



Alternative Approaches to Adjusting Military Cash Pay



At a Glance

Each year, the Department of Defense (DoD) adjusts its regular military compensation, primarily to help attract and retain high-quality personnel. That compensation includes basic pay, housing and food allowances, and the tax advantage that arises because those allowances are not subject to federal income tax. Unless the Congress passes legislation directing otherwise, the law requires DoD to use the employment cost index (ECI) to make annual adjustments to basic pay, the largest component of regular military compensation. The department uses other methods to adjust the housing and food allowances. Currently, regular military compensation substantially exceeds DoD's benchmark goal, which equals the 70th percentile of earnings for comparable civilians (meaning that 30 percent of comparable civilians would earn more).

In this report, the Congressional Budget Office examines two approaches to making the annual adjustments to regular cash pay (that is, regular military compensation excluding the tax advantage).

Adjusting Basic Pay With an Alternative Wage Index. CBO created an alternative wage index tailored to the characteristics of military personnel and a broad index for the entire labor force, comparable to the ECI, but the agency found only small differences between them. From 2004 to 2020, basic pay raises under CBO's alternative index would have been broadly similar to those under its all-labor-force index, although slightly higher or lower in some years. The agency's alternative index and the military-adjusted indexes of other researchers were sensitive to the methods used to construct them; their cumulative effect on basic pay over time was also sensitive to the starting year. The changes in those indexes varied from year to year.

Transitioning to an alternative index would entail some administrative costs and could garner less support than the ECI from some stakeholders. Effects on recruiting and retention might also be significant considerations in evaluating an alternative index.

Adjusting All Components of Regular Cash Pay With the ECI. CBO found that applying the ECI to all elements of regular cash pay could help slow the growth in compensation costs. If that method had been applied from 2004 to 2020, it would have reduced costs and helped narrow the gap between regular military compensation and DoD's 70th percentile goal. If applied in the future, it could slightly slow the growth in spending for regular cash pay and associated expenses. In 2030, it could reduce annual costs by roughly \$3 billion (or 1.7 percent). But other costs, such as special and incentive pays to address any recruiting and retention problems that might arise, could erode some or all of the savings.

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Unless this report indicates otherwise, all years referred to are federal fiscal years, which run from October 1 to September 30 and are designated by the calendar year in which they end.

All costs are expressed in nominal dollars unless otherwise stated.

Alternative Approaches to Adjusting Military Cash Pay

The Department of Defense (DoD) annually adjusts regular military compensation for its military personnel, in large part to be competitive with the civilian sector and, consequently, to help attract and retain service members to fulfill the department's missions. Regular military compensation includes basic pay, allowances for housing and food, and the tax advantage that arises because those allowances are not subject to federal income tax. This report focuses on regular cash pay, which the Congressional Budget Office defines as regular military compensation excluding the tax advantage. Under current law, the annual adjustment to basic pay—the largest component of regular cash pay—is linked to changes in the employment cost index (ECI) unless legislation is enacted that mandates a different adjustment. Other methods are used to change the housing and food allowances.

Those adjustment methods may not reflect pay changes among the civilian workers most comparable to military personnel. In addition, the department's ability to achieve its other priorities, such as procuring weapons, sustaining research and development of new equipment, and maintaining systems, may be limited if DoD pays more than necessary for personnel. Currently, regular military compensation exceeds DoD's benchmark goal, which is equal to the 70th percentile of wages and salaries for comparable civilians.

In this report, CBO examines the implications of two different approaches to adjusting regular cash pay:

- Adjusting basic pay with an alternative wage index tailored to the age and education level of military personnel compared with adjusting it with a broad labor force index, such as the ECI, which does not account for such demographic information, or
- Adjusting all components of regular cash pay (excluding the tax advantage) with the ECI.

Background

The composition, amount, and growth of military compensation are key factors in attracting and retaining military personnel. Although military compensation consists

of a number of elements, CBO's analysis focused on the growth in the elements of regular cash pay because they make up a large portion of service members' total compensation. DoD annually adjusts regular cash pay with a different method for each element, largely to be competitive with the civilian sector.

Composition of Military Compensation

Compensation for military personnel is a mix of cash earnings and in-kind benefits received while in service, as well as the deferred pay and benefits service members may receive after leaving. In 2020, DoD spent about \$160 billion, or about 25 percent, of its base budget of \$630 billion for cash pay and benefits for current service members (active-duty and activated reserves). DoD's base budget consists of funding for the department's normal peacetime operations and excludes supplemental appropriations for wars and other contingency operations.

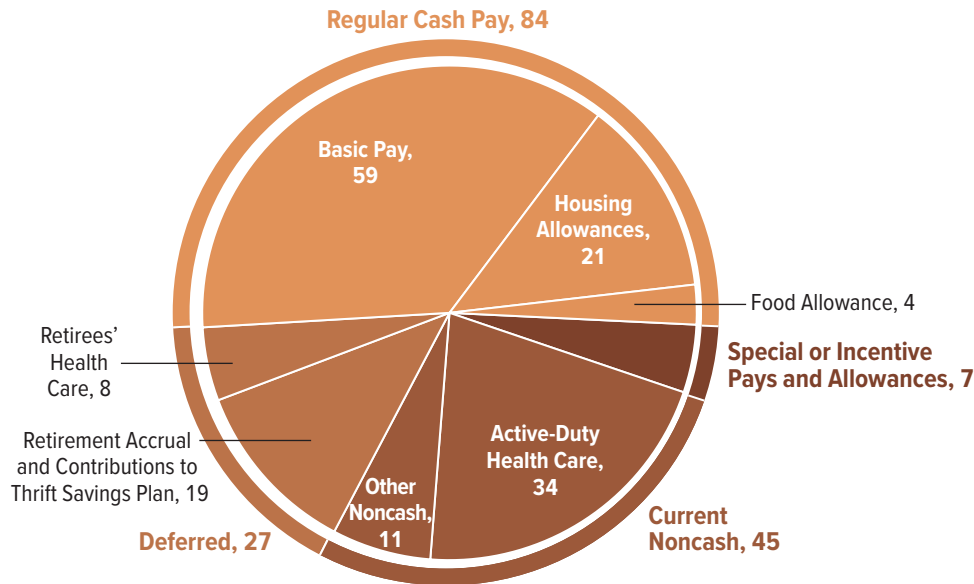
The three elements of regular cash pay—basic pay and allowances for housing and food—that are the most visible components of service members' compensation accounted for just over half of DoD's total spending for cash pay and benefits in 2020 (see Figure 1). Previous studies have shown that the decisions of potential recruits and current service members to sign up for or stay in the military are influenced by changes in regular cash pay and bonuses but are less responsive to changes in noncash and deferred compensation.¹ Because this report focuses on the costs DoD incurs for current military service members, CBO excluded the tax advantage from its definition of regular cash pay. Regular cash pay also excludes special and incentive pays, because those types of pay vary by occupation, job assignment, and location.

1. For more information on how military pay affects DoD's recruiting and retention, see Congressional Budget Office, *Approaches to Changing Military Compensation* (January 2020), www.cbo.gov/publication/55648; and Beth J. Asch and others, *Setting the Level and Annual Adjustment of Military Pay* (RAND Corporation, 2020), www.rand.org/pubs/research_reports/RRA368-1.html.

Figure 1.

The Department of Defense's Funding for the Compensation of Military Personnel, 2020

Billions of 2020 Dollars



Regular military cash pay, which includes basic pay and allowances for housing and food, accounts for a major share of total compensation for service members. Basic pay is the largest component of regular cash pay.

Data source: Congressional Budget Office, using data from the Department of Defense. See www.cbo.gov/publications/57192#data.

The remaining portion of compensation consists of special and incentive pays; deferred pay, such as retirement pay; current noncash benefits, such as health care, children's education, government-provided housing, and family services for currently serving members and their families; and deferred noncash benefits, such as health care and commissary access for retirees.

DoD's Current Method of Adjusting Regular Military Cash Pay

Under current law, the basic pay raise for military service members—unless the Congress passes legislation to the contrary—is determined by the rate of change in the ECI for wages and salaries for private-sector workers, which is constructed by the Bureau of Labor Statistics (BLS). Although the basic pay increase has been linked to the ECI for decades, the National Defense Authorization Act for Fiscal Year 2004 established that the default pay raise would equal the ECI beginning in 2007. Specifically, the pay increase for a given calendar year is determined by the increase in the ECI from the third quarter of the third preceding calendar year to the third quarter of the second preceding calendar year. That method results in a lag of about 15 months between the increase in the ECI and the corresponding basic pay increase.

Under the law, the President can recommend an alternative pay adjustment (which must be approved by the Congress), or the Congress may pass legislation that supersedes the automatic adjustment or an adjustment proposed by the President.

The military's basic pay raises were set higher than the increases in the ECI in the 2000s and have either matched or been lower than the ECI increases since 2011. Although the basic pay raise generally applies to all military personnel, the Congress provided additional, targeted raises to service members within certain pay grades and years of service in the early 2000s to address specific retention problems.

Different rules are used to adjust allowances for housing and food. By law, the Secretary of Defense determines housing allowance rates annually to provide "adequate housing."² To do that, DoD uses data on vacancies for selected rental housing in each local area. The monthly food allowance is set annually and is based on the Department of Agriculture's index for the price of food.

2. See Pay and Allowances of the Uniformed Services, 37 U.S.C., §403.

Housing allowances differ by rank, by whether a service member has dependents, and by location. The food allowance varies according to whether service members are officers or enlisted personnel; enlisted personnel receive larger allotments than officers do. Service members may choose to pay more for housing and food than they receive in their allowances or to pay less and keep the extra tax-free allowances.

Reasons to Consider Alternative Approaches to Adjusting Military Cash Pay

The amount of regular cash pay for service members (as measured using DoD's definition) has exceeded DoD's benchmark goal. CBO's and the RAND Corporation's research indicates that, in 2018, regular cash pay for enlisted personnel was at roughly the 90th percentile of the earnings of civilian workers with comparable years of experience and some college education, about 20 percentiles above the benchmark.³ In addition, research indicates that, overall, DoD has successfully met its staffing needs for the force. For example, the share of active-duty enlisted recruits who are considered high quality—those with a high school diploma and an above-average score on the Armed Forces Qualification Test—has grown since at least the 2000s. Those data raise questions about whether DoD is paying more for its personnel than is necessary to meet its goals.

The growth in regular cash pay has broad implications for DoD's future operations. If military pay continued to exceed DoD's goal in the future, the department would be more likely to continue to attract and retain high-quality, productive personnel, resulting in greater readiness to conduct military operations. But DoD might be able to pay less and still reach its personnel goals, while possibly meeting other objectives, such as procuring weapons. If pay growth was too slow, regular cash pay would eventually fall below DoD's goal, which could make it difficult for the department to achieve its recruiting and retention goals.

In response to those pay implications, CBO examined two questions in its analysis:

- First, how would an alternative, or military-adjusted, wage index that reflected the characteristics of service members compare with a broad labor force index like the ECI for setting the annual basic pay raise? It is unclear whether the rate of change of the ECI or other broad labor force index is a good indicator of pay changes in the labor market in which DoD competes. Collectively, military personnel and civilian workers have different attributes, including age (or work experience), education, occupation, and gender. CBO created a military-adjusted wage index and an all-labor-force index to explore that issue.
- Second, what would be the implications of applying one wage index to all regular cash pay (basic pay and allowances for housing and food)? That approach would make the method for increasing military pay more comparable to that of civilians, whose pay has to cover costs for housing and food that DoD compensates for separately. CBO examined the effects that such a policy would have had on DoD's costs over the past 15 years and projected the effects that it might have over the next 10 years.

Adjusting Basic Pay With a Military-Adjusted Wage-Growth Index Instead of a Broad Labor Force Index

In the first part of its analysis, CBO examined how a military-adjusted index that reflected the characteristics of service members (such as age and education) would compare with a broad labor force index in setting the annual basic pay raise. The agency found only small differences between the indexes: Growth in CBO's military-adjusted index was slightly higher in some years and slightly lower in others than that in the broad index it created. Moreover, the military-adjusted index appeared to vary more from year to year than the broad index, which could lead to larger swings (both positive and negative) in pay raises.

CBO found a relatively small difference between 2004 and 2020 when it compared the effects on basic pay of using its all-labor-force index and its military-adjusted index. Those results appear sensitive to the methods used to construct the military-adjusted index and the starting year for the comparison. For example, an index that RAND created resulted in annual changes that were smaller than those in the ECI during the same period.

Those findings suggest that using a military-adjusted index instead of a broad index like the ECI would probably have little effect on the future growth of basic

3. For comparisons of military and civilian pay, see Congressional Budget Office, *Approaches to Changing Military Compensation* (January 2020), www.cbo.gov/publication/55648; and Beth J. Asch and others, *Setting the Level and Annual Adjustment of Military Pay* (RAND Corporation, 2020), www.rand.org/pubs/research_reports/RRA368-1.html.

pay. Furthermore, transitioning to such a customized index would entail some administrative costs and could garner less support than the ECI from some stakeholders because it would not be created by a neutral third party.

Advantages and Disadvantages of Adjusting Basic Pay With the ECI

The ECI may not reflect pay changes among the civilian workers who are most similar to military service members. The index is based on the National Compensation Survey of employers' payrolls conducted by BLS. It measures the change in compensation costs in the U.S. economy and is weighted to reflect the industrial and occupational mix of jobs in specific years. Because the survey tracks specific jobs, it reflects the increase in wages for those jobs, not the wage growth one person may experience. The ECI has several different series; DoD uses the wage and salary series for private workers (excluding benefits).

Adjusting basic pay with the ECI has several advantages. It is a large, nationally recognized index designed and measured by a third party (BLS) rather than by DoD, and it is publicly available. Because it holds the occupational and industrial distribution of jobs constant over time, it is more stable than indexes that do not use that approach. For example, if a job disappears from the survey sample during a recession, it is replaced by a job with the same occupational and industrial mix. The ECI is also less prone to respondents' recall errors than household survey data.

Using the ECI has some disadvantages as well: Because the occupational and industrial mix is infrequently reweighted, it does not fully reflect the current job mix available to U.S. workers. The current series reflects the mix of jobs in the U.S. economy in 2012. Moreover, the ECI is not designed to reflect the age of military service members or their educational and occupational characteristics. If wage growth in the private sector differs by those characteristics, the ECI may not reflect the actual civilian opportunities available to military personnel or the employment instability they might experience in the civilian sector. The educational attainment of military personnel (both enlisted service members and officers) differs from that of civilians (see Figure 2). For this study, CBO used data on the educational attainment of service members from DoD's Status of Forces Surveys, which are regarded as a more reliable source for those data than administrative records.

Constructing Wage-Growth Indexes From the Current Population Survey

Because the ECI tracks jobs, not individuals, it does not include information on the characteristics of the workers filling those jobs, which CBO needed to construct its military-adjusted index. Instead, the agency used the Current Population Survey (CPS), a large national survey that contains information on the age, educational attainment, and occupation of civilian workers. Respondents to the CPS self-report employment, earnings, and demographic characteristics, such as age and education.

As a first step, CBO constructed an all-labor-force index to examine the differences in wage growth between the ECI and CPS data. The agency then used the all-labor-force index in place of the ECI in its analysis to ensure that any differences in the indexes were due to characteristics of the military population rather than to intrinsic differences in the surveys.

CBO's All-Labor-Force Index

CBO's all-labor-force index, which is based on monthly CPS data, includes all full- and part-time workers in the private-sector civilian workforce but excludes people who are self-employed or who work on farms. It is constructed from the average wages of workers, not jobs, for each fiscal year and from associated annual growth rates. The index corrects for misreporting of hours worked by respondents.⁴

Unlike the ECI, CBO's index incorporates changes in the industrial and occupational structure of the economy to reflect current opportunities available to service members. CBO explored keeping the occupation and industry composition of jobs in the all-labor-force index constant over the years, similar to the method used for the ECI series, but opted not to do so, in part because the average annual growth in the two indexes over the past decade and a half was similar.

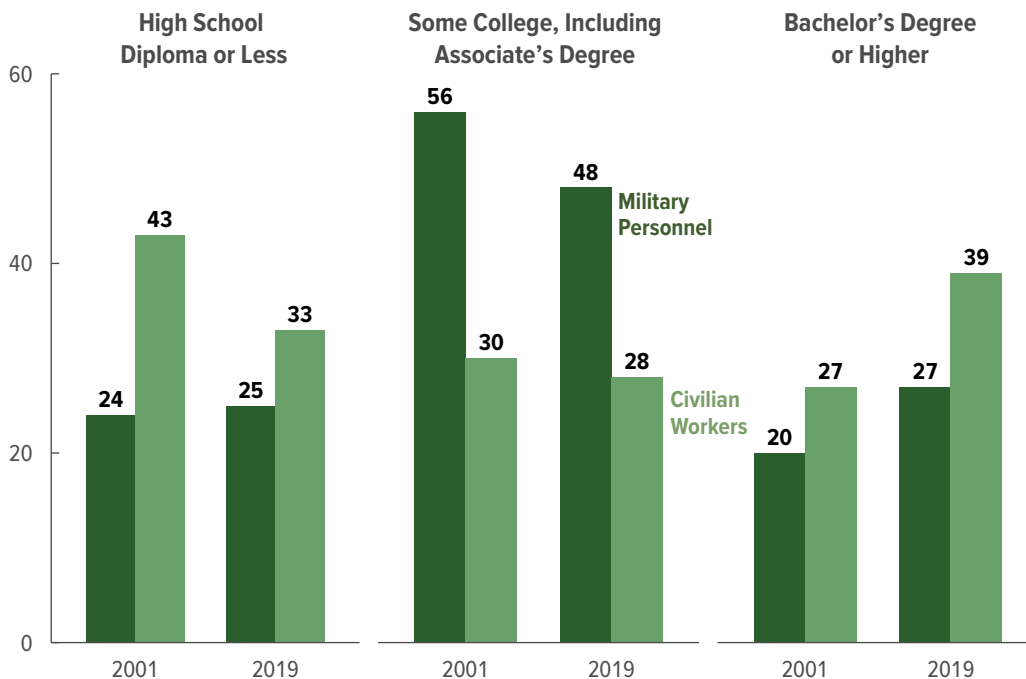
The average annual growth in CBO's all-labor-force index between 2004 and 2019 was comparable to the average annual growth in the ECI. Year-to-year growth in the all-labor-force index was also broadly similar in pattern to that in the ECI over the same period (see Figure 3). That

4. In this report, CBO uses the same basic methods to calculate wages as outlined in Congressional Budget Office, *The Effects of a Minimum-Wage Increase on Employment and Family Income* (February 2014), www.cbo.gov/publication/44995. For an update on those methods, see Congressional Budget Office, *The Effects on Employment and Family Income of Increasing the Federal Minimum Wage* (July 2019), www.cbo.gov/publication/55410.

Figure 2.

Educational Attainment of Military and Civilian Workers

Percent



The share of people with a high school diploma or less is larger for civilian workers than for military personnel, primarily because the military accepts few recruits without a diploma.

The share of people with at least a bachelor's degree is larger for civilian workers than for military personnel. Although virtually all officers have at least a college degree, they make up less than 20 percent of military personnel.

Data source: Congressional Budget Office, using data from the Department of Defense and Current Population Survey data from IPUMS-CPS. See www.cbo.gov/publications/57192#data.

result suggests that the findings derived from CBO's all-labor-force index would also apply to the ECI.

CBO's Military-Adjusted Index

CBO's military-adjusted index controls for the educational level and age of military personnel, two characteristics by which wage growth has differed in the past. To construct that index, CBO used DoD's administrative and survey data to categorize military personnel into educational and age groups, extracted wage data from the CPS for civilians with corresponding characteristics, and weighted the civilian data to reflect the composition of the military personnel. In addition, CBO's method allowed the mix of age and education of military personnel to change annually.

CBO did not adjust for occupation within the military. Initial explorations to do so using the ECI's separate series for broad occupational groups did not yield an index markedly different from the ECI, so CBO did not pursue it further. The agency also did not adjust for gender because military pay is gender-neutral. Because data were not available in the CPS, CBO did not adjust for

other characteristics by which military personnel differ from civilians, such as their scores on the Armed Forces Qualification Test, which is an aptitude test that predicts job performance among service members.

Previously, researchers at RAND also constructed a military-adjusted wage index, known as the Defense Employment Cost Index (DECI). CBO's approach was largely the same, although the specific methods differed in some respects.⁵

Comparing the All-Labor-Force and Military-Adjusted Indexes

CBO's alternative all-labor-force index and military-adjusted index exhibited broadly similar trends (see Figure 4). Both indexes grew at an average rate of about 2.5 percent annually from 2004 through 2019. Changes in the military-adjusted index were not consistently above or below those of the all-labor-force index for most

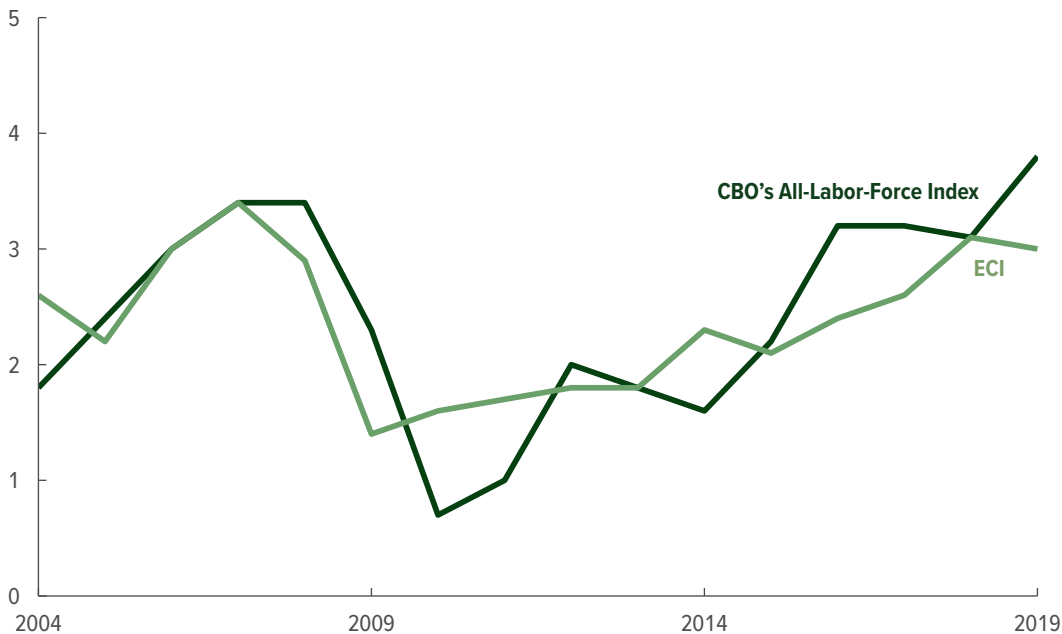
5. For details on RAND's approach and findings, see Beth J. Asch and others, *Setting the Level and Annual Adjustment of Military Pay* (RAND Corporation, 2020), www.rand.org/pubs/research_reports/RRA368-1.html.



Figure 3.

Annual Growth in CBO's All-Labor-Force Index and the ECI

Percent



The annual rate of change in the all-labor-force index and the ECI increased from 2004 to 2008, dipped sharply from 2008 to 2010, and then began to rise after 2010. (Those indexes do not include a time lag like the one DoD uses to set military pay raises.) Although the average annual change was almost identical for 2004 to 2019, CBO's index was more volatile than the ECI.

Data source: Congressional Budget Office, using data from the Bureau of Labor Statistics and Current Population Survey data from IPUMS-CPS. See www.cbo.gov/publications/57192#data.

DoD = Department of Defense; ECI = employment cost index.

of that period. In other words, it is not clear whether a military-adjusted index would systematically differ from an all-labor-force index such as the ECI over the long run. The differences in the indexes depend on the composition of the military force but also on the effects of age and education on wages in the civilian sector, which vary over time.

Although an adjusted measure may, in theory, capture the civilian opportunities available to military personnel better than an unadjusted index, the way that adjustment is accomplished could influence the trend in the resulting index. For example, adjusting for gender or including only full-time civilian workers (instead of both full-time and part-time workers) could influence the level and trend of the index.

In addition, using a military-adjusted index would entail some administrative costs and stakeholder buy-in that would not apply if DoD continued using the ECI.

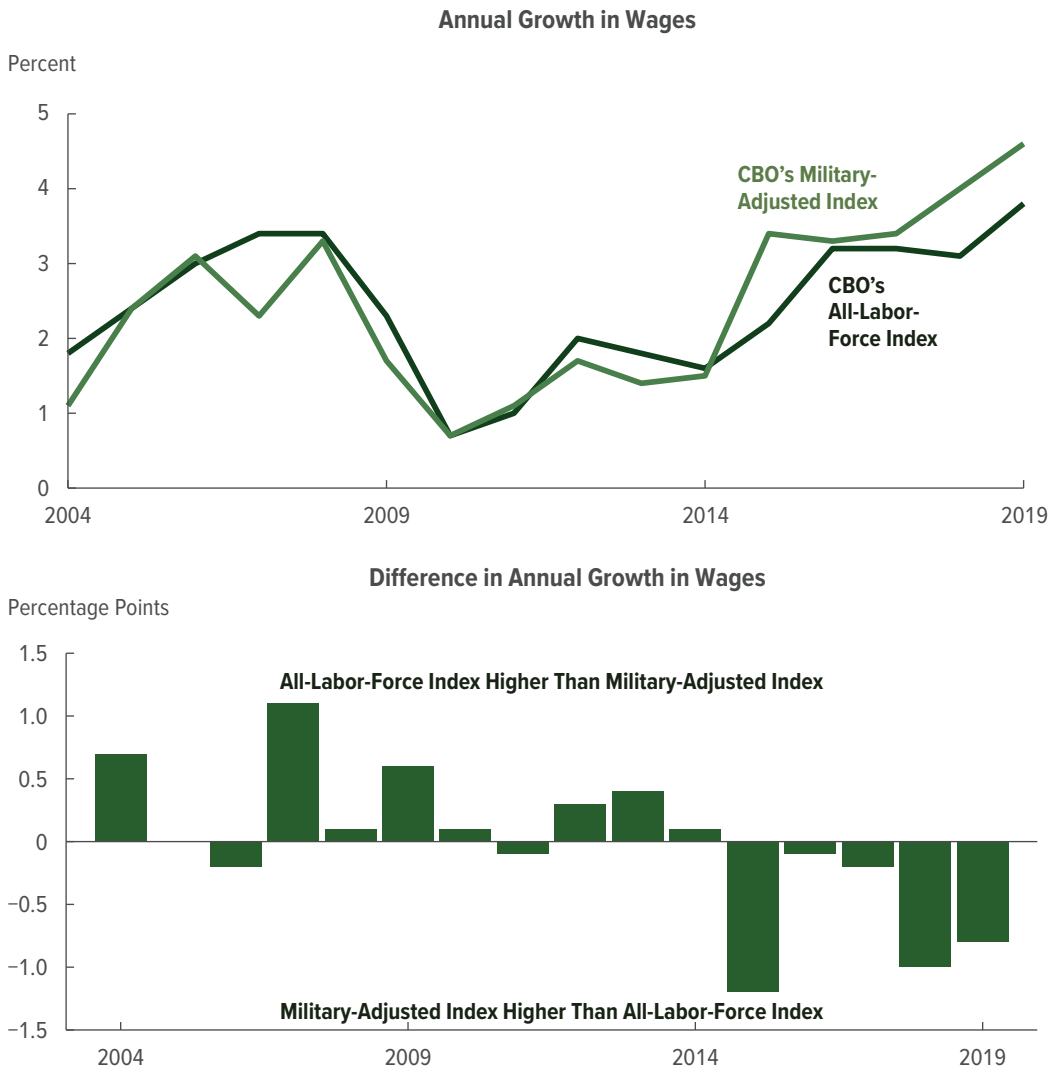
Comparing the Effects of the All-Labor-Force and Military-Adjusted Indexes on Basic Pay

CBO found that, since 2004, the growth in basic pay would have been broadly similar using either the all-labor-force index or the military-adjusted index. (That result is based on the assumption that enacted pay raises would not have been higher or lower than the rate of growth in the all-labor-force index.) However, the cumulative effect of the all-labor-force index or the military-adjusted index on basic pay over time was sensitive to the starting point (or benchmark year).

To illustrate that sensitivity to the starting point, CBO calculated the average basic pay for the E-4 pay grade in calendar year 2020 using both indexes but under two separate scenarios: one starting in calendar year 2004 and the other starting a year later (see Figure 5). (Basic pay increases go into effect at the beginning of the calendar year.) Pay grade E-4 is the most common single rank among enlisted service members and the typical rank attained at the end of the first term of service. CBO's approach removed the effect of changes in the number

Figure 4.

Wage Growth in CBO’s All-Labor-Force and Military-Adjusted Indexes



After a sharp decline during the 2007–2009 recession, the annual rate of change for both indexes increased beginning in 2011.

In recent years, the earnings of workers with a high school diploma have grown at a rate similar to or slightly higher than that of workers with a college degree, which partly explains the higher growth in the military-adjusted index after 2014.

Since 2004, annual wage growth in the all-labor-force index has been both higher and lower than the wage growth in the military-adjusted index, and those deviations have largely offset each other.

Data source: Congressional Budget Office, using Current Population Survey data from IPUMS-CPS. See www.cbo.gov/publications/57192#data.

of personnel and the grade structure of the force. The calculations excluded other compensation elements that are tied to basic pay, such as the accrual of retirement benefits. Indexes included a time lag similar to the one DoD uses to determine pay raises. For instance, growth in calendar year 2005 was calculated as the change in the index for fiscal year 2003 compared with that for fiscal year 2002. CBO found that, when 2004 was the benchmark year, the two indexes would have resulted in basic pay that differed by a small percentage. That difference shrank when 2005 was the benchmark year and reversed when 2014 was used as the starting point.

Comparing CBO’s and RAND’s Findings

Using CPS data, RAND researchers recently updated an earlier analysis that developed a military-adjusted index, the Defense Employment Cost Index. The earlier analysis adjusted for age, education, and occupation. The new effort revised the earlier analysis by adjusting for age, education, and gender; it also changed data sources and updated the analysis through 2019.

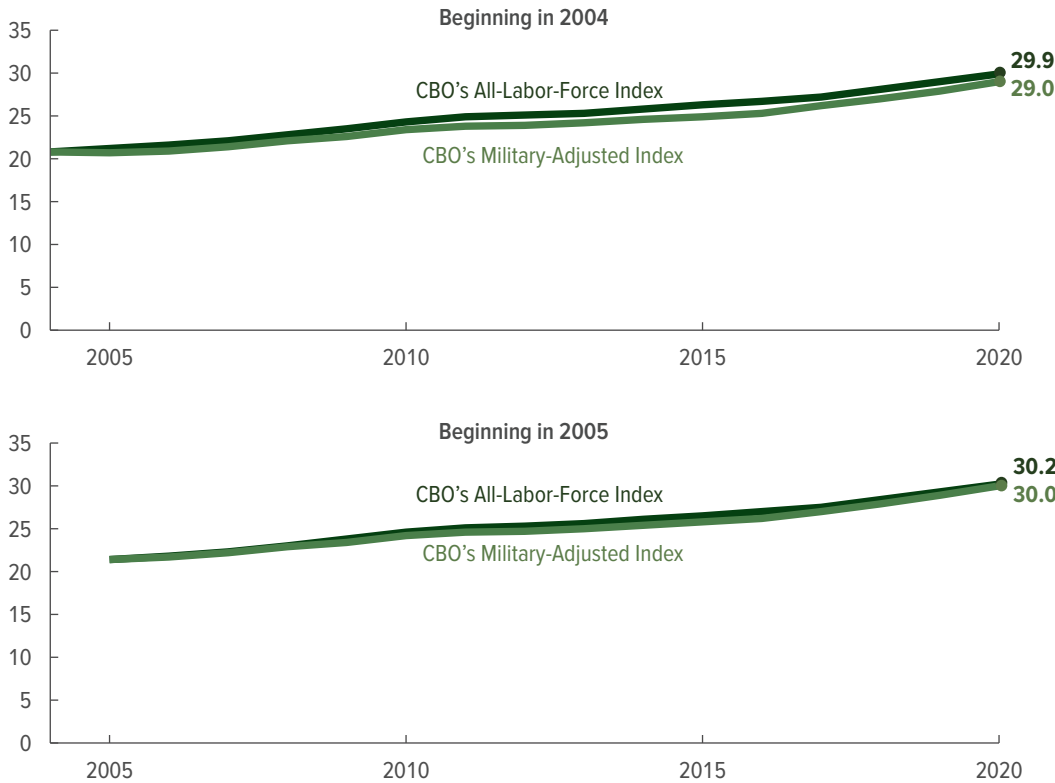
In its earlier analysis, RAND showed a trend in the average annual wage growth measured by its military-adjusted index that was markedly lower than the ECI in the 1980s. RAND’s recent work also found a gap. However, RAND’s new analysis showed that the gap between the average



Figure 5.

Simulations of the Growth in Basic Pay for Enlisted Pay Grade E-4, by Calendar Year

Thousands of Nominal Dollars per Service Member



When CBO's simulation used 2004 as the starting point, the gap in basic pay for 2020 between the all-labor-force index and the military-adjusted index was about 3 percent. That gap shrank to less than 1 percent when 2005 was the starting point. The gap would be reversed if 2014 was the starting point.

Data source: Congressional Budget Office, using data from the Department of Defense and Current Population Survey data from IPUMS-CPS. See www.cbo.gov/publications/57192#data.

annual growth rate of the DECI and that of the ECI had narrowed between 2004 and 2019 compared with the gap between 1982 and 2004 (roughly by half, from 0.8 percent to 0.4 percent). RAND found that, since the mid-2010s, the average annual growth in the DECI has exceeded that of the ECI.⁶

By contrast, CBO found a negligible gap in the average annual growth rate of its military-adjusted index and its all-labor-force index since 2004. The difference between RAND's and CBO's findings is probably attributable to differences in analytic methods. Like RAND, CBO found that the average annual growth rate of its

military-adjusted index has exceeded that of its all-labor-force index in recent years.

Adjusting All Elements of Regular Military Cash Pay With the ECI

In the second part of its analysis, CBO examined the effects of using the ECI to adjust all elements of regular military cash pay (excluding the tax advantage). That approach would make the method for increasing military pay more comparable to that of civilians, whose pay has to cover costs for housing and food that DoD compensates for separately.

CBO found that housing allowances grew faster than the ECI from 2000 through 2020 and that if the ECI was used to adjust all elements of regular cash pay, that pay in total would be about 9 percent lower in 2020 than it actually was for enlisted service members at pay grade E-4. CBO projects that DoD's spending for regular cash pay and associated expenses in 2030 would be lower by

6. See James Hosek and others, *A Civilian Wage Index for Defense Manpower* (RAND Corporation, 1992), www.rand.org/pubs/reports/R4190.html; and Beth J. Asch and others, *Setting the Level and Annual Adjustment of Military Pay* (RAND Corporation, 2020), www.rand.org/pubs/research_reports/RRA368-1.html.

roughly \$3 billion, or 1.7 percent, if all components grew at the rate of the ECI instead of each component growing as it is projected to do under the current approach. The spending in CBO's projection includes regular cash pay and associated expenses that are linked to basic pay, such as reservists' drill pay, DoD's contributions for retirement, and the cost of Social Security taxes.

Even though regular military cash pay is much higher than DoD's goal, slower growth could affect DoD's ability to recruit and retain military personnel. Whether the 1.7 percent change over 10 years in CBO's scenario would be enough to affect recruiting and retention is not known. But if it did have an effect, DoD could take steps to maintain the quality of its force if it chose to do so.

Matching the future growth in regular cash pay to that of civilians would not bring it down to DoD's 70th percentile goal over the next 10 years.⁷ Achieving that goal would probably require several years of raises that were smaller than the ECI's growth rate.

Implementing a Single Index for All Elements of Regular Cash Pay

Basic pay accounts for 70 percent of DoD's spending on regular cash pay. Under current policy, it is the only component that is usually linked to changes in the ECI; the two other elements, housing and food allowances, are adjusted at different rates.

Using one index to adjust all elements of regular cash pay would allow all those elements to help address any imbalances between civilian and military earnings. That approach also more closely aligns with practices in the private sector, which typically does not separate the categories of pay. Instead, salaries or wages are intended to cover the goods and services employees consume, including housing and food. Finally, DoD's fixed categories of regular cash pay are inherently inflexible and do not fully reflect the way people adjust to changes in the market prices of the goods and services they consume. For example, when housing costs increase, some people probably reduce the "quantity" of housing they consume and increase their purchases of other goods and services, which have become relatively less expensive. (In New York City, for instance, people live in smaller apartments than they might in lower-cost areas.) By contrast, DoD pegs housing allowances to certain types of housing

(such as a two-bedroom apartment), and those standards have not changed for several years.

If DoD adjusted all three components of regular cash pay with the ECI instead of using separate indexes for each, it could still continue to pay for housing and food separately. Housing allowances could continue to vary by geographic location, as could their growth, but the overall rate of growth in the allowance budget would equal that of the ECI. During DoD's Quadrennial Review of Military Compensation, it could still assess whether regular cash pay adequately met its recruiting and retention goals, and, as it does now, the Congress could provide funding for regular cash pay that was either more or less than would have been appropriated using the ECI. DoD could also examine using additional targeted adjustments to pay to address earnings disparities in certain geographic locations if such problems arose.

How Adjusting All Elements of Regular Cash Pay With the ECI Would Have Affected Its Previous Growth

CBO analyzed historical data and projected costs to illustrate the implications of adopting a single-index approach. Regular cash pay would have grown more slowly between calendar years 2004 and 2020 if all elements grew at the same rate as the ECI. That approach would also have narrowed the gap between DoD's goal for regular cash pay (the 70th percentile of comparable civilians' pay) and the actual level (around the 90th percentile), although it would not have eliminated the gap.

To reach those conclusions, CBO used DoD's data on personnel costs per service member to analyze the growth in actual regular cash pay, on average, that enlisted service members with the rank of E-4 received between 2004 and 2020 (see Figure 6). By calculating growth for a single pay grade, the agency controlled for growth in regular cash pay stemming from changes in DoD's end strength (the number of military personnel at the end of a fiscal year) or shifts in the mix of ranks. CBO's analysis included a time lag in the index similar to the one DoD uses to determine pay raises.

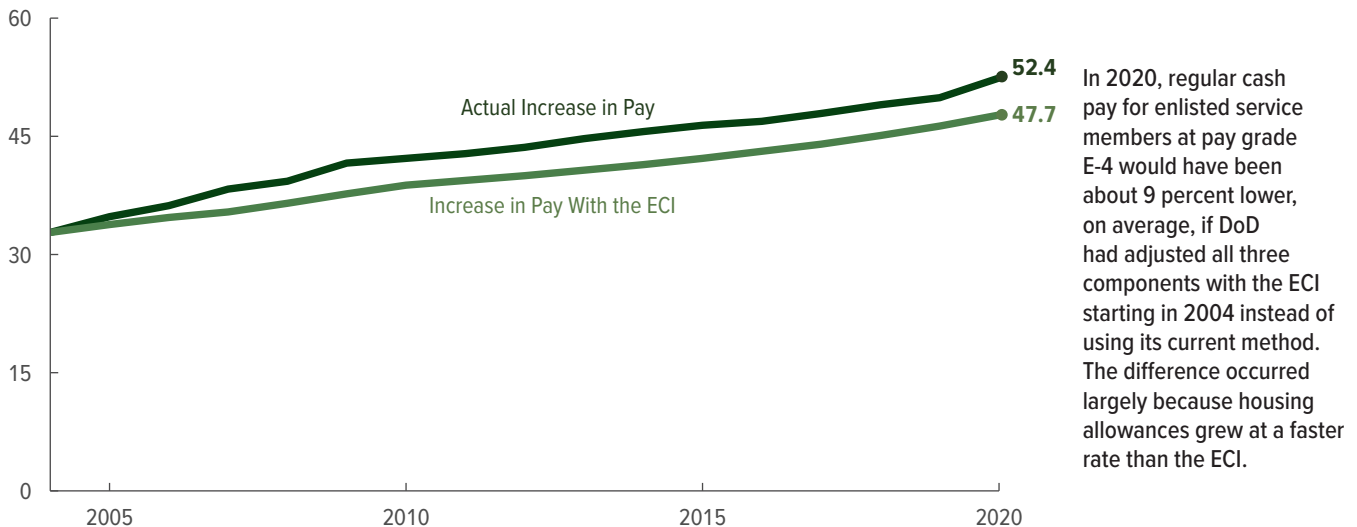
In calendar year 2020, adjusting regular cash pay with the ECI starting in 2004 would have saved about \$4 billion in military compensation costs across the force. Most of that savings would have come from lower housing allowances, although a portion would have occurred because basic pay grew faster than the ECI in some years. Those savings would have been smaller if DoD had used

7. Although the 70th percentile goal applies to regular military compensation (which includes the tax advantage), for simplicity CBO uses regular cash pay for this comparison.

Figure 6.

Simulations of the Growth in Regular Cash Pay for Enlisted Pay Grade E-4, by Calendar Year

Thousands of Nominal Dollars per Service Member



Data source: Congressional Budget Office, using data from the Department of Defense and the Bureau of Labor Statistics. See www.cbo.gov/publications/57192#data.

DoD = Department of Defense; ECI = employment cost index.

additional pay to address disparities in earnings between service members and civilians that might have arisen in some geographic locations or if switching to the new policy had required other implementation costs.

Effects of the Faster Growth in DoD's Housing Costs

Since calendar year 2000, housing allowances have grown more than the other components of regular cash pay, in part because rental prices have grown faster than the ECI (see Figure 7). That larger increase contributed to the growth in regular cash pay.

Although housing allowances rose faster than the ECI, spending on housing allowances grew faster in some years and slower in others because of policy changes the department made. DoD's housing policy changed in 2001, when it began reducing service members' out-of-pocket housing costs. By 2005, DoD's housing allowances covered 100 percent of normal housing expenses for service members, up from about 80 percent in 2000 and earlier years. In 2015, DoD partially reversed its policy and, by 2019, had dropped housing allowances to 95 percent of typical housing prices, which slowed the growth in housing costs. If DoD had covered 100 percent of housing costs for the entire period, the gap

between spending for housing allowances and spending for other components of regular cash pay would have been greater.

Scenarios for Projecting Regular Cash Pay From 2020 to 2030

To illustrate the effects of using the ECI to adjust the future growth rate for all three components of regular cash pay, CBO projected spending for regular cash pay and associated expenses over the next 10 years. Those projections include a base-case and an alternative scenario.

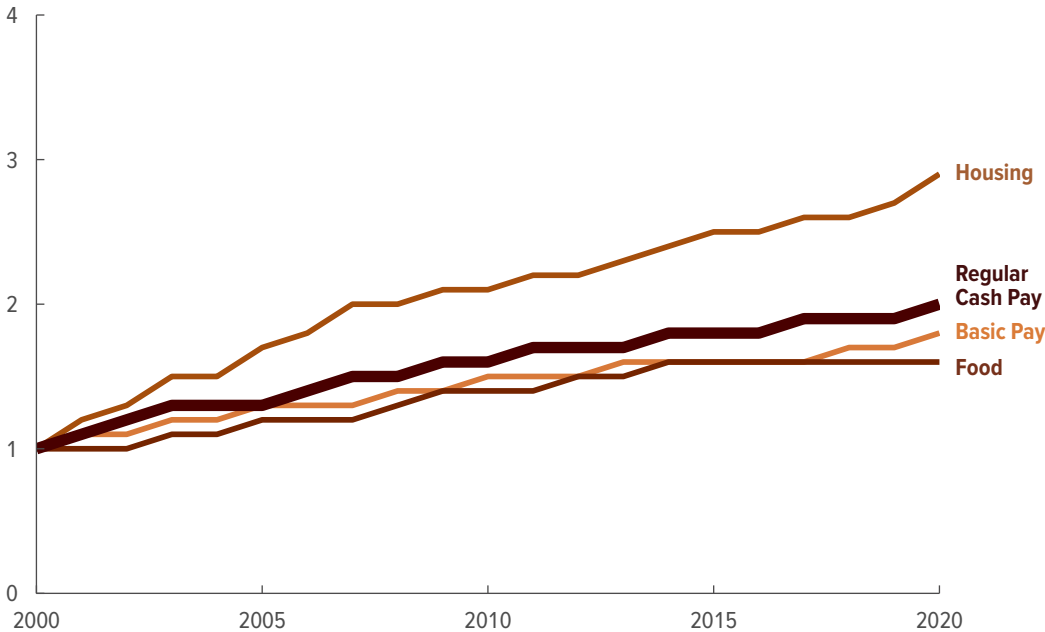
The base-case scenario followed DoD's current policy of adjusting regular cash pay on the basis of separate indexes and DoD's plans for the next few years. CBO used the plans that the department provided to the Congress for basic pay raises and increases in housing and food allowances through 2025. DoD's plans would increase basic pay at an annual rate that was 0.1 percent to 0.5 percent higher than CBO's forecasts of the ECI for 2022 through 2025.

CBO applied rates of growth for each element of regular cash pay using the agency's forecasts of relevant national indexes after 2025. It increased basic pay at a rate equal

Figure 7.

Increase in Regular Cash Pay and Its Components for Enlisted Pay Grade E-4 Relative to Amounts in Calendar Year 2000

Index, 2000 = 1



For service members at pay grade E-4, housing allowances grew at an average annual rate of about 5.5 percent, compared with an average annual increase in basic pay of 2.9 percent. The largest average annual growth in housing allowances, about 11 percent, occurred between 2000 and 2005. However, growth of housing allowances was higher than that of either the ECI or the consumer price index of housing costs, even between 2006 and 2015, when there were fewer policy changes.

Data source: Congressional Budget Office, using data from the Department of Defense. See www.cbo.gov/publications/57192#data.

ECI = employment cost index.

to the growth in the ECI, the default rate specified by law. Because DoD’s method for calculating housing rates focuses on a subset of housing units that meets its standards, no forecasts are available for housing rates that reflect DoD’s increases in housing costs. Therefore, CBO projected the growth in those costs at a rate that was 1 percentage point above the economywide rate (as measured by the consumer price index for housing). That increase is consistent with the historical growth in the basic allowance for housing between 2006 and 2015, a period during which DoD’s housing policy did not change significantly.

Under the alternative scenario, CBO adjusted all components of regular cash pay using the increase in the ECI for each year in the projection period. In that scenario, lawmakers would maintain the ECI increase for basic pay, rather than overriding it as they sometimes have done. In both scenarios, the end strength and rank structure would change in the manner described in DoD’s plans.

That approach is consistent with the method CBO has used to project compensation costs.⁸

Increasing Regular Cash Pay With the ECI

DoD could slow the growth in regular cash pay if it adjusted all components with the ECI. Currently, regular cash pay for military personnel substantially exceeds DoD’s goal of equaling the 70th percentile of wages and salaries for comparable civilians, which DoD has indicated is the level needed to maintain an effective force. That approach could be a first step in bringing regular cash pay down to that goal, which would probably require several years of raises that were smaller than the ECI’s growth rate.

Under current policy, in CBO’s base-case scenario, the spending for regular cash pay and associated expenses grows at an annual rate of 3.2 percent in nominal terms between 2020 and 2030 (see Figure 8). Under the

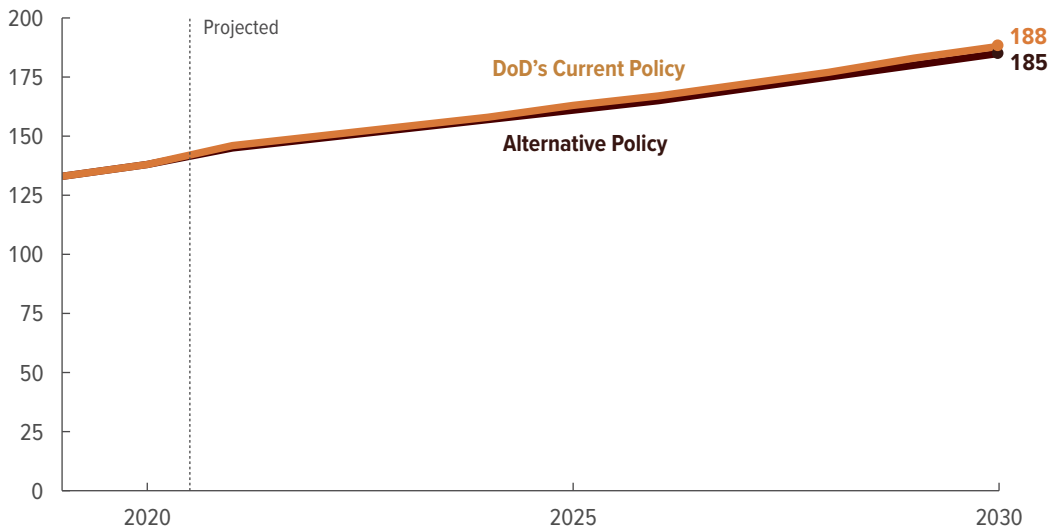
8. See Congressional Budget Office, *Long-Term Implications of the 2021 Future Years Defense Program* (September 2020), www.cbo.gov/publication/56526.



Figure 8.

Spending for Regular Cash Pay and Associated Expenses Under Current and Alternative Policies

Billions of Nominal Dollars



Compared with DoD's current policy (adjusting each element of regular cash pay with a separate index), spending for regular cash pay and associated expenses would be lower by roughly \$3 billion, or 1.7 percent, in 2030 if all components grew at the rate of the ECI. Those savings under the alternative policy would grow over time as long as DoD's housing allowances under current law grew faster than the ECI.

Data source: Congressional Budget Office, using data from the Department of Defense and the Bureau of Labor Statistics. See www.cbo.gov/publications/57192#data.

DoD = Department of Defense; ECI = employment cost index.

alternative policy, that growth rate would be slightly lower, at 3.1 percent. That 0.1 percent annual difference amounts to about \$3 billion in 2030 and would compound over time.

CBO's results are sensitive to the assumption in the base case that the growth in housing allowances DoD experienced in the past would continue in the future. Fewer or even negative savings would occur if housing costs grew at a slower pace than the historical rate in CBO's projection. The savings would be larger if the opposite was true.

Potential Effects on Recruiting and Retention

Although regular cash pay exceeds DoD's goals by a large amount, slower growth could present DoD with some recruiting and retention issues. As the pay of service members has increased relative to civilian pay in past years, the share of recruits that DoD considers high quality has also risen substantially and exceeds its goals. The opposite would probably happen if pay for service members slowed significantly relative to civilian pay. Whether the 0.1 percent reduction in the average annual rate of pay growth under the alternative policy would be

large enough to create recruiting and retention problems is not known.

If those issues did arise, DoD would have several options: It could still periodically reassess the adequacy of regular cash pay in meeting its recruiting and retention goals. It could allow the quality of recruits to decline to levels that still met its goals. It could try to maintain today's high quality by adjusting regular cash pay at rates higher than the ECI to meet that objective. Finally, DoD could use other management tools, such as special and incentive pays targeted to occupations, geographic locations, or skills, if it had difficulty filling certain vacancies. Targeted pay has been more cost-effective than across-the-board increases, and any decline in savings would probably be smaller if DoD used those force management tools rather than across-the-board pay raises.⁹

9. See Congressional Budget Office, *Approaches to Changing Military Compensation* (January 2020), www.cbo.gov/publication/55648; and Beth J. Asch and others, *Setting the Level and Annual Adjustment of Military Pay* (RAND Corporation, 2020), www.rand.org/pubs/research_reports/RRA368-1.html.

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About This Document

This report by the Congressional Budget Office was prepared at the request of the Chairman and Ranking Member of the Senate Armed Services Committee. In keeping with CBO's mandate to provide objective, impartial analysis, the report makes no recommendations.

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CBO seeks feedback to make its work as useful as possible. Please send any comments to communications@cbo.gov.



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