most reasonable justification for selecting 1982 is that military pay was "about right" for the needs of the Department of Defense (DoD) in that year—not "comparable with" or "equal to" civilian earnings. DoD justified its request for a large raise in 1982 on the basis of difficulties it was having in recruiting and retaining military personnel. Even the architects of the modern volunteer military made no attempt to compare pay levels, except to indicate the amount by which pay for recruits would have to increase to bring it in line with pay for career personnel.

In addition to the regular raise scheduled for October 1, 1981, the new Administration requested a special raise of 5.3 percent that would take effect on July 1. In justifying the amount of the special raise, a DoD spokesman stated:

We define comparability by comparing military pay raises with various measures of civilian sector pay increases. This enables us to make judgements about whether we are maintaining competitiveness with the civilian sector. There are a number of different indices for measuring civilian pay growth. When we took a look at this recently, we found that since 1972, military pay raises had lagged civilian pay increases in a range of one to twenty percent depending on the civilian index used and what military pay elements are included in the military pay raise measurement base. The 5.3 percent figure was derived from a comparison of military pay adjustments and PATC index increases since 1972. We settled on that figure not because it would achieve technical comparability . . . but because it fell within the range of alternatives for a clearly justified military pay raise.¹

1. Statement of Major General Dean Tice, Deputy Assistant Secretary of Defense (Military Personnel Policy), in U.S. House of Representatives, *Department of Defense Appropriations for 1982*, hearings before the Subcommittee on the Department of Defense of the Committee on Appropriations, Committee Print 79-552 (June 1, 1981), pp. 5-6. PATC (Professional, Administrative, Technical, and Clerical) refers to a survey of private-sector pay levels that was the official basis for adjusting the pay of federal white-collar workers.

The Congress approved an October 1 raise incorporating the Administration's request, but not without dissent. The House Committee on Appropriations questioned the need for the additional raise, noting that the Deputy Secretary of Defense had testified before the committee that "we do not pretend to have a precise or magic percentage increase in military pay that will achieve comparability."² The committee also pointed out that the variable housing allowance, instituted in the previous year, had raised regular military compensation by nearly the amount of the requested raise. The committee concluded that "although DoD is not quite sure how to calculate comparability, if the current index that is set in law is used, military personnel are within one percent of comparability."³ The committee interpreted comparability in the same terms as DoD: raises since 1972 equal to raises in the civilian sector.

Why were conditions in 1972 still used to determine the pay raise in 1981? That question was posed by the Subcommittee on the Department of Defense of the House Committee on Appropriations. Both the question and DoD's response are instructive:

Question. It is interesting that the Department persists in returning to fiscal year 1972 as representing the "correct" pay comparability level. Since that was done without any historical experience for an all volunteer force, it was necessarily an educated guess. Why shouldn't we make use of the experience we have had in the past nine years and take a year for which recruiting and retention were satisfactory and use that as a basis for figuring comparability?

Answer. Since there is no precise answer to the question of "correct" pay comparability, it is fruitless, I believe, to quibble about whether 1972 or any other year should be used for the comparison base. We are convinced that a pay raise in about the 14- to 15-percent range is justified. Our justification for that does not rest upon an adherence to a certain base or a particular civilian index to measure against. We used 1972 as a base year only for the purpose of providing us a rough guide in making a judgement about the magnitude of what the military pay raise should be.

Based on our experience over the last nine years, recurring [*sic*] and retention statistics were satisfactory for each year in which

2. House Committee on Appropriations, *Armed Forces Pay Act of 1981*, report to accompany H.R. 3380, Report 97-109, Part 2 (June 11, 1981), p. 3.

3. *Ibid.*

the 1972 standard was maintained. Recruiting and retention began to decline only after the first pay cap was imposed in 1975.⁴

The base year of 1972 was therefore justified not by a comparison of military and civilian pay levels in the preceding years but by what happened after: the military's success in recruiting and retaining personnel in light of the pay raises that were granted.

Was there any basis for thinking that 1972 military pay levels were in some sense comparable with civilian pay levels? Not really. The President's Commission on an All-Volunteer Armed Force (the Gates Commission), which was established by President Nixon in 1969 to develop a plan for eliminating conscription, made rough pay comparisons as part of its effort to determine the pay increase for junior personnel that would be needed to attract sufficient numbers of volunteers.⁵ During the 1950s and 1960s, pay for personnel in their first two years of service had risen much more slowly than had pay for more senior personnel.

The commission did not argue that military pay levels should bear a particular relationship to civilian pay levels. Rather, it asked: What increases are necessary for the military services to meet personnel requirements without a draft? The commission based its pay recommendations on studies of how increases in pay affect voluntary enlistments and reenlistments.

4. Statement of Major General Dean Tice in U.S. House of Representatives, *Department of Defense Appropriations for 1982*.

5. *The Report of the President's Commission on an All-Volunteer Armed Force* (London: Collier Books/Macmillan Company, 1970).

APPENDIX C

PAY ADJUSTMENTS OUTSIDE THE ANNUAL PAY-RAISE PROCESS

Military pay levels are affected by a number of adjustment mechanisms. Two of them derive from policy decisions that are made for reasons other than changing military pay. One involves the large allowances for food and housing (or their in-kind equivalents) that are not subject to federal income tax. When tax rates change, so does the value of the tax advantage that accrues to members because the allowances are not taxed. The other adjustment comes from the services' promotion policies. The services can respond to improved retention either by being more selective about whom they promote or by promoting people to successive grades later in their career. (Increasing the fraction of personnel in the higher pay grades is more difficult.) Later promotions have obvious implications for the pay that a typical service member can expect to receive at a given point in a career and are fairly easy to document for enlisted personnel during the 1980s and 1990s.

TAX REFORM AND THE TAX ADVANTAGE

When people compare the pay offered by two employers, their real interest is in after-tax pay. Usually, however, it is sufficient to compare gross pay because the pay of most jobs is subject to the same taxes, at least at the federal level. But a portion of military pay is not subject to federal income taxes. That is why the Congress formally recognized the concept of regular military compensation (RMC), which indicates the amount of gross pay that a civilian job would have to offer to provide the same after-tax pay as a military job. The component of RMC called the federal tax advantage is the amount of additional pay that service members would have to receive, if the subsistence and housing allowances were subject to federal income taxes, to have the same after-tax income as they do when the allowances are not taxed.

Although the pay comparison between two civilian jobs is generally not affected by changes in federal income tax rates, that is not true of the comparison between a military and a civilian job. If one civilian job offers higher gross pay than another, it also offers higher after-tax pay, whatever the tax rates are.¹ A military job, however, could offer higher after-tax pay than a given civilian job before a tax cut but lower after-tax pay after the cut. Because only a portion of military pay is subject to

1. The discussion ignores the tax treatment of fringe benefits that different employers may offer. A 401(k) retirement plan, for example, tends to be more attractive at higher tax rates because it allows employees to avoid current taxes on the money that they or their employers put into the plan.

income taxes, changes in tax rates have a smaller effect on the after-tax pay of military personnel than they do on the pay of civilian workers. If tax rates fall, the tax advantage—and thus RMC—also falls; if rates rise, RMC rises.

Most tax changes from one year to the next will have only a very small effect on service members' pay in comparison with the pay of civilian workers, but the occasional major change can have quite a significant impact. The Tax Reform Act of 1986, for example, substantially reduced the tax rate on the last dollar of income for many workers—civilian and military. Those rate cuts reduced the tax advantage of service members by as much as 40 percent; reductions were generally largest for members in the higher pay grades.

In terms of overall pay (RMC), the reduction in the tax advantage that resulted from the 1986 act was large enough to offset an entire military pay raise for some members (see Table C-1). Raises of 3 percent in 1987 and 2 percent in 1988 increased basic pay and the basic allowances by just over 5 percent (after compounding). The increase in RMC over the two years, however—after accounting for the decrease in the tax advantage—ranged from 5.1 percent for a typical E-4 with dependents to less than 2 percent for some senior officers. In effect, workers in the civilian economy received a pay raise, through reduced taxes, that military personnel did not fully share. If tax rates had risen instead, military personnel would have experienced a smaller cut in their after-tax pay than civilian workers.

The change in relative pay between military and civilian jobs caused by changes in tax rates was not something that the defense authorizing committees of the Congress intended or could control. They could, of course, have offset the effect through larger pay raises for military personnel, but they could not have used the federal government's savings from the reduced tax advantage to pay for the raises. Changes in relative pay that arise from changes in tax rates are an inevitable consequence of the military allowance system and its tax-exempt treatment. Taxing the allowances, or eliminating them in favor of a simple salary system, would put military and civilian jobs on the same footing when tax rates rise or fall.

EFFECTS OF SLOWER PROMOTIONS ON PAY

The services' promotion practices determine when and whether a particular member will serve in each pay grade. Thus, changes in promotion practices can affect the average level of pay for members who have served in the military for any given number of years. Improved retention, for example, can lead to slower promotions—coming later, that is, in the career of a typical service member—which tend to reduce average pay levels in the affected years of service. Reducing overall personnel levels without forcing many people to leave can also slow promotions. Working in the

other direction, a decision to allow a greater fraction of personnel to serve in the higher pay grades, within either the enlisted or the officer ranks, tends to accelerate promotions.

Promotions for enlisted personnel slowed between 1982 and 1996, limiting the growth in average pay levels throughout much of a typical enlisted career. (The timing of officers' promotions is less free to change because it is guided by law.) Modest increases in the fraction of personnel serving in the higher grades could not offset the effects of improved retention and of policies designed to avoid involuntary separations during the personnel cuts of the 1990s.

TABLE C-1. EFFECTIVE MILITARY PAY RAISE AND ADDITIONAL RAISE REQUIRED TO OFFSET CHANGE IN THE TAX ADVANTAGE, FISCAL YEARS 1986-1988 (In percent)

Pay Grade	Single Member		Married Member	
	Effective Raise	Additional Required	Effective Raise	Additional Required
E-1	5.0	0	1.9	3.1
E-2	4.7	0.3	4.3	0.7
E-3	4.5	0.5	4.7	0.4
E-4	4.1	0.9	5.1	0
E-5	3.3	1.7	4.9	0.2
E-6	2.6	2.4	4.6	0.5
E-7	4.1	0.9	4.0	1.1
E-8	4.9	0.1	3.1	1.9
E-9	3.7	1.4	2.1	2.9
O-1	3.0	2.0	4.5	0.5
O-2	5.0	0.1	3.5	1.5
O-3	3.8	1.2	2.4	2.6
O-4	2.2	2.8	2.4	2.6
O-5	1.8	3.2	3.2	1.8
O-6	1.6	3.4	2.3	2.7
O-7	0.3	4.7	1.4	3.6

SOURCE: Congressional Budget Office. Estimates of the tax advantage are from the Department of Defense.

NOTES: The tax advantage is the benefit that accrues to service members because housing and subsistence allowances, or their in-kind equivalents, are not subject to federal income tax. The value of the tax advantage equals the increase in military pay that would be required to yield the same after-tax income if the allowances were taxable.

Because of data limitations, the calculations of the tax advantage exclude the effect of the variable housing allowance.

The common approach to comparing military and civilian pay increases ignores the effect of promotion practices on average pay rates. Through the 1980s and into the 1990s, slower promotions in all four services limited the growth in average pay levels through much of a typical enlisted member's career. Among personnel with dependents, the increase in average pay at the fourth year of service was about 2 percentage points less than the increase for an E-4; more than 6 percentage points less at the eighth year than the increase for an E-5; and 5 percentage points less at the 13th year than the increase for an E-6 (see Figure C-1). For the midcareer years (roughly years 4 through 17), average military pay did not rise as rapidly relative to civilian pay as the data on pay raises indicate. Accounting for the effect of slowed promotions tends to increase the estimate of the change in relative pay for those midcareer years by about 1 to 5 percentage points.

The slower growth of average pay levels has implications not only for mid-career retention but also for initial reenlistments. Although young enlistees nearing the end of their first enlistment tour may compare their current pay with what their friends from high school are earning in civilian jobs, they may be concerned with how rapidly their pay will rise if they remain in the military. Compared with people who were making the same decision in the early 1980s, young enlistees in the 1990s could expect slower earnings growth. Not only has pay not risen as much for the higher enlisted pay grades as for the junior grades, but enlisted personnel cannot expect to reach higher grades as early in their career.

The figures on increases in average pay by year of service seem to give a better picture of what has happened to the military pay of typical service personnel than do those for increases for individual pay grades, but the results should be interpreted cautiously for three reasons. First, although slowdowns in promotions tended to reduce average pay levels for midcareer enlisted personnel, those slowdowns—and thus the relative fall in midcareer pay—were made necessary in part by the military's success in retaining people.² Promotion rates offset, to some extent, the effects of shocks to the military personnel system. When retaining military personnel became easier, slowed promotions discouraged some people from completing a military career. If retention had become more difficult, faster promotions would have increased average pay levels and thus encouraged more people to stay.

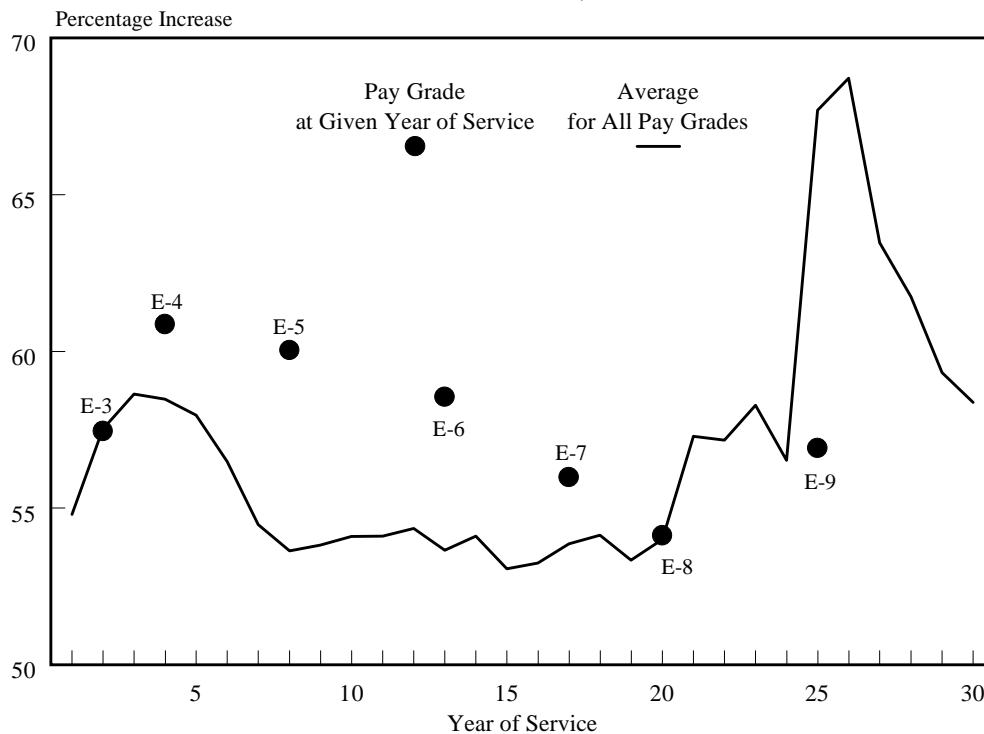
The second reason to be cautious in interpreting the results is that averages can be deceiving. A good example is the large spike in Figure C-1 at the 25th year of service. That spike does not mean that staying through that year became much more attractive for a typical enlisted person. Rather, it reflects service policies that, by 1996, generally required anyone who had not achieved one of the top two enlisted

2. The personnel reductions of the 1990s also caused promotion slowdowns.

pay grades to leave after completing 24 years of service. Moreover, the overall pattern of slowed promotions may conceal disparate trends for different subgroups—slower promotions for the majority, perhaps, but faster promotions for exceptional performers whom the services most want to retain. Whether that phenomenon actually occurred deserves further study.

Finally, work experience may not play the same role in determining the civilian earnings prospects of military personnel as it does the earnings of workers already in the civilian sector. The level of occupational skill and the degree of re-

FIGURE C-1. INCREASE IN REGULAR MILITARY COMPENSATION FOR ENLISTED PERSONNEL WITH DEPENDENTS, FISCAL YEARS 1982-1996



SOURCE: Congressional Budget Office.

NOTES: Increases by pay grade are for personnel with the median years of service for the grade in 1990. Figures for each year reflect pay rates and personnel totals at the end of the fiscal year.

Increases by year of service are averages for personnel in all four services. They represent, roughly, the situation for each individual service except the Marine Corps. In that service, increases in average pay for years of service 8 through 22 were several percentage points lower than shown.

The sharp rise in average pay at year 25 reflects a change in service policies that reduced the maximum time personnel in grade E-7 could serve.

sponsibility that military personnel have achieved may be as important as the number of years they have served. Thus, a person who was considering leaving the military in the 1990s as an E-5, after serving for eight years, might not look as attractive to a potential civilian employer as his or her counterpart in the early 1980s who left as an E-6. If that was the case, the lesser increase in average pay levels for midcareer personnel would not have the negative effect on their retention that might otherwise be expected.