



INSTITUTE FOR DEFENSE ANALYSES

## **Analysis of a Salary-Based Pay System for the Quadrennial Review of Military Compensation**

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September 2020

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IDA Document D-13204

Log: H 20-000185



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### **About This Publication**

This work was conducted by the IDA Systems and Analyses Center under contract HQ0034-19-D-0001, Project BE-7-4565, “Analysis of a Salary-Based Pay System for the Quadrennial Review of Military Compensation (QRMC),” for the Office of the Under Secretary of Defense for Personnel and Readiness (OUSD (P&R)). The views, opinions, and findings should not be construed as representing the official position of either the Department of Defense or the sponsoring organization.

### **Acknowledgments**

Thank you to Gregory A. Davis, Matthew S. Goldberg, and Peter K. Levine for performing a technical review of this document.

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## Executive Summary

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The Thirteenth Quadrennial Review of Military Compensation (QRMC) was established by the President in a September 2017 memorandum to the Secretary of Defense. One of its three main provisions was “to determine whether the structure of the current military compensation system, as a system of basic pay, housing, and subsistence allowances, remains appropriate, or whether an alternate compensation structure, such as a salary system, would enhance readiness and better enable the Department of Defense [DoD] to recruit and retain tomorrow’s military force.”<sup>1</sup>

This direction echoes the 2017 National Defense Authorization Act (NDAA), which requires that the Secretary of Defense submit to the Armed Services Committees a report on a single-salary pay system.<sup>2</sup> The act states that the single-salary system should be adjusted by the same cost-of-living adjustment that DoD uses for civilian employees.<sup>3</sup> It also specifies that the new pay structure “will result in no or minimal additional costs to the Government.”<sup>4</sup>

The Director of the Thirteenth QRMC, via the Office of the Under Secretary of Defense for Personnel and Readiness (OUSD (P&R)), asked the Institute for Defense Analyses (IDA) to provide the fact-finding, analytic tools, and analysis necessary to assess how a single-salary system would affect Service members’ earnings and behavior. Additionally, we assessed the readiness, cost, and tax revenue implications of such a system. Although past QRMC studies have examined portions of the salary system—removing the marriage premium, for example—this QRMC is the first to have been tasked with evaluating and quantifying the effects of a salary system as a whole. In doing so, our analysis reveals many complex interactions among compensation variables and the parallel policy changes necessary to establish a salary system without inducing radical swings in compensation or cost. We find that the implementation of the proposed single-salary system would introduce substantial additional complexity, reduce aggregate after-tax

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<sup>1</sup> “Thirteenth Quadrennial Review of Military Compensation,” Memorandum for the Secretary of Defense, September 15, 2017.

<sup>2</sup> The full text of the September 2017 Presidential memo and the relevant section of the 2017 NDAA are available in Appendix A.

<sup>3</sup> The annual cost-of-living adjustment for civilian employees is well-specified but complex. It is codified in 5 U.S. Code § 5303, Annual adjustments to pay schedules; and described in, “Federal Employees: Pay and Pension Increases Since 1969,” Congressional Research Service (CRS) report 94-971, January 20, 2010, <https://fas.org/sgp/crs/misc/94-971.pdf>.

<sup>4</sup> National Defense Authorization Act for Fiscal Year 2017, Public Law 114–328, Section 604, December 23, 2016.

compensation (also known as “take-home” pay), and generate little, if any, benefit to readiness. Moreover, a salary system is likely to encounter substantial suspicion and resistance from Service members.

Our assessment of a salary system follows three lines of effort. First, the IDA Salary System Assessment Tool (SSAT) models the after-tax income effects of transitioning to a salary system by focusing on four major characteristics of Service members: rank, dependency status, receipt of the Basic Allowance for Housing (BAH) versus government-owned housing, and tax liabilities.<sup>5</sup> The model calculates how transferring current funding for allowances to the salary system pay pool affects the after-tax, take-home pay of each category of Service members. The SSAT analyses show how individual after-tax cash compensation change for specified pay policies. In this paper, we examine four cases:

1. **A baseline case:** Current allowances (\$24.9 billion) are allocated proportionately to current basic pay. Basic pay is increased further to cover federal taxes on the higher basic pay.
2. **A tailored case:** The percentage increase in basic pay to offset reduction in allowances varies by pay grade to reduce cross-rank variation in proportional changes in after-tax income.
3. **A baseline case with rent:** Service members are required to pay market-equivalent rent for government-owned housing.
4. **A tailored case with rent:** The provisions for cases 2 and 3 are combined.

The output for each policy case shows the distribution of categories of Service members who “win” or “lose” after-tax income (also known as “take-home pay”) relative to the current system. Major takeaways of the distributional analysis of the four alternative salary systems include the following:

- If government spending is not allowed to increase, the total take-home compensation of military personnel would decline under a salary system. This decline is due to increases in state taxes associated with higher basic pay. The two criteria specified by Congress, that compensation not fall and that cost to the government not rise, cannot be satisfied simultaneously.
- The cost to DoD is equal to the cost to the government plus federal taxes, including the employer’s share of Social Security and Medicare taxes. In the current system, we estimate this cost to be \$89 billion. This cost would rise to roughly \$97 billion under the salary systems we examine.

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<sup>5</sup> Some Service members live in government-owned housing and do not receive BAH. However, Service members who live on base in privatized housing are provided BAH. In the latter case, the BAH allowance is paid by allotment to the landlord.

- Currently, under our assumptions, junior personnel not receiving BAH have lower total compensation than other personnel because they do not receive as valuable a housing benefit.
- If members in government-owned housing are not charged rent, they would benefit from a salary system at the expense of Service members who pay for housing.
- The baseline systems, which multiply each member's basic pay by the same percentage, favor more senior personnel.
- The tailored systems reduce discrepancies among categories of BAH recipients, particularly married ones.
- Charging market rents for government-owned housing eliminates the unequal gains Service members in such housing receive under a salary system.
- A tailored salary system with market rents largely equalizes compensation within a pay grade regardless of marriage status and occupancy of government-owned housing. Under such a system, married BAH recipients would suffer an average loss in after-tax income of 5.5 percent while single BAH recipients' losses would average 2.5 percent.
- A tailored salary system with market rents would reduce the pay of married members relative to unmarried members, and reduce the pay of BAH recipients relative to residents of government-owned housing. These adverse impacts on elements of the force would likely have a negative impact on retention.
- The impact of moving to a salary system will differ by individual within a category. For example, personnel with high-earning spouses will lose more of their increases in basic pay to federal taxes.

The second line of effort entails an econometric analysis designed to estimate the likely responses of Service members to changes in after-tax income. This work complements and extends a long history of studies of military retention. We analyze annual data on all active duty Service members from December 2000 through December 2017, roughly 1.3 million Service member records each year.

A long history of prior econometric estimates finds that retention and recruiting are sensitive to changes in pre-tax compensation. Those estimates suggest that a salary system that would substantially increase the pay of junior personnel would improve recruiting. At the same time, pay cuts to career enlisted personnel receiving BAH could well lead to retention problems.

There are, however, opposing considerations. First, our econometric analysis found no significant effect on retention from a permanent change in annual *after-tax* income of

\$1,000. Second, behavioral economic theory and evidence from our field fact-finding suggest (a) the responses to pay losses are stronger than the responses to pay gains, and (b) the uncertainty created in adopting a salary system could undermine how Service members' value their compensation. We caution that the unprecedented nature and magnitude of the changes inherent to adopting a salary system, and the diversity of Service member perspectives and perceptions, prevent us from confidently predicting how Service members might respond.

The third line of effort entails extensive fact-finding in the field with individual Service members and focus groups. We engaged with 740 Service members in every Service by visiting Active and Reserve Component installations in four states across the country. The field research indicates that Service members mainly

- Value pay and benefits, but also join the military for employment stability as well as the education and career development opportunities it offers. Service members are more concerned with the value of national service, childcare, healthcare, education benefits and loan forgiveness, and stability in compensation than the precise level of compensation.
- Strongly favor fairness in pay that reflects work demands, risks, and rank. Service members widely support greater differentials in pay for effort, assignment responsibility, hours, and onerous or risky duty.
- Express strong concerns about “correcting” childcare and housing allowances while hoping for improvements in other non-cash benefits. Service members see inadequate childcare as a particularly major issue that also relates to the fairness of family compensation.
- Express strong skepticism of major restructuring of military compensation systems. Service members view the current system as imperfect, but “fair enough.” They see uncertainty in how a salary system would work, and its implications for themselves. Their major feedback focused on the needed improvements within the current system.

In addition, we included questions related to a salary system in the 2019 Status of Forces survey for active duty personnel (SOFA) conducted by the DoD Office of People Analytics (OPA). Overall, 78 percent of research participants in the focus groups and 75 percent of SOFA respondents indicated that they “strongly opposed” or “somewhat opposed” a change to a salary system. The participants also indicated that there would be impacts to the proposed changes both in terms of retention and to the potential recruitment of those not yet in the military. Economic research has shown that losers tend to feel more strongly about losing than winners feel about gaining an equivalent amount. We observe a very similar pattern from the focus groups and survey results. When queried about retention perceptions associated with earning levels as a result of a proposed change to a salary

system, research participants responded in an asymmetric way. The reported disapproval for a certain percentage drop in pay as a result of a salary system was much larger than the reported approval for an equivalent percentage increase in pay.

### **Other Paths to Efficient and Fair Compensation**

In modeling the transition to a salary system, we identified many possible mechanisms—short of adopting a salary system—that might improve the efficiency or fairness of the current system, and thereby enhance readiness. Mechanisms that could be considered include the following:

- Shifting the basic allowance for subsistence and the “marriage premium” portion of BAH into targeted, flexible pays such as special and incentive pays
- More precisely targeting flexible pays, such as special and incentive pays, to resolve readiness issues
- Tailoring the basic pay table by occupation to target readiness issues
- Reforming BAH to reflect locational factors beyond the cost of housing
- Improving quality of and access to in-kind benefits such as housing and childcare

Each of the above improvements could be implemented without adopting a salary system. In addition, DoD’s current cash compensation system already allows a high degree of flexibility, particularly through the many categories of special and incentive pays and enlistment and retention bonuses.

One important overall conclusion of our work is that the DoD would be well served to consider a broader range of alternatives for improving compensation beyond the wholesale elimination of allowances and the adoption of a salary system.



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# 1. Introduction

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**The goal of a salary system is to “enhance readiness and better enable the Department of Defense to recruit and retain tomorrow’s military force.”<sup>1</sup>**

Consideration of a salary system for compensating military personnel goes back at least to the post-Civil War era. Until 1870, in addition to basic pay officers received a cash allowance to cover their subsistence. The size of the allowance varied with rank. The Army and Navy Appropriation Acts for 1871 established a salary system for officers and abolished the allowances for subsistence or rations. This system remained in effect until 1922, when subsistence allowances again became a separate part of officers’ compensation.<sup>2</sup>

In a more recent context, the virtues of a salary system have been debated since some time before the advent of the all-volunteer force. In 1967, the First Quadrennial Review of Military Compensation (QRMC) concluded that the same salary should be paid to all personnel of the same grade and years of service regardless whether they have dependents or live in government-owned housing. It also found that the system of pay and allowances was both inefficient and inequitable. The inefficiency was tied to the fact that military pay was “complex and confusing.”<sup>3</sup> A survey determined that “potential reenlistees underestimate the true value of their pay by almost one-fourth. We do not get the maximum retention return from our compensation dollars.”<sup>4</sup>

Regarding inequity, the study group observed that “only 58 percent of total pay depends on the work done by the member. The rest depends on family size, accidents of quarters availability, and whether the member serves to retirement. Potential reenlistees cannot be sure what their pay will be. Many, especially bachelors, dislike a system that does not pay equal pay for equal work.”<sup>5</sup> Further, “allowances have not kept pace with

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<sup>1</sup> “Thirteenth Quadrennial Review of Military Compensation,” Presidential Memo to the Secretary of Defense, September 15, 2017.

<sup>2</sup> “Military Compensation Background Papers, Eighth Edition,” Under Secretary of Defense for Personnel and Readiness, July 2018, 159.

<sup>3</sup> “Modernizing Military Pay,” Report of the First Quadrennial Review of Military Compensation, Volume I, Active Duty Compensation, Washington, D.C., November 1, 1967, 35.

<sup>4</sup> Ibid, 34.

<sup>5</sup> Ibid, 36.

costs. Thus, members who draw cash allowances must often spend more than their allowances on food and housing. They are thereby penalized compared to those who are furnished these items in kind. Potential reenlistees see these results and are apprehensive. They cannot be reasonably sure what their living conditions will be, hence cannot predict what their pay will be if they do reenlist.”

Since the First QRMC, the concept of a salary system has been revisited with some regularity. The Report of the President’s Commission on an All-Volunteer Armed Force, usually called the Gates Commission after its chairman, played a central role in the end of conscription. It found that although conversion to a salary system was not essential for creating an all-volunteer force, it was ultimately necessary for reasons of equity and efficiency.<sup>6</sup> In addition to the reasons cited by the First QRMC, the Gates Commission Report notes that “providing compensation in cash has an inherent advantage... it allows each individual to decide how he or she will use whatever he earns. He can thus get the full value of whatever costs are incurred by the government in paying him. When he is compensated in non-cash form, however, the value of what he receives is often less to him than its cost to the government. Meanwhile, he is encouraged to consume more of particular goods or services than he otherwise would.”<sup>7</sup> More recently, a paper by the Center for Naval Analyses (CNA) notes that the Third (1976) and Seventh (1992) QMRCs, as well as the Defense Manpower Commission Report (1976), discussed the potential advantages and disadvantages of transitioning to a salary system.<sup>8</sup>

The general interest in adopting a salary system is motivated by the belief that such a system can better use available budget dollars to create a ready force. The CNA report identifies from the literature the following arguments for a salary system:

- The current system is unduly complex, and members do not understand the true value of their compensation packages. While both basic pay and tax-free allowances are received in cash, the tax advantage associated with the allowances is not clearly quantified.
- The current system does not represent equal pay for equal work. The size of housing allowances is larger for personnel with dependents.<sup>9</sup>

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<sup>6</sup> “Report of the President’s Commission on an All-Volunteer Force,” U.S. Government Publishing Office, September 1970, 56.

<sup>7</sup> Ibid, 63.

<sup>8</sup> Thomas M. Geraghty, Kyle Neering, Patty Kannapel, et al., “The Single-Salary System for Military Personnel: A Review of Existing Practices and Literature,” Center for Naval Analyses (CNA), March 2019, 2.

<sup>9</sup> Although housing allowances also vary by location, this variation does not violate the principle of equal pay for equal work. Location is a differentiating characteristic of work. Regardless of the similarity in tasks, work that requires living in a coastal metropolitan hub is not equal to work that requires living in

- The current system does not reflect normal market practice. Also, the value of the tax advantage hinges on dependency status and income bracket. Those with higher salaries enjoy a greater tax advantage.
- Because much of military compensation occurs through the tax system (in the form of reduced revenues to federal, state, and local governments rather than explicit budgetary outlays), the current system does not make transparent the true cost of military compensation.<sup>10</sup>

Although these studies present strong arguments for a salary system, the literature also advances the following arguments against a salary system:

- A salary system might be more difficult to administer, particularly if it charged rent for government-provided housing.
- More high-ranking officers would find their pay capped because of constraints related to the pay of Executive Level II and V government civilians. Some officers in pay grades O-8 (Major General or Rear Admiral upper half) and above are capped now.
- As noted above, the DoD budget would have to increase to compensate Service members for the additional taxes they would pay under a salary system. This increase could be politically difficult for many reasons, including jurisdictional disputes among the relevant Congressional committees.
- The increased tax burden might fall more heavily on junior personnel because tax-free allowances now make up a larger proportion of their income. Alternatively, high-ranking personnel might bear a greater tax burden because they are in higher tax brackets. Which of these two effects is stronger is an empirical question that we analyze in this paper.
- The implications of a salary system for the ultimate Social Security benefits that Service members will receive are unclear, depending on rank and ultimate years of service. The true value of the compensation system would still not be entirely transparent.

While past studies have presented reasonable arguments for and against moving to a salary system, none of these studies has evaluated these arguments empirically. For example, these studies have not examined how much compensation will increase or decrease for various categories of Service members. Understanding the impact of a salary system is central to evaluating the wisdom of adopting one.

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a heartland town. Section 7.A discusses principles and options for variation in pay by location under a salary system.

<sup>10</sup> Ibid, 3.

## A. The Thirteenth Quadrennial Review of Military Compensation

The Thirteenth QRMC was established by the President in a September 2017 memorandum to the Secretary of Defense. One of its three main provisions was “to determine whether the structure of the current military compensation system, as a system of basic pay, housing, and subsistence allowances, remains appropriate, or whether an alternate compensation structure, such as a salary system, would enhance readiness and better enable the Department of Defense to recruit and retain tomorrow’s military force.”<sup>11</sup>

This direction echoes the 2017 National Defense Authorization Act, which requires that the Secretary of Defense submit to the Armed Services Committees a report on a single-salary pay system.<sup>12</sup> The act states that the single-salary system should be adjusted by the same cost-of-living adjustment that DoD uses for civilian employees.<sup>13</sup> It also specifies that the new pay structure “will result in no or minimal additional costs to the Government.”<sup>14</sup>

The Director of the Thirteenth QRMC, via the Office of the Under Secretary of Defense for Personnel and Readiness (OUSD (P&R)), asked the Institute for Defense Analyses (IDA) to provide the fact-finding, analytic tools, and analysis necessary to assess how a single-salary system would affect Service members’ earnings and behavior and to assess the readiness, cost, and tax revenue implications of such a system.<sup>15</sup> Although past QRMC studies have examined portions of the salary system—removing the marriage premium, for example—this QRMC is the first to evaluate and quantify the effects of a salary system as a whole. Our analysis reveals many complex interactions among compensation variables and the parallel policy changes that are necessary to establish a salary system without inducing radical swings in compensation or cost. We find that the implementation of the proposed single-salary system would introduce substantial additional complexity, reduce aggregate take-home compensation, and generate little, if

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<sup>11</sup> “Thirteenth Quadrennial Review of Military Compensation,” Memorandum for the Secretary of Defense, September 15, 2017.

<sup>12</sup> The full text of the September 2017 Presidential memo and the relevant section of the 2017 NDAA are available in Appendix A.

<sup>13</sup> The annual cost-of-living adjustment for civilian employees is well-specified but complex. It is codified in 5 U.S. Code § 5303, “Annual Adjustments to Pay Schedules”; and described in “Federal Employees: Pay and Pension Increases Since 1969,” Congressional Research Service (CRS), report 94-971, January 20, 2010, <https://fas.org/sgp/crs/misc/94-971.pdf>.

<sup>14</sup> National Defense Authorization Act (NDAA) for Fiscal Year 2017, Public Law 114–328, Section 604, December 23, 2016.

<sup>15</sup> Specifically, we were asked to investigate the implications of a salary system for uniformed personnel in the Department of Defense. Although not part of this study, personnel in three additional uniformed services—the United States Coast Guard, the United States Public Health Service Commissioned Corps, and the National Oceanic and Atmospheric Administration Commissioned Officer Corps—also receive basic pay, BAH, and BAS. These personnel would also be affected by the elimination of BAH and BAS under a salary system.

any, benefit to readiness. Moreover, a salary system is likely to encounter substantial suspicion and resistance from current Service members.

## **B. Approach**

This paper summarizes our analysis of the implications of a single-salary system (usually referred to here as a salary system) on the earnings of Service members. The impact of transitioning from a system with allowances to a salary system is complex, and the effects would vary significantly across personnel. To assess these effects, we developed three analytic methods.

First, the IDA Salary System Assessment Tool (SSAT) models the after-tax income effects of transitioning to a salary system. The model focuses on four major individual characteristics: rank, dependency status, receipt of the Basic Allowance for Housing (BAH) versus government-owned housing, and tax liabilities.<sup>16</sup> The model calculates how transferring current funding for allowances to the salary system pay pool affects the take-home pay of each category of Service members. Our analysis is consistent with Congressional guidance not to increase the cost of the military compensation system to the Federal Government—that is, the cost of DoD’s budget for compensation minus the tax payments of Service members that flow back to the U.S. Treasury.

The SSAT analyses show how after-tax cash compensation for categories of individuals will change for specified pay policies. The cases examined in this paper demonstrate the modeling concepts embodied in the SSAT and illustrate the general forces at work in transitioning from a compensation system with allowances to a salary system. The output for each policy case shows the distribution of categories of Service members who “win” or “lose” after-tax income (also known as “take-home pay”) relative to the current system. To provide a basis for interpreting how individuals would respond to such changes, we pursued two additional lines of research.

In our second line of research, we conduct econometric analyses designed to estimate the likely responses of Service members to the changes in after-tax pay that are being modeled. This work complements and extends a long history of studies of military retention. The econometric analysis uses advanced analytic methods on a sample of all Service members from December 2000 through December 2017. This sample represents personnel records for roughly 1.3 million Service members each year. The econometric estimates are consistent with the field research in proving that many factors other than raw compensation are more likely to influence Service member decisions to remain in the force.

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<sup>16</sup> Many Service members live in government-owned housing and do not receive BAH. On the other hand, Service members who live on base in privatized housing are provided BAH. In the latter case, the BAH allowance is paid by allotment to the landlord.

The third line of research entails extensive field fact-finding with individual Service members and focus groups. We engaged with 740 Service members in every Service by visiting Active and Reserve Component installations in four states. The structured interviews and follow-up survey questions distinguish the views of officers and enlisted, and newer versus long-tenured personnel. The results provide individual views on compensation “fairness”; Service members’ likely responses to increases and decreases in compensation; and their valuation of alternative forms of cash, in-kind, and deferred compensation. This work is important for understanding Service members’ values as well as the nuances of their interpretations of the complex changes associated with the policy cases. This field research confirms and augments existing DoD surveys, as well as previous studies. In addition, we included questions related to a salary system in the 2019 Status of Forces survey for active duty personnel (SOFA) conducted by the DoD Office of People Analytics (OPA). Overall, 78 percent of research participants in the focus groups and 75 percent of SOFA respondents indicated that they “strongly opposed” or “somewhat opposed” a change to a salary system.

The integration of these three lines of research provides a policy analysis platform that allows users to consider a wide range of “what if” policy cases and to assess the implications for individual attitudes and behaviors. This information in turn provides insights about how any given policy case would affect military readiness, as well as pay fairness and efficiency—which are the ultimate benchmarks for assessing alternatives.

### **C. Scope of the Analysis**

Following the language in the FY 2017 NDAA, we define a “single-salary system” as a compensation system without BAH and basic allowance for subsistence (BAS). The implementation of a salary system would have many implications for military compensation, which we summarize here.

Elimination of basic allowances for housing and subsistence would remove the following features of military compensation:

- A large portion of Service member compensation, which would warrant enlargement of active duty basic pay
- The income tax advantage of Regular Military Compensation, which would warrant further enlargement of basic pay
- Variation in pay across localities, which would warrant the introduction of locality pay
- Variation in pay due to dependent status, which could advantage some members while disadvantaging others

Enlargement of basic pay would increase the following features of military compensation:

- Pay to Service members who live in government housing and currently do not receive BAH, which would warrant the introduction of rent for government housing
- Pay to Service members on reserve status who currently do not receive BAH, which would warrant the separation of basic pay tables for inactive duty and active duty and enlargement only of the latter
- The number of Service members subject to Executive Schedule caps, which could warrant the modification or elimination of those caps
- Service members' retirement pay, which would warrant reduction of the retirement pay multiplier
- Service members' marginal tax brackets
- Service members' federal and state income tax liabilities
- Service members' payments of Social Security and Medicare taxes
- Government expenditures on matching contributions and automatic one-percent contributions to Thrift Savings Plans (because each contribution would be based on higher basic pay)
- The range of permissible continuation pay amounts
- The value of the Combat Zone Tax Exclusion (CZTE)

In addition to the wide range of variables that would be directly affected by the transition to a salary system, a number of other important policy alternatives are not directly tied to salary. The implementation of a salary system would be compatible with, but not cause or warrant, changes to the following features of military compensation:

- Variation in pay across occupations, whether within the current system of special and incentive (S&I) pays or a new system linked to market rates
- Pay for performance
- Deployment duration and frequency
- Family Separation Allowance, Hardship Duty Pay, Hazardous Duty Incentive Pay, and Imminent Danger/Hostile Fire Pay
- The rules governing CZTE
- Non-cash benefits such as educational benefits, commissaries, and health care
- The process by which basic pay adjusts over time

- The possibility for basic pay to decrease over time

In our analysis, we assume that most non-salary elements of compensation are unaffected by the repeal of BAH and BAS, including retention incentives, deployment and hazardous duty pay, educational benefits, commissaries, and health care.<sup>17</sup> Further, in Chapter 10, we discuss a potential “pay-for-performance” compensation policy. As described in the following chapters, the complexity of the compensation system makes it necessary to simplify the analysis and to focus on the factors that would be most important for informing the deliberations of the QRMC. The final chapter of this report details the major findings of this study. Several of these findings shaped the work as well as the cases analyzed in the chapters to follow.

## **D. Structure of this Report**

Our report consists of the following chapters:

- Chapter 2 describes the current state of military compensation.
- Chapters 3 through 6 describe the SSAT analytic framework. These chapters also use the framework to show how compensation would change for subgroups of Service members under four policy cases.
- Chapter 7 discusses additional implications of a salary system such as locality pay, retirement benefits, Reserve pay, the combat zone tax exclusion, administrative costs, and federal income tax brackets.
- Chapter 8 describes econometric estimates for the effects of adopting a salary-based pay system on recruiting and retention.
- Chapter 9 describes our methodology for eliciting individual Service members’ attitudes toward a potential salary system and, more generally, their compensation.
- Chapter 10 describes options for achieving the objectives of a salary system without actually implementing one.
- Chapter 11 summarizes our findings.

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<sup>17</sup> A salary system would also affect the implementation of other elements of compensation that are tied to basic pay such as the death gratuity, accrued leave upon separation, severance pay, readjustment pay, and pay of cadets and midshipmen. The secondary and tertiary effects of a salary system on these compensation elements is beyond the scope of this study. However, any adoption of a salary system would need to account for changes to these pays as well. A recent paper by the Center for Naval Analyses (CNA) identifies and prioritizes potential second- and third-order effects of a salary system (Geraghty et al., “The Single-Salary System for Military Personnel: An Analysis of Second- and Third-Order Effects,” Center for Naval Analyses, July 2019).

## **2. The Current Military Compensation System**

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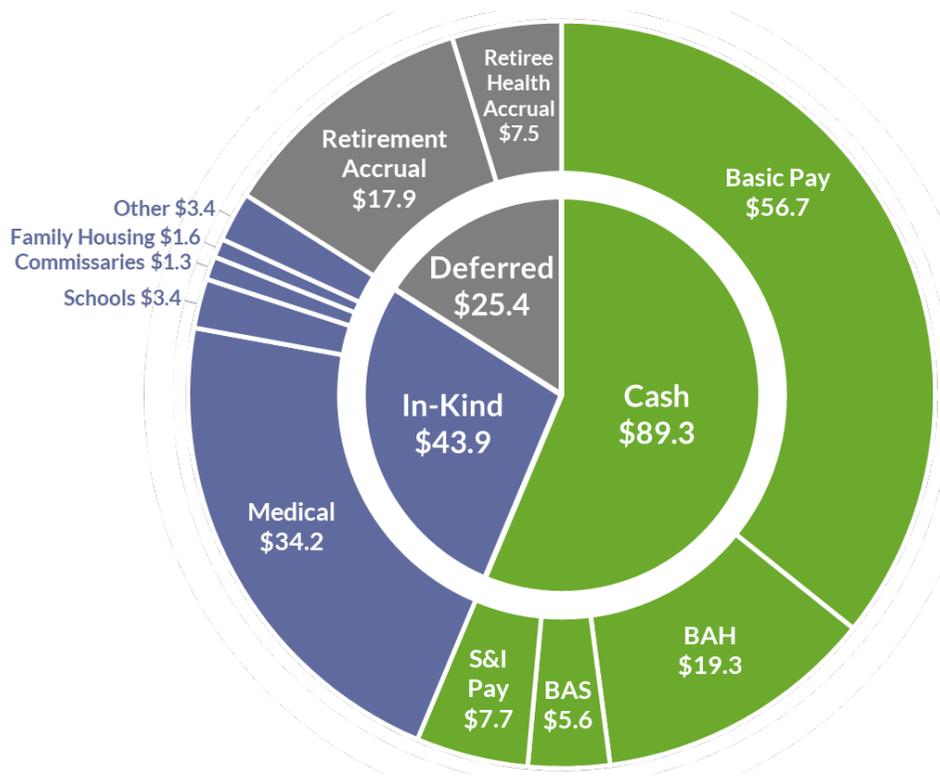
As outlined in the introduction to this report, the fundamental question being posed by the QRMC is whether it is possible to reshape the package of current cash payments provided to military personnel in a way that will yield a more effective—that is, a more ready—military force. To provide the foundation for analyzing this question, it is essential to document the current compensation system and the incentives it creates for shaping individual behaviors of Service members.

### **A. Description of the System**

The budget for military compensation includes current cash income, a range of in-kind benefits, and deferred benefits. Any proposed policy for changing any component of compensation must be evaluated in the context of the overall compensation system. Figure 1 summarizes DoD's current budgetary expenditures for compensation. Cash compensation accounts for 56 percent of DoD's \$158.6 billion budget for compensation. In-kind benefits account for 28 percent and deferred benefits account for 16 percent.

Current cash payments consist principally of Basic Pay (BP), which accounts for 63 percent cash payments; BAH, which accounts for 22 percent; BAS, which accounts for 6 percent; and more than 40 types of targeted pays, which account for somewhat less than 9 percent. From the standpoint of a philosophy of compensation, each of these components plays a distinct role:

- Basic pay is embodied in rank and years-of-service pay tables that reward rank and longevity in the military. This pay type is transparent and predictable. Every individual who is an E-4 with 4 years of service gets exactly the same basic pay. Individuals who are promoted through the ranks know what pay and benefits to expect.
- BAH is based on location, rank, and whether a Service member has dependents. Further, BAH is not taxed. DoD's personnel approach requires a mobile workforce; some mechanism to adjust pay across locations is necessary to enable Service members to maintain a degree of consistency in their accommodations and lifestyle across duty assignments. (The determinants of BAH are discussed below. A more detailed discussion of BAH is available in Appendix B.)



Source: Congressional Budget Office, “Approaches to Changing Military Compensation,” January 2020.

**Figure 1. DoD Budget for Personnel Compensation (\$billion, 2019)**

- BAS is a per-capita payment that goes to every Service member. In 2020, the flat rate is \$256.68 per month for officers and \$372.71 per month for enlisted personnel. BAS is not taxed.
- Targeted, flexible pays, which consist of special and incentive pays and attraction and retention pays, provide flexibility to target force readiness issues in selected career fields, to reward duty in onerous or hazardous assignments, and to target specific skills for retention. As discussed next, there are currently 12 categories of special and incentive pays and a total of 60 pays stipulated by Congress within those categories.<sup>18</sup>

## B. The Role of Allowances

There has long been a school of thought that Congress should reduce allowances, or eliminate them altogether, and transfer the available funding to basic pay or to targeted, flexible pays. Doing so would provide DoD with a greater pool of available funds to reward

<sup>18</sup> “S&I Pays Currently for Active Duty Service Members,” Title 37, Chapter 5, Subchapter I, Department of Defense, <https://militarypay.defense.gov/>, accessed April 15, 2020.

performance or longevity. This idea reflects the belief that Service members should be paid for performance and not for extraneous considerations.

One critique of the current pay system is that BAH is set by arbitrary judgments regarding housing entitlements according to a Service member's rank and family status. A common critique relates to the "marriage premium" built into housing entitlements. That is, Service members with dependents receive roughly 15 percent to 20 percent higher BAH than single Service members.

BAH and BAS are not taxed.<sup>19</sup> BAH rates are keyed to duty location, within a wide range, depending on the local rental market. Personnel without dependents (called single personnel here) receive less BAH than personnel with dependents (called married personnel here).<sup>20</sup>

To illustrate the logic inherent in the current BAH formula, Figure 2 provides representative data on current BAH allowances. Allowances are displayed for twenty-five California locations identified in DoD's BAH tables for a mid-rank enlisted (E-5) and a mid-rank officer (O-4). California provides a good example because it includes a wide range of high and low cost-of-living locations.

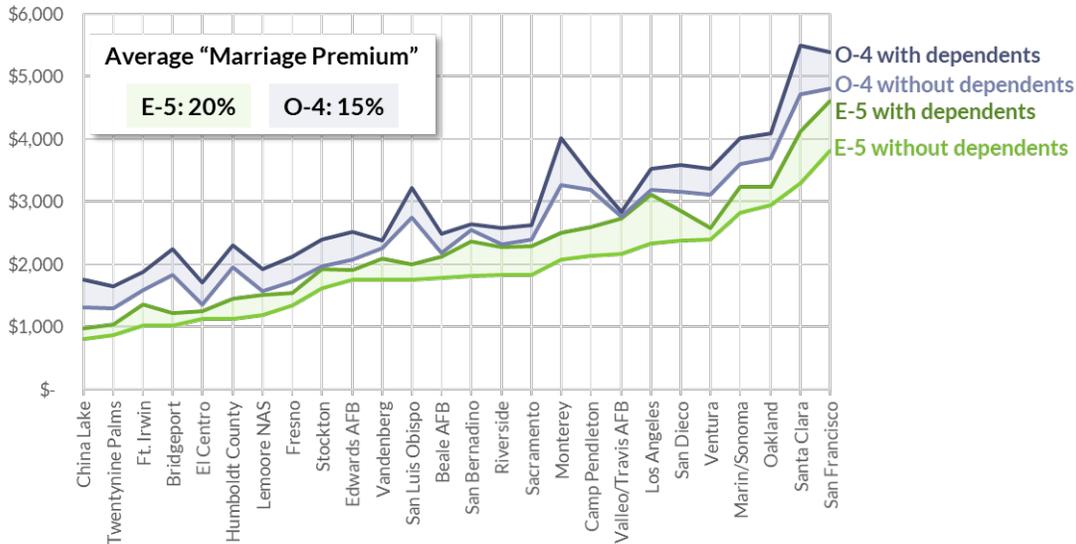
The figure illustrates three main characteristics:

- BAH is intended to neutralize variations in housing costs across assignment locations and thus reflects wide geographic variability. For example, an enlisted E-5 with no dependents receives \$813 per month at China Lake, but would receive \$3,842 per month in San Francisco—a multiple of more than 4 times between the low-cost and high-cost assignments.
- the variability by rank is also substantial. For example, the average BAH for an O-4 with no dependents across locations is about 36 percent higher than the average for a comparable E-5. Therefore, BAH, like basic pay, rewards rank.
- the additional allowance for Service members with dependents—the so-called "marriage premium"—averages about 20 percent for the E-5 and about 15 percent for an O-4.

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<sup>19</sup> The Tax Cuts and Jobs Act of 2017 (TCJA) reduced income tax rates, which in turn reduced the value of the BAH and BAS tax advantage. See Appendix E for our estimates of how the TCJA affected the BAH/BAS tax advantage. All our estimates of the value of the current compensation system and four alternative salary systems use the TCJA rates.

<sup>20</sup> Divorced single parents may also qualify for BAH at the higher "with dependent" rate, depending on their custody arrangements and whether they pay child support. See *Basic Allowance for Housing (BAH), Frequently Asked Questions*, "I am divorced with children, what is my BAH allowance?", Defense Travel Management Office, [www.defensetravel.dod.mil/site/faqbah.cfm](http://www.defensetravel.dod.mil/site/faqbah.cfm), updated September 20, 2018.



Source: DoD BAH Tables, calendar year 2020.

**Figure 2. BAH for E-5 and O-4 at California Assignment Locations, by Dependency**

Because the “marriage premium” is not directly linked to performance, it is often the target of criticism and reform efforts. Therefore, it is useful to determine the scale of this payment relative to the overall scale of DoD’s compensation budget. As shown in Table 4 later in this chapter, there are currently about 890,000 BAH recipients, and about 70 percent of them are married. Based on these data, we estimate that the average BAH across all Service members equals \$21,700 per year. We can further estimate that a “marriage premium” of 20 percent would yield an average payment of about \$3,800 per year across all married Service members receiving BAH. The total “marriage premium” paid by DoD is thus \$2.4 billion per year. The “marriage premium” is not insignificant, but it is a fairly small component of DoD’s compensation system: about 2.6 percent of DoD annual current cash compensation, and about 1.5 percent of the total compensation budget.

As we discuss later in Chapter 9, Service members generally do not support removing the marriage premium. We asked Service members participating in focus groups and Status of Forces Survey for Active Duty Personnel (SOFA) respondents what they thought about the possibility of removing the dependent rate for BAH where the after-tax income of Service members with dependents decreases on average, and the after-tax income of Service members without dependents increases on average. Overall, 71 percent of focus group participants and 66 percent of SOFA respondents opposed the change. Interestingly, 49 percent of single focus-group participants without dependents and 45 percent of single SOFA respondents without children opposed the proposal to equalize BAH for those with and without dependents. In comparison, 34 percent of single focus-group participants without dependents and 31 percent of single SOFA respondents without children supported it.

### C. BAH versus Government Housing as Compensation

Personnel living in government-owned quarters do not receive BAH but instead are provided no-cost housing, which has compensation value. The value varies very substantially, from barracks to the substantial homes provided to commanders and senior officers. The value of this housing also depends on the location and off-base housing alternatives. For example, junior sailors stationed in San Diego greatly value access to on-base housing, because affordable alternatives require major commuting time. Additionally, the valuation of on-base housing depends on the individual tastes of Service members.

For all of these reasons, the value of government-provided housing is variable and subjective and cannot be precisely estimated; however, we have developed rules of thumb to provide insight into the average magnitude. We start from two assumptions regarding the quality and valuation of on-base housing. First, senior officers and senior enlisted personnel receive on-base quarters that are worth approximately as much as the BAH they would otherwise receive. Second, we assume that the quarters provided to the most junior, single enlisted personnel have no value as compensation because these personnel often live in regimented, communal barracks. Interpolating between those extremes yields the approximations we use concerning the value of government-provided housing, as shown in Table 1. This assumed scale for valuing on-base housing is, of course, subjective. Based on our discussions with the QRMC sponsors and independent reviewers, we believe these approximations are reasonable; moreover, the overall conclusions of the analysis are not highly sensitive to the assumed scale.

**Table 1. Estimate of the Value of Government-Provided Housing as a Percentage of BAH**

	<u>Single</u>	<u>Married</u>		<u>Single</u>	<u>Married</u>
O-4 and above	100%	100%	E-6 and above	100%	100%
O-3	80%	100%	E-5	80%	80%
O-2	60%	60%	E-4	60%	60%
O-1	40%	60%	E-3	40%	60%
			E-2	0%	60%
			E-1	0%	60%

### D. Taxes and “Regular Military Compensation”

The concept of Regular Military Compensation (RMC) is sometimes used to compare pay with the private sector. RMC consists of BP, BAH, and BAS, plus the estimated tax savings from BAH and BAS. The tax savings are calculated as averages and will vary across Service members depending on other factors that determine a person’s tax bracket.

These factors include spousal earnings, investment earnings, and itemized deductions. The average federal tax advantage across DoD equals \$4,384 per year.<sup>21</sup>

DoD reports that the federal tax advantage ranges from a few thousand dollars for low-ranking enlisted personnel to about \$10,000 for general officers. However, DoD does not report the state-level tax advantage. Therefore, we estimated the average of state taxes to be around 1.7 percent. We also estimated that the current total of the tax payment reductions is approximately \$8 billion for federal taxes and \$500 million for state taxes.

In addition to BAH and BAS, the CZTE is an important benefit. However, this benefit has no direct budgetary cost for DoD, but can be a very significant cost to the Federal Government in terms of taxes collected. The value of the tax exclusion depends on household total income and other factors that determine the household’s usual tax liability.

### E. Flexible Targeted Pays

Congress has provided DoD with substantial flexibility to target extra pay where necessary to address readiness issues. In all, there are 12 categories of special and incentive pays and a total of 60 pays stipulated by Congress within those categories.<sup>22</sup> Table 2 identifies the categories to illustrate the range of situations addressed in the existing authorities. As noted in Figure 1, Special and Incentive (S&I) Pays amount to \$7.7 billion, which is just under 9 percent of total current cash compensation.

**Table 2. Categories of Existing Flexible Pays (Stipulated Pays within Category)**

Special and Incentive Pays	Attraction and Retention Pays
Hazardous Duty (12)	Retention Incentives (8)
Hardship Duty (1)	Responsibility (2)
Assignment Incentives (2)	Rehabilitation Pay (1)
Career Incentives (5)	Skill Conversion Incentives (1)
Accession Incentives (4)	Transfer Between Services (1)
Proficiency (1)	Medical Professional Incentives (22)

*Source:* Department of Defense, [Militarypay.defense.gov](https://militarypay.defense.gov/); “Title 37, Chapter 5, Subchapter I – S&I pays currently for active duty Service members. Site accessed on April 15, 2020.

<sup>21</sup> *Compensation Greenbook*, “Selected Military Compensation Tables,” Office of the Under Secretary of Defense (Personnel and Readiness), January 1, 2019, B3, <https://militarypay.defense.gov/Portals/3/Documents/Reports/GreenBook%202020.pdf?ver=2020-05-06-170512-543>.

<sup>22</sup> “S&I Pays Currently for Active Duty Service Members,” Title 37, Chapter 5, Subchapter I, Department of Defense, <https://militarypay.defense.gov/>, accessed April 15, 2020.

## **F. The Distribution of Compensation under the Current System**

The heart of our analysis is estimating how the take-home pay of various groups of people would be affected by different versions of a single-salary system. To establish the baseline, Table 3 shows the average pre-tax and post-tax compensation for the categories of Service members included in the analysis. The categories include single and married Service members grouped into those who receive BAH versus those who do not. For each group, we perform the analysis for all ranks: officers (O-1 through O-10), warrant officers (W-1 through W-5), and enlisted (E-1 through E-9).

Personnel receiving BAH include those living in privatized on-base housing. DoD treats these personnel as receiving BAH although their housing allowances are usually paid by allotments to their landlords.<sup>23</sup> Personnel living in government-owned, on-base housing do not receive BAH.

The compensation calculations also include an estimated 5 percent government contribution to the Thrift Savings Plan (TSP), although retirement pay accrual is not included. In addition, we deduct estimates of federal and state income taxes to calculate take-home pay as well as the employees' share of Social Security and Medicare taxes.

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<sup>23</sup> *Compensation Greenbook*, "Selected Military Compensation Tables," Office of the Under Secretary of Defense (Personnel and Readiness), January 1, 2019, A7, <https://militarypay.defense.gov/Portals/3/Documents/Reports/GreenBook%202020.pdf?ver=2020-05-06-170512-543>.

**Table 3. Average Annual Income of Military Personnel by Category**

	Single				Married			
	Receiving BAH		Not Receiving BAH		Receiving BAH		Not Receiving BAH	
	Pre-Tax	After-Tax	Pre-Tax	After-Tax	Pre-Tax	After-Tax	Pre-Tax	After-Tax
O-10	230,778	179,303	202,134	150,659	236,106	194,655	202,134	160,683
O-9	229,250	178,203	200,798	149,752	234,542	193,392	200,798	159,648
O-8	221,044	172,693	192,400	144,049	226,372	187,118	192,400	153,146
O-7	196,280	154,583	167,636	125,939	201,608	167,943	167,636	133,971
O-6	173,355	137,216	144,927	108,788	177,615	149,076	144,927	116,388
O-5	143,930	116,335	117,494	89,899	148,754	128,236	117,494	96,976
O-4	124,568	102,643	99,344	77,419	127,892	111,629	99,344	83,081
O-3	99,694	84,365	77,255	61,926	104,609	92,308	79,856	67,555
O-2	80,011	69,676	60,530	50,194	82,922	74,348	61,527	52,953
O-1	61,667	54,954	44,223	37,510	65,116	59,746	45,435	40,065
W-5	138,598	111,941	114,539	87,883	138,598	118,963	114,539	94,904
W-4	119,326	98,147	96,850	75,671	122,626	106,870	96,850	81,094
W-3	102,606	86,121	81,126	64,641	105,726	93,167	81,126	68,567
W-2	86,559	74,478	66,375	54,294	89,763	80,203	66,375	56,815
W-1	74,736	64,745	59,376	49,385	79,080	70,944	59,376	51,240
E-9	111,985	93,291	89,905	71,211	115,885	101,821	89,905	75,841
E-8	92,869	79,613	71,691	58,435	96,001	85,641	71,691	61,331
E-7	82,012	71,543	62,356	51,887	85,624	77,162	62,356	53,894
E-6	70,619	62,726	51,407	43,514	74,147	67,912	51,407	45,172
E-5	60,199	54,217	42,007	36,025	62,395	57,911	42,007	37,523
E-4	50,019	45,480	34,911	30,372	53,535	50,358	34,911	31,734
E-3	45,236	41,706	29,948	26,418	49,064	46,792	29,948	27,676
E-2	43,903	40,734	28,171	25,002	45,847	43,733	28,171	26,057
E-1	38,417	35,902	24,701	22,186	42,725	40,920	24,701	22,896

We estimated tax rates based on taxable earnings and family size using Defense Manpower Data Center (DMDC) data.

Among personnel receiving BAH, after-tax income is about 25 percent lower for single personnel than for married personnel. This difference occurs because BAH is lower for single than married personnel and because married personnel tend to be of higher rank. In terms of after-tax pay, all BAH recipients fare better than those living in government-owned housing.

Table 4 shows the number of people in each of the twelve categories. While most personnel receive BAH, roughly 430,000, a third of the active force, do not. These Service

members live in government-owned housing provided at no cost.<sup>24</sup> Most non-BAH personnel are single junior enlisted and more than 100,000 are single personnel in pay grades E-1 or E-2. Another 116,000 are single E-3s. Generally, all new recruits are in traditional barracks in boot camp. After that, single enlisted soldiers live in barracks on base when they first complete their training. Life in these barracks is similar to living in a college dorm: each soldier has at least one roommate and uses a communal bathroom and shower. However, many bases provide housing for senior enlisted and officers, and in fact commanders and senior staff are often required to live on base.

Table 5 shows that including the value of government-owned housing as part of the compensation package narrows the apparent gap in compensation between those receiving BAH and those who receive government-owned housing in lieu of BAH—in some cases eliminating the gap entirely. This is our most complete view of how the different populations fare under the current compensation system in terms of the total value of their take-home compensation and housing.

However, the total value of pay and housing for single, junior enlisted personnel remains significantly lower because they are the only Service members to receive a substantial housing benefit. The calculated magnitude of the gap reported in Table 5 reflects the low valuation assigned to government-owned housing in our calculations.

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<sup>24</sup> Service members who live on base in privatized housing are provided BAH, but their allowance is paid by allotment to the landlord. Thus, these Service members are counted among the BAH recipients.

**Table 4. Numbers of Personnel Receiving and Not Receiving BAH by Category**

	Receiving BAH		Not Receiving BAH	
	Single	Married	Single	Married
O-10	0	33	1	2
O-9	3	140	6	0
O-8	2	297	5	2
O-7	6	426	10	2
O-6	335	10,895	363	84
O-5	1,217	25,618	1,213	86
O-4	4,029	38,040	2,466	115
O-3	21,428	47,900	5,062	207
O-2	16,175	11,399	1,997	273
O-1	15,934	5,252	3,002	1,150
Officers	59,129	140,000	14,125	1,921
W-5	34	746	22	1
W-4	97	2,565	82	4
W-3	181	5,017	167	17
W-2	535	6,070	254	29
W-1	320	2,048	107	57
Warrant	1,167	16,446	632	108
E-9	384	9,578	346	20
E-8	1,121	24,531	928	52
E-7	5,696	83,326	4,065	155
E-6	21,218	133,717	9,876	397
E-5	60,010	127,835	32,354	8,962
E-4	62,315	73,601	82,481	18,979
E-3	31,161	21,973	116,426	20,247
E-2	7,916	2,951	57,793	6,100
E-1	3,977	1,236	47,420	2,661
Enlisted	193,798	478,748	351,689	57,573
Total	254,094	635,194	366,446	59,602

**Table 5. Average Annual After-Tax Income of Military Personnel by Category Including the Estimated Value of Government-Provided Housing**

	Receiving BAH		Not Receiving BAH			
	Single	Married	Without Value of Housing		With Value of Housing	
			Single	Married	Single	Married
O-10	179,303	194,655	150,659	160,683	179,303	194,655
O-9	178,203	193,392	149,752	159,648	178,203	193,392
O-8	172,693	187,118	144,049	153,146	172,693	187,118
O-7	154,583	167,943	125,939	133,971	154,583	167,943
O-6	137,216	149,076	108,788	116,388	137,216	149,076
O-5	116,335	128,236	89,899	96,976	116,335	128,236
O-4	102,643	111,629	77,419	83,081	102,643	111,629
O-3	84,365	92,308	61,926	67,555	79,877	92,308
O-2	69,676	74,348	50,194	52,953	61,883	65,790
O-1	54,954	59,746	37,510	40,065	44,487	51,873
W-5	111,941	118,963	87,883	94,904	111,941	118,963
W-4	98,147	106,870	75,671	81,094	98,147	106,870
W-3	86,121	93,167	64,641	68,567	86,121	93,167
W-2	74,478	80,203	54,294	56,815	74,478	80,203
W-1	64,745	70,944	49,385	51,240	64,745	70,944
E-9	93,291	101,821	71,211	75,841	93,291	101,821
E-8	79,613	85,641	58,435	61,331	79,613	85,641
E-7	71,543	77,162	51,887	53,894	71,543	77,162
E-6	62,726	67,912	43,514	45,172	62,726	67,912
E-5	54,217	57,911	36,025	37,523	50,579	53,833
E-4	45,480	50,358	30,372	31,734	39,436	42,909
E-3	41,706	46,792	26,418	27,676	32,533	39,146
E-2	40,734	43,733	25,002	26,057	25,002	36,663
E-1	35,902	40,920	22,186	22,896	22,186	33,711



### 3. Analysis of a Baseline Salary System

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#### A. Baseline Assumptions

This paper follows the guidance of Congress in requiring that any salary system should not appreciably alter the cost of military compensation to the Federal Government. From a cash flow perspective, moving to a salary system involves shifting funds from tax-free allowances to basic pay (BP). Merely redistributing current amounts spent on allowances as basic pay would leave Service members in aggregate with substantially less take-home pay because the additional basic pay would be taxable. Cost to the Federal Government would be reduced because of the extra tax flow from Service members to the Government. Neutralizing the system and avoiding the transfer from Service members (paying more taxes) to the Federal Government (collecting more taxes) requires that basic pay be increased by more than current expenditures on allowances. Of course, the DoD budget would have to be increased to finance the new system.

The shift toward taxable compensation also has implications for the states. Twenty states have no income tax for military personnel, while sixteen exempt at least some military earnings. The remaining states tax military earnings in full. When Service members move to a new state, they may choose whether to change their state of legal residence. Many Service members move to states that do not tax military earnings and choose to make those states their legal residences. As a result, DMDC data show that the average state tax rate for military personnel is only 1.7 percent, which is the value we use in our analyses. The states that tax military earnings would experience an increase in collections under a shift to a salary system. Viewed from a Service member's perspective, the requirement to pay state taxes as well as federal taxes implies that a given redistribution of tax-free allowances to BP results in lower take-home pay compared to a hypothetical world in which all state taxes were zero.<sup>25</sup>

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<sup>25</sup> Service members in states that do not tax military income will fare better under a salary system than personnel in other states. As a result, some personnel would likely move to these tax-free states and establish them as their homes of record. This behavior would somewhat reduce the average state tax rate paid by military personnel.

For DoD to keep Service members unharmed, the boost in BP must be large enough to compensate not only for the incremental federal taxes that they now must pay, but also the incremental state taxes. However, such an increase in Service member pay would result in an overall increase of compensation cost to the Federal Government. Because the congressional guidance precludes such an increase, the salary systems that we consider would result in a net decrease in compensation to Service members.

We analyze several possible single-salary systems. They largely differ according to how the extra expenditures on basic pay are distributed among various categories of Service members: those with and without dependents, those in different pay grades, and those who are currently eligible for the basic allowance for housing versus those who are not. The baseline analysis presented in this chapter assumes that the basic pay of all Service members will increase by the same percentage. This is a reasonable assumption because it maintains the current percent differences in pay across ranks. We subsequently consider various modifications to the pay structure to adjust for problems with the baseline that are identified in our analysis.

## **B. Computational Methodology**

Our initial goal is to calculate how much basic pay will increase in the baseline salary system. We do this by iteration, first calculating the cost to the Government under the current system and then calculating the cost under baseline salary systems with different percentage increases in basic pay (“pay multiples”). We then can identify the pay multiple that keeps cost constant.

We disaggregate before-tax pay in Table 3 into basic pay, allowances (BAH and BAS), government TSP contributions, federal taxes, and state taxes. We apply the population information in Table 4 to the before-tax income information to calculate the cost of the current system to the DoD: take-home pay plus federal and state taxes. Cost to the Government subtracts out federal taxes. In all our salary system cases, BAH and BAS are removed, saving the Government money. In the baseline case, basic pay is then increased by the same multiple for all pay grades.

Increasing basic pay increases many Service members’ federal tax rates. Because tax rates are a complex non-linear function of many variables, we cannot solve for the cost-neutral multiplier as a function of those variables. However, keeping those variables constant, the net cost to the Federal Government is an increasing function of the basic pay multiple. Therefore, there is a unique cost-neutral basic pay multiple, and we can use a simple optimization procedure to compute it:

1. Begin at an arbitrary basic pay multiple.
2. Evaluate the net cost to the Federal Government at the multiple.

3. If the cost is the same as the current cost (within some tolerance), stop—the multiple is cost-neutral.

Otherwise, continue with step 4.

4. If the cost exceeds the current cost, decrease the multiple, and vice versa.
5. Return to step 2.

### **C. Take-Home Pay under the Baseline Salary System**

Following the procedure just described, we find that a 53.9 percent increase in basic pay under a salary system would yield a cost to the Federal Government equal to that of the current system. The result of these calculations is displayed in Table 6.

In addition, taxable income would rise by \$30 billion, pushing some Service members into higher tax brackets. In addition, the average federal income tax rate would increase from 15.1 percent to 17.9 percent.

Starting with current average basic pay, we estimated average tax liabilities by pay grade and marital status. We based these estimations on information on the marginal tax structure from the 2019 tax data table in the DoD Compensation Green Book.<sup>26</sup> We applied the same methodology to estimate the increased tax liabilities associated with the new level of basic pay under the baseline salary system.

The cost of the compensation system to DoD includes basic pay, allowances, TSP contributions, and DoD's FICA contribution. All payments to the federal treasury (federal income tax payments, individual contributions to FICA, and DoD FICA contributions) are removed from the cost to DoD to calculate cost to the Federal Government. Take-home pay equals cost to the Federal Government (outlays net of federal taxes) minus state taxes. By construction we have kept the cost to the Federal Government constant. However, by increasing the amount of taxable pay, we have increased state taxes by roughly \$600 million. Therefore, our baseline salary system would reduce the total take-home pay of Service members by the same amount.

Figure 3 shows the percentage changes in take-home pay by rank, dependent status, and BAH status. These calculations do not include any imputed value of government-provided housing to those not receiving BAH.

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<sup>26</sup> *Compensation Greenbook*, "Selected Military Compensation Tables," Office of the Under Secretary of Defense (Personnel and Readiness), January 1, 2019, A4, <https://militarypay.defense.gov/Portals/3/Documents/Reports/GreenBook%202020.pdf?ver=2020-05-06-170512-543>.

Our calculations reveal that people not receiving BAH gain substantially. This result is hardly surprising, because BAH recipients lose an important element of compensation under a salary system whereas non-BAH personnel do not.

Among BAH recipients, officers tend to gain while enlisted personnel in ranks below E-7 have particularly severe losses. This disparity occurs because allowances are a smaller portion of total compensation for higher ranking personnel. Compensating for this asymmetry will be addressed in the next chapter.

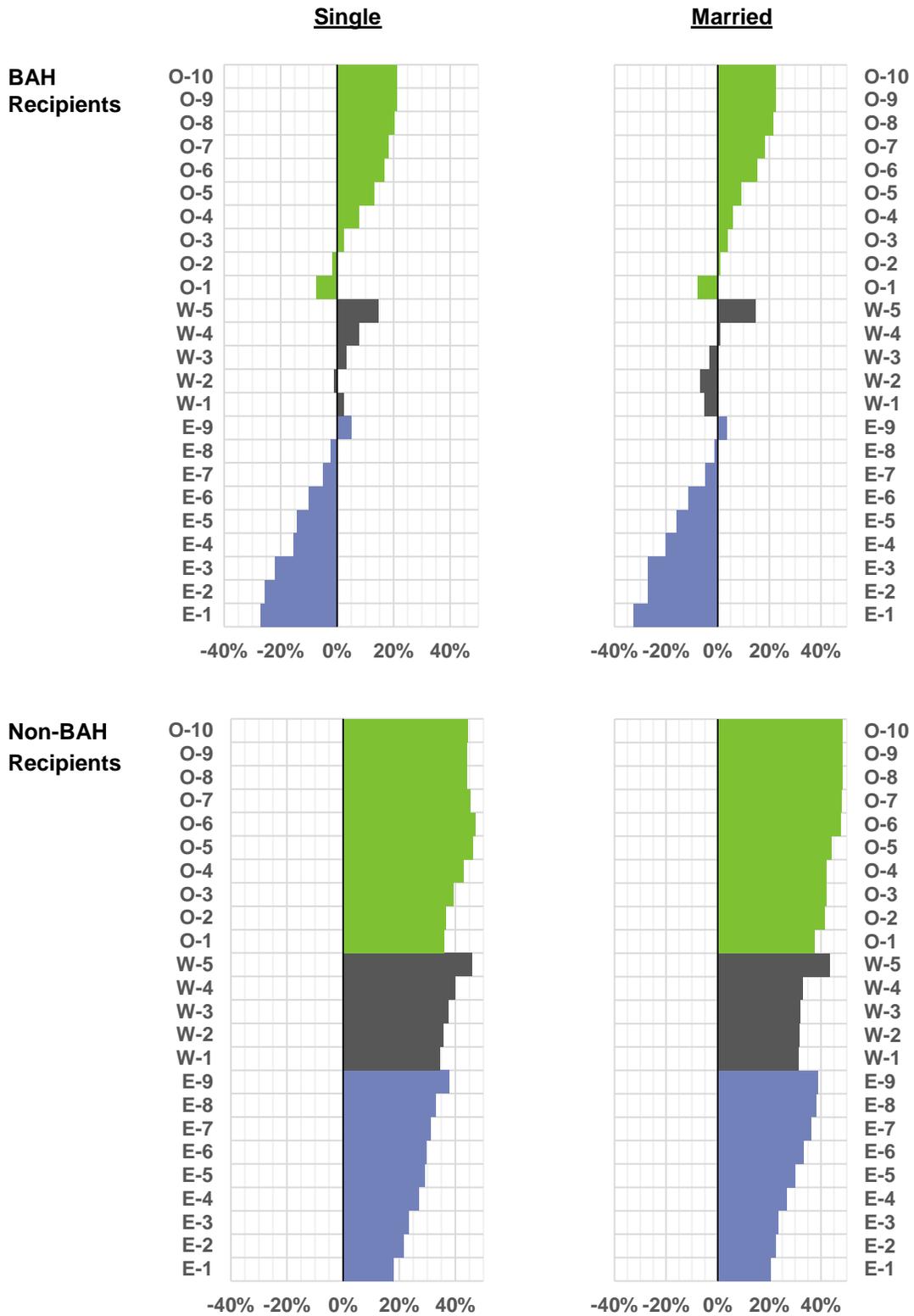
**Table 6. Composition of DoD Payments under Current and Baseline Salary Systems (\$Bil)**

		<b>Current System</b>	<b>Baseline Salary System, Multiple = 1.539</b>
	Basic pay	55.8	85.8
	BAH	19.0	
	BAS	5.5	
	TSP contribution	2.8	4.3
	Employer FICA <sup>a</sup>	4.3	6.6
	<b>Cost to DoD</b>	<b>87.3</b>	<b>96.7</b>
Less	Employer FICA <sup>b</sup>	4.3	6.6
Less	Employee FICA	4.3	6.6
Less	Federal income tax	4.0	8.7
	<b>Cost to Government</b>	<b>74.8</b>	<b>74.8</b>
Less	State income tax	0.9	1.5
	<b>After-tax/take-home pay</b>	<b>73.9</b>	<b>73.3</b>

<sup>a</sup> FICA refers to the Federal Insurance Contributions Act, which mandates payroll taxes to fund Social Security and Medicare.

<sup>b</sup> A definitional issue arises concerning government FICA contributions, which we have excluded from our calculations of cost to the Government. This approach is consistent with the treatment cited in Congressional Budget Office, *CBO's Long-Term Projections for Social Security*, Additional Information, December 2016. Footnote 4 on page 2 of the document states that the Federal Government contributed \$17 billion as the employer's share of the payroll tax for federal workers, but that such funds are recorded as offsetting receipts rather than revenues because they are from intragovernmental transfers. We conclude that because these funds are not treated as revenues to the trust funds, they should not be treated as costs to the Government for the purposes of our analysis.

Of course, there would be substantial variation within our broad categories. Service members with low federal tax rates (for example, those who are married with little spousal income, have dependents, and own their own homes rather than renting) will be advantaged over those with higher tax rates, because they will all receive make-up payments based on an average taxation rate.



Note: The value of government-owned housing is not included in take-home pay.

**Figure 3. Percent Changes in Take-Home Pay Under the Baseline Salary System**

## D. Spousal Earnings

The Council of Economic Advisors' 2018 report, *Military Spouses in the Labor Market*, presents information on the earnings of military spouses.<sup>27</sup> Almost 88 percent of all military spouses are not military personnel. Although military spouses are somewhat better educated than other Americans, they are less likely to participate in the labor force—57 percent compared to 76 percent in the general population. Also, military spouses earn an average of 27 percent less than their civilian counterparts.

Because no data are available on spousal income by rank,<sup>28</sup> it is difficult to provide detailed estimates of the effect of spousal income on after-tax income for married people for the 27 ranks and either BAH or non-BAH recipients. However, average data on earnings for all women workers are available in the Bureau of Labor Statistics report, *Highlights of Women's Earnings in 2018*.<sup>29</sup> We expect that the ratio of spousal earning to Service member pay is similar for all ranks. Therefore, we are comfortable that the major insights of this report are independent of spousal income. (Of course, our expectation is unverified and it would be good to incorporate better data if they were available.)

Variation in spousal earnings among individuals of the same rank and BAH status will lead to differences in the incentives facing Service members and, thus, to differences in their likely reactions to a salary system.

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<sup>27</sup> *Military Spouses in the Labor Market*, Council of Economic Advisors, May 2018, <https://www.whitehouse.gov/wp-content/uploads/2018/05/Military-Spouses-in-the-Labor-Market.pdf>.

<sup>28</sup> The Joint Committee on Taxation (JCT) produces estimates of so-called “tax expenditures”—the costs to the U.S. Government due to non-taxability of certain transactions such as receipt of BAH. However, JCT has extraordinary access to tax records from the Internal Revenue Service. See Joint Committee on Taxation, *Estimates of Federal Tax Expenditures for Fiscal Years 2019-2023*, Table 1, panel on National Defense, <https://www.jct.gov/publications.html?func=startdown&id=5238>.

<sup>29</sup> *Highlights of Women's Earnings in 2018*, Bureau of Labor Statistics, November 2019, <https://www.bls.gov/opub/reports/womens-earnings/2018/home.htm>.



## 4. Salary System with Tailored Increases in Basic Pay That Vary by Rank

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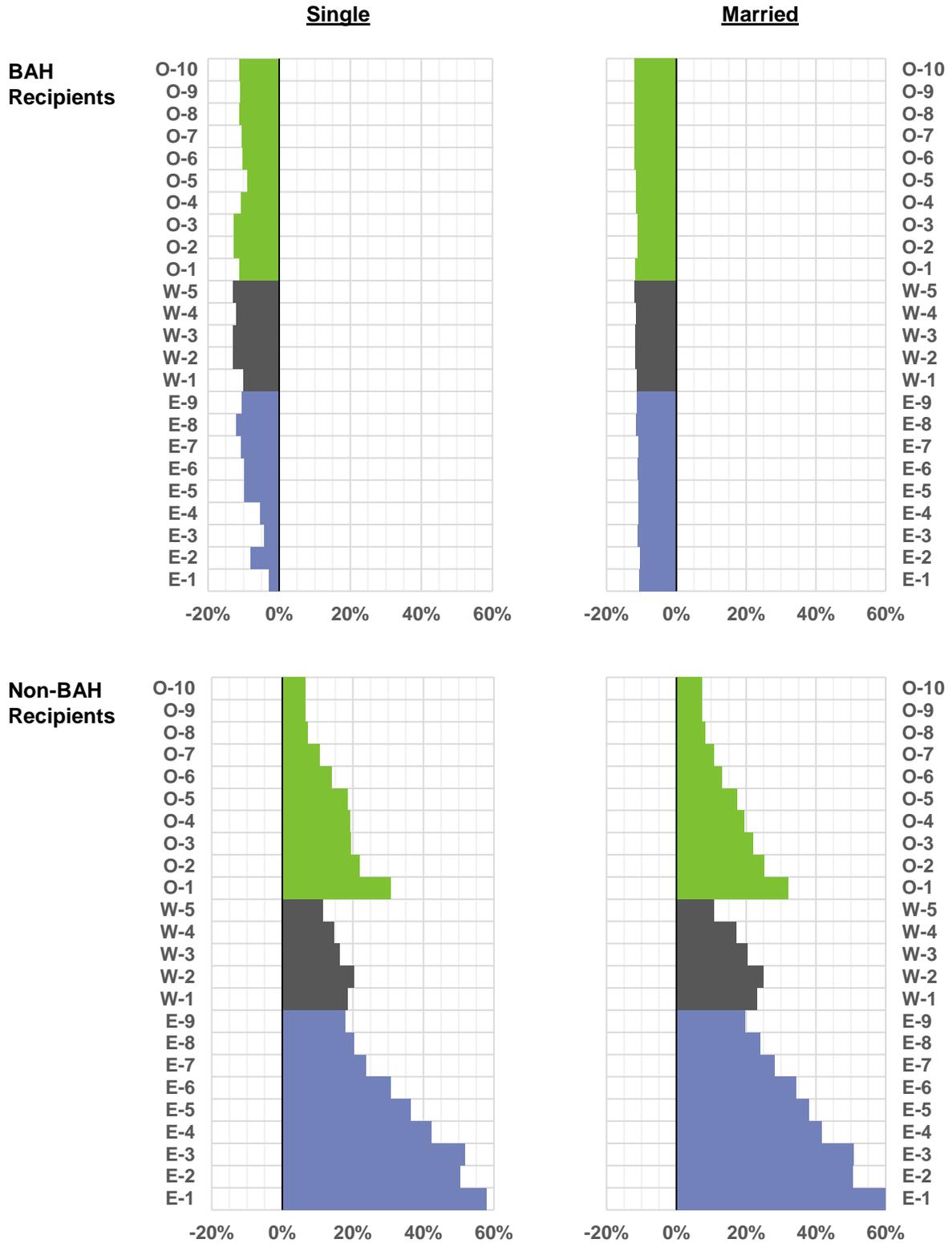
The discrepancies across ranks seen among BAH recipients in Table 5 are due to the design of the baseline salary system that increases basic pay by the same percentage for all Service members. The baseline case affects junior married personnel most because BAH accounts for a larger fraction of their total compensation. The philosophy of salary systems requires that people be paid the same amount regardless of family status. However, the percentage increase in basic pay can still vary by rank in a way that reduces the variation of inter-rank changes in take-home pay.

We derived a tailored set of basic-pay multiples that strive to equate the percentage changes in take-home pay for all married personnel receiving BAH. The multiples are shown in Table 7. Other tailoring options are possible; however, we chose this one because most BAH recipients are married. It is not possible to equalize take-home pay changes for single and married BAH recipients in a pay grade because of differences in BAH levels.

**Table 7. Tailored Basic Pay Multiples That Roughly Equalize Percentage Change in Take-Home Pay for All Ranks of Married BAH Recipients**

<b>Pay Grade</b>	<b>Tailored Multiple</b>	<b>Pay Grade</b>	<b>Tailored Multiple</b>	<b>Pay Grade</b>	<b>Tailored Multiple</b>
O-10	1.10	W-5	1.18	E-9	1.30
O-9	1.10	W-4	1.25	E-8	1.37
O-8	1.11	W-3	1.28	E-7	1.44
O-7	1.14	W-2	1.35	E-6	1.55
O-6	1.17	W-1	1.34	E-5	1.64
O-5	1.25			E-4	1.74
O-4	1.28			E-3	1.91
O-3	1.30			E-2	1.92
O-2	1.36			E-1	2.09
O-1	1.47				

Figure 4 shows a tailored salary system largely eliminates discrepancies across ranks in the percentage losses in take-home pay faced by married BAH recipients, the largest element of the force.



Note: The value of government-owned housing is not included in take-home pay.

**Figure 4. Percent Changes in Take-Home Pay Under a Salary System with Tailored Increases in Basic Pay That Vary by Rank**

We observe that, compared to the current system, those receiving BAH lose an average of 10 percent under the tailored salary system. Compared to the baseline, the distribution of losses is more evenly distributed.

Earlier, Table 5 implied that when the value of government-provided housing is counted for at least some categories of personnel, non-BAH recipients currently receive take-home compensation comparable to their BAH-receiving peers. Under a salary system, even a tailored one, the compensation of non-BAH personnel exceeds that of their peers by a considerable amount; Table 8 illustrates this point.

Using Table 8 as an example, consider the situation for E-3 personnel. If we accept that the value of their government-provided housing is less than BAH, the current system treats them worse than their BAH-receiving colleagues. Under the salary systems they would do better than BAH recipients. The benefit to E-3 personnel is greater when we tailor the basic pay multiple by pay grade. Doing so avoids giving disproportionate increases in benefits to senior personnel that the baseline salary system would entail. However, this approach introduces a different inequity. Service-members in government-owned housing would receive the same higher basic pay as previous BAH recipients, and they would still receive value in the form of their rent-free housing. In the next chapter, we address the distributional effect of charging rent.

**Table 8. After-Tax Income of Military Personnel by Category, Including the Estimated Value of Government-Provided Housing under Different Systems (\$K)**

	<u>Single</u>						<u>Married</u>					
	<u>Current</u>	<u>BAH Baseline</u>	<u>Tailored</u>	<u>Current</u>	<u>Non-BAH Baseline</u>	<u>Tailored</u>	<u>Current</u>	<u>BAH Baseline</u>	<u>Tailored</u>	<u>Current</u>	<u>Non-BAH Baseline</u>	<u>Tailored</u>
O-10	\$179,303	\$217,306	\$160,436	\$179,303	\$245,950	\$189,080	\$194,655	\$238,385	\$172,356	\$194,655	\$272,357	\$206,328
O-9	\$178,203	\$215,968	\$159,480	\$178,203	\$244,420	\$187,932	\$193,392	\$236,832	\$171,246	\$193,392	\$270,576	\$204,990
O-8	\$172,693	\$207,561	\$154,505	\$172,693	\$236,205	\$183,149	\$187,118	\$227,071	\$165,675	\$187,118	\$261,043	\$199,647
O-7	\$154,583	\$182,771	\$139,137	\$154,583	\$211,415	\$167,781	\$167,943	\$198,288	\$148,481	\$167,943	\$232,260	\$182,453
O-6	\$137,216	\$160,037	\$123,866	\$137,216	\$188,465	\$152,294	\$149,076	\$171,892	\$131,688	\$149,076	\$204,580	\$164,376
O-5	\$116,335	\$131,427	\$106,445	\$116,335	\$157,863	\$132,881	\$128,236	\$139,690	\$113,828	\$128,236	\$170,950	\$145,088
O-4	\$102,643	\$110,574	\$92,218	\$102,643	\$135,798	\$117,442	\$111,629	\$118,061	\$99,224	\$111,629	\$146,609	\$127,772
O-3	\$84,365	\$86,263	\$73,967	\$79,877	\$104,214	\$91,918	\$92,308	\$95,910	\$82,470	\$92,308	\$120,663	\$107,224
O-2	\$69,676	\$68,547	\$61,135	\$61,883	\$80,236	\$72,824	\$74,348	\$74,852	\$66,288	\$65,790	\$87,689	\$79,124
O-1	\$54,954	\$50,944	\$49,038	\$44,487	\$57,921	\$56,015	\$59,746	\$55,122	\$52,893	\$51,873	\$66,931	\$64,702
W-5	\$111,941	\$128,236	\$97,985	\$111,941	\$152,295	\$122,044	\$118,963	\$136,169	\$105,152	\$118,963	\$160,228	\$129,211
W-4	\$98,147	\$105,842	\$86,720	\$98,147	\$128,318	\$109,196	\$106,870	\$107,676	\$95,053	\$106,870	\$133,452	\$120,829
W-3	\$86,121	\$88,837	\$75,183	\$86,121	\$110,317	\$96,663	\$93,167	\$90,328	\$82,561	\$93,167	\$114,928	\$107,161
W-2	\$74,478	\$73,705	\$65,308	\$74,478	\$93,889	\$85,492	\$80,203	\$74,836	\$71,026	\$80,203	\$98,224	\$94,414
W-1	\$64,745	\$66,332	\$58,465	\$64,745	\$81,692	\$73,825	\$70,944	\$67,301	\$63,084	\$70,944	\$87,005	\$82,788
E-9	\$93,291	\$98,098	\$83,939	\$93,291	\$120,178	\$106,019	\$101,821	\$105,268	\$90,714	\$101,821	\$131,248	\$116,694
E-8	\$79,613	\$77,743	\$70,304	\$79,613	\$98,921	\$91,482	\$85,641	\$84,711	\$76,041	\$85,641	\$109,021	\$100,351
E-7	\$71,543	\$68,022	\$64,227	\$71,543	\$87,678	\$83,883	\$77,162	\$73,427	\$69,078	\$77,162	\$96,695	\$92,346
E-6	\$62,726	\$56,455	\$56,860	\$62,726	\$75,667	\$76,072	\$67,912	\$60,175	\$60,639	\$67,912	\$82,915	\$83,379
E-5	\$54,217	\$46,524	\$49,128	\$50,579	\$61,078	\$63,681	\$57,911	\$48,797	\$51,780	\$53,833	\$65,108	\$68,091
E-4	\$45,480	\$38,549	\$43,193	\$39,436	\$47,614	\$52,258	\$50,358	\$40,207	\$44,981	\$42,909	\$51,382	\$56,155
E-3	\$41,706	\$32,542	\$40,086	\$32,533	\$38,658	\$46,201	\$46,792	\$34,110	\$41,744	\$39,146	\$45,579	\$53,214
E-2	\$40,734	\$30,392	\$37,593	\$25,002	\$30,392	\$37,593	\$43,733	\$31,904	\$39,251	\$36,663	\$42,510	\$49,857
E-1	\$35,902	\$26,191	\$35,001	\$22,186	\$26,191	\$35,001	\$40,920	\$27,597	\$36,631	\$33,711	\$38,412	\$47,446

## 5. Charging Rent for Government-Owned Housing

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Charging rent for government-owned housing could eliminate the asymmetric treatment of Service members living in such housing. Currently, personnel not receiving BAH occupy government-furnished housing and do not pay rent. If after the salary system were adopted they were to pay rent, the cost to the government would be reduced by their rent. In addition, the multiple of BP could be much higher while keeping cost to the Government the same.

As noted in Chapter 2, government-owned quarters vary quite a bit in value. Our assumption, shown in Table 1, is that for higher-ranking officers, enlisted personnel, and all warrant officers, the on-base quarters would rent for roughly the amount of BAH. For the lower-ranking officer and enlisted personnel, the implied rents would be much lower. We have assumed that the quarters provided to single E-1s and E-2s, presumably barracks, would have no value on the open market.

Of course, our assumptions about the value of government-owned housing are arbitrary and require deeper examination before a system of rents for such housing was instituted. However, from our perspective the specifics of market-value rents are less important to this analysis than the impact of a system of charging rents on the distribution of gains and losses associated with a salary system.

We calculate that if non-BAH recipients had to pay rent, the level of basic pay that would keep Government cost the same as it now would be 62.6 percent above its current level. This percentage assumes that occupants of government-provided housing would pay rents equal to our assumed values of their quarters. By contrast, our earlier analysis derived a smaller increase of 53.9 percent without the introduction of rent for government-owned housing.

When rents are charged, Figure 5 shows the impact of the baseline salary system, where all ranks receive a 63 percent increase in basic pay. BAH recipients suffer smaller losses in take-home pay because of the larger basic pay increase. On the other hand, non-recipients see smaller gains because they now pay rent.

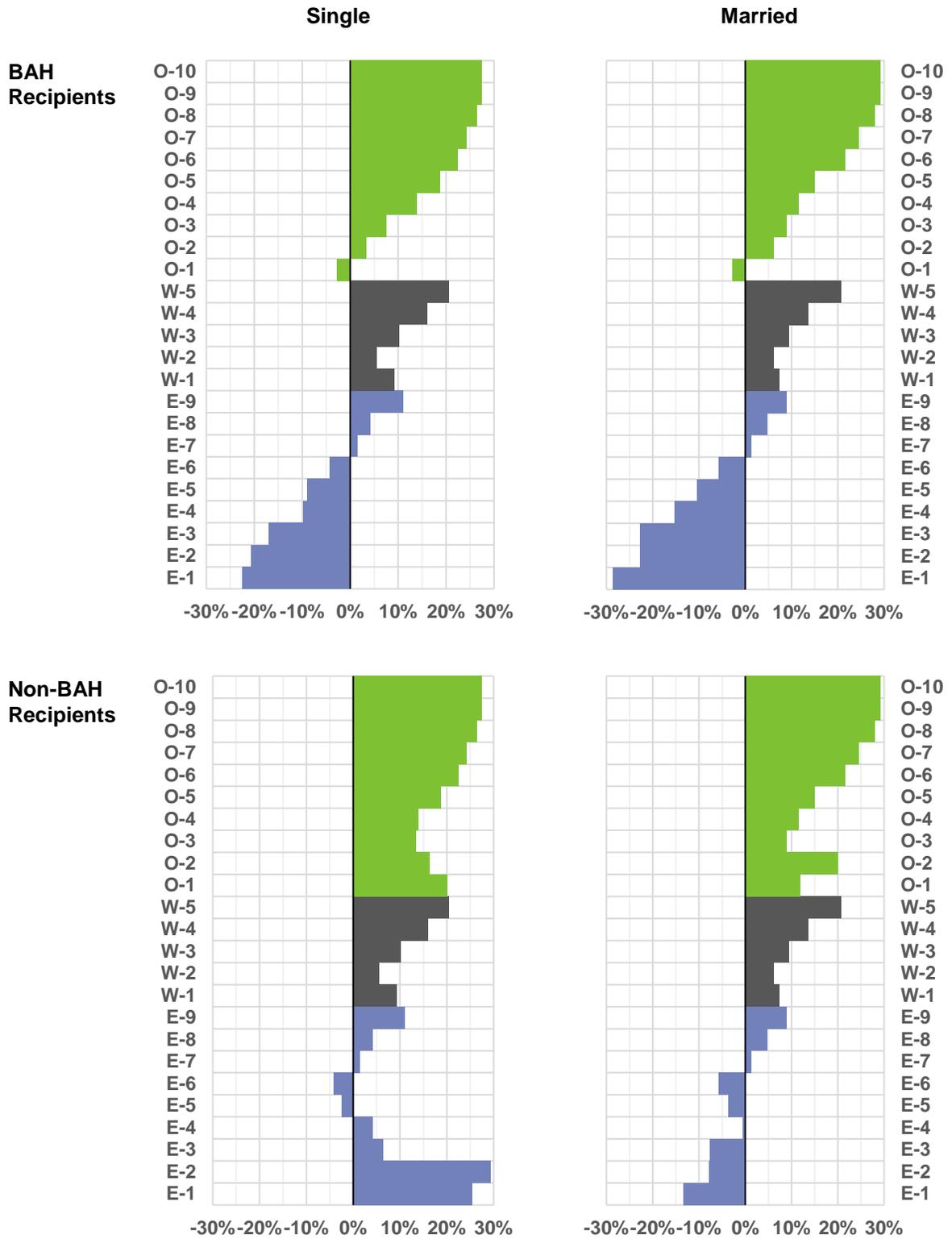


Figure 5. Percentage Changes in Take-home Pay under the Baseline System, with Rental Payment

Under this alternative, junior BAH recipients suffer the largest losses, while others gain. As in Chapter 4, this disparity occurs because BAH is a larger fraction of their total compensation in the current system. In addition, the larger cash payment does not compensate them as well for the loss of their tax advantage. To adjust for this, we reintroduce basic pay increases tailored to largely eliminate variation in changes in take-home pay among different categories of married BAH recipients.

Table 9 is analogous to Table 7, showing the basic pay multiples associated with every pay grade under the tailored salary system with rents charged to occupants of government-provided housing.<sup>30</sup>

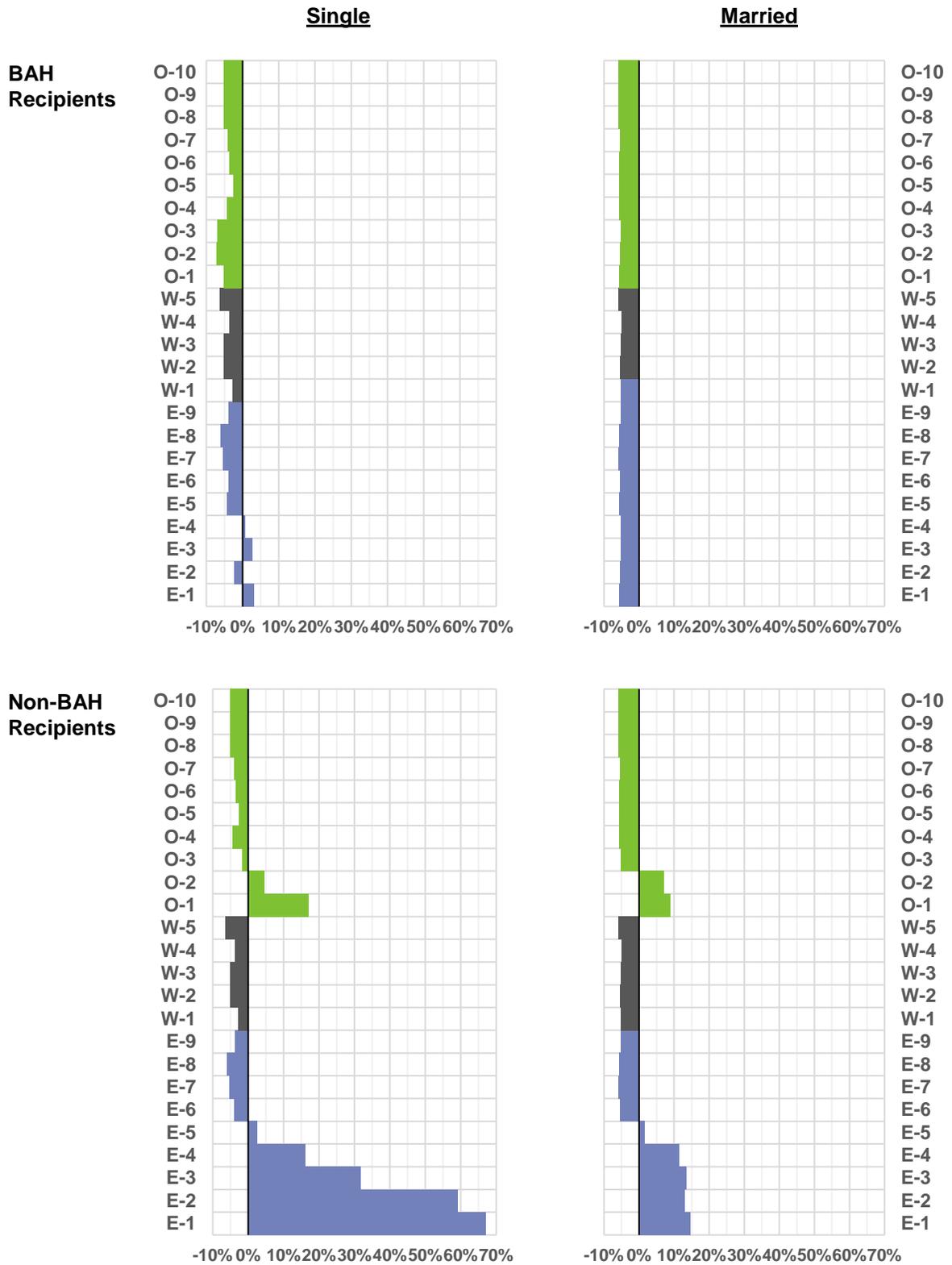
**Table 9. Tailored Basic Pay Multiples that Roughly Equalize Percent Change in Take-Home Pay for All Ranks of Married BAH Recipients in a Salary System with Rental Payments**

<b>Pay Grade</b>	<b>Tailored Multiple</b>	<b>Pay Grade</b>	<b>Tailored Multiple</b>	<b>Pay Grade</b>	<b>Tailored Multiple</b>
O-10	1.20	W-5	1.29	E-9	1.44
O-9	1.20	W-4	1.37	E-8	1.49
O-8	1.21	W-3	1.41	E-7	1.55
O-7	1.25	W-2	1.47	E-6	1.67
O-6	1.28	W-1	1.46	E-5	1.76
O-5	1.36			E-4	1.88
O-4	1.41			E-3	2.08
O-3	1.43			E-2	2.08
O-2	1.49			E-1	2.21
O-1	1.63				

The results of this calculation are shown in Figure 6. Compared to Figure 5, the change is dramatic. Most pay grades experience much smaller changes in take-home pay. However, the losses for most would not be negligible. Although the specifics vary by rank, on average married BAH recipients face larger losses than single BAH recipients—5.5 percent versus 2.5 percent. This difference is driven by moving from a system where married personnel get higher compensation to one where they do not.

Only junior enlisted personnel who live in government-owned housing gain substantially. However, Table 5 showed that, under our assumptions about the value of government-owned housing, they are worse off relative to the vast majority of personnel who receive a valuable housing benefit under the current system.

<sup>30</sup> These multiples are influenced by the assumptions about the value of government-owned housing. For example, if the values used are too low for junior personnel, the amount of rent income available to increase basic pay will actually be greater and the multiples will be higher.



**Figure 6. Changes in Take-home Pay (including the Value of Government-Provided Housing) in a Salary System with Rental Payments and Tailored Increases in Basic Pay That Vary by Rank**

In a salary system that charges rent to occupants of government-owned housing, the take-home pay (including the value of such housing) is the same for BAH recipients as for non-recipients of any given rank. Both groups receive the same basic pay. Former BAH recipients give up BAH and get higher BP. Residents of government-owned housing also get the higher BP, but now the net value of living in government housing is zero because they have to pay for it at a market rate. Both groups receive net take-home pay equal to basic pay plus the government TSP contribution minus taxes. Introducing rents eliminates the difference in compensation between occupants of government-owned housing and other Service members, which has been noted as a source of serious differences in compensation throughout this paper.

However, a salary system with rent would have very different impacts on different parts of the force. This system would eliminate parts of the current compensation system designed to reward continued service, support military families, and compensate members for anticipated costs of military living. Overall, married members would fare worse than single members, BAH recipients would fare far worse than junior residents of government-owned housing, and mid-grade officers and senior enlisted would fare far worse than junior officers and junior enlisted. Moreover, the marriage transfer would average about \$2,000 for officers O-1 to O-6 and more than \$3,000 for enlisted members E-1 to E-6. The BAH transfer would average about \$6,000 for officers O-1 to O-3 and more than \$8,000 for enlisted members E-1 to E-5. Further, the transfer from mid-grade officers (O-4 to O-6) to junior officers (O-1 to O-3) would average almost \$7,000, and the transfer from senior enlisted (E-5 and E-6) to junior enlisted (E-1 to E-4) would average almost \$5,000. The losers in these income transfers would most likely feel that the change was unfair.

Moreover, even beyond the distributional effects of a salary system, some Service members could object to having to pay rent for on-base housing, particularly if they do not have a choice about where they live. As we show later in Chapter 9, we asked Service members participating in focus groups how they thought people might respond to a requirement to pay rent for on-base housing if a salary system were implemented. Across the enlisted force and officer communities, regardless of rank or component, participants expressed mostly negative views about a potential requirement to pay rent for on-base housing.

Finally, because total cost to the Government has been held constant at \$74.7 billion throughout our analysis, total take-home pay to all military personnel is lower under all of our alternatives than it is under the current system. Taken together, the overall reduction in compensation and the transfers between various categories of the force are likely to be perceived as unfair. This perception could be expected to impact retention adversely.



## 6. Comparing Alternative Compensation Systems

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### A. Summary of Distributional Analyses

Table 10 and Table 11 summarize our analysis of the distributional effects of alternative compensation systems for single and married military personnel, respectively. From a fairness perspective, the system of rank-specific multiples with rent payments for government-owned housing impacts military compensation significantly less than other systems we considered, although that impact may still be significant. It changes take-home pay by a smaller amount for most categories of personnel while eliminating the differences between those who live in government-provided housing and others. Even so, some ranks and categories—and some individuals within ranks and categories—would fare considerably better or worse than others. Those who are disadvantaged by the new system are likely to see it as unfair.

Figure 7 and Figure 8 show how the level and composition of annual compensation varies across the alternative systems we analyzed for E-4s and O-3s. The gray-scale portions of the bars represent basic pay, and the colored portions represent other parts of military pay. The lengths of the bars represent total annual compensation, including the value of government-owned housing. The portions of the bars below zero represent the part of basic pay that Service members pay to governments in the form of taxes and rent for government-owned housing. The height of the bars above zero shows annual take-home pay, including the remainder of basic pay after paying taxes and rent for government-owned housing, TSP contributions from the Government, and the value of government-provided housing. In the current system, a large fraction of compensation of the E-4s receiving BAH consists of allowances. This percentage is somewhat less so for the O-4s.

Of course, under the salary systems there are no allowances, and basic pay would be increased to compensate for the difference. Taxes, which are shown below the line, increase in all cases for the salary systems. Major takeaways of the comparative analysis illustrated by Table 10, Table 11, Figure 7, and Figure 8 include the following:

- If Government spending is not allowed to increase, the total take-home compensation of military personnel would fall under a salary system due to increases in state taxes associated with higher basic pay. The two criteria specified by Congress, that compensation not fall and that cost to the Government not rise, cannot be satisfied simultaneously.

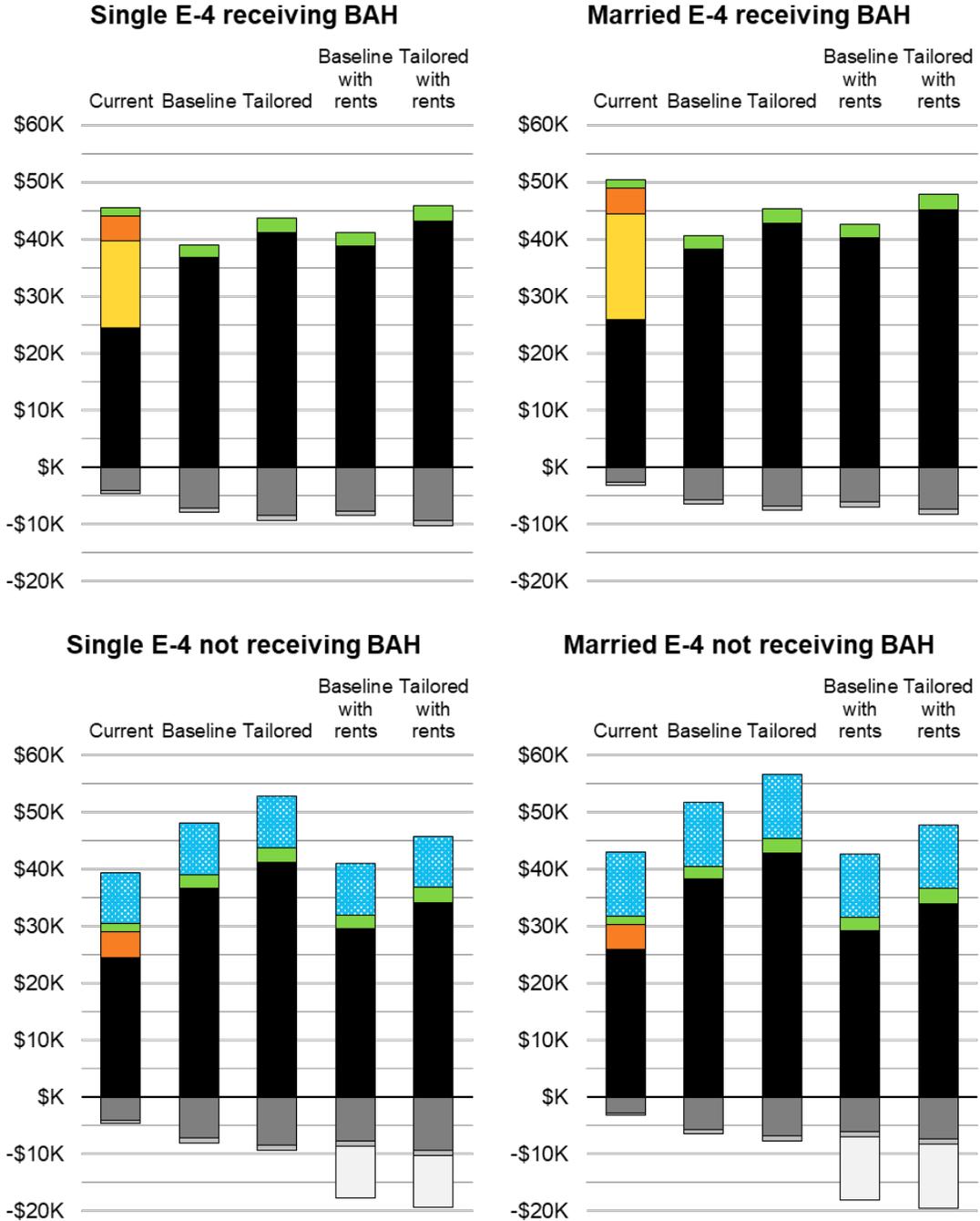
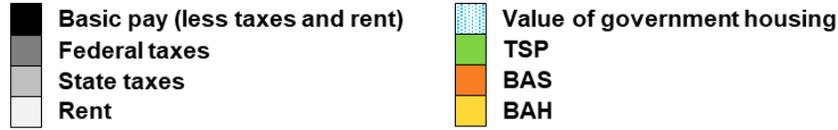
- Under the current system, personnel not receiving BAH have lower total compensation than BAH recipients, especially junior personnel. This disparity is only partially mitigated by the value of Government housing received under the assumptions we used to determine the valuation.
- When people in government-owned housing are not charged rent, they benefit from a salary system at the expense of other Service members. They get free housing and the others do not, while everyone in a given rank and years of service gets the same basic pay.
- The baseline systems, with the same salary system multiple for all ranks, favor senior personnel more than the current system.
- The tailored systems reduce discrepancies among BAH recipients, particularly married ones.
- Charging market rents for government-owned housing eliminates the unequal gains Service members in such housing receive under a salary system.
- A tailored salary system with market rents largely equalizes compensation within a pay grade regardless of marriage status and occupancy of government-owned housing. Remaining differences are due to factors like marriage-based differences in tax rates, the extent to which individuals are pushed into higher tax brackets, and the relevance of state taxes.
- Even in a tailored salary system with rents, the degree of gains and losses would vary across elements of the Service population. For example, married BAH recipients would have their compensation reduced by 5.5 percent, while single BAH recipients would lose 2.5 percent. This discrepancy is a necessary consequence of moving to a system that does not differentially compensate Service members with dependents.
- The tabulations we presented are averages for the rank, BAH status, and dependency status categories. Changes in compensation would also vary with individual circumstances. Service members with low federal tax rates (for example, those who are married, have dependents, and own their own homes) would be advantaged over those with higher tax rates, because they would all receive make-up payments based on an average taxation rate. On the other hand, the additional basic pay of Service members with high-earning spouses would be taxed more heavily.

**Table 10. Take-Home Pay of Single Military Personnel (including the value of government-provided housing) under Alternative Compensation Systems**

	<u>BAH</u>					<u>Non-BAH</u>				
	<u>Current</u>	<u>Baseline</u>	<u>Tailored</u>	<u>Baseline with Rents</u>	<u>Tailored with Rents</u>	<u>Current</u>	<u>Baseline</u>	<u>Tailored</u>	<u>Baseline with Rents</u>	<u>Tailored with Rents</u>
O-10	\$179,303	\$217,306	\$160,436	\$228,572	\$170,037	\$179,303	\$245,950	\$189,080	\$228,572	\$170,037
O-9	\$178,203	\$215,968	\$159,480	\$227,159	\$169,017	\$178,203	\$244,420	\$187,932	\$227,159	\$169,017
O-8	\$172,693	\$207,561	\$154,505	\$218,277	\$163,789	\$172,693	\$236,205	\$183,149	\$218,277	\$163,789
O-7	\$154,583	\$182,771	\$139,137	\$192,085	\$148,410	\$154,583	\$211,415	\$167,781	\$192,085	\$148,410
O-6	\$137,216	\$160,037	\$123,866	\$168,066	\$132,346	\$137,216	\$188,465	\$152,294	\$168,066	\$132,346
O-5	\$116,335	\$131,427	\$106,445	\$138,188	\$113,429	\$116,335	\$157,863	\$132,881	\$138,188	\$113,429
O-4	\$102,643	\$110,574	\$92,218	\$116,901	\$98,121	\$102,643	\$135,798	\$117,442	\$116,901	\$98,121
O-3	\$84,365	\$86,263	\$73,967	\$90,668	\$78,500	\$79,877	\$104,214	\$91,918	\$90,668	\$78,500
O-2	\$69,676	\$68,547	\$61,135	\$72,054	\$64,693	\$61,883	\$80,236	\$72,824	\$72,054	\$64,693
O-1	\$54,954	\$50,944	\$49,038	\$53,456	\$52,074	\$44,487	\$57,921	\$56,015	\$53,456	\$52,074
W-5	\$111,941	\$128,236	\$97,985	\$134,925	\$104,794	\$111,941	\$152,295	\$122,044	\$134,925	\$104,794
W-4	\$98,147	\$105,842	\$86,720	\$113,839	\$94,565	\$98,147	\$128,318	\$109,196	\$113,839	\$94,565
W-3	\$86,121	\$88,837	\$75,183	\$94,963	\$81,647	\$86,121	\$110,317	\$96,663	\$94,963	\$81,647
W-2	\$74,478	\$73,705	\$65,308	\$78,595	\$70,611	\$74,478	\$93,889	\$85,492	\$78,595	\$70,611
W-1	\$64,745	\$66,332	\$58,465	\$70,739	\$62,949	\$64,745	\$81,692	\$73,825	\$70,739	\$62,949
E-9	\$93,291	\$98,098	\$83,939	\$103,615	\$89,717	\$93,291	\$120,178	\$106,019	\$103,615	\$89,717
E-8	\$79,613	\$77,743	\$70,304	\$82,963	\$74,806	\$79,613	\$98,921	\$91,482	\$82,963	\$74,806
E-7	\$71,543	\$68,022	\$64,227	\$72,563	\$67,712	\$71,543	\$87,678	\$83,883	\$72,563	\$67,712
E-6	\$62,726	\$56,455	\$56,860	\$60,076	\$60,305	\$62,726	\$75,667	\$76,072	\$60,076	\$60,305
E-5	\$54,217	\$46,524	\$49,128	\$49,355	\$51,844	\$50,579	\$61,078	\$63,681	\$49,355	\$51,844
E-4	\$45,480	\$38,549	\$43,193	\$41,060	\$45,793	\$39,436	\$47,614	\$52,258	\$41,060	\$45,793
E-3	\$41,706	\$32,542	\$40,086	\$34,631	\$42,839	\$32,533	\$38,658	\$46,201	\$34,631	\$42,839
E-2	\$40,734	\$30,392	\$37,593	\$32,329	\$39,814	\$25,002	\$30,392	\$37,593	\$32,329	\$39,814
E-1	\$35,902	\$26,191	\$35,001	\$27,834	\$37,050	\$22,186	\$26,191	\$35,001	\$27,834	\$37,050

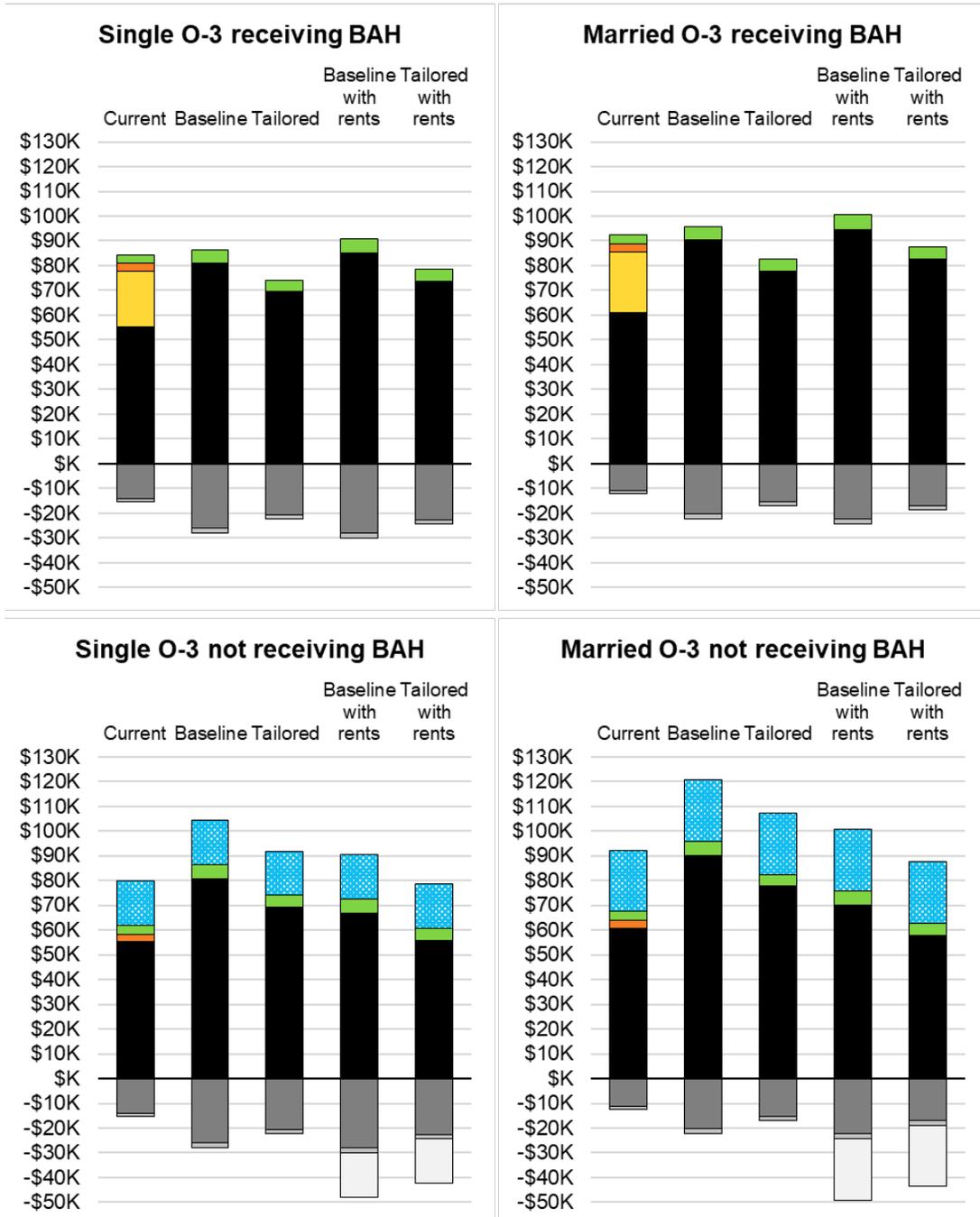
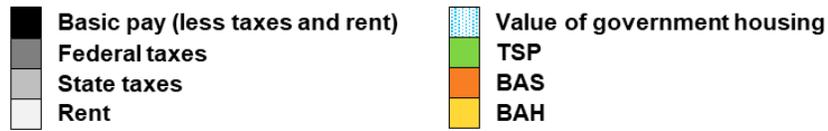
**Table 11. Take-Home Pay of Married Military Personnel (including the value of government-provided housing) under Alternative Compensation Systems**

	<u>BAH</u>					<u>Non-BAH</u>				
	<u>Current</u>	<u>Baseline</u>	<u>Tailored</u>	<u>Baseline with Rents</u>	<u>Tailored with Rents</u>	<u>Current</u>	<u>Baseline</u>	<u>Tailored</u>	<u>Baseline with Rents</u>	<u>Tailored with Rents</u>
O-10	\$194,655	\$238,385	\$172,356	\$251,466	\$183,503	\$194,655	\$272,357	\$206,328	\$251,466	\$183,503
O-9	\$193,392	\$236,832	\$171,246	\$249,825	\$182,319	\$193,392	\$270,576	\$204,990	\$249,825	\$182,319
O-8	\$187,118	\$227,071	\$165,675	\$239,512	\$176,249	\$187,118	\$261,043	\$199,647	\$239,512	\$176,249
O-7	\$167,943	\$198,288	\$148,481	\$209,102	\$158,897	\$167,943	\$232,260	\$182,453	\$209,102	\$158,897
O-6	\$149,076	\$171,892	\$131,688	\$181,214	\$140,738	\$149,076	\$204,580	\$164,376	\$181,214	\$140,738
O-5	\$128,236	\$139,690	\$113,828	\$147,399	\$120,988	\$128,236	\$170,950	\$145,088	\$147,399	\$120,988
O-4	\$111,629	\$118,061	\$99,224	\$124,548	\$105,292	\$111,629	\$146,609	\$127,772	\$124,548	\$105,292
O-3	\$92,308	\$95,910	\$82,470	\$100,596	\$87,650	\$92,308	\$120,663	\$107,224	\$100,596	\$87,650
O-2	\$74,348	\$74,852	\$66,288	\$78,905	\$70,399	\$65,790	\$87,689	\$79,124	\$78,905	\$70,399
O-1	\$59,746	\$55,122	\$52,893	\$58,059	\$56,443	\$51,873	\$66,931	\$64,702	\$58,059	\$56,443
W-5	\$118,963	\$136,169	\$105,152	\$143,679	\$112,135	\$118,963	\$160,228	\$129,211	\$143,679	\$112,135
W-4	\$106,870	\$107,676	\$95,053	\$121,409	\$101,636	\$106,870	\$133,452	\$120,829	\$121,409	\$101,636
W-3	\$93,167	\$90,328	\$82,561	\$102,046	\$88,358	\$93,167	\$114,928	\$107,161	\$102,046	\$88,358
W-2	\$80,203	\$74,836	\$71,026	\$85,184	\$75,973	\$80,203	\$98,224	\$94,414	\$85,184	\$75,973
W-1	\$70,944	\$67,301	\$63,084	\$76,118	\$67,272	\$70,944	\$87,005	\$82,788	\$76,118	\$67,272
E-9	\$101,821	\$105,268	\$90,714	\$110,926	\$96,653	\$101,821	\$131,248	\$116,694	\$110,926	\$96,653
E-8	\$85,641	\$84,711	\$76,041	\$89,710	\$80,760	\$85,641	\$109,021	\$100,351	\$89,710	\$80,760
E-7	\$77,162	\$73,427	\$69,078	\$78,190	\$72,680	\$77,162	\$96,695	\$92,346	\$78,190	\$72,680
E-6	\$67,912	\$60,175	\$60,639	\$64,008	\$64,268	\$67,912	\$82,915	\$83,379	\$64,008	\$64,268
E-5	\$57,911	\$48,797	\$51,780	\$51,831	\$54,658	\$53,833	\$65,108	\$68,091	\$51,831	\$54,658
E-4	\$50,358	\$40,207	\$44,981	\$42,639	\$47,785	\$42,909	\$51,382	\$56,155	\$42,639	\$47,785
E-3	\$46,792	\$34,110	\$41,744	\$36,166	\$44,431	\$39,146	\$45,579	\$53,214	\$36,166	\$44,431
E-2	\$43,733	\$31,904	\$39,251	\$33,809	\$41,393	\$36,663	\$42,510	\$49,857	\$33,809	\$41,393
E-1	\$40,920	\$27,597	\$36,631	\$29,207	\$38,629	\$33,711	\$38,412	\$47,446	\$29,207	\$38,629



The gray-scale portions of the bars represent basic pay. The lengths of the bars represent total annual compensation. The portions of the bars below zero represent the part of basic pay paid to governments in taxes and rent. The heights of the bars above zero show annual take-home pay.

**Figure 7. Composition of Annual Compensation for an E-4 under Each Alternative**



The gray-scale portions of the bars represent basic pay. The lengths of the bars represent total annual compensation. The portions of the bars below zero represent the pay paid to governments in taxes and rent. The heights of the bars above zero show annual take-home pay.

**Figure 8. Composition of Annual Compensation for an O-3 under Each Alternative**

## **B. Some Cost Implications**

Throughout this paper, we assumed that cost to the Federal Government would not change by introducing a salary system. To fund such a system under DoD's current budget levels ("top-line") would require offsetting reductions in other areas, with corresponding risks to capabilities and readiness. Alternatively, DoD's budget could increase through offsetting reductions to other federal departments and spending programs, or the overall federal budget could increase.<sup>31</sup> The latter courses of action would require concurrence among the Administration and the Congressional committees of jurisdiction.

The cost to DoD is equal to the cost to the Government plus federal taxes, including the employer's share of Social Security and Medicare taxes. In the current system we estimate this cost to be \$89 billion. This cost would rise to roughly \$97 billion under the salary systems we examined.

Congress was concerned that a salary system could appreciably increase the cost of military compensation to the Government. Additionally, Congress was concerned about maintaining the level of compensation to military personnel. Under all the salary systems we considered, the total level of take-home pay would fall due to increased state tax payments under a salary system. To the extent that increases to basic pay are larger than BAH expenditures because of increased federal tax liability, there is no extra cost to the Federal Government. However, state taxes would rise under a salary system. They are a cost to Service members that is not returned to the Federal Government and they reduce take-home pay.

The largest losers in moving to a salary system are those who now receive BAH. The extent of losses varies considerably by rank, with some ranks gaining on average under some notional salary systems. There would also be differential impacts on individuals within ranks, depending on factors like marital status, housing status, state of residence, and overall taxable income. We considered alternative salary systems that would leave the population of BAH recipients with no average losses. Such a system would increase the cost to the Government by \$8 billion and the cost to DoD by \$10 billion. Holding all individual members harmless against reductions in compensation would cost even more.

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<sup>31</sup> An increase in the overall federal budget would be offset by the increased tax revenues collected from Service members.



## **7. Additional Implications of a Salary System**

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This paper emphasizes the implications of a salary system for compensating active duty military personnel. However, we have not addressed the possible indirect effects of a salary system. This chapter considers the implications of the more significant issues: locality pay, increased military retirement benefits, and increased pay for members of the reserve components; costs of the combat zone tax exclusion; administrative costs of a salary system; and the effects of a salary system on federal income taxes.

### **A. Introducing Locality Pay into a Salary System**

Service member compensation currently varies over time and space. For example, basic pay adjusts each year, and BAH varies according to housing costs across locations. In this section, we consider how Service member compensation could vary over time and space under a salary system. In the dimension of time, our answer is simple—basic pay would adjust by the same process it does today. In the dimension of space, our answer is more involved—a locality pay system would replace BAH.

Basic pay currently adjusts annually according to percentage changes in the Employment Cost Index compiled by the U.S. Bureau of Labor Statistics (BLS). Congress may ratify a Presidential proposal for an alternative adjustment and may modify such a proposal.<sup>32</sup> In either case, the implementation of a salary system would not warrant a change to how basic pay adjusts over time. Salaries would be no more or less likely than today's basic pay to decrease annually due to changes in economic conditions.

#### **1. Basing Locality Pay on Conditional Wages**

By eliminating BAH, a salary system would change how Service members' compensation varies by location. With equity (in the sense of "fairness") being a principle underlying the basic philosophy of military compensation,<sup>33</sup> the implementation of a salary system might warrant a new locality pay program. A Service member's BAH currently depends on the cost of housing in the location of his or her duty station and whether he or she has dependents. One way to describe fairness would be for DoD to expect a Service member of unknown characteristics to be equally happy in each possible location. A system

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<sup>32</sup> "Adjustments of monthly basic pay," 37 U.S. Code, § 1009, 2011, <https://www.govinfo.gov/app/details/USCODE-2011-title37/USCODE-2011-title37-chap19-sec1009>.

<sup>33</sup> *Military Compensation Background Papers*, Eighth Edition, Undersecretary of Defense for Personnel and Readiness, July 2018, [https://www.loc.gov/rr/frd/pdf-files/Military\\_Comp-2018.pdf](https://www.loc.gov/rr/frd/pdf-files/Military_Comp-2018.pdf).

of locality pay using this approach would not need to consider the cost of housing or number of dependents. Such a system would follow two principles:

- All Service members that perform a given set of duties at a given level should receive the same compensation.
- DoD should expect a Service member of unknown characteristics to be equally satisfied at any duty location.

The first principle precludes the use of any factors beyond a Service member's nature and quality of service, including number of dependents, in determining compensation. The second principle is incompatible with using only cost of housing to determine locality pay. For Service members compensated for the cost of housing to be equally satisfied at any duty location, they would need to be equally satisfied with a given quantity and quality of housing in each location. For example, they would need to be just as happy with a 3-bedroom, 2-bathroom house in San Diego, California, as with a 3-bedroom, 2-bathroom house in Minot, North Dakota.

Higher costs of housing in part reflect individuals' greater willingness to pay to live in one locality than another. Individuals are more willing to pay to live in localities with greater natural, cultural, industrial, and other amenities. Some locations have better weather, more fascinating museums, and more robust labor markets for family members to join. Individuals bid up the cost of housing in those locations. When Service members in higher-amenity locations are compensated based on their cost of housing, they enjoy those amenities without paying more for housing than Service members stationed in locations with poorer amenities. All else equal, DoD can expect a Service member in a poorer-amenity location to be worse off.

We do not propose that pay should be equal across localities or that Service members should not be compensated for housing costs. Instead, we propose to make differences in locality pay account for other location-specific characteristics *in addition* to housing costs. Doing so would, on average, make assignments in low-amenity locations more attractive and assignments in high-amenity locations less attractive relative to the current compensation system, balancing a Service member's expected satisfaction in those assignments.

Wages offer a way to measure the compensation individuals will accept to live in one location instead of another. For a given job, job market, and skillset, individuals will accept a lower wage to live in a location with greater amenities and/or lower cost of living (which includes the cost of housing). Assuming individuals choose their locations to maximize their satisfaction, wages adjust across locations to equalize how well off an individual would be in each location. In other words, if the distribution of wages were such that an individual would be better off in another location, they would be in that location instead.

This concept is known in economics as “spatial equilibrium” (Roback, 1982<sup>34</sup>; Rosen, 1986<sup>35</sup>; Glaeser and Gottlieb, 2008<sup>36</sup>; Graves, 2013<sup>37</sup>). Unlike the cost of housing, basing locality pay on wages (conditional on job, job market, and skillset) would serve the principle of expecting a Service member of unknown characteristics to be equally satisfied at any duty location.

DoD cannot ensure that every Service member would be equally satisfied at any duty location. Every Service member has idiosyncratic preferences that a locality pay program cannot account for. The principle requires only that disparities in location satisfaction do not appear on average.

One pitfall of basing Service members’ locality pay on the conditional wages of civilians is that Service member preferences may systematically differ from the preferences of civilians. For example, those who choose to serve in the Army may be more willing to live in rural areas. In that case, Service members stationed in rural areas would be overcompensated. Service members may also differ from other wage-earners in their ability to take advantage of local amenities. For example, the local installation and cultural amenities may be on opposite ends of the locality.

That Service members do not choose their locations does not invalidate a locality pay system. Service members enjoy the amenities (or rue the lack of amenities) in their respective locations regardless of whether they are in those locations voluntarily. A straightforward solution to even out the satisfaction levels of Service members as they are assigned to high- and low-amenity areas is to increase the pay of members assigned to less desirable areas. Carrell and West (2005)<sup>38</sup> argue that adjusting military wages according to local civilian wages would stabilize the force across locations, generate more volunteers for high-cost or low-amenity areas, and increase retention. Similarly, Carrell (2007)<sup>39</sup> studied how the difference in military and civilian wages across locations and occupations affects the retention of Service members in the Air Force. He found that retention is significantly higher for Airmen stationed in locations where the military pay is competitive with civilian pay.

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<sup>34</sup> Jennifer Roback, “Wages, Rents, and the Quality of Life,” *Journal of Political Economy* 90, no. 6, 1982, 1257–1278.

<sup>35</sup> Sherwin Rosen, “The Theory of Equalizing Differences,” *Handbook of Labor Economics* 1, 1986, 641–692.

<sup>36</sup> Edward L. Glaeser and Joshua D. Gottlieb, “The Wealth of Cities: Agglomeration Economies and Spatial Equilibrium in the United States,” *Journal of Economic Literature* 47, no. 4, 2009, 983–1028.

<sup>37</sup> “Spatial Equilibrium in the Labor Market,” *The Handbook of Regional Science*, 2013.

<sup>38</sup> Scott E. Carrell and James E. West, “Optimal Compensating Wages for Military Personnel,” *Journal of Policy Analysis and Management* 24, no. 4, 2005, 803–822.

<sup>39</sup> Scott E. Carrell, “The National Internal Labor Market Encounters the Local Labor Market: Effects on Employee Retention,” *Labour Economics* 14, 2007, 774–787.

Locality pay based on conditional wages would be a radical departure from the current approach. Under the current system, the Services seek to “recruit an individual, but retain a family” by offering wrap-around support that considers the full needs of military families, including not only housing but health care, childcare, education, and other family services. Locality pay based on conditional wages would be incompatible with an alternative version of fairness—one which seeks to provide for each Service member according to their respective needs, accounting for family status and other unique considerations. Accordingly, the change could be perceived as unfair and prejudicial by those who rely on the current system to meet their needs and enable them to serve, and who would be asked to take on substantial new costs.

## **2. Adapting the Federal Civilian Locality Pay Adjustment**

A locality pay program based on wages exists in the form of the General Schedule Locality Pay Tables, which determine locality pay for federal civilian employees. The tables reflect pay levels for non-federal workers in 53 locality pay areas measured annually by the BLS. The tables were originally designed to match federal wages to non-federal wages by locality. In principle, therefore, the federal locality pay program could provide a fairer locality pay program for Service members than BAH. Indeed, in section 604(b)(1) of the 2017 National Defense Authorization Act, which led to the examination of a salary system for the Thirteenth QRMC, Congress requested that the Secretary of Defense consider a salary system “adjusted by the same cost-of-living adjustment that the Department of Defense uses worldwide for civilian employees.”

Federal locality pay is relatively simple. Each locality is associated with a percentage increase to the General Schedule (GS) base pay of each person working in the locality. For example, workers in the Colorado Springs, CO, locality in 2020 receive 17.79 percent more than the GS base pay defined by their grade and step. Adaptation of federal locality pay to military pay would be similarly simple. Each Service member’s basic pay would be increased by the percentage associated with the locality of their duty station. In other words, the percentage increase associated with a locality would apply to each entry in the basic pay table, just as it currently applies to each entry in the GS base pay table. DoD would not be limited to the federal locality definitions and percentages and could devise its own localities and definitions to suit its principles. However, to illustrate a specific policy option and to address Congress’ request directly, our analysis directly adapts the federal locality definitions and percentages to military basic pay.

Like BAH, locality pay would cause Service member incomes to vary across localities. Under the hypothesis that the current system overly rewards Service members stationed in high-amenity locations, and that those locations tend to have high costs of housing, a salary system with locality pay would cause less variation in after-tax income across localities than the current system. To investigate that hypothesis, we compute the

after-tax incomes of Service members under a salary system that is cost-neutral to the Federal Government. We first multiply each Service member's basic pay by the federal locality pay multiplier associated with their assigned location. Next, we find the additional constant multiplier of all Service members' basic pay that would make the elimination of allowances cost-neutral to the Federal Government. Finally, we compute each Service member's after-tax income.<sup>40</sup> We find that a salary system with locality pay would have about 1 percent less variation (in terms of standard deviation) in after-tax income than the current system. However, much of that variation is due to variation in pay grade. After we stratify by pay grade, we find that a salary system with locality pay would have less variation in after-tax income for almost all Service members. Only cadets, O-6s, O-8s, O-9s, and W-5s would have greater variation in after-tax income. Because we stratify by pay grade, our finding of less variation in after-tax income for locality pay than for BAH is not sensitive to tailored basic pay multiples or rents by pay grade.

As an example, we estimate that in 2018, E-5s stationed in the Washington-Baltimore-Arlington, DC-MD-VA-WV-PA locality had a mean after-tax income of \$54,633. In addition, we estimate that E-5s stationed in the baseline "Rest of United States" locality had a mean after-tax income of \$41,565. Under a salary system with locality pay, E-5s stationed in the Washington-Baltimore-Arlington, DC-MD-VA-WV-PA locality would have had a mean after-tax income of \$45,328. Also, E-5s stationed in the baseline "Rest of United States" locality would have had a mean after-tax income of \$40,594.<sup>41</sup> Thus the difference in mean E-5 after-tax income across the two localities would shrink from roughly \$13,000 to \$5,000.

For another example, we estimate that O-4s stationed in the Washington-Baltimore-Arlington, DC-MD-VA-WV-PA locality had a mean after-tax income of \$102,818 and that O-4s stationed in the baseline "Rest of United States" locality had a mean after-tax income of \$87,755. Under a salary system with locality pay, O-4s stationed in the Washington-Baltimore-Arlington, DC-MD-VA-WV-PA locality would have had a mean after-tax income of \$105,208. We also estimate that O-4s stationed in the baseline "Rest of United States" locality would have had a mean after-tax income of \$98,176.<sup>42</sup> Thus the difference

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<sup>40</sup> We compute taxes using a local executable copy of TAXSIM version 27 software provided by the National Bureau of Economic Research. See <https://users.nber.org/~taxsim/taxsim27>.

<sup>41</sup> After-tax income falling for E-5s in both locations is the result of the baseline salary system with a single basic pay multiple that is cost-neutral to the Government. A different multiple for E-5s would cause different changes in basic pay for a given location. However, our finding of less variation in after-tax income across locations for locality pay than for BAH is not sensitive to the multiple.

<sup>42</sup> After-tax income increasing for O-4s in both locations is the result of the baseline salary system with a single basic pay multiple that is cost-neutral to the Government. A different multiple for O-4s would cause different changes in basic pay for a given location. However, our finding of less variation in after-tax income across locations for locality pay than for BAH is not sensitive to the multiple.

in mean O-4 after-tax income across the two localities would shrink from roughly \$15,000 to \$7,000.

In implementation, the federal locality pay program is flawed. Most importantly, the locality pay areas are coarse: each area is either a metropolitan area, the entire states of Alaska or Hawaii, or the massive “Rest of United States.” All stations in the continental United States not in a metropolitan area would be associated with the lowest locality pay according to the federal locality pay program. In addition, Congress and the President have exercised power to override the statutory locality pay formula throughout its history. Thus, political actions have hindered the program’s ability to serve the principle of equal satisfaction across locations.

An ideal locality pay program for Service members would be granular, data-driven, and regularly updated to reflect changes in economic geography and Service members’ preferences. DoD already collects data on Service members’ preferences through the assignment preference sheets Service members complete prior to receiving a new assignment. DoD could directly pursue the principle of equal satisfaction across locations (on average) by regularly raising locality pay in locations of low average preference and decreasing locality pay in locations of high average preference. Such a program would require only basic data analysis on an annual basis.

Locality pay could be considered a modification of basic pay or as separate from basic pay. This consideration would impact the value of elements of pay that are tied to basic pay. Retirement pay, in particular, is a multiple of the retired Service member’s highest 36 months of basic pay. Thus, considering locality pay as a modification of basic pay would increase the value of retirement pay and cause that value to depend on where Service members were stationed late in their careers. Alternatively, DoD could consider some part of locality-adjusted pay to be separate from basic pay. Options under that alternative, in increasing order of benefit to retirement pay, include the following:

1. Preserving the current basic pay table and considering all compensation above it to be locality pay
2. Considering the federal locality pay multiplier to represent locality pay
3. Normalizing the multiplier for the “Rest of United States” locality pay area to one
4. Normalizing the mean locality pay multiplier to one

Option 1 has the advantage of preserving the values of retirement pay and other pays that are tied to basic pay. Option 1 would also be relatively easy to explain to Service members. This option would effectively mean the replacement of BAH and BAS with a larger but taxable pay that does not depend on dependent status. Instead, this pay would account for

all aspects of a locality, not just the cost of housing. Under other options, the retirement pay multiplier could be adjusted to keep retirement pay similar to previous levels.

### 3. Comparing Locality Pay to BAH

Table 12 illustrates how allowances and locality pay would differ for two example Service members in selected localities. We use the basic pay multiples tailored by pay grade defined in Table 7.<sup>43</sup> We define locality pay according to option 1: the entire increase in basic pay is due to the salary system and locality pay multipliers. This definition of locality pay allows the closest comparison to allowances. However, locality pay is taxable. The take-home value of locality pay depends on all of the inputs to an individual’s income tax liability, and therefore varies by individual.

Table 12 shows that some localities have relatively high BAH but would have relatively low locality pay, and vice versa. Honolulu typifies localities with relatively high BAH but relatively low locality pay; it is high in natural and cultural amenities that workers are willing to accept in lieu of higher pay. San Diego has similar BAH as Honolulu but would have higher locality pay. The locality pay in San Diego would be significantly lower than the sum of allowances, reflecting a high value of amenities although not as high as Honolulu. Anchorage, AK, has significantly lower BAH than San Diego, but would have similar locality pay to San Diego, reflecting a low value of amenities in Anchorage.

**Table 12. Examples of Monthly Allowances and Locality Pay**

	E-5, 6 YOS*, married		O-4, 12 YOS*, married	
	BAH & BAS	Locality Pay	BAH & BAS	Locality Pay
Atlanta, GA	2,635	2,087	2,882	2,337
Honolulu, HI	3,286	1,977	3,959	2,121
San Diego, CA	3,223	2,410	3,839	2,971
Lawton, OK	1,261	1,824	1,763	1,820
Anchorage, AK	2,440	2,406	2,957	2,963

\*YOS: Years of service.

Computed using the 2020 General Schedule locality pay multipliers and the 2020 basic pay table.

Lawton, OK, is one of many locations with low BAH that fall into the “Rest of United States” locality, which has the lowest multiplier. These locations would experience the greatest gains from replacing allowances with locality pay. The high locality pay relative to allowances reflects the low value of amenities in these locations. On average, workers

<sup>43</sup> Alternative multiples, such as the baseline constant multiple, would scale locality pay proportionately. Residents of government housing would receive the same locality pay as other Service members. Any rent they would pay represents the value of the housing they currently receive in-kind and is analogous to the current value of BAH for comparison with locality pay.

assigned to low-BAH, low-amenity locations need additional compensation beyond the cost of housing to be as satisfied as they would be working in a higher-amenity location.

Table 12 reinforces our finding earlier in this section that locality pay would vary less across locations than BAH. Compared to BAH, locality pay would redistribute more compensation to low-amenity locations and less compensation to high-amenity locations. In spatial equilibrium theory, this redistribution is the primary advantage of locality pay because it improves fairness in satisfaction across locations. Whether this redistribution is truly an advantage or disadvantage of locality pay compared to BAH depends on Service members' perceptions and concepts of fairness. If Service members consider the current system to be fair, they may perceive deviations from it to be unfair. That Service members stationed in high-amenity locations would lose more income than others may exacerbate Service members' perceptions of unfairness. On the other hand, Service members may believe that those stationed in low-BAH, low-amenity locations deserve more compensation.

From Service member responses, detailed in Chapter 9, we found that many Service members are dissatisfied with BAH amounts. However, they did not single out low-BAH areas. We expect that Service members whose untaxed allowances are replaced with a lower amount of taxable locality pay would be particularly dissatisfied. As a result, any overall benefits to fairness may not be worth the discontent of Service members stationed in San Diego or Honolulu. In fact, Service members who do not value the amenities in such high-amenity locations may experience the most dissatisfaction.

Independent of personal implications, we expect that Service members will be skeptical of replacing BAH with a new system. Although the primary advantage of BAH is that it is not taxable, its familiarity is another important advantage. Service member responses indicate that they are generally averse to extensive compensation changes.

#### **4. Incorporating Assignment Preferences into Locality Pay**

A potential advantage of locality pay over BAH is its simplicity and consistency. Each locality is associated with a single multiplier. Similarly, each BAH location is associated with 48 values to differentiate BAH by pay grade and dependent status. BAH may be higher in one city than another for married E-5s but not for married O-4s (for example, Atlanta and Anchorage). The simplicity of locality pay comes at the cost of specificity, however, because federal locality pay multipliers do not vary by grade. A locality pay system that accommodates differing locational preferences by pay grade could not be so simple. However, such a system would be possible and could be uniquely effective if informed by the assignment preferences of Service members.

Information on assignment preferences could facilitate a very different and possibly much more effective locality pay system than the system described thus far. If Service

members could quantify their preferences for assignments in terms of the minimum additional pay that would make each assignment desirable to them, the Services could serve those preferences with special pays. In fact, the Navy uses Assignment Incentive Pay (AIP) in this fashion.<sup>44</sup> Sailors submit AIP bids through the Navy online career management system. A Sailor selected for an AIP assignment receives their bid for each month they serve in that assignment.

The rationale for this bidding system generalizes the rationale for locality pay. Consider this excerpt from a Navy memo on the AIP program:

*Sailors do not view all assignments as equally desirable. This can be attributed to factors such as geographic location, type of job, or nature of duty (e.g., time away), particularly when preceded and followed by arduous sea tours. The Assignment Incentive Pay (AIP) program has been initiated in the attempt to make all assignments desirable to at least one qualified volunteer. By increasing the volunteer rates for hard-to-fill jobs and locations, the AIP program also aims to increase member satisfaction and retention from filling these jobs voluntarily.*<sup>45</sup>

This memo applies a different concept of fairness: “all assignments desirable to at least one qualified volunteer.” Achieving this concept requires information on assignment desirability at the individual level, and through a bidding process, this information is obtainable. Just as Sailors bid for AIP, all Service members could bid for locality pay. Service members that do not value the amenities in a given location could avoid being assigned there without additional compensation by submitting high bids. Similarly, those that particularly value the same amenities could improve their probability of being selected by submitting low bids. As a result, Service members would sort into assignments according to their willingness to serve in those assignments, increasing member satisfaction.

Using a bidding system to determine locality pay is a theoretically attractive approach. However, applying it broadly would require a major change in assignment policy, and administering it on a large scale might prove cumbersome. Administration on a broad scale would be essential to a bid-based locality pay system to allow each individual to reveal their own preferences and have those preferences served. A system that largely relies on involuntary assignments cannot expect the preferences revealed in bids by those assigned voluntarily to reflect accurately the tastes of others assigned involuntarily to the same locations.

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<sup>44</sup> “Policy Decision Memorandum 003-06: Assignment Incentive Pay (AIP) Program,” Chief of Naval Operations to Assistant Commander, Naval Personnel Command, December 7, 2006.

<sup>45</sup> Ibid.

## B. The Cost of Military Retirement Benefits

The 2017 National Defense Authorization Act (NDAA) that mandated a DoD study of a salary system specified that the retirement system would be modified to ensure that under the new pay structure members of the armed forces would receive retirement benefits similar to those they are entitled to under the current system.<sup>46</sup> This section documents why the level of retirement benefits is a concern.

Under the relatively new Blended Retirement System (BRS), military retirement benefits are calculated as a fraction of retirees' final basic pay. Those who retire with 20 years of service receive 40 percent of the average of their highest 3 years of basic pay. The multiple increases by 2 percent for every additional year of service. Because basic pay would increase dramatically under a salary system, this salary system would yield a large increase in retirement benefits.

Retirement benefits are financed through an accrual fund; a fraction of basic pay is put into the fund. The DoD Actuary calculates the appropriate multiple to use under assumptions about the return that the money in the fund will earn. Currently, the multiple is .304. We assume that under a salary system with no legislative changes to the retirement system, the same multiple would pertain. Table 13 shows the cost implications to retirement benefits under a salary system.

**Table 13. Increased Retirement Costs under a Salary System (\$Billion)**

	<b>Current Basic Pay</b>	<b>Basic Pay under Salary System</b>	<b>Current Retirement Accrual</b>	<b>Retirement Accrual under Salary System</b>	<b>Increased Retirement Accrual</b>
Without Rental Payments	55.8	85.8	17.0	26.1	9.1
With Rental Payments	55.8	90.8	17.0	27.6	10.6

In a salary system that did not involve rental payments from residents of government-owned housing, we estimated that basic pay would rise by 53.9 percent. This percentage implies an increased retirement accrual cost of \$9.1 billion. Under a system with rental payments, we estimated a 62.6 percent increase in basic pay, implying an increased retirement accrual cost of \$10.6 billion.

There are two ways that the retirement formula could be changed to maintain the current level of retirement pay. The multiples used to calculate retirement pay for every

<sup>46</sup> National Defense Authorization Act for Fiscal Year 2017, Public Law 114–328, December 23, 2016, 2000–2968.

year of service could be reduced to compensate for the increased level of basic pay. Under a salary system, basic pay would likely vary across locations because it would incorporate locality pay. In this case, an average pay table would have to be used to avoid the perverse incentive for Service members to retire from areas with high locality pay.

Alternatively, the simplicity of the current retirement multiples could be maintained by continuing to use a version of the current basic pay table, perhaps termed the “legacy pay table,” to calculate retirement benefits. Of course, the legacy table would have to be modified every year to incorporate annual pay increases. Introducing a separate pay table for retirement would add complexity and reduce the transparency of the military compensation system. Retirement pay would be calculated on the basis of this separate pay table rather than on the actual pay of retiring Service members.

An additional element of the BRS is the inclusion of continuation pay (CP), which is an incentive pay offered to personnel between the 8<sup>th</sup> and 12<sup>th</sup> years of service. CP is meant to induce personnel to stay in the military until they reach the 20-year retirement point. The Services have considerable discretion over how to implement continuation pay. They can choose the precise point between year 8 and year 12 to offer it, choose the amount to offer, and vary the timing and level of the pay by occupation.

The level of CP can vary between 2.5 and 13 months of basic pay. If the Services chose to offer levels of continuation pay toward the high end of this scale, the introduction of a salary system would not affect it. The Services could still offer the same amount of CP by lowering the number of months of basic pay associated with continuation pay. However, the Services have tended to implement CP at the low end of the range. In 2020, all Services are offering CP equal to 2.5 months of basic pay to active component personnel. This means that continuation pay would rise by the same proportion as basic pay unless the rules were changed legislatively to permit lower basic pay multiples. A recent RAND paper calculates that the total cost of CP using the minimum multiplier is a bit over \$300 million. This result means that the cost of continuation pay might rise by roughly \$175 million under a salary system unless the minimum multiple were changed. On the other hand, RAND estimates that the Services would be well served by increasing the levels of CP in order to induce higher retention.<sup>47</sup>

### **C. Increased Cost of the National Guard and Reserves**

Unless members of the Selected Reserves (SELRES) are activated, they report to duty or “drill” a notional 39 days per year: 1 weekend (2 days) per month (= 24 days), plus 2 weeks (= 15 days) once per year. SELRES consists of approximately 740,000 members

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<sup>47</sup> Beth J. Asch, Michael G. Mattock, and James Hosek, “The Blended Retirement System: Retention Effects and continuation Pay Cost Estimates for the Armed Services,” RAND Corporation, 2017, [https://www.rand.org/pubs/research\\_reports/RR1887.html](https://www.rand.org/pubs/research_reports/RR1887.html).

who draw basic and other types of pay during their drill days, but are not ordinarily eligible for BAH. However, SELRES personnel who are activated for shorter periods for training or operational purposes are generally eligible for some form of BAH. (This concept is elaborated on in Appendix B.) Under a salary system, they would forego BAH and receive higher basic pay.

Members of the Active Guard Reserves (AGRs) consist of members of the Army National Guard, Army Reserve, Air National Guard, and Air Force Reserve. These personnel are on active duty status to support the following functions of the Army National Guard and the Air National Guard: organizing, administering, recruiting, instructing, or training. The Navy has a similar category called Training and Administration of the Reserve (TARs). There was a total of 79,000 members in those categories during 2018.<sup>48</sup> AGRs receive the same pay and benefits, including BAH, as their counterparts in the active components (ACs). Presumably, under a salary system AGRs would continue to be treated like their AC peers, receiving increased basic pay and foregoing allowances.

If a salary system is adopted, activated SELRES personnel will experience the same kinds of gains or losses in take-home pay as AC personnel, depending on the details of the system and their rank and marital status. On the other hand, the situation for non-activated SELRES personnel is different. Under a salary system, their basic pay would rise by the same proportion as that of active duty personnel with no offsetting loss in BAS and BAH. This approach would obviously benefit them substantially, but it would impose an extra cost on the Federal Government.

Currently the cost of basic pay to members of the reserve components is \$5.7 billion. Table 14 shows how this cost would increase under a salary system.

**Table 14. Increased Costs of Reserve Component Pay under a Salary System (\$B)**

	<b>Current Reserve Pay</b>	<b>Reserve Pay under Salary System</b>	<b>Change in Reserve Pay</b>
Without Rental Payments	5.7	8.8	3.1
With Rental Payments	5.7	9.3	3.6

Unless the method of determining pay to the Guard and Reserve was changed under a salary system, their cost could rise between \$3.1 billion and \$3.6 billion per year. Perhaps the most straightforward adaptation method would be to keep the Guard and Reserve under a legacy basic pay table (adjusted for future cost-of-living changes), as proposed in the previous section on retirement pay, except when they are on active duty. Conceptually, the maintenance of a legacy pay table for inactive duty reservists would maintain the current

<sup>48</sup> *Compensation Greenbook*, “National Defense Budget Estimates for FY 2019,” Table 7-5, Under Secretary of Defense (Comptroller), <https://comptroller.defense.gov/Budget-Materials/Budget2019/>.

difference in pay between inactive duty Service members who are not eligible for BAH and active duty Service members who are. In practice, however, the Reserve Components may be unwilling to accept separate pay tables if they believe they are not being paid the same as their active duty counterparts.

#### **D. Costs of the Combat Zone Tax Exclusion**

The implementation of a salary system would not directly affect deployment duration and frequency. More generally, it would not affect the time Service members spend away from their home location (“PERSTEMPO”). Pay associated with deployment, including Family Separation Allowance, Hardship Duty Pay, and Imminent Danger/Hostile Fire Pay, are not tied to basic pay and would not be affected by the implementation of a salary system. Further, the rules concerning the Combat Zone Tax Exclusion (CZTE) would not change. Military pay earned by an enlisted member or warrant officer in the same month the Service member served in a combat zone is exempt from income taxes. The exemption for commissioned officers is limited to the highest rate of enlisted pay plus Imminent Danger/Hostile Fire Pay.

By increasing Service members’ taxable income, the implementation of a salary system would increase the value of CZTE. The value of CZTE is the additional amount of taxes Service members would pay if CZTE did not exist. Although BAH and BAS are not taxable under the current system—regardless of whether a Service member qualifies for CZTE—a salary system requires DoD to increase basic pay by *more* than the sum of BAS and BAH to compensate Service members for the additional cost of taxes. That additional pay would also be tax exempt under CZTE and would be an additional cost of the salary system.<sup>49</sup> We measure the value of CZTE in 2018 by computing 2018 income taxes for all active duty Service members, then doing so again but treating CZTE-exempted income as if it were taxable. The difference in taxes paid is the value of CZTE. We then measure the value of CZTE under a salary system that is cost-neutral to the Federal Government. To determine each Service member’s tax liability in each case we apply TAXSIM27, a tax simulation model developed by the National Bureau of Economic Research (NBER), to DMDC personnel data.<sup>50,51</sup>

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<sup>49</sup> We do not account for this additional cost of CZTE in our estimates of a cost-neutral system in Chapters 3 through 6. A true cost-neutral salary system would have a lower basic-pay multiple.

<sup>50</sup> An internet-based version of NBER’s TAXSIM27 model is available at <http://users.nber.org/~taxsim/taxsim27/>. NBER provided to IDA a version of TAXSIM that computes on the local system for use with our sensitive personnel data. TAXSIM accounts for many elements of income tax liability, including state taxes, the Child and Dependent Care Tax Credit, and the Earned Income Tax Credit.

<sup>51</sup> We observe elements of military pay, marital status, and dependent status in DMDC personnel data. We impute non-military and spousal income by training machine-learning models on a public dataset of

We estimate that Service members paid a mean income tax (federal, FICA, and state) of \$7,484 in 2018. Without CZTE, this mean would have been \$7,942. Therefore, CZTE was worth \$458 per Service member in 2018, a total of \$671 million. The amount of \$458 per Service member is the mean value of CZTE over all active duty Service members, including those that were not eligible for CZTE in some or all months. Considering only those member-months for which members were eligible for CZTE, CZTE had a mean value of \$857 per month of eligibility.

Under a cost-neutral salary system, however, we estimate that Service members would have paid a mean income tax of \$11,194 in 2018. Without CZTE, this mean would have been \$11,920. Therefore, the CZTE tax advantage under a cost-neutral salary system would have been \$726 per Service member in 2018, a total of \$1.06 billion. CZTE would have been \$268, or 58.5 percent, more valuable per Service member under a salary system. Considering only those member-months for which members were eligible for CZTE, CZTE would have had a mean value of \$1,358 per month under a cost-neutral salary system. Therefore, CZTE would have been \$501 more valuable per month of eligibility under a salary system.

The cost of CZTE to the Federal Government is the amount of federal income taxes exempted, which is equal to the total CZTE benefit less the amount of state income taxes exempted. Some states fully exempt military income earned in a combat zone, but other states only partially exempt or do not exempt such income.<sup>52</sup> After accounting for state exemptions of military income, we use TAXSIM to estimate that CZTE saved Service members a total of \$41 million in state income taxes in 2018 and would have saved them \$65 million in state taxes under a cost-neutral salary system. Therefore, we estimate that CZTE costed the Federal Government \$630 million in 2018 and would have cost the Federal Government \$995 million under a cost-neutral salary system.<sup>53</sup>

## **E. Administrative Costs of a Salary System**

The implementation of a salary system would eliminate some administrative costs and likely create other administrative costs. The primary administrative savings associated

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married active duty Service members from the Current Population Survey (CPS) Annual Social and Economic Supplement (ASEC). Section 8.D provides details on our imputation method.

<sup>52</sup> “Ask Military Pay: Combat Zone Tax Exclusion,” Defense Finance Accounting Service, <https://corpweb1.dfas.mil/askDFAS/faqView.do?faq.faqId=253&pgModId=4>.

<sup>53</sup> Our estimate is consistent with Joint Committee on Taxation (JCT) estimates of the federal tax expenditure associated with CZTE in fiscal years 2018 through 2022 of \$600 million to \$700 million per year. See Joint Committee on Taxation, *Estimates of Federal Tax Expenditures for Fiscal Years 2018-2022*, Table 1, panel on National Defense, <https://www.jct.gov/publications.html?func=startdown&id=5148>.

with moving to a salary system is the cost of determining BAH. The Defense Travel Management Office determines BAH each year by a labor-intense process:

*We obtain current residential vacancies from local newspapers and real estate rental listings. We also contact apartment and real estate management companies to identify units for rental pricing. We consult with real estate professionals in each MHA [military housing area] to confirm market rental prices and obtain additional data. Where available, we also contact fort/post/base housing referral offices and installation leadership. We tap the local housing office knowledge and gain insights into the concerns of our members. Current, up-to-date rental information from telephone interviews and the internet is utilized from contacts provided by the local housing offices. Properties are subjected to additional screening and validation processes.*<sup>54</sup>

Under a salary system, this BAH determination process would no longer be necessary to determine military pay. Currently, however, the BAH of Service members living in privatized military housing is paid by allotment to the housing owners according to the public-private partnership agreements formed under the Military Housing Privatization Initiative (MHPI). Completely eliminating the BAH determination process would require the Services to renegotiate how the MHPI partners are compensated. Furthermore, a very similar process would be necessary to determine rents that DoD would charge Service members living in government housing. Indeed, the most cost-effective method for introducing rent determination would likely be to assign it to the same office currently responsible for determining BAH with modest changes to that office's activities and the services for which they contract. In that case, the administrative costs of determining rent under a salary system would likely be similar to the current costs of determining BAH.

The elimination of a clearly defined "housing" component of Service members' compensation would require changes in how they pay for on-base housing. As mentioned previously, Service members living in government-provided housing under the current system effectively "pay" for their housing by not receiving BAH. Under a salary system, the Services would need to develop new financial processes and systems to collect rent from members living in government-owned housing. Similarly, under the current system, Service members living in privatized on-base housing "pay" for their housing by an allotment of BAH to their landlords. Under a salary system, either the Services could continue collecting rent directly from members' paychecks to pay by allotment to the MHPI partners, or the Services could require the private housing partners to collect rent from Service members directly. The latter option would pass some of the administrative

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<sup>54</sup> "Basic Allowance for Housing (BAH), Frequently Asked Questions," Defense Travel Management Office, updated September 20, 2018, <https://www.defensetravel.dod.mil/site/faqbah.cfm>. The "BAH Primer" offers further detail: "A Primer on the Basic Allowance for Housing (BAH) for the Uniformed Services," Office of Military Compensation Policy, updated January 2019, [www.defensetravel.dod.mil/Docs/perdiem/BAH-Primer.pdf](http://www.defensetravel.dod.mil/Docs/perdiem/BAH-Primer.pdf).

costs of collecting rent to the MHPI partners, but would require the partners to agree to amend their current partnership agreements.

The elimination of BAS would not result in appreciable administrative savings because yearly BAS is based on the food cost index computed by the United States Department of Agriculture (USDA). We can assume that the USDA would continue to compute the food cost index after the elimination of BAS. Contrary to BAH, BAS is extremely simple to adjust. In each year there are only two BAS rates: one for officers and one for enlisted. Yearly adjustments consist of multiplying each rate by the USDA-computed increase in the cost of food.

Similar to BAS, the introduction of locality pay would not result in appreciable administrative costs if it was based on locality pay for federal civilians as suggested by Congress in the 2017 NDAA. Federal locality pay multipliers are already determined yearly as defined in law (see section 7.A of this paper) and could be applied to Service members at negligible marginal cost. More complicated locality pay systems, such as a system of yearly adjustments based on Service members' preferences, would entail administrative costs roughly proportionate to their level of complication.

The elimination of BAH and BAS and the introduction of locality pay and rent are unlikely to appreciably change the administrative costs of providing compensation to Service members. Administrative costs would remain relatively unchanged because a salary system would effectively replace the determination of allowances with the determination of rent and locality pay without changing the administration of the vast majority of other sources of compensation. These sources, which complicate the system, include special and incentive pays, pays associated with deployment, retention bonuses, TSP, and so on.

The administrative costs of a salary system would be affected by implementing retirement pay and reserve pay. For example, if retirement pay is tied to a legacy pay table (based off the current basic pay tables), then there would be additional administrative costs. These costs would include maintaining this separate pay table, updating it each year to account for annual pay increases, and calculating the "legacy basic pay" of retiring Service members (which would no longer be equivalent to their actual pay) to determine their level of retirement benefits. Likewise, if inactive duty reservists are paid according to this same "legacy pay" table, then the complexity of maintaining two pay systems for reserve personnel would increase the overall administrative costs of implementing a salary system. DoD would likely need to develop and maintain educational materials so that, for example, retiring Service members know not to expect retirement pay in proportion to their full high-three earnings.

## **F. Salary System Effects on Federal Income Taxes**

A salary system would increase Service members' federal income tax liabilities. Because the U.S. income tax system is progressive, federal income tax liabilities would increase not only in dollar amount but as a share of taxable income. An exception to the progressive nature of federal taxes are Social Security taxes (more formally known as the Old-Age, Survivors, and Disability Insurance program), which individuals pay at a flat rate of 6.2 percent of wages up to an annually adjusted wage cap. Table 15 shows how a salary system that is cost-neutral to the Federal Government would have changed Service members' marginal federal income tax brackets and Social Security taxes in 2018. The values in Table 15 represent means by pay grade. Tax brackets and Social Security taxes vary within pay grade due to military pay other than basic pay and allowances, marital and dependent status, and imputed non-military and spousal income.<sup>55</sup> We determine each Service member's individual tax liability using TAXSIM27 (described in section 7.D) and then aggregate to the pay grade level.

The mean marginal federal income tax rate would increase from 11.2 percent to 13.3 percent of taxable income and increase most for E-6s through E-9s, O-1s through O-3s, and W-1s through W-3s. We estimate that a salary system would push 33 percent of Service members into a higher tax bracket. Members affected most include cadets in years 2 through 4; E-8s; and prior enlisted O-2s, O-3s, O-6s, O-7s, and W-2s.

Service members would pay an average of \$778 more in Social Security taxes, a 29.1 percent increase. We cannot equate increases to Social Security taxes with increases to Social Security benefits because Social Security benefits are a complicated function of Social Security taxes paid. Further, the Social Security program is likely to change in the decades between Service members' tax payments and their receipt of any benefits.

Our analyses in this and other sections assume that basic pay would be allowed to exceed current Executive Schedule caps. Raising or eliminating these caps would require Congressional action. Moreover, because the salary caps are tied to politically sensitive Congressional pay rates, past proposals for such Congressional action have not been successful. However, the implementation of a salary system with the current caps would produce a highly distorted basic pay table with a significant reduction in total compensation for senior officers.

Currently, the basic pay of O-6s and below is capped at Level V of the Executive Schedule, which was \$153,800 per year in 2018 and is \$160,100 in 2020. The basic pay of O-7s and above was capped at \$189,600 in 2018 and is capped at \$197,300 in 2020. The

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<sup>55</sup> We observe military pay other than basic pay and allowances, marital status, and dependent status in DMDC personnel data. We impute non-military and spousal income by training machine-learning models on a public dataset of married active duty Service members from the Current Population Survey (CPS) Annual Social and Economic Supplement (ASEC). Section 8.D provides details on our imputation method.

caps are divided by 12 and applied to the monthly basic pay tables. Given the 2020 basic pay tables and 2020 Executive Schedule, a salary system would make many more Service members subject to the caps. At the cost-neutral, constant basic pay multiple of 1.539, all O-7s and above would be subject to the caps. Additionally, the following Service members would be subject to the caps: O-6s with 14 or more years of service (99 percent as of December 2018), O-5s with 16 or more years of service (87 percent as of December 2018), and W-5s with 24 or more years of service (87 percent as of December 2018). Even with the basic pay multiples tailored by pay grade as specified in Table 7, all O-6s with 24 or more years of service (65 percent as of December 2018), all O-8s with 22 or more years of service (99 percent as of December 2018), and all O-9s and O-10s would be subject to the caps. Therefore, the implementation of a fair salary system is incompatible with the current Executive Schedule caps. We recommend that the implementation of a salary system eliminate Executive Schedule caps.

**Table 15. Effects of a Cost-Neutral Salary System on 2018 Federal Income Taxes**

Pay Grade	Count	Mean Marginal Federal Income Tax Rate		Share Shifted to Higher Tax Bracket	Mean Social Security Taxes	
		Status Quo	Salary System		Status Quo	Salary System
C01	3,810	11.8	10.1	14.8%	\$453	\$676
C02	3,613	10.3	12.0	71.7%	\$743	\$1,116
C03	3,373	10.4	12.0	72.3%	\$753	\$1,129
C04	3,353	10.4	12.0	69.7%	\$792	\$1,164
E01	80,514	1.8	4.1	27.0%	\$420	\$582
E02	79,083	7.4	9.3	41.6%	\$930	\$1,297
E03	205,552	9.7	10.8	27.9%	\$1,435	\$1,976
E04	292,904	9.7	11.0	28.9%	\$1,793	\$2,419
E05	259,431	10.6	12.5	27.7%	\$2,470	\$3,251
E06	175,555	11.9	14.4	27.0%	\$3,419	\$4,452
E07	104,045	13.1	17.0	41.5%	\$4,131	\$5,379
E08	31,103	14.2	18.9	51.6%	\$4,582	\$5,958
E09	12,480	17.9	20.6	38.0%	\$5,535	\$6,881
O01	19,742	11.3	14.9	44.0%	\$1,937	\$2,758
O01E	2,083	13.0	16.5	36.6%	\$3,804	\$5,089
O02	22,351	14.8	18.6	41.8%	\$3,161	\$4,412
O02E	2,975	15.3	20.0	54.8%	\$4,641	\$6,153
O03	53,470	17.3	20.7	53.4%	\$4,721	\$6,194
O03E	11,674	19.3	21.6	38.4%	\$5,860	\$7,227
O04	43,397	20.7	22.3	35.1%	\$6,383	\$7,384
O05	29,478	21.5	23.1	47.4%	\$7,015	\$7,617
O06	12,781	22.5	24.6	60.5%	\$7,452	\$7,685
O07	473	23.3	25.1	51.8%	\$7,669	\$7,817
O08	363	23.2	24.4	39.7%	\$7,664	\$7,775
O09	185	23.9	25.0	29.7%	\$7,641	\$7,699
W01	391	13.5	17.5	41.7%	\$4,299	\$5,722
W02	1,886	14.0	19.0	54.8%	\$4,520	\$5,949
W03	4,492	16.4	20.1	46.9%	\$5,133	\$6,562
W04	3,288	18.6	20.7	35.8%	\$5,793	\$6,997
W05	954	21.0	22.6	49.5%	\$6,802	\$7,481
<b>Total</b>	<b>1,464,799</b>	<b>11.2</b>	<b>13.3</b>	<b>33.0%</b>	<b>\$2,674</b>	<b>\$3,452</b>



## 8. Econometric Analysis of Behavioral Responses to a Compensation Change

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The preceding chapters describe how a salary system would change compensation for different categories of Service members. We may expect compensation changes to affect both recruiting and retention. In the next section, we discuss previous estimates of the effect of changes in military compensation on recruiting and retention and their applicability to a salary system. In the remainder of the chapter, we describe a strategy for estimating the causal effect of changes in after-tax income on retention using data on all 3.5 million active duty Service members over the 17-year period from December 2000 to December 2017. Finally, we present our results.

### A. Empirical Estimates of the Effects of Pay Changes on Recruiting and Retention

Previous papers have used military pay data to estimate effects of compensation changes on both recruiting and retention. We focus here on such papers published since 2001.

Goldberg (2002) finds that most point estimates imply that a 1 percent increase in military compensation increases the probability of first-term reenlistment by 1.2 percent to 2.2 percent. Estimates for the second term tend to be moderately lower than estimates for the first term.<sup>56</sup> Further, Goldberg (2002) summarizes point estimates of the effect of a 1-unit increase in the Selective Retention Bonus (SRB) multiplier on reenlistment rates as falling between 1 and 4 percentage points.<sup>57</sup> Similarly, Joffrion and Wozny (2015) estimate that increasing the SRB multiplier by 1 unit (more than double the mean multiplier) increases the retention of Air Force enlistees in the last year of their contracts by 0.8 percentage points.<sup>58</sup>

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<sup>56</sup> Matthew S. Goldberg, *Staff paper for The Ninth Quadrennial Review of Military Compensation (2002)*, “A Survey of Enlisted Retention: Models and Findings,” Volume III, Chapter II, <http://militarypay.defense.gov/References/QRMC.aspx>.

<sup>57</sup> *Ibid.*

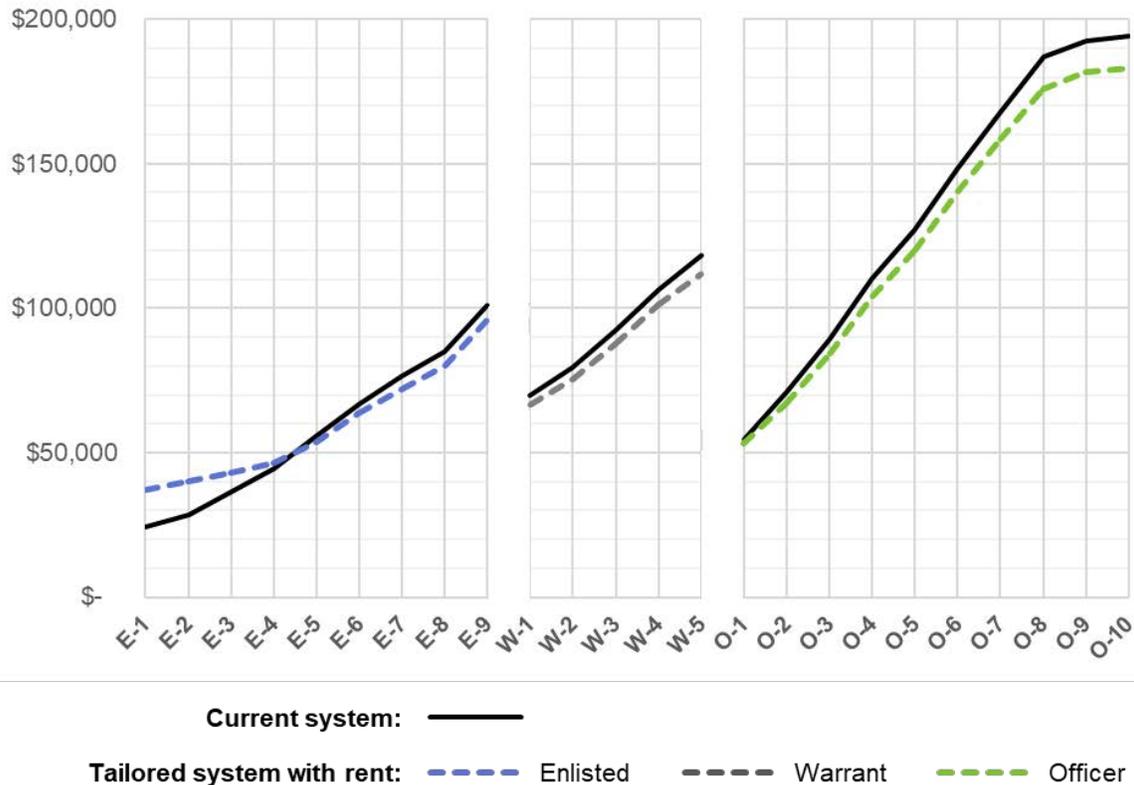
<sup>58</sup> Justin L. Joffrion and Nathan Wozny, *Upjohn Institute Working Paper*, No. 15-226, “Military Retention Incentives: Evidence from the Air Force Selective Reenlistment Bonus,” 2015.

Mattock et al. (2014) find that a \$20,900 bonus in the 10<sup>th</sup> year of service would increase retention of Army officers to the 10<sup>th</sup> year of service by 10 percent.<sup>59</sup> They also find that a 10 percent increase in RMC would increase year-to-year retention rates by multiple percentage points between the 6<sup>th</sup> and 13<sup>th</sup> years of service, causing retention to the 20<sup>th</sup> year of service to increase from under 20 percent to about 30 percent. As discussed previously, a constant-cost salary system will lower average military compensation. For example, the tailored salary system with rent would lower average officer compensation by about 5 percent. A simple application of Mattock et al.'s (2014) estimates would imply that such a salary system might reduce retention of officers at the 20<sup>th</sup> year of service by about 5 percentage points. This calculation assumes that officers would respond equally to a decrease in compensation as they do to an increase in compensation. However, beginning with Kahneman and Tversky (1979),<sup>60</sup> numerous economists and psychologists have recognized that the dissatisfaction that people feel from a loss tends to be greater than the satisfaction they get from an equivalent gain; this concept is known as "loss aversion." Consequently, the negative retention effects of a pay cut are likely to be greater than the positive retention effects from a pay raise. Retention is affected not just by the overall level of pay but also by the difference in pay across ranks. The promise of future higher pay (e.g., in the form of retention bonuses or promotion raises) may incentivize high performers to remain in the service. However, as Figure 9 shows, a tailored salary system that incorporates rents reduces the income growth from promotions for officer and enlisted, which may further reduce the retention rates. (The pay raise from promotions decreases only slightly for warrant officers.)

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<sup>59</sup> Michael G. Mattock, Beth J. Asch, James Hosek et al., "Toward Improved Management of Officer Retention: A New Capability for Assessing Policy Options," RAND National Defense Research Institute, Santa Monica, CA, 2014.

<sup>60</sup> Daniel Kahneman and Amos Tversky, "Prospect Theory: An Analysis of Decision under Risk," *Econometrica* 47, no. 2, 1979, 263–91.



**Figure 9. Average Annual After-Tax Income of Military Personnel by Rank for Tailored Salary System with Rent (compared to the current compensation system)**

Asch et al. (2010) estimate that the Army recruited an additional soldier for every \$44,900 spent on enlistment bonuses between FY 2005 and FY 2008, while the Navy recruited an additional sailor for every \$89,100.<sup>61</sup> John Warner’s review for the 11<sup>th</sup> QRMC finds Asch et al. (2010) estimates of the effectiveness of enlistment bonuses on Army and Navy recruiting to be consistent with prior estimates.<sup>62</sup> Warner summarizes estimates of the effect of a permanent 10 percent increase in military compensation as increasing the supply of high-quality enlisted recruits by six to 11 percent.<sup>63</sup> Although officer recruitment is likely to suffer in response to a decline in overall take-home pay, enlisted pay actually increases on average under a tailored salary system with rent—and these increases are substantial for the most junior enlisted. Depending on how much new enlisted recruits discount the value of future income, we can use Warner’s (2012) numbers to estimate how enlisted recruiting would respond to a tailored salary system. Table 16 shows that, if

<sup>61</sup> Beth J. Asch, Paul Heaton, James Hosek et al., “Cash Incentives and Military Enlistment, Attrition, and Reenlistment,” RAND National Defense Research Institute, Santa Monica, CA, 2010.

<sup>62</sup> John T. Warner, “The Effect of the Civilian Economy on Recruiting and Retention,” *Report of the Eleventh Quadrennial Review of Military Compensation, Supporting Research Papers, Part 1*, Chapter 2, June 2012, <https://go.usa.gov/xVBxq>.

<sup>63</sup> Ibid.

enlisted recruits care about the average pay to all enlisted ranks, then recruitment might increase by 5 percent to 10 percent. However, potential recruits are more likely to place a lower value on pay beyond the next few years. If they primarily care about the pay in the junior ranks, then high-quality enlistment might increase by as much as 7 percent to 12 percent. Although enlisted recruitment is likely to be positively affected by a substantial increase in pay for junior enlisted, the flattening of the pay across enlisted ranks is likely to result in more retention challenges after they join.

**Table 16. Potential Change in High-Quality Enlisted Recruitment Based on Average Salary Change from Implementing a Tailored Salary System with Rents**

Relevant Ranks	Average Salary Increase	Percent Change in Supply of High-Quality Enlisted Recruits (min and max)	
E-1 to E-4	11%	7%	12%
E-1 to E-9	9%	5%	10%

A salary system would permanently change Service members’ RMC through an increase in pre-tax compensation to offset a loss in tax advantage. Thus, two issues impair the relevance of prior estimates to understanding the effects of a salary system. First, some prior estimates (most importantly, estimates of the effects of bonuses) do not estimate the effects of permanent changes to compensation. Second, prior estimates do not estimate the effects of changes to tax advantage. Moreover, an extensive labor and behavioral economics literature summarized in Rebitzer and Taylor (2011) documents that compensation policies also serve an important role in communicating (or “signaling”) employers’ values to employees.<sup>64</sup> The estimates from the literature do not separate the signaling effects of compensation from the raw compensation effects. For a new compensation policy to be effective, it must accomplish two purposes: (1) it must adequately compensate Service members for their efforts (the raw compensation effect), and (2) it must not break the trust Service members have that DoD is committed to the mission of national defense and to treating Service members fairly (the communication effect). In the remainder of this chapter, we use variations in state tax rates to estimate how compensation alone (independent of communication) affects retention. In Chapter 9, we present our findings from focus groups conducted with Service members so that we can understand their perceptions of the current military compensation package as well as a potential salary system.

<sup>64</sup> James B. Rebitzer and Lowell J. Taylor, “Extrinsic Rewards and Intrinsic Motives: Standard and Behavioral Approaches to Agency and Labor Markets,” *Handbook of Labor Economics*, 4, Part A, 2011, 701–772, [https://doi.org/10.1016/S0169-7218\(11\)04114-1](https://doi.org/10.1016/S0169-7218(11)04114-1).

## **B. Econometric Strategy**

Ideally, we would like to estimate the retention effects of a specific implementation of a salary system. However, this goal cannot be accomplished through quantitative analysis. A salary system would be unprecedented and so would its effects. Instead, our goal in this section is to estimate the effects of permanent changes in after-tax military compensation on Service members' separation behavior. This analysis complements estimates of the effects of compensation changes from prior work and Service-member attitudes revealed through qualitative research described in Chapter 9. The unique contribution of this analysis is to isolate after-tax compensation effects from signaling, selection, and pre-tax compensation effects in a way that does not rely on structural assumptions about how Service members decide to continue their military service.

To accomplish this estimation, we use a novel combination of econometric techniques, machine-learning tools, survival analysis methods, and nearly two decades of individual-level active duty personnel data. We estimate the effect of a change in expected after-tax compensation on the probability that an individual remains on active duty for up to 5 years.

There are two key obstacles to estimating the relationship between compensation and separation behavior. First, we only observe Service members' actual compensation. Second, a simple analysis of compensation and retention may be biased by related omitted factors. We explain both of these obstacles and how we circumvent them in more detail next.

Because we seek to estimate the effects of a permanent compensation change, we must estimate the effects of changes in expected future after-tax income, as opposed to income realized by the time of the separation decision. We do not observe expected future after-tax income in our data, so we predict it at the individual level for each of the 12 years following the given observation. Our predictions represent the take-home pay a Service member with given features may expect to earn in each of the next 12 years should the member remain on active duty.

Turning to the second challenge, relationships we observe in personnel data between expected after-tax income and separation generally do not represent causal effects. As a result, they do not represent how Service member behavior would respond to a compensation change. This difference between observed and causal relationships arises because one or more unobserved features affect both expected after-tax income and the probability of separation. Such a feature is called a "confounder" of the relationship of interest.

Suppose, for example, that Service members with a greater "taste for service" exert more effort to attain excellence in their positions, are therefore more likely to be promoted sooner, and therefore expect to have higher future after-tax income. If Service members

with greater taste for military service choose longer careers independent of their after-tax incomes, the observed relationship between after-tax income and career duration will include this independent effect, and therefore overstate the causal relationship.

On the other hand, suppose that more naturally skilled individuals tend to choose more difficult jobs that offer bonuses. These individuals can expect higher future after-tax income if they stay on active duty. However, they can also expect higher income if they leave active duty. If having a greater “outside option” causes more skilled individuals to choose shorter career durations independent of their after-tax incomes, the observed relationship between after-tax income and career duration will understate the causal relationship.

To estimate the causal effects of expected after-tax income on the probability of separation, we may isolate a specific cause of variation in expected after-tax income. We believe this cause is not confounded by unobserved features in its effect on the probability of separation. Such a cause is called an instrumental variable, or instrument. The observed relationship between expected after-tax income and career duration due to a valid instrument reflects the causal relationship we seek. The primary weakness of this strategy is that it reduces the amount of empirical variation available for analysis, thereby reducing precision. However, to counteract this loss of precision, we analyze a large volume of data.

We use the state income tax liability that a Service member would incur if his or her state of legal residence and home of record state were the same (home of record state income tax liability, or HORSITL). This tax liability is conditional on individual controls including gross pay and home of record state as an instrument for expected after-tax income. Thus, we rely on variation in expected after-tax income due to changes in how states tax military income during the period of our data. We assume that, conditional on our controls, changes to home of record state income taxes are related to career choices only through their effect on expected after-tax income. Because it is a claim regarding the causal effects of unobserved features, this assumption is fundamentally unverifiable.

Crucially, we rely on tax changes in the home of record state, not the state of legal residence. While Service members may change their state of legal residence during their military careers, in particular to decrease their income tax liabilities, they may not change their home of record. At the start of a military career, home of record state and state of legal residence state are the same. Under specific conditions and only with conscious effort, a Service member has the option to change their state of legal residence. Our instrument will not be relevant for Service members who have changed their state of legal residence to a state that does not tax military income. Our instrument will also not be relevant for Service members from states that did not change how they tax military income during the respective members’ careers. Our analysis thus focuses on the subset of Service members whose income was affected by state income tax changes and uses other Service members as control units.

## C. Data and Summary Statistics

Our key data sources are maintained by the Defense Manpower Data Center (DMDC). We use the universe of active duty personnel records from December 2000 through December 2017, which capture 3,594,482 unique individuals. The records contain two broad categories of information: outcome variables and explanatory (also known as “feature”) variables.

### 1. Outcome Variables

The main outcome in our analysis is the duration of a person’s active duty career. Measured in years, we construct this variable by noting the appearance and exit of personnel from the DMDC’s Active Duty Payments (ADP) database. The ADP tracks every cash payment to active duty personnel during the 18 years in our sample. We consider a person’s initial year of active service to be the first December they receive an active duty paycheck. A Service member is considered to have left the military in the year where they do not receive a December active duty pay check. Because this approach confirms a Service members’ presence only once a year, it reduces the complexity and amount of computational resources needed for our analysis.<sup>65</sup>

One potential concern with this approach is that the ADP database does not reflect the actual movement of individuals in and out of military service. We test this concern by using a separate database, the Active Duty Transactions (ADT) file. The ADT tracks changes in the Active Duty Master (ADM) personnel database, which is used to track the status and strength of the total military force. If an individual enters or exits active duty service, the central ADM database is changed and the ADT records a “gain” or “loss” transaction (Department of Defense, 2009). Not only do we successfully match 98.3 percent of ADP personnel, there is broad agreement on the timing of a Service member’s exit from the military. Some 91.5 percent of matched individuals identified as leaving by our ADP-based strategy also separate less than 12 months later in the ADT database. Such a high level of agreement between these two data sources gives us confidence that using the ADP to track accession and separation behavior is appropriate.<sup>66</sup>

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<sup>65</sup> This strategy focuses our analysis on Service members who have been on the active duty payroll for at least 1 year. Individuals who join and exit in the same calendar year would largely be excluded from our analysis. This approach also helps mitigate potential complications regarding individuals intermittently appearing in the ADP due to longer-term reservist activations or other reasons.

<sup>66</sup> Only 72 percent of the personnel listed in the ADT appear in the ADP-derived dataset we use for our analysis. This result supports our view that we sidestep many of the additional complications inherent in a more granular analysis, while not sacrificing our ability to answer the fundamental policy question. A potential robustness check for our analysis is to rerun our December analysis with a different cut-off month. For the 8.5 percent of individuals whose ADT exit does not fall less than 12 months after their ADP exit, nearly all exit within 12 months *before* their ADP exit. We have not examined this phenomenon in detail, but it could be the subject of further analysis.

## 2. Explanatory Variables

Monetary and non-monetary factors likely influence a Service member's decision to separate from the military. We calculate each Service member's gross annual military wages as the sum of monthly basic pay, special pay, bonus pay, incentive pay, other taxable pay, and non-taxable allowances such as Basic Allowance for Housing (BAH) and Basic Allowance for Subsistence (BAS).<sup>67</sup> Service members' year-to-date federal taxable wages are reported in the DMDC data. We determine each Service member's individual tax liability using TAXSIM27.<sup>68</sup>

We are particularly interested in state tax liability because it is the mechanism through which our instrument affects after-tax income. Among our 18.5 million observations of Service members from 2000 through 2017, 58.4 percent would have benefitted from a state military income tax exemption if single and 55.3 percent would have benefitted if married. The share that would not have benefitted had a state of legal residence that did not tax income or otherwise did not have enough taxable military income to incur a positive liability. Among those who would have benefitted, the mean annual after-tax income gain was \$1,066 if single and \$975 if married, with first and third quartiles of (\$444, \$1,195) and (\$385, \$1,404), respectively. Therefore, our analysis relies on changes in after-tax income on the order of \$1,000 per person per year.

We control for several variables that could confound the relationship between income and retention, including a Service member's age, marital status, race, ethnicity, education level, number of children, number of dependents, home of record state, state of legal residence, rank, military occupation, military service branch, and number of months spent in a combat zone during the past year.

## D. Construction of Explanatory Variables

As mentioned in the previous sections, our goal is to estimate the effects of a permanent change in after-tax military income on retention behavior. A permanent change affects after-tax military income in each future year of service. We expect Service members to consider future after-tax military income as well as all other sources of household income in their retention decisions.<sup>69</sup>

However, we do not observe Service members' expectations of their future after-tax military income. For some Service members, we observe actual future military income,

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<sup>67</sup> The Internal Revenue Service provides a list of taxable and non-taxable military wage components in Table 1 and Table 2 of the *2018 Armed Forces' Tax Guide*, <https://www.irs.gov/pub/irs-pdf/p3.pdf>.

<sup>68</sup> We describe TAXSIM27 in more detail in section 7.D.

<sup>69</sup> Although we expect Service members' retention decisions to depend on their expected after-tax income, an advantage of our method compared to a structural econometric method is that we need not *assume* so.

which may differ from Service members' prior expectations. For those that leave military service or are observed in more recent years of our sample, we observe a relatively short window of their military income. Therefore, we must impute each Service member's expected after-tax income as if they stayed on active duty. To do so, we use a machine-learning method to predict after-tax income up to 17 years after the time of observation. Using machine learning to predict unobserved features is not novel. Deryugina et al. (2019) use a similar strategy to predict an important feature in their research: a person's remaining life expectancy.

We begin by predicting future military gross income conditional on remaining on active duty. Then, we train a machine-learning model on the DMDC personnel database to predict each Service member's military income up to 17 years into the future based on individual characteristics. Next, we apply the tax regime in the year following the year of observation to the predicted incomes, obtaining predicted after-tax income and HORSITL in each future year.<sup>70</sup> Determinants of tax liability are uncertain in future years. In particular, for each given number of years into the future, each Service member has a probability of being married and of having a state of legal residence that does not tax income.<sup>71</sup> For each probability, we train a machine-learning model to predict the probability using individual characteristics. Next, we obtain the Service member's after-tax income and HORSITL in each of the four possible scenarios defined by marital and state income tax statuses. Finally, we take the mean after-tax income and HORSITL over the four scenarios weighted by the scenarios' predicted probabilities.

We face a similar imputation problem for other external sources of income: non-military and spousal income. We do not observe either potential income source, currently or in the future. These sources of income are important to our calculations of after-tax income. A Service member who earns substantial income outside their military service will have a higher marginal tax rate. All else equal, these personnel will experience a greater gain in after-tax income when their state exempts their military income. We expect a similar effect for married Service members with high-earning spouses.

We use a similar prediction strategy to address the lack of information on non-military and spousal income in our personnel data. We train machine-learning models on a public dataset of married active duty Service members from the Current Population Survey (CPS) Annual Social and Economic Supplement (ASEC). While the CPS-ASEC does not directly

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<sup>70</sup> By applying the next year's tax regime, we assume that Service members are informed of tax policy changes one year in advance, but do not anticipate tax regime changes.

<sup>71</sup> Factors such as numbers of dependents under specific ages and the specific state of legal residence also affect tax liability, but present too many combinations for us to simulate. We assume that the Service member does not anticipate changes in tax liability due to these factors.

target military personnel responses, it reports information on a participant’s spouse, even if the spouse is on active duty.<sup>72</sup>

We use the 10,701 observations of individuals surveyed between 2000 and 2018 who were married to an active duty Service member. We train a model for each of eight categories of non-military income: spousal wages, income from dividends, interest, retirement benefits, unemployment benefits, Social Security, other government transfers, and all other sources. Each model predicts income based on Service member characteristics available in both the CPS-ASEC and the DMDC personnel database: year of observation, sex, age, race, number of children, education, and income.<sup>73</sup>

We do not have observations of future non-wage or spousal income that we could use to train a model. Instead, we predict future non-wage and spousal income by inflating the current predictions by the 12-month moving average of median U.S. wage growth in the year of observation. For example, suppose our model predicts spousal income of \$30,000 for a 2004 observation with a 12-month moving average of median U.S. wage growth of 3.5 percent. Then we would predict 2007 spousal income for that observation to be \$30,000 times 1.035 raised to the third power.

## **E. Model Specification**

We estimate in two stages following the control function method introduced by Blundell and Powell (2003) and explained by Wooldridge (2015). First, we use predicted HORSITL to instrument for predicted future after-tax income in the retention decision year and each of the 12 following years. Second, we model retention decisions as depending on current and predicted future after-tax income and on controls.

The first stage is a set of ordinary least squares regressions, one for each year from 0 to 12 years beyond the retention decision year, of predicted after-tax income on predicted HORSITL, predicted income net of federal taxes, and a set of individual-level controls. The controls are each represented by one-hot encodings (“dummy variables”). The second stage is a set of neural networks, each trained on the 12 predicted after-tax incomes, the controls used in the first stage, and the residuals from the first stage. Wooldridge (2015) emphasizes the importance of a flexible second-stage specification to the control function method. We use neural networks because they offer a supremely flexible specification.

The first-stage residuals represent the “control function” that, under our assumptions, accounts for confounders of the relationship between predicted after-tax income and retention. Each neural network outputs a retention probability for each observation a given number of years ahead. Because we predict income up to 12 years after the retention

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<sup>72</sup> The CPS and its supplements generally do not survey active duty Service members.

<sup>73</sup> Due to differences in data structure, we manually mapped CPS-ASEC categories for race and education to categories in the DMDC personnel data, aggregating where necessary.

decision year, and we observe retention up to 17 years ahead, we can predict retention decisions only up to 5 years ahead of the current observation. We train each neural network only on those individuals for whom we can observe the retention decision. For example, to predict retention 3 years after the current observations, we are limited to observations at least 3 years prior to 2017.

Each neural network consists of a set of parallel embedding layers, one for each categorical feature. These layers are followed by two consecutive sets of 64-node, densely connected, rectified linear unit layers, followed by a densely connected sigmoid output layer. Each embedding layer outputs a one-dimensional array. Thus, each embedding layer is a map from the set of natural numbers to the reals. We use 1-dimensional embeddings instead of higher dimensional embeddings for computational efficiency. We then use the AMSGrad variant of the Adam optimizer to train each neural network with a learning rate of 0.001 (see Kingma and Ba (2014); Reddi, Kale, and Kumar (2018)). We train on batches of 512 observations, randomly sampled without replacement, for 19 epochs. To choose the number of epochs, we computed the standard deviation of estimates over a 5-epoch rolling window. We then chose the number of epochs that minimized the sum of the computed standard deviations over all 5 retention horizons. By choosing the number of epochs this way, we seek to obtain estimates that are stable over modest variations in the number of epochs.

A more conventional method of estimating the effects of permanent changes in expected future after-tax income on retention through HORSITL is two-stage least squares (2SLS). The 2SLS method allows us to estimate the local average treatment effects (LATE) of changes in expected future after-tax income. However, 2SLS does not allow us to estimate effects on individuals who would not be affected by changes in HORSITL, namely those Service members who are from a state without income taxes or have changed their state of legal residence. Also, 2SLS does not allow us to estimate different effects for different individuals. An even simpler method of estimating relationships between expected future after-tax income and retention would be ordinary least squares (OLS). However, we cannot expect relationships estimated by OLS to be causal. Therefore, we report 2SLS and OLS estimates for comparison with the average treatment effect estimates we obtain by the control function method.<sup>74</sup>

## **F. Estimation**

We estimate the effect of a permanent change in after-tax income on retention by calculating the difference between Service members' retention probabilities under baseline

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<sup>74</sup> OLS may produce predicted probabilities outside the unit interval, which is a problem we could address with a non-linear probability model such as probit or logit. However, estimates from a non-linear model would be no more justifiable as causal as OLS estimates. We use OLS estimates because they provide a more direct comparison to 2SLS estimates than those from a non-linear model.

and treatment scenarios. Our model produces a probability of remaining on active duty for up to 5 years in the future for every Service member, conditional on his or her specific feature values and predicted after-tax income. We then simulate a \$1,000 increase in every Service member's after-tax income in all future periods and use those simulated values to predict new retention probabilities. Subtracting each Service member's baseline retention probability from his or her treated retention probability gives us the expected treatment effect for each individual. We then take the mean over all Service members to determine the average treatment effect.

We quantify the uncertainty of our point estimates through bootstrapping, which produces a distribution of estimates based on many resamples of the data. To significantly reduce the computation time required for the bootstrapping procedure, we implement the Bag of Little Bootstraps (BLB) technique outlined in Kleiner et al. (2014). First, we take 10 samples without replacement, each with a number of observations equal to the number of observations in the original dataset raised to the seven-tenths power. Next, we resample with replacement for 80 iterations from each subsample.<sup>75</sup> For each iteration, we use the same model specification and estimation procedure outlined in the previous sections to determine the average treatment effect across all individuals. Next, we compute a bias-corrected 95 percent confidence interval of the average treatment effect for every subsample, and then average the upper and lower bounds of the 95 percent confidence interval across all subsamples. Finally, we repeat this procedure for each future year.

## G. Results

Table 17 reports our estimates of the mean effect of a \$1,000 annual increase in expected future after-tax income in the retention decision year and each of the 12 following years on the probability of retention in each of the next 5 years. We report each effect estimate in terms of percentage points and report estimates for three methods: OLS, 2SLS, and the control function method. Our OLS estimates represent the correlation between expected future after-tax income and the probability of retention conditional on individual characteristics. Although these estimates do not inform us about how compensation changes would affect retention, they are useful as prelude and comparison to the causal effect estimates. All else equal, a Service member with \$1,000 greater expected future after-tax income was 0.23 percentage points more likely to be on active duty 1 year later. However, these Service members were slightly *less* likely to remain on active duty through their second, third, and fourth years into the future. These estimates include any effects of unobserved confounders such as taste for service and outside options.

Our 2SLS estimates represent the mean causal effect of a state military income tax exemption over those Service members being taxed by their home of record state. Using

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<sup>75</sup> Each resampled dataset is the same size as the subsample from which it was drawn.

this method, we estimate that a Service member with \$1,000 greater expected future after-tax income due to an exemption was 1 percentage point *less* likely to be on active duty 1 year later. We estimate that an exemption decreased the probability of retention in the second and third years but increased the probability of retention in the fourth and fifth years. Only the effect on retention in the fifth year exceeds 1 percentage point.

Our control function estimates represent the mean causal effect of a \$1,000 annual increase in expected future after-tax income due to a state military income tax exemption over all Service members. For Service members in states that already do not tax income, the \$1,000 increase could be considered a hypothetical tax credit. Further, under an assumption that Service members value a change in income of a given amount independently of its source, our control function estimates represent the effect of a \$1,000 increase in after-tax income on retention. By using our control function method, we estimate that a Service member with \$1,000 greater expected future after-tax income due to an exemption was 1.9 hundredths of a percentage point *less* likely to be on active duty 1 year later.<sup>76</sup> Conditional on being on active duty 1 year later, the same Service member was 2.3 hundredths of a percentage point more likely to remain on active duty for an additional year. Our estimates of effects on retention in later years are statistically insignificant and no larger in magnitude.

Our results do not provide evidence that state tax exemptions of military income substantially increased active duty retention. Therefore, our prior expectation that retention decisions depend on future after-tax income clashes with our proposed assumption that Service members value a change in future income of a given amount independently of its source. We hypothesize that our proposed assumption is false—Service member responses to a change in income depend on how and why the income is changing in addition to how much. For example, we expect that Service members would be more aware of a change in the DoD compensation system than a change to the policy that determines their state income taxes, and therefore more responsive.

We may also expect an individual's decision to remain with an organization to be more responsive to a change in income due to decisions made by that organization than to any other change in future income of the same magnitude. In particular, we may expect a Service member to be more responsive to a change in their DoD compensation than a change to their state taxes, even if the two changes affect their after-tax income identically. This difference in responsiveness may arise not only due to increased probability of awareness, but from resulting changes in sentiments toward the organization. As a corollary of our conclusion that an income change does not affect Service member behavior

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<sup>76</sup> Despite bias correction, we compute a confidence interval on the 1-year effect that is entirely below the point estimate. This result is peculiar, but not impossible, and we plan to investigate it further.

only through its magnitude, we expect that DoD can implement compensation changes in a way that encourages preferred behaviors and attitudes in Service members.

**Table 17. Estimated Mean Percentage-Point Effects of a \$1,000 Permanent Increase in After-Tax Income on Probability of Retention**

<b>Retention Horizon</b>	<b>Point Estimate</b>	<b>95% Lower Bound</b>	<b>95% Upper Bound</b>
<b>OLS</b>			
1 year	0.230	0.198	0.261
2 years	-0.003	-0.045	0.039
3 years	-0.346	-0.392	-0.299
4 years	-0.189	-0.238	-0.140
5 years	0.109	0.062	0.156
<b>2SLS</b>			
1 year	-1.019	-1.078	-0.961
2 years	-0.124	-0.202	-0.045
3 years	-0.156	-0.245	-0.067
4 years	0.011	-0.086	0.108
5 years	1.437	1.333	1.541
<b>Control Function</b>			
1 year	-0.019	-0.040	-0.027
2 years	0.023	0.002	0.050
3 years	0.004	-0.022	0.024
4 years	-0.016	-0.039	0.013
5 years	-0.019	-0.049	0.010

The distributional changes resulting from a move to a salary system, as explored in Chapters 3 through 6, would likely undermine DoD efforts to encourage desirable attitudes and behaviors in response to a salary system. Moving to a salary system would, on average, adversely impact Service members with dependents and those that currently receive BAH. Table 4 indicates that 53 percent of the force is married and 67 percent of the force currently receives BAH. Therefore, each of these categories alone represents a majority of Service members with reason to believe that a salary system is targeted against them. Other categories of members, such as members in specific pay grades or assigned to specific locations, may have similar beliefs. This widely perceived, adverse impact would likely affect retention well beyond that of the average pay cut alone. The next chapter of this paper describes current Service members' perceptions toward their compensation and toward potential changes to it.

## 9. Service Member Attitudes to Military Compensation

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As we noted in the previous chapter, Service members' reactions to a change in military compensation may be driven as much (or more) by their perceptions about the new system as by the actual financial impact of the change. In this chapter, we describe our methodology for examining these perceptions through focus groups and surveys, and present research findings. We examined these perceptions and reactions in the Active and Reserve Components of the Army, Navy, Air Force, and Marine Corps, and across grades, occupational specialties, geographic locations (i.e., with and without state taxes), and family demographics.

Research questions supporting this task were as follows:

1. How do Service members perceive compensation?
2. How do Service members react to a proposed change to a single salary system?

### A. Methodology

One method to answer these questions entailed the inclusion of QRMC-related questions in the 2019 Status of Forces survey for active duty personnel (SOFA), conducted by the DoD Office of People Analytics (OPA). Additionally, we worked with the sponsoring office within DoD to have each military Service identify units for field data collection. The field data includes responses to both open-ended questions that we asked Service members during focus groups, and the same set of closed-ended survey questions that were included in the SOFA. Prior to conducting site visits, we developed a minimally intrusive research methodology that would not stress the operational tempo of the units included in the sample. Although the SOFA would entail a large sample frame, the intent of the field research was to rapidly ascertain some depth in Service member attitudes in order to identify themes related to military compensation.

We collected and analyzed quantitative and qualitative data in the field, using a mixed-methods approach to address research questions. We took a focused approach, visiting Active component (AC) and Reserve component (RC) units across four states (i.e., two states with income taxes and two without income taxes), to administer surveys and conduct focus groups with enlisted personnel and officers, each represented at three career stages (first-term, mid-career, and advanced). This approach allowed us to obtain greater

granularity in the perceptions and reactions of Service members. The sections below describe our research process.

## **1. Engagement Preparation**

Prior to the engagements, we developed a research protocol, which included data collection instruments (i.e., survey and focus group questions); gathered information about the selected units from a variety of sources; and obtained Institutional Review Board approval for the ethical inclusion of human participants in the research project. Points of contact were then identified for each military Service, AC and RC, in two states with state income tax (California and Virginia) and two states without state income tax (Texas and Washington). Our contacts helped recruit participants and acted as coordinators/support liaisons for our field research teams. In the related engagement preparation, we also reviewed prior research, reports, policy, law, and doctrine to develop a research protocol and focus group questions.

## **2. Field Interview Protocols**

For each military Service, component, and state, we conducted focus groups with military officers and with enlisted personnel, each at three career stages (first-term, mid-career, and advanced). At the conclusion of the field data collection, we had conducted focus groups involving a total of 740 research participants (Table 18). We formed teams of two to three people to conduct each focus group, varying the members on each team in order to limit moderator effects. Teams were composed of at least one person with direct experience serving in the military and at least one person with an academic background and experience conducting field research.

Although we collected data from all military Services, both active and reserve components, we had to suspend operations in March of 2020 due to the global coronavirus outbreak. As a result, we were unable to schedule engagements with the Army Reserve.

**Table 18. Numbers of Respondents by Category**

	<b>Number of Respondents</b>	<b>Percentage of Respondents</b>
<b>State Type</b>		
Without state tax	363	49%
With state tax	377	51%
<b>Component</b>		
Active	483	65%
Reserve	257	35%
<b>Military Branch</b>		
Army	207	28%
Navy	242	33%
Air Force	190	26%
Marine Corps	101	13%
<b>Military Career Stage</b>		
Junior Enlisted	116	16%
Mid-Grade Enlisted	135	18%
Senior Enlisted	162	22%
Junior Officer	81	11%
Mid-Grade Officer	141	19%
Senior Officer	105	14%
<b>TOTAL Participants</b>	<b>740</b>	<b>100%</b>

## **B. Results**

One aspect of the field data collection was to administer the same seven survey questions from the 2020 SOFA, permitting us to compare responses to a larger sample frame than the 740 focus group participants. Those questions are listed in Appendix C. For the second aspect, we collected qualitative data through non-attributional focus groups of uniformed members of the military Services. Those discussions were guided by the questions listed in Appendix D.

Of particular interest, comparisons of responses obtained in surveys and themes obtained from focus groups permitted us to identify distinctive features in the responses. These comparisons include:

- By **state type** (i.e., states with state income tax, California and Virginia, vs. states without state income tax, Texas and Washington).
- By **components** (i.e., AC vs. RC), both overall and within state type.
- By **military branch** (i.e., Army vs. Navy vs. Air Force vs. Marine Corps), overall, within state type, and by component.

- By **military career stage** (i.e., first-term vs. mid-career vs. advanced in both enlisted and officer ranks), overall, within state type, by component, and by military branch.

Table 19 provides a brief compilation of the feedback from our open-ended questions. Not surprisingly, Service members were quite forthcoming. Although there is diversity of opinion, there are also a few consistent themes.

**Table 19. Compilation of Service Member Feedback on Compensation**

Theme	Excerpts from Fact Finding (paraphrased)
<i>Pay, fairness, and benefits are all important</i>	
Pay and major non-cash benefits matter to Service members.	<p>Pay wasn't a factor to join, but to stay it's been a factor. Patriotic duty was the main factor to join, but pay is to stay.</p> <p>I think the biggest incentive is education—I am passing my GI bill to my son.</p> <p>Health care: I am a 10-year attorney and do a non-military civilian job that pays well; I need to make up any missed time, but DoD health care is a big draw.</p>
At the same time, Service members are more concerned with the value of national service, benefits, and stability in compensation than in the exact level of compensation.	My primary concern was not money, but having a stable job.
The current compensation system reinforces the military culture.	The more the military sounds like, feels like, is like the civilian sector, the more it will be treated like the civilian sector. The military insulates itself from the civilian sector so that you feel tied in and it's a big cultural change to leave. But with a salary system, it's not so hard to leave.
Service members support greater differentials in pay—independent of rank—for effort, assignment responsibility, hours, and onerous or risky duty.	<p>Pay grade should not equal rank. If pay grade were a separate function and reflected rank and effort expended, that would be more fair.</p> <p>I was in Iraq and was in charge of a whole airfield as a Corporal. People who do that on the civilian side are going to make upwards of 6 figures, when I was making \$20K.</p> <p>While I was deployed I was working 20-hour days; you don't get paid for any of that extra work</p> <p>Pay should be commensurate with responsibilities. The E-1s to E-4s—they mow lawns and pull staff duty. Then some E-4s have responsibilities, yet they get the same pay regardless of the job.</p> <p>Pay should be billet dependent and designator specific.</p>

Theme	Excerpts from Fact Finding (paraphrased)
	<p>For the reserves, you work all month long doing evals and communications; there is no such thing as a part-time Chief, but we get paid like we're part time.</p> <p>Some senior enlisted with master's degrees are paid less than junior officers with bachelor's degrees.</p> <p>We change positions so much. Some jobs are 17 hours a day, others 8. Depends on the effort expended.</p> <p>There is not adequate leadership compensation in the Reserves. Chiefs' pay in the Reserve Components is grossly behind the curve for leadership positions; everyone knows we're not just working 7-4, so they need to relook at the pay structure and percentage; need to reevaluate the time; need to be compensated for the time.</p>
<i>Service members see risks in moving to a salary system</i>	
<p>A salary system would need to account for the Federal assistance benefits available for low-income Service members.</p>	<p>Some assistance is strictly based on your tax bracket. If you're adding BAH, you're going up a tax bracket.</p> <p>You'd be surprised the number of your junior Service members who are on food stamps.</p> <p>Also consider junior Service members applying for income-based programs? E.g., a Service member who has a spouse applying to go to college, filling out the FAFSA, may no longer qualify for Pell Grants etc.</p>
<p>There is <i>not</i> a major, systemic compensation problem that a salary system would fix.</p>	<p>If you adopt a salary system, then my wife would let me get out!</p> <p>The current system is not perfect, but it is "fair enough."</p> <p>I'm highly negative on this salary pay system. You're paying more in taxes and have less incentive to stay in.</p> <p>The resources should focus on fixing our current pay system.</p>

Theme	Excerpts from Fact Finding (paraphrased)
<i>Views on the fairness of the “marriage premium” are mixed</i>	
The “marriage premium” is unfair.	<p>You should be paid based on your rank and your work. This is about life choices; we shouldn’t reward Service members based on their personal life choices.</p> <p>I have a wife and kids, but I like the idea of people getting the same whether or not they have kids.</p> <p>Why reward getting married? Men get 10 days for each child, and women get 12 weeks of leave. [...] With 30 days of leave per year, you can plan ahead!</p> <p>I like the idea of single and dependent getting paid the same. I know people who got married just to get the BAH, and that is not good for your sanity.</p> <p>Should have incentive pay for sailors who choose to stay single. Because some get married to just get BAH. ... how much do you save the DoD for not bringing dependents in?</p>
The “marriage premium” is fair.	<p>Service members with dependents deserve more compensation since they have more mouths to feed, more rooms necessary in their lodging.</p> <p>The military is the only job where you have no/little control over where you go, when you go, and for how long. For deployments, your duration may also be unknown. The impact on military families is far greater. Allowing compensation to reflect this is a good thing and makes the system more fair.</p> <p>There is supposed to be on-base childcare, but the waiting list is longer than their tour length in some places. Spouses can’t get jobs because the off-base childcare option is so expensive that it doesn’t make sense to work. This is one reason why families need more.</p>

Theme	Excerpts from Fact Finding (paraphrased)
<i>Service members would value improvements in child care, location pay, and on-base housing</i>	
Fix child care and access.	<p>Childcare is the biggest thing.</p> <p>Poor on-base childcare, or lack of availability, is an important, far-reaching issue; drives costs, spouse employability.</p> <p>Even though childcare at the CDC is cheaper than in town, it's still crazy expensive. They base the cost off of rent. As an E4 I was paying close to \$600 a month out of pocket, so it was a crazy amount for just 1 kid. So imagine the ones with multiple kids...more CDC capacity.</p> <p>They need to fix that whole CDC system. I have 2 kids in there, it's a lot of money. Childcare is stupid expensive no matter where you are.</p> <p>This a major issue, which also relates to how families should be compensated.</p>
Improve location pay.	<p>The research isn't done properly to see what the quality of life would be when they set BAH. The numbers aren't accurate regionally.</p> <p>There's no way that BAH in San Diego is going to cover anything more than a box, living by yourself in a good neighborhood.</p> <p>BAH doesn't even remotely reflect the rent for the area.</p> <p>A lot of people rely on that extra income; housing markets in here are higher than in the capital city.</p>
Improve on-base housing; don't require rent for substandard housing.	<p>The quality of on-base housing varies greatly and BAH overpays in some cases.</p> <p>If a salary system provides extra money, can junior enlisted get out of the barracks? The attraction wouldn't be in the money, it would be in getting out of the barracks.</p> <p>Maybe paying rent for government housing would be OK if they updated the housing, making it worth the pay. We're living back in the 70s right now.</p> <p>Our houses on bases have all kinds of problems, they are asbestos ridden, don't make code.</p> <p>For privatized housing, BAH is forfeited regardless of rank. This means that an E5 and an E7 living in the same neighborhood, perhaps the same sized house, each forfeit their entire BAH.</p>

## 1. Observations from Open-Ended Questions

The following tables summarize responses to each open-ended question by military Service.

**Table 20. Summary of Responses to Question, “To what extent was pay a factor that influenced your decision to join the military?”**

	Tax	No Tax
<b>Army</b>		
<b>Enlisted</b>	Among Active Duty junior enlisted and mid-grade NCOs in high tax states, 59 percent specified that pay was not the factor that influenced their decision to enlist. Among the senior NCOs, 73 percent specified that pay was not the factor that influenced their decision to enlist. Among Reserve Component junior enlisted and mid-grade NCOs in high tax states, 43 percent specified that pay was not the factor that influenced their decision to enlist. Among the senior NCOs, 100 percent specified that pay was not the factor that influenced their decision to enlist.	Among Active Duty junior enlisted and mid-grade NCOs in low tax states, 60 percent specified that pay was not the factor that influenced their decision to enlist. Among the senior NCOs, 53 percent specified that pay was not the factor that influenced their decision to enlist. Among Reserve Component junior enlisted and mid-grade NCOs in low tax states, 40 percent specified that medical benefits, not pay, was the factor that influenced their decision to enlist.
<b>Officer</b>	Among Active Duty junior and mid-grade officers in high tax states, 39 percent specified that pay was not the factor that influenced their decision to join; the same percentage stated that pay was either a small factor, or a factor. Among the senior officers, 62.5 percent specified that pay was not the factor that influenced their decision. Among Reserve Component junior and mid-grade officers in high tax states, 84.6 percent specified that pay was not the factor that influenced their decision. Among the senior officers, 50 percent specified that pay was not the factor that influenced their decision.	Among Active Duty junior and mid-grade officers in low tax states, 75 percent specified that pay was not the factor that influenced their decision to join; the same percentage stated that pay was either a small factor, or a factor. Among the senior officers, 100 percent specified that pay was not the factor that influenced their decision. Among Reserve Component junior and mid-grade officers in low tax states, 62.5 percent specified that pay was not the factor that influenced their decision. Among the senior officers, 60 percent specified that pay was not the factor that influenced their decision.
<b>Navy</b>		
<b>Enlisted</b>	Among Active Duty junior enlisted and mid-grade NCOs in high tax states, 44 percent specified that pay was not the factor that influenced their decision to enlist. Among the senior NCOs, 36 percent specified that pay was not the factor that influenced their decision to enlist. Among Reserve Component junior enlisted and mid-grade NCOs in high tax states, 70 percent specified that pay was not the factor that influenced their decision to enlist. Among the senior NCOs, 50 percent specified that pay was not the factor that influenced their decision to enlist, with the other 50 percent identifying pay as a factor.	Among Active Duty junior enlisted and mid-grade NCOs in low tax states, 53.8 percent specified that pay was not the factor that influenced their decision to enlist. Among the senior NCOs, 55.5 percent specified that pay was not the factor that influenced their decision to enlist. Among Reserve Component junior enlisted and mid-grade NCOs in low tax states, 43 percent specified that pay was not a factor that influenced their decision to enlist. Among senior enlisted, 81.8 percent stated that pay was not a factor.

	<b>Tax</b>	<b>No Tax</b>
<b>Officer</b>	Among Active Duty junior and mid-grade officers in high tax states, 26.6 percent specified that pay was not the factor that influenced their decision to join; the same percentage stated that pay was either a small factor, or a factor. Among the senior officers, 63.6 percent specified that pay was not the factor that influenced their decision. Among Reserve Component junior and mid-grade officers in high tax states, 77.7 percent specified that pay was not the factor that influenced their decision. Among the senior officers, 66.6 percent specified that pay was not the factor that influenced their decision.	Among Active Duty junior and mid-grade officers in low tax states, 75 percent specified that pay was not the factor that influenced their decision to join; the same percentage stated that pay was either a small factor, or a factor. Among the senior officers, 100 percent specified that pay was not the factor that influenced their decision. Among Reserve Component junior and mid-grade officers in low tax states, 62.5 percent specified that pay was not the factor that influenced their decision. Among the senior officers, 60 percent specified that pay was not the factor that influenced their decision.

### Air Force

<b>Enlisted</b>	Among Active Duty junior enlisted and mid-grade NCOs in high tax states, 62.5 percent specified that pay was not the factor that influenced their decision to enlist. Among the senior NCOs, 33 percent specified that pay was not the factor that influenced their decision to enlist; the only response that ranked higher was "having a job" (44 percent). Among Reserve Component junior enlisted and mid-grade NCOs in high tax states, 50 percent specified that pay was not the factor that influenced their decision to enlist.	Among Active Duty junior enlisted and mid-grade NCOs in low tax states, 63.6 percent specified that pay was a factor that influenced their decision to enlist, with the largest number stating that pay was somewhat a factor (36 percent of the total number of respondents). Among the senior NCOs, 58.8 percent specified that pay was not the factor that influenced their decision to enlist. Among Reserve Component junior enlisted and mid-grade NCOs in low tax states, 62 percent stated that pay was not a factor; educational benefits were (33 percent). Among the senior NCOs, 33 percent specified that benefits, not pay, were the factor that influenced their decision to enlist. One-third of senior NCOs specified that pay was not a factor.
<b>Officer</b>	Among Reserve Component junior and mid-grade officers in high tax states, 57 percent specified that pay was not the factor that influenced their decision.	Among Active Duty junior and mid-grade officers in low tax states, 72 percent specified that pay was one factor among many that influenced their decision. Among Reserve Component junior and mid-grade officers in low tax states, 47 percent specified that pay was not the factor that influenced their decision. Among the senior officers, 100 percent specified that pay was not the factor that influenced their decision.

### Marine Corps

<b>Enlisted</b>	Among Active Duty junior enlisted and mid-grade NCOs in high tax states, 66.6 percent specified that pay was not the factor that influenced their decision to enlist. Among the senior NCOs, 83 percent specified that pay was not the factor that influenced their decision to enlist. Among Reserve Component junior enlisted and mid-grade NCOs in high tax states, 91 percent specified that pay was not the factor that influenced their decision to enlist.	
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	<b>Tax</b>	<b>No Tax</b>
<b>Officer</b>	Among Active Duty junior and mid-grade officers in high tax states, 85 percent specified that pay was not the factor that influenced their decision to join. Among the senior officers, 100 percent specified that pay was not the factor that influenced their decision.	

Source: IDA Analysis of Research Participant Responses.

**Table 21. Summary of Responses to Question, “Overall, do you think you are fairly paid for the work you do? Why do you feel that way? Are there changes you would like to see in the pay system to make it fairer?”**

	<b>Tax</b>	<b>No Tax</b>
<b>Army</b>		
<b>Enlisted</b>	Among Active Duty junior enlisted and mid-grade NCOs in high tax states, 29.6 percent stated that they felt fairly paid with the current benefits and allowances. The same percentage, 29.6 percent, stated that compensation should be commensurate with the level of responsibility. Among the senior NCOs, 46.6 percent stated they were fairly paid. Among Reserve Component junior enlisted and mid-grade NCOs in high tax states, 57 percent stated they did not feel they were fairly paid. Among the senior NCOs, 100 percent stated they felt they were undercompensated.	Among Active Duty junior enlisted and mid-grade NCOs in low tax states, 85 percent stated that they felt they were not fairly paid. Among the senior NCOs, there were mixed views, with the majority stating that compensation should be commensurate with the level of responsibility (33 percent). Among Reserve Component junior enlisted and mid-grade NCOs in low tax states, 100 percent stated they did not feel they were fairly paid.
<b>Officer</b>	Among Active Duty junior and mid-grade officers in high tax states, 50 percent stated that they felt fairly paid with the current benefits and allowances. Among the senior officers, 100 percent stated they were fairly paid. Among Reserve Component junior and mid-grade officers in high tax states, there were mixed views, with 38 percent stating they would earn more in the civilian world. Among the senior officers, there were mixed views, with 50 percent stating that travel costs should be reimbursed.	Among Active Duty junior and mid-grade officers in low tax states, 50 percent stated that they felt fairly paid with the current benefits and allowances. Among the senior officers, 50 percent stated they were fairly paid as long as allowances were not taxed. Among Reserve Component junior and mid-grade officers in high and low tax states, 75 percent stated they spent too much uncompensated time working and traveling for drills. Among the senior officers, 80 percent stated they felt fairly paid.
<b>Navy</b>		
<b>Enlisted</b>	Among Active Duty junior enlisted and mid-grade NCOs in high tax states, 61 percent stated that they felt fairly paid with the current benefits and allowances; 52.7 percent specified that they felt fairly paid as long as they were not on a ship. Among the senior NCOs, 27 percent stated they were not fairly paid. Among Reserve Component junior enlisted and mid-grade NCOs in high tax states, 20 percent stated they were fairly paid because of benefits. Among the senior NCOs, 100 percent stated they felt they were undercompensated.	Among Active Duty junior enlisted and mid-grade NCOs in low tax states, 34.6 percent stated that they felt they were not fairly paid. Among the senior NCOs, 50 percent felt they were not fairly paid. Among Reserve Component junior enlisted and mid-grade NCOs in low tax states, 30 percent stated they did not feel they were fairly paid. All senior NCOs felt they were not fairly paid given the hours worked.

	<b>Tax</b>	<b>No Tax</b>
<b>Officer</b>	Among Active Duty junior and mid-grade officers in high tax states, 56.6 percent stated that they felt fairly paid with the current benefits and 81 percent stated they were fairly paid.	Among Active Duty junior and mid-grade officers in low tax states, 62.5 percent stated that they felt fairly paid with the current benefits and allowances. Among the senior officers, 75 percent stated they were fairly paid as long as allowances were not taxed. Among Reserve Component junior and mid-grade officers in low tax states, 39 percent stated they were not fairly paid. With senior officers, 100 percent stated they felt fairly paid.

#### **Air Force**

<b>Enlisted</b>	Among Active Duty junior enlisted and mid-grade NCOs in high tax states, 25 percent stated that they felt they were not fairly paid. The only response with greater frequency was that compensation should be commensurate with the level of responsibility (31 percent). Among the senior NCOs, 44 percent stated they were not fairly paid. Among Reserve Component junior enlisted and mid-grade NCOs in high tax states, there was a mixed response, with most individuals stating it depended on the Air Force Specialty Code.	Among Active Duty junior enlisted and mid-grade NCOs in low tax states, 54 percent stated that they felt they were not fairly paid. Among the senior NCOs, there were mixed views, with a slight majority stating they felt they were not fairly paid (41 percent). Among Reserve Component junior enlisted and mid-grade NCOs in low tax states, a slight majority stated they felt they were fairly paid (33 percent). Senior NCOs largely felt they were fairly paid (77.7 percent).
<b>Officer</b>	Among Reserve Component junior and mid-grade officers in high tax states, 62.5 percent stated they felt they were not fairly paid given the uncompensated time spent.	In low tax states, among Active Duty senior officers, 72.7 percent stated they were fairly paid, given the benefits. Among Reserve Component junior and mid-grade officers in low tax states, 76 percent stated they were fairly paid. Among the senior officers, 88.8 percent stated they felt fairly paid.

#### **Marine Corps**

<b>Enlisted</b>	Among Active Duty junior enlisted and mid-grade NCOs in high tax states, 50 percent stated that they felt they were not fairly paid. The next most common response was that compensation should be commensurate with the level of responsibility (44 percent). Among the senior NCOs, 58 percent stated they were not fairly paid. Among Reserve Component junior enlisted and mid-grade NCOs in high tax states, 66.6 percent stated they did not feel they were fairly paid. In every case (rank, component), uncompensated hours of work were a major concern.	
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	<b>Tax</b>	<b>No Tax</b>
<b>Officer</b>	Among Active Duty junior and mid-grade officers in high tax states, 55 percent stated that they felt fairly paid with the current benefits and allowances. Among the senior officers, the most common response was that they were not fairly paid due to the long hours worked (33 percent). Among Reserve Component junior and mid-grade officers in high tax states, there were mixed views, with 38 percent stating they would earn more in the civilian world. Among the senior officers, there were mixed views, with 50 percent stating that travel costs should be reimbursed.	

Source: IDA Analysis of Research Participant Responses.

**Table 22. Summary of Responses to Question, “How does your compensation for what you do compare to what you would earn as a civilian?”**

	<b>Tax</b>	<b>No Tax</b>
<b>Army</b>		
<b>Enlisted</b>	Among Active Duty junior enlisted and mid-grade NCOs in high tax states, 74 percent stated that civilians earn more. Among the senior NCOs, 40 percent stated that civilians earn more. Among Reserve Component junior enlisted and mid-grade NCOs in high tax states, 61.5 percent stated that civilian pay is higher. Reserve Component senior NCOs emphasized the non-reimbursed travel costs.	Among Active Duty junior enlisted and mid-grade NCOs in low tax states, there was a mixed response, with 50 percent 60 percent stating that civilians earn more. Among the senior NCOs, the emphasis was more on the benefits than the base pay.
<b>Officer</b>	Among Active Duty junior and mid-grade officers in high tax states, 38.8 percent stated that military compensation was higher due to the benefits. Among the senior officers there was uncertainty and mixed views. Among Reserve Component junior and mid-grade officers in high tax states, 69 percent stated that civilian pay is higher. Reserve Component senior officers largely viewed civilian and military compensation as comparable (75 percent).	Active Duty junior and mid-grade officers in low tax states had mixed views regarding the comparison between civilian and military compensation. Reserve senior officers largely viewed civilian and military compensation as comparable (40 percent).
<b>Navy</b>		
<b>Enlisted</b>	Among Active Duty junior enlisted and mid-grade NCOs in high tax states, 36 percent stated that civilians earn more. Among the senior NCOs, 50 percent stated that civilians earn more. Among Reserve Component junior enlisted and mid-grade NCOs in high tax states, 30 percent stated that civilian pay is higher. 75 percent of Reserve Component senior NCOs stated that civilian pay was more.	Among Active Duty junior enlisted and mid-grade NCOs 38 percent state that civilians earn more. Among the senior NCOs, 66.6 percent state that civilians earn more. In the Reserve Component, 26 percent of the junior and mid-grade NCOs feel civilians earn more. The majority of the senior NCOs feel civilians earn more (72 percent).

	<b>Tax</b>	<b>No Tax</b>
<b>Officer</b>	Among Active Duty junior and mid-grade officers in high tax states, 36.6 percent stated that civilian compensation was higher. Among the senior officers over half felt civilian pay was higher (54 percent).	Half of the Active Duty junior and mid-grade officers in low tax states viewed civilian compensation as higher (50 percent). A smaller percentage of senior officers viewed civilian compensation as higher (41.6 percent).
<b>Air Force</b>		
<b>Enlisted</b>	Among Active Duty junior enlisted and mid-grade NCOs in high tax states, the most common response was that civilians earn more. Among the senior NCOs, there was a mixed response; the most common statement was that civilian pay is more, but there were frequent references to military benefits. Among Service members in the Reserve Component, there was a mixed response, with junior and mid-grade split 50/50, and senior NCOs stating that military pay was more because of the benefits.	Among Active Duty junior enlisted and mid-grade NCOs in low tax states, the most common response was that civilians earn more (45 percent). Among the senior NCOs, there was a mixed response; the most common statement was that civilian pay is more, but there were frequent references to military benefits on the one hand, and longer hours on the other. Among Service members in the Reserve Component, there was a mixed response, with junior and mid-grade split 50/50, and senior NCOs stating that military pay was more because of the benefits.
<b>Officer</b>	Among Reserve Component junior and mid-grade officers in high tax states, responses were evenly split between civilian pay being higher and military pay being higher. Several respondents stated that they lose money being in the National Guard.	Among Active Duty junior enlisted and mid-grade officers in low tax states, the most common response was that civilians earn more (54.5 percent). Among Reserve Component junior and mid-grade officers in low tax states, responses were evenly split between civilian pay being higher and military pay being higher. Among senior officers, 44 percent stated that military pay was more than civilian pay given the benefits; 22 percent stated that civilian pay was higher.
<b>Marine Corps</b>		
<b>Enlisted</b>	Among Active Duty junior enlisted and mid-grade NCOs in high tax states, 27.7 percent stated that civilians earn more. Among the senior NCOs, 41.6 percent stated that civilians earn more. Among Reserve Component junior enlisted and mid-grade NCOs in high tax states, 91.6 percent stated that civilian pay is higher. Reserve Component enlisted emphasized the unreimbursed travel costs.	
<b>Officer</b>	Among Active Duty junior and mid-grade officers in high tax states, 40.7 percent stated that military compensation was higher due to the benefits. Among the senior officers, slightly more stated that with benefits, military pay is on par with civilian pay (50 percent).	

Source: IDA Analysis of Research Participant Responses.

**Table 23. Summary of Responses to Question, “What do you think if the DoD moved to a single-salary system that combines basic pay, BAS, and BAH?”**

	Tax	No Tax
<b>Army</b>		
<b>Enlisted</b>	Among Active Duty junior enlisted and mid-grade NCOs in high tax states, the most common response was negative (44 percent). Among the senior NCOs, 66.6 percent had a negative response. Among Reserve Component junior enlisted and mid-grade, the views expressed focused on needing to know more.	Among Active Duty junior enlisted and mid-grade NCOs in low tax states, 70 percent of soldiers had a negative response. Senior NCOs also had a negative response (73 percent). Among the Reserve Component junior enlisted and mid-grade NCOs, the response was also largely negative (80 percent).
<b>Officer</b>	Among Active Duty junior and mid-grade officers in high tax states, the most common response was negative (83 percent). Among the senior officers, 100 percent had a negative response. Among Reserve Component junior and mid-grade officers, 61.5 percent had a negative response. Half of the senior officers had a negative response.	Among Active Duty junior and mid-grade officers in low tax states, the most common response was negative (50 percent). Among the senior officers, 75 percent had a negative response. Among Reserve Component junior and mid-grade officers, 62.5 percent had a negative response. All senior officers had a negative response (100 percent).
<b>Navy</b>		
<b>Enlisted</b>	Among Active Duty junior enlisted and mid-grade NCOs in high tax states, the most common response was negative (44 percent). Among the senior NCOs, 31.8 percent had a negative response. Among the majority of Reserve Component junior enlisted and mid-grade, the views expressed focused on there being a positive response only if salary is not taxed (40 percent). The senior enlisted had a 50 percent negative response.	Among Active Duty junior enlisted and mid-grade NCOs in low tax states, 38 percent of Sailors had a negative response. Senior NCOs also had a negative response (50 percent). Among the Reserve Component junior enlisted and mid-grade NCOs, the response was also largely negative (34.7 percent). Senior NCOs had a 45 percent negative response rate.
<b>Officer</b>	Among Active Duty junior and mid-grade officers in high tax states, the most common response was negative (63 percent). Among the senior officers, 36 percent had a negative response. A large percentage of senior officers, 63.6 percent, focused on whether sailors with dependents should earn a higher salary. The majority felt sailors should be compensated for their performance, not on the number of dependents.	Among Active Duty officers in low tax states, regardless of rank, the most common response was negative (75 percent). Among Reserve Component officers in low tax states, regardless of rank, the most common response was negative (55.5 percent of junior and mid-grade officers; 100 percent of senior officers).
<b>Air Force</b>		
<b>Enlisted</b>	Among Active Duty junior enlisted and mid-grade NCOs in high tax states, there was a mixed response. The two most frequent responses were "neutral" (18.7 percent), and "depends on the outcome" (18.7 percent). Among the senior NCOs, 66.6 percent had a negative response, many citing detrimental tax implications. Among Reserve Component junior enlisted and mid-grade NCOs, 87.5 percent had a negative response.	Among Active Duty junior enlisted and mid-grade NCOs in low tax states, 81.8 percent of Airmen had a negative response. Among Senior NCOs, the most common response was negative (47 percent). Among the Reserve Component junior enlisted and mid-grade NCOs, the response was negative (100 percent).

	Tax	No Tax
<b>Officer</b>	Among Reserve Component junior and mid-grade officers in high tax states, the most common response was that Airmen should be paid more for dependents negative (71 percent); 57 percent had a negative response regarding any change to the salary system.	Among Active Duty junior and mid-grade officers in low tax states, the most common response was negative (45.5 percent). Among Reserve Component junior and mid-grade officers, 88 percent had a negative response. Among the senior officers the most common response was negative (44 percent).
<b>Marine Corps</b>		
<b>Enlisted</b>	Among Active Duty junior enlisted and mid-grade NCOs in high tax states, the most common response was negative (72 percent). Among the senior NCOs, 66.6 percent had a negative response. Reserve Component junior enlisted and mid-grade expressed mixed views.	
<b>Officer</b>	Among Active Duty junior and mid-grade officers in high tax states, the most common response was negative (29.6 percent). The second most common response was that Marines with dependents should not earn more (26 percent). Among the senior officers, 100 percent had a negative response.	

Source: IDA Analysis of Research Participant Responses.

**Table 24. Summary of Responses to Question, “How important to your standard of living are BAH and BAS?”**

	Tax	No Tax
<b>Army</b>		
<b>Enlisted</b>	Among Active Duty junior enlisted and mid-grade NCOs in high tax states, 70 percent stated that BAH was very important to their standard of living. Among the senior NCOs, 66.6 percent stated that BAH was either important or very important.	Among Active Duty junior enlisted and mid-grade NCOs in high tax states, 80 percent stated that BAH was important or very important to their standard of living. Among the senior NCOs, 100 percent stated that BAH was either important or very important.
<b>Officer</b>	Among Active Duty junior and mid-grade officers in high tax states, 50 percent stated that BAH was important for their standard of living, but some noted it was too low in high-cost areas. Among the senior officers, 87.5 percent viewed BAH as very important.	Among Active Duty junior and mid-grade officers in low tax states, 87.5 percent stated that BAH was important for their standard of living. Among the senior officers, 100 percent viewed BAH as very important.
<b>Navy</b>		
<b>Enlisted</b>	Among Active Duty enlisted in high tax states, regardless of rank, the most common response was that BAH was very important to their standard of living.	Among Active Duty enlisted in low tax states, regardless of rank, the most common response was that BAH was very important to their standard of living. In the Reserve Component, there were mixed views; roughly one-third of junior enlisted and mid-grade NCOs stated it was very important. Nearly half, 45 percent, of the senior NCOs focused on the poor condition of on-base housing and privatized housing companies with predatory practices.

	<b>Tax</b>	<b>No Tax</b>
<b>Officer</b>	Among Active Duty officers in high tax states, regardless of rank, the most common response was that BAH was important for their standard of living; junior and mid-grade officers regarded it as very important, while senior officers regarded it as important.	Among Active Duty officers in low tax states, regardless of rank, the most common response was that BAH was important for their standard of living. Some junior and mid-grade officers expressed the view that while it is important, BAH is inadequate and inaccurate (18.7 percent). In the Reserve Component, there were mixed views; roughly one-quarter of junior and mid-grade officers stated it was very important. Senior officers expressed the view that BAH was important for Active Duty Service members.

#### Air Force

<b>Enlisted</b>	Among Active Duty junior enlisted and mid-grade NCOs in high tax states, 93.7 percent stated that BAH was very important to their standard of living. Among the senior NCOs, 100 percent stated that BAH was either important or very important. Among Reserve Component junior enlisted and mid-grade NCOs, 87.5 percent regarded BAH/BAS as very important.	Among Active Duty junior enlisted and mid-grade NCOs in low tax states, 72.7 percent stated that BAH was important or very important to their standard of living. That BAH was important was also the most common response among senior enlisted. In low tax states, among the junior enlisted and mid-range NCOs, 33 percent stated BAH/BAS was important. Among the senior enlisted, 88.8 percent stated BAH/BAS was important to their standard of living.
<b>Officer</b>	[Did not really answer the question]	Among Active Duty junior and mid-grade officers in low tax states, 91 percent stated that BAH was important for their standard of living. Among the junior and mid-grade officers in the Reserve Component, 47 percent viewed BAH/BAS as important. Senior officers stated BAH was huge if on Active Duty (66.6 percent).

#### Marine Corps

<b>Enlisted</b>	Among Active Duty junior enlisted and mid-grade NCOs in high tax states, the most common response was that BAH was very important to their standard of living, but too low (38.8 percent). Among the senior NCOs, 58.3 percent stated that BAH was either important or very important. Among Reserve Component junior enlisted and mid-grade, 66.6 percent stated BAH/BAS was very important.	
<b>Officer</b>	Among Active Duty junior and mid-grade officers in high tax states, 62.9 percent stated that BAH was important or very important for their standard of living, with many noting it was too low in high-cost areas. Among the senior officers, 50 percent expressed negativity about any change.	

Source: IDA Analysis of Research Participant Responses.

**Table 25. Summary of Responses to Question, “Under a salary system, people who live on base may be required to pay rent for their on-base housing. How do you think people would respond to paying rent for their housing?”**

	Tax	No Tax
<b>Army</b>		
<b>Enlisted</b>	Issues that were prominently referenced include: poor conditions in on-base housing and barracks; the predatory practices of the companies running privatized housing; leaders’ inability to do inspections if soldiers had to pay rent for their barracks; the barracks would be empty if soldiers had to pay rent (they would live elsewhere if given a choice).	No difference
<b>Officer</b>	Issues that were prominently referenced include: poor conditions in on-base housing and barracks; the predatory practices of the companies running privatized housing; leaders’ inability to do inspections if soldiers had to pay rent for their barracks; the barracks would be empty if soldiers had to pay rent (they would live elsewhere if given a choice).	No difference
<b>Navy</b>		
<b>Enlisted</b>	Issues that were prominently referenced by the Active Duty Enlisted in high tax states included: poor conditions in on-base housing and barracks; the impact of such a requirement on retention; and (among Senior NCOs) concerns regarding the need for your Sailors to live in the barracks as they are for purposes of "conditioning."	Issues that were prominently referenced by the Active Duty Enlisted in low tax states included: poor conditions in on-base housing and barracks; the impact of such a requirement on retention; and (among Senior NCOs) concerns regarding barracks inspections. Reserve Component Enlisted in low tax states expressed the view that no one would live on base due to the poor quality of on-base housing if there were rent requirements. Reserve Component Senior Enlisted referenced financial literacy issues.
<b>Officer</b>	Issues that were prominently referenced by Active Duty officers in high tax states included: poor conditions in on-base housing and barracks and the need for oversight of young sailors. A small number of officers regardless of rank favored the requirement for there to be rent associated with on-base housing (16.6 percent of junior and mid-grade, 27 percent of senior officers).	Issues that were prominently referenced by Active Duty officers in low tax states included: poor conditions in on-base housing and barracks, the need for there to be barracks inspections, issues with financial literacy, and other concerns regarding discipline issues and safety/security. Reserve Component officers in low tax states had mixed responses. Some officers expressed the view that the condition of on-base housing varies by location.

	<b>Tax</b>	<b>No Tax</b>
<b>Air Force</b>		
<b>Enlisted</b>	Issues that were prominently referenced by the Active Duty enlisted in high tax states included: poor conditions in on-base housing and barracks and the importance of having a choice regarding living on base. Junior enlisted and mid-grade NCOs in both components had a negative response to the question.	Issues that were prominently referenced by the Active Duty enlisted in low tax states emphasized the poor conditions in on-base housing and barracks. Senior enlisted referenced concern regarding the ability for leaders to conduct barracks inspections and issues with the quality of life in base housing. Both groups had a generally negative response to the question. Reserve Component enlisted in low tax states expressed concern about issues with the quality of life in base housing. Both junior enlisted and mid-grade and senior NCOs had a generally negative response to the question.
<b>Officer</b>	Issues that were prominently referenced by the Reserve Component junior and midgrade officers in low tax states included poor conditions in on-base housing and barracks, the importance of having a choice regarding living on base. Across both components in low tax states there was a negative response to the question in general.	No difference
<b>Marine Corps</b>		
<b>Enlisted</b>	Among Active Duty junior enlisted and mid-range NCOs, 100 percent had a negative view of this question. Half of the Reserve Component junior enlisted and mid-range NCOs voiced a negative response to this question. Issues that were prominently referenced include: poor conditions in on-base housing and barracks; the opinion that Marines should have options.	
<b>Officer</b>	Among Active Duty junior and mid-range officers, 29.6 percent had a negative view of this question. Senior officers' responses were even more negative (83 percent). Issues that were prominently referenced include: poor conditions in on-base housing and barracks; leaders' inability to do inspections if Marines had to pay rent for their barracks; widespread financial illiteracy.	

Source: IDA Analysis of Research Participant Responses.

**Table 26. Summary of Responses to Question, “Are there any non-monetary benefits that would help offset the elimination of allowances?”**

	<b>Tax</b>	<b>No Tax</b>
<b>Army</b>		
<b>Enlisted</b>	Among Active Duty junior enlisted and mid-grade NCOs in high tax states, the most common response was "None" (26 percent). Among the senior NCOs, multiple individuals referenced improved access to childcare and tuition assistance. Among Reserve Component enlisted, benefits such as the elimination of state income taxes were referenced, as was Tricare for Life.	Among Active Duty junior enlisted and mid-grade NCOs in low tax states, the two most common responses were "None" and gas/transportation costs subsidies (both 15 percent). The second most common response was increased leave accrual. Senior NCOs also identified greater flexibility for geographic stability as a benefit to consider (20 percent). Among the Reserve Component junior enlisted and mid-grade NCOs, compensation for time spent traveling to drill and lodging was the most common response (40 percent).
<b>Officer</b>	Among Active Duty junior and mid-grade officers in high tax states, the most common response was "None" (22 percent). Among the senior officers, the most common response was "None" (25 percent). Among Reserve Component junior and mid-grade officers, the most common response was "None" (23 percent).	Among Active Duty junior and mid-grade officers in low tax states, the most common response was telecommuting (12.5 percent). Among the senior officers, the most common response was "None" (75 percent). Among the Reserve Component senior officers, compensation for time spent traveling to drill and lodging was the most common response (60 percent).
<b>Navy</b>		
<b>Enlisted</b>	Among Active Duty junior enlisted and mid-grade NCOs in high tax states, the most common response was subsidized and improved access to childcare (22 percent). Among the senior NCOs, multiple individuals referenced subsidized childcare (27 percent). Reserve Component enlisted identified benefits such as subsidized childcare, improved access to health insurance, transportation subsidies, and the elimination of 29-day orders.	Among Active Duty junior enlisted and mid-grade NCOs in low tax states, the two most common responses were "None" and gas/transportation costs subsidies (both 15 percent). The second most common response was increased leave accrual. Senior NCOs also identified greater flexibility for geographic stability as a benefit to consider (20 percent). Among the Reserve Component junior enlisted and mid-grade NCOs, compensation for time spent traveling to drill and lodging was the most common response (40 percent).
<b>Officer</b>	Among Active Duty junior and mid-grade officers in high tax states, the most common response focused on having greater flexibility with assignment locations; the second benefit identified was increased leave accrual. Among the senior officers, the most common response was improved access to childcare and improvements to childcare facilities.	Among Active Duty junior and mid-grade officers in low tax states, the most common response was improved access to tuition assistance (25 percent). Senior officers referenced a wide variety of benefits, to include improvements to the retirement benefits and facilities improvements. Among the Reserve Component junior and midgrade officers, subsidized childcare was the benefit referenced most (33 percent).

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**Tax**

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**No Tax**

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**Air Force**

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<b>Enlisted</b>	Among Active Duty junior enlisted and mid-grade NCOs in high tax states, the most common response was improved medical care (25 percent). Senior NCOs referenced numerous benefits, to include exemption from state income tax and expanded family benefits. Reserve Component enlisted referenced benefits such as improved access to entitlements and health care.	Among Active Duty junior enlisted and mid-grade NCOs in low tax states, the two most common responses were greater flexibility with choice of assignment location and telecommuting (both 27percent). The second most common response was subsidized childcare. Senior NCOs also identified greater flexibility for geographic stability as a benefit to consider. The most common response from the senior enlisted was that there were no non-monetary benefits that would offset. Among the Reserve Component junior enlisted and mid-grade NCOs, additional education benefits were the most common response. Reserve Component senior NCOs mentioned expanded medical insurance benefits, expanded education benefits, and more annual leave accrual.
<b>Officer</b>		Among Active Duty junior and mid-grade officers in low tax states, the most common response was telecommuting (18 percent). Among the Reserve Component junior and mid-grade officers, expanded healthcare benefits for the Reserve Component was the most common response. Compensation for time spent traveling to drill and travel costs, to include lodging, was also referenced by multiple individuals.

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**Marine Corps**

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<b>Enlisted</b>	Among Active Duty junior enlisted and mid-grade NCOs in high tax states, the most common response was "None" (38.8 percent); two respondents mentioned childcare (11 percent). Among the senior NCOs, individuals referenced improved access to childcare; BAH reform; flexibility with extending tours and switching assignments; and additional compensation for college degrees. Among Reserve Component enlisted, benefits such as improvements in Tricare for Life (16.6 percent) and improvements in education benefits (16.6 percent) were referenced; 16.6 percent of Reserve Component respondents stated that there were no non-monetary benefits that would offset the elimination of allowances.
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	Tax	No Tax
<b>Officer</b>	Among Active Duty junior and mid-grade officers in high tax states, the most common response was addressing spouse employment issues (18.5 percent); the second most common statement regarded options for extended tours (14.8 percent). Among the senior officers, the most common response regarded options for extended tours (33 percent). Individuals also referenced: childcare subsidies; comp time; better training (more ammo, better ranges, better systems); more annual leave; and telecommuting options	

Source: IDA Analysis of Research Participant Responses.

**Table 27. Summary of Responses to Question, “How would changes to the compensation system affect your plans to stay in uniform?”**

	Tax	No Tax
<b>Army</b>		
<b>Enlisted</b>	Among Active Duty junior enlisted and mid-grade NCOs in high tax states, the two most common responses were that "changes would have no impact" (15 percent) and "negative changes would have a negative impact" (15 percent). Among the senior NCOs, 33 percent indicated that changes would have no impact.	Among Active Duty junior enlisted and mid-grade NCOs in low tax states, 75 percent specified that negative changes would have a negative impact. Among the senior NCOs, 13 percent indicated that changes would have no impact.
<b>Officer</b>	Among Active Duty junior and mid-grade officers in high tax states, 22 percent stated that negative changes would have a negative impact. Among the senior officers, the most common response was that negative changes would have a negative impact (50 percent). Among Reserve Component junior and mid-grade officers in high tax states, the most common response was that negative changes would have a negative impact (30.7 percent). Among the senior officers, 50 percent specified that negative changes would have a negative impact.	Among Active Duty junior and mid-grade officers in low tax states, 54 percent stated that changes would have no impact. Among the senior officers, 100 percent stated that it would depend on the changes. Among Reserve Component junior and mid-grade officers in low tax states, significant changes were identified as potentially having an impact (12.5 percent).
<b>Navy</b>		
<b>Enlisted</b>	Among Active Duty junior enlisted and mid-grade NCOs in high tax states, the most common response was that any negative changes would have a negative impact.	Among Active Duty junior enlisted and mid-grade NCOs in low tax states, 53.8 percent specified that negative changes would have a negative impact. Senior NCOs expressed concerns regarding changes. Half of the Reserve Component enlisted stated changes would have no impact (52 percent).

	<b>Tax</b>	<b>No Tax</b>
<b>Officer</b>	Among Active Duty junior and mid-grade officers in high tax states, the most common response was that negative changes would have a negative impact.	Among Active Duty junior and mid-grade officers in low tax states, the most common responses were that changes would have no impact, and that there are concerns with financial literacy. Among the senior officers, 25 percent stated that it would depend on the changes. Among Reserve Component junior and mid-grade officers in low tax states, changes were identified as having no impact (16.6 percent).
<b>Air Force</b>		
<b>Enlisted</b>	Among Active Duty junior enlisted and mid-grade NCOs in high tax states, the most common response was that negative changes would have a negative impact (43.7 percent). Among the senior NCOs, the only response was that it would depend on the change (22 percent). All the Reserve Component junior enlisted and mid-grade NCOs stated that negative changes would have a negative impact on their plans (100 percent). In the Reserve Component, junior enlisted NCOs had mixed responses.	Among Active Duty junior enlisted and mid-grade NCOs in low tax states, 100 percent specified that negative changes would have a negative impact. Among the senior NCOs, 47 percent indicated that changes would have no impact. In the Reserve Component, junior enlisted and mid-range NCOs stated that there would be an impact (19 percent). Senior NCOs had mixed responses. The two most frequent responses were that it would depend and that changes would have no impact (each with 22 percent).
<b>Officer</b>	Among Reserve Component junior and mid-grade officers in high tax states, the most common response was that negative changes would have a negative impact (71.4 percent).	Among Active Duty junior and mid-grade officers in low tax states, respondents largely indicated that it depends on the changes (63.6 percent). Among Reserve Component junior and mid-grade officers in high tax states, the most common response was changes would have some impact, but would depend on the change (17.6 percent).
<b>Marine Corps</b>		
<b>Enlisted</b>	Answers provided focused on the blended retirement system.	
<b>Officer</b>	Among Active Duty junior and mid-grade officers in high tax states, 18.5 percent stated that negative changes would have no impact. Among the senior officers, the most common response was that changes would have no impact (50 percent). The next most common response from senior officers was that changes would have an impact depending on whether positive or negative (33 percent).	

*Source:* IDA Analysis of Research Participant Responses.

We now consider service member responses to the close-ended questions comparing these with the responses from the SOFA.

## 2. Close-Ended Questions and the SOFA

At the conclusion of each focus group session, research participants were asked to complete a close-ended instrument consisting of the same seven questions that were developed via interaction with the Office of People Analytics (OPA) for inclusion in the 2019 SOFA. The survey was fielded in late November 2019 through mid-February 2020, with preliminary tabulations received in April of 2020. According to OPA, the sample size consisted of 122,090 active service members, with a final weighted response rate of 13 percent. It is through these instruments that we were able to compare responses, based on various demographic information. For the purposes of this analysis, Reserve component members currently on a full-time military status were treated as part of the Active component. Results associated with each question are depicted first by focus group participants, followed by SOFA response.

1. Suppose DoD increased basic pay but removed the dependent rate on the Basic Allowance for Housing. This would mean
  - Service members with dependents and without dependents would receive the same pay.
  - On average, Service members with dependents would see a decrease in their earnings (after taxes); and Service members without dependents would see an increase in their earnings (after taxes).
- a. Would you support or oppose the change described above?

1. Strongly oppose	2. Somewhat oppose	3. Neither oppose nor support	4. Somewhat support	5. Strongly support
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Table 28 provides a compilation of responses to question 1a. Overall, more than 70 percent of those service members responding to the question either “strongly opposed” or “somewhat opposed” the proposed change in compensation. Subpopulations are represented in the table, parsing responses by Service, component, pay grade, location, and family status. It is interesting to note that 34 percent of the research participants having a family status of single without dependents supported this proposed change. Now, we consider responses to the same question in the SOFA shown in Table 29.

**Table 28. Focus Group Responses to Removal of Dependent BAH Rate**

	Percentages				
<b>Overall and Service</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Total</b>	52%	19%	10%	13%	6%
<b>Army</b>	62%	15%	9%	11%	3%
Active Component	61%	17%	10%	9%	3%
Reserve Component	63%	10%	4%	19%	4%
<b>Navy</b>	40%	20%	13%	16%	11%
Active Component	42%	20%	8%	17%	13%
Reserve Component	35%	18%	29%	12%	6%
<b>Marine Corps</b>	48%	22%	10%	16%	4%
Active Component	46%	23%	10%	17%	4%
Reserve Component	50%	25%	17%	8%	0%
<b>Air Force</b>	57%	19%	9%	10%	5%
Active Component	56%	19%	9%	11%	5%
Reserve Component	61%	17%	9%	9%	4%
<b>Pay Grade</b>					
<b>Enlisted</b>	51%	18%	13%	12%	6%
E1-E4	40%	18%	18%	17%	8%
E5-E9	56%	18%	11%	11%	4%
<b>Officers</b>	52%	20%	7%	15%	6%
W1-W5	67%	13%	8%	12%	0%
O1-O3	53%	20%	6%	14%	7%
O4-O6	49%	20%	9%	16%	6%
<b>Location</b>					
State with Tax	49%	21%	11%	14%	5%
State without Tax	54%	17%	9%	13%	7%
On Base	50%	21%	7%	16%	6%
Off Base	52%	18%	11%	13%	6%
<b>Family Status</b>					
<b>Single</b>	33%	20%	16%	19%	12%
With Dependents	46%	17%	13%	18%	6%
Without	27%	22%	17%	20%	14%
<b>Married</b>	61%	18%	7%	10%	4%
Working Spouse	59%	18%	9%	10%	4%
Dual Service Spouse	65%	19%	4%	9%	3%

Source: IDA Analysis of Research Participant Responses.

**Table 29. Responses to Removal of Dependent BAH Rate SOFA**

179. Suppose DoD increased basic pay but removed the dependent rate on the Basic Allowance for Housing. This would mean: Service members with dependents and without dependents would receive the same pay. On average, Service members with dependents would see a decrease in their earnings (after taxes); and Service members without dependents would see an increase in their earnings (after taxes). Would you support or oppose this change?

- 1. Strongly oppose
- 2. Somewhat oppose
- 3. Neither support nor oppose
- 4. Somewhat support
- 5. Strongly support

	% Resp.	Percentages					Max ME	Percentage Reporting Somewhat Support/Strongly Support		
		1	2	3	4	5				
<b>OVERALL AND SERVICE</b>										
Total DoD	77	48	18	15	9	10	±2	19.0	±2.0	■
Army	73	47	17	17	8	10	±3	19.0	±3.0	■
Navy	78	51	18	13	8	10	±3	18.0	±3.0	■
Marine Corps	72	39	18	19	12	13	±5	24.0	±5.0	■
Air Force	83	52	18	13	9	9	±3	17.0	±2.0	■
<b>PAYGRADE</b>										
Enlisted	75	47	17	17	9	10	±2	19.0	±2.0	■
3 to 5 Years of Service	72	39	18	19	12	12	±4	25.0	±4.0	■
6 to 9 Years of Service	77	55	16	14	6	9	±5	15.0	±4.0	■
E1-E4	71	36	19	22	10	13	±3	23.0	±3.0	■
E5-E9	78	57	16	12	7	8	±3	15.0	±2.0	■
Officers	85	52	19	10	9	9	±2	19.0	±2.0	■
W1-W5	83	63	14	10	7	7	±4	13.0	±3.0	■
O1-O3	84	45	23	11	10	10	±3	20.0	±3.0	■
O4-O6	87	59	15	9	8	9	±2	17.0	±2.0	■
<b>LOCATION</b>										
U.S. (Incl. Territories)	77	49	18	14	9	10	±2	18.0	±2.0	■
Overseas	76	41	18	20	9	12	±4	21.0	±4.0	■
Europe	81	46	18	17	8	11	±5	19.0	±5.0	■
Asia and Pacific	75	39	18	19	11	13	±5	24.0	±5.0	■
On Base	73	39	19	20	10	12	±3	22.0	±3.0	■
Off Base	79	54	17	12	8	8	±2	16.0	±2.0	■
<b>DEPLOYMENT STATUS</b>										
Deployed in Past 24 Months	77	49	18	15	8	10	±3	18.0	±3.0	■
Not Deployed in Past 24 Months	76	48	18	15	9	10	±2	19.0	±2.0	■
<b>EDUCATION</b>										
No College	70	37	18	24	10	11	±4	21.0	±4.0	■
Some College	77	51	17	14	9	10	±3	19.0	±2.0	■
4-Year Degree	80	50	21	11	8	9	±3	17.0	±2.0	■
Grad/Prof Degree	86	56	16	9	9	10	±2	18.0	±2.0	■
<b>FAMILY STATUS</b>										
Single	75	27	22	21	14	17	±3	30.0	±3.0	■
With Child(ren)	73	58	17	9	7	9	±6	16.0	±5.0	■
Without Child(ren)	75	23	22	23	14	17	±3	32.0	±3.0	■
Married	78	66	15	10	5	5	±2	10.0	±2.0	■
With Child(ren)	79	71	13	9	4	4	±2	8.0	±2.0	■
Without Child(ren)	76	56	18	13	7	7	±4	14.0	±3.0	■
Working Spouse	77	63	15	11	6	5	±3	11.0	±2.0	■
Dual Service Spouse	76	57	17	9	9	8	±5	17.0	±4.0	■

Note. Percent responding are active duty members who answered the question.

Source: OPA SOFA Survey 2019.

Similar to the close-ended responses during the field research, we observe an overall opposition to the proposed change to compensation. During the field research, 71 percent of research participants indicated that they “strongly opposed” or “somewhat opposed” the change. With the larger sample frame of the SOFA, 66 percent of survey respondents indicated an opposition to the suggested change to compensation. We also observe that 31 percent of those reporting that they are single without children support this proposal to varying levels.

Additional queries associated with question 1a were made regarding perceptions of retention and recruiting. Table 30 summarizes the responses to this question from the focus groups, and Table 31 summarizes the responses to the same question in the SOFA.

b. Would the change described above make you more likely to stay, more likely to leave, or have no impact on your decision to remain in service at the end of your service obligation/commitment?

- |                              |                                  |              |                                 |                             |
|------------------------------|----------------------------------|--------------|---------------------------------|-----------------------------|
| 1. Much more likely to leave | 2. Somewhat more likely to leave | 3. No impact | 4. Somewhat more likely to stay | 5. Much more likely to stay |
|------------------------------|----------------------------------|--------------|---------------------------------|-----------------------------|

**Table 30. Retention Perceptions Related to Removing the Dependent BAH rate (Focus Groups)**

	Percentages				
	1	2	3	4	5
<b>Total</b>	25%	27%	40%	7%	1%

Source: IDA Analysis of Research Participant Responses.

Although “no impact” received the largest percentage of any response, it should be noted that the distribution of responses was more skewed towards the “much more likely to leave” and “somewhat more likely to leave” than to the combined “likely to stay” responses. In the final part of the first question, research participants were asked for their thoughts regarding how the described change would impact recruiting those not already in the military. Now we consider responses to the same question in the SOFA.

**Table 31. Retention Perceptions Related to Removing the Dependent BAH Rate (SOFA)**

180. Would the change described in Q179 make you more likely to stay, more likely to leave, or have no impact on your decision to remain in service at the end of your service obligation/commitment?

- 1. Much more likely to leave
- 2. Somewhat more likely to leave
- 3. No impact
- 4. Somewhat more likely to stay
- 5. Much more likely to stay

	% Resp.	Percentages					Max ME	Percentage Reporting Somewhat More Likely to Stay/Much More Likely to Stay		
		1	2	3	4	5				
<b>OVERALL AND SERVICE</b>										
Total DoD	76	28	23	37	8	5	±2	13.0	±2.0	
Army	73	28	21	36	8	7	±3	15.0	±3.0	
Navy	78	30	23	37	7	3	±3	11.0	±2.0	
Marine Corps	72	22	19	41	13	5	±5	18.0	±5.0	
Air Force	82	29	26	35	5	5	±3	10.0	±2.0	
<b>PAYGRADE</b>										
Enlisted	74	28	21	36	9	6	±2	15.0	±2.0	
3 to 5 Years of Service	72	26	17	38	13	6	±4	19.0	±4.0	
6 to 9 Years of Service	77	33	25	31	7	5	±4	11.0	±4.0	
E1-E4	71	22	17	40	12	8	±4	21.0	±3.0	
E5-E9	78	33	25	32	6	4	±3	10.0	±2.0	
Officers	85	26	28	39	4	3	±2	7.0	±1.0	
W1-W5	82	39	25	30	4	2	±4	6.0	±2.0	
O1-O3	84	22	27	42	5	3	±3	8.0	±2.0	
O4-O6	87	30	29	37	2	2	±2	4.0	±1.0	
<b>LOCATION</b>										
U.S. (Incl. Territories)	76	29	23	36	7	5	±2	12.0	±2.0	
Overseas	76	23	19	41	9	8	±4	17.0	±4.0	
Europe	80	26	22	38	7	6	±5	13.0	±5.0	
Asia and Pacific	75	22	18	42	10	7	±5	17.0	±5.0	
On Base	72	23	19	39	11	8	±3	19.0	±3.0	
Off Base	79	31	25	35	6	3	±2	9.0	±2.0	
<b>DEPLOYMENT STATUS</b>										
Deployed in Past 24 Months	77	29	22	37	7	4	±3	11.0	±3.0	
Not Deployed in Past 24 Months	76	27	23	37	8	6	±2	14.0	±2.0	
<b>EDUCATION</b>										
No College	70	21	18	40	12	8	±4	21.0	±4.0	
Some College	77	31	22	35	7	5	±3	12.0	±2.0	
4-Year Degree	80	28	27	38	5	3	±3	8.0	±2.0	
Grad/Prof Degree	86	30	27	37	4	3	±2	7.0	±2.0	
<b>FAMILY STATUS</b>										
Single	74	13	16	48	14	9	±3	23.0	±3.0	
With Child(ren)	73	34	26	32	5	2	±6	8.0	±5.0	
Without Child(ren)	75	11	15	50	14	10	±3	24.0	±3.0	
Married	78	40	28	27	3	2	±2	5.0	±2.0	
With Child(ren)	79	43	29	25	2	2	±3	4.0	±2.0	
Without Child(ren)	76	34	26	32	5	2	±4	7.0	±3.0	
Working Spouse	77	39	27	30	3	2	±3	5.0	±2.0	
Dual Service Spouse	76	33	24	35	5	3	±5	8.0	±4.0	

Note. Percent responding are active duty members who answered the question.

Source: OPA SOFA Survey 2019.

As with the focus group responses, “no impact” also had the single largest response at 37 percent. Here also we see that “much more likely to leave” and “somewhat more likely to leave” combine for 51 percent of the responses, compared to 52 percent of focus group responses. The next question asks perceptions as they relate to recruiting those not already in the military. Table 32 summarizes the responses to this question from the focus groups, and Table 33 summarizes the responses to the same question in the SOFA.

c. For those considering joining the military, do you think the change described above would make them more likely to join, less likely to join, or have no impact on their decision to join?

1. Much less likely to join      2. Somewhat less likely to join      3. No impact      4. Somewhat more likely to join      5. Much more likely to join

**Table 32. Recruiting Perceptions Related to Removing the Dependent BAH Rate (Focus Groups)**

	Percentages				
	1	2	3	4	5
<b>Total</b>	14%	28%	35%	18%	5%

Source: IDA Analysis of Research Participant Responses.

Again, the “no impact” response received the greatest number of responses; however, the next two largest responses were “somewhat less likely to join” followed by “somewhat more likely to join.” Next, we look at the responses to the same question in the SOFA.

**Table 33. Recruiting Perceptions Related to Removing the Dependent BAH Rate (SOFA)**

181. For those considering joining the military, do you think the change described in Q179 would make them more likely to join, less likely to join, or have no impact on their decision to join?

1. Much less likely to join                      2. Somewhat less likely to join                      3. No impact  
 4. Somewhat more likely to join                      5. Much more likely to join

	% Resp.	Percentages					Max ME	Percentage Reporting Somewhat More Likely to Join/Much More Likely to Join		
		1	2	3	4	5				
<b>OVERALL AND SERVICE</b>										
Total DoD	76	20	26	36	12	5	±2	17.0	±2.0	■
Army	73	20	25	36	13	6	±3	19.0	±3.0	■
Navy	78	21	26	35	13	4	±3	17.0	±3.0	■
Marine Corps	71	15	22	38	18	7	±5	25.0	±5.0	■
Air Force	82	22	30	35	9	4	±3	13.0	±2.0	■
<b>PAYGRADE</b>										
Enlisted	74	21	25	35	13	6	±2	19.0	±2.0	■
3 to 5 Years of Service	72	21	24	34	15	6	±4	21.0	±4.0	■
6 to 9 Years of Service	76	24	26	34	11	4	±5	16.0	±4.0	■
E1-E4	71	19	23	33	17	8	±3	25.0	±3.0	■
E5-E9	78	23	27	36	10	4	±3	14.0	±2.0	■
Officers	85	16	31	42	9	3	±2	12.0	±2.0	■
W1-W5	82	23	24	40	10	3	±4	13.0	±3.0	■
O1-O3	84	16	32	40	9	3	±3	12.0	±2.0	■
O4-O6	87	16	30	44	8	2	±2	10.0	±2.0	■
<b>LOCATION</b>										
U.S. (Incl. Territories)	76	21	27	36	12	5	±2	17.0	±2.0	■
Overseas	76	18	25	36	15	7	±4	22.0	±4.0	■
Europe	80	20	27	35	13	5	±5	18.0	±5.0	■
Asia and Pacific	75	18	23	38	14	7	±5	21.0	±5.0	■
On Base	72	18	24	34	16	8	±3	24.0	±3.0	■
Off Base	79	22	28	37	10	3	±2	13.0	±2.0	■
<b>DEPLOYMENT STATUS</b>										
Deployed in Past 24 Months	77	20	25	39	11	5	±3	16.0	±3.0	■
Not Deployed in Past 24 Months	76	20	27	35	13	5	±2	18.0	±2.0	■
<b>EDUCATION</b>										
No College	70	18	22	36	15	8	±4	23.0	±4.0	■
Some College	76	23	26	34	13	5	±3	18.0	±2.0	■
4-Year Degree	80	20	30	38	10	3	±3	13.0	±2.0	■
Grad/Prof Degree	86	17	29	42	8	3	±2	11.0	±2.0	■
<b>FAMILY STATUS</b>										
Single	74	15	25	35	17	8	±3	25.0	±3.0	■
With Child(ren)	73	23	29	33	10	5	±6	15.0	±5.0	■
Without Child(ren)	74	14	24	36	18	8	±3	26.0	±3.0	■
Married	78	25	27	36	8	3	±2	11.0	±2.0	■
With Child(ren)	79	25	27	37	8	3	±2	11.0	±2.0	■
Without Child(ren)	76	24	28	36	9	4	±4	13.0	±3.0	■
Working Spouse	77	24	27	38	8	3	±3	11.0	±2.0	■
Dual Service Spouse	76	26	28	36	7	3	±5	10.0	±4.0	■

Note. Percent responding are active duty members who answered the question.

Source: OPA SOFA Survey 2019.

When queried about recruiting perceptions associated with this proposed compensation change, 46 percent of SOFA survey respondents indicated a perception that the proposed change would result in a less likelihood to join the military, with 36 percent suggesting that the change would have no impact to recruiting at all. These results are comparable to those in Table 32 where 42 percent of focus group participants responded that the proposed change in compensation would result in a less likelihood to join the military, with 35 percent indicating that they perceived that there would be no impact to such a change.

Next, we asked focus group and SOFA participants to respond to a second question:

2. Suppose DoD increased basic pay for Service members but removed the Basic Allowance for Housing. This would mean
  - Service members living in civilian/privatized housing that they own or rent would receive the same pay as Service members living in rent-free, government-owned housing.
  - On average, Service members living in civilian/privatized housing that they own or rent would see a decrease in their earnings (after taxes).
  - On average, Service members living in government-owned housing that they do not pay rent for would see an increase in their earnings (after taxes); however, they may have to start paying rent for their housing.

a. Would you support or oppose the change described above?

1. Strongly  
oppose

2. Somewhat  
oppose

3. Neither  
oppose nor  
support

4. Somewhat  
support

5. Strongly  
support

**Table 34. Focus Group Responses to a Single-Salary System**

	Percentages				
<b>Overall and Service</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>Total</b>	55%	23%	12%	8%	2%
<b>Army</b>	65%	18%	11%	5%	1%
Active Component	65%	19%	10%	5%	1%
Reserve Component	65%	17%	12%	4%	2%
<b>Navy</b>	42%	28%	12%	14%	4%
Active Component	48%	24%	12%	12%	4%
Reserve Component	20%	43%	15%	18%	4%
<b>Marine Corps</b>	48%	27%	10%	10%	5%
Active Component	43%	29%	11%	12%	5%
Reserve Component	84%	8%	8%	0%	0%
<b>Air Force</b>	66%	19%	10%	4%	1%
Active Component	68%	18%	10%	3%	1%
Reserve Component	61%	20%	10%	7%	2%
<b>Pay Grade</b>					
<b>Enlisted</b>	50%	22%	15%	10%	3%
E1-E4	35%	25%	18%	16%	6%
E5-E9	54%	22%	14%	8%	2%
<b>Officers</b>	62%	23%	6%	7%	2%
W1-W5	79%	13%	4%	4%	0%
O1-O3	60%	24%	9%	6%	1%
O4-O6	60%	25%	6%	7%	2%
<b>Location</b>					
State with Tax	52%	24%	12%	10%	2%
State without Tax	57%	21%	10%	7%	5%
On Base	54%	19%	12%	10%	5%
Off Base	57%	23%	11%	7%	2%
<b>Family Status</b>					
<b>Single</b>	44%	28%	13%	12%	3%
With Dependents	52%	25%	12%	10%	1%
Without	40%	29%	16%	12%	3%
<b>Married</b>	61%	20%	10%	7%	2%
Working Spouse	60%	21%	8%	8%	3%
Dual Service Spouse	66%	16%	9%	6%	3%

Source: IDA Analysis of Research Participant Responses.

As Table 34 shows, overall, 78 percent of research participants indicated that they “strongly opposed” or “somewhat opposed” this particular proposed change. Again,

subpopulations associated with Service, grade, location, and family status are also depicted. Now we compare these responses to those in the SOFA as shown in Table 35.

**Table 35. SOFA Responses to a Single-Salary System**

182. Suppose DoD increased basic pay for Service members but removed the Basic Allowance for Housing. This would mean: Service members living in civilian/privatized housing that they own or rent would receive the same pay as Service members living in rent-free government-owned housing; on average, Service members living in civilian/privatized housing that they own or rent would see a decrease in their earnings (after taxes); and on average, Service members living in government-owned housing that they do not pay rent for would see an increase in their earnings (after taxes); however, they may have to start paying rent for their housing. Would you support or oppose the change described above?

1. Strongly oppose  
 2. Somewhat oppose  
 3. Neither support nor oppose  
 4. Somewhat support  
 5. Strongly support

	% Resp.	Percentages					Max ME	Percentage Reporting Somewhat Support/Strongly Support		
		1	2	3	4	5				
<b>OVERALL AND SERVICE</b>										
Total DoD	75	61	14	16	5	4	±2	9.0	±2.0	
Army	72	55	16	17	6	5	±3	11.0	±3.0	
Navy	77	65	11	14	5	4	±3	9.0	±2.0	
Marine Corps	71	49	15	23	5	7	±5	13.0	±4.0	
Air Force	82	69	13	13	3	2	±3	5.0	±1.0	
<b>PAYGRADE</b>										
Enlisted	73	58	14	18	5	5	±2	10.0	±2.0	
3 to 5 Years of Service	71	51	15	21	7	5	±4	12.0	±3.0	
6 to 9 Years of Service	75	69	10	14	3	4	±5	7.0	±3.0	
E1-E4	69	46	17	23	7	7	±3	14.0	±3.0	
E5-E9	77	68	12	14	4	3	±3	7.0	±2.0	
Officers	85	73	14	7	3	2	±2	5.0	±1.0	
W1-W5	82	72	12	10	4	2	±4	7.0	±3.0	
O1-O3	84	74	14	7	3	2	±3	4.0	±2.0	
O4-O6	87	72	14	8	4	3	±2	7.0	±2.0	
<b>LOCATION</b>										
U.S. (Incl. Territories)	76	62	14	15	5	4	±2	9.0	±2.0	
Overseas	75	53	17	21	5	5	±4	10.0	±3.0	
Europe	79	63	15	14	5	3	±6	8.0	±4.0	
Asia and Pacific	74	49	18	22	5	5	±5	11.0	±4.0	
On Base	71	44	18	23	8	8	±3	16.0	±3.0	
Off Base	78	72	12	11	3	2	±2	5.0	±1.0	
<b>DEPLOYMENT STATUS</b>										
Deployed in Past 24 Months	76	64	13	16	4	3	±3	7.0	±2.0	
Not Deployed in Past 24 Months	75	59	15	16	5	5	±2	10.0	±2.0	
<b>EDUCATION</b>										
No College	69	46	15	25	6	7	±4	13.0	±4.0	
Some College	76	62	14	15	5	4	±3	9.0	±2.0	
4-Year Degree	79	70	14	9	4	3	±3	7.0	±2.0	
Grad/Prof Degree	86	72	13	8	3	3	±2	7.0	±2.0	
<b>FAMILY STATUS</b>										
Single	73	50	16	19	7	7	±3	14.0	±3.0	
With Child(ren)	72	66	14	11	5	3	±6	8.0	±4.0	
Without Child(ren)	73	49	17	20	7	7	±3	14.0	±3.0	
Married	77	69	12	13	3	2	±2	6.0	±1.0	
With Child(ren)	78	70	12	13	3	3	±2	6.0	±2.0	
Without Child(ren)	75	68	13	13	3	2	±4	5.0	±2.0	
Working Spouse	77	72	12	11	3	2	±3	5.0	±2.0	
Dual Service Spouse	75	76	14	7	2	2	±5	3.0	±2.0	

Note. Percent responding are active duty members who answered the question.

Source: OPA SOFA Survey 2019.

When the proposed compensation change regarding a single salary system was provided to Service members via the 2019 SOFA, 75 percent of survey respondents opposed such a change to varying degrees, compared to 78 percent of the Service members that participated in focus groups.

As with question 1, service members were then asked the extent to which enactment of such a proposal would impact their retention and the recruiting of others not yet in the military. Table 36 summarizes the responses to this question from the focus groups, and Table 37 summarizes the responses to the same question in the SOFA.

b. Would the change described above make you more likely to stay, more likely to leave, or have no impact on your decision to remain in service at the end of your service obligation/commitment?

- |                              |                                  |              |                                 |                             |
|------------------------------|----------------------------------|--------------|---------------------------------|-----------------------------|
| 1. Much more likely to leave | 2. Somewhat more likely to leave | 3. No impact | 4. Somewhat more likely to stay | 5. Much more likely to stay |
|------------------------------|----------------------------------|--------------|---------------------------------|-----------------------------|

**Table 36. Retention Perceptions Related to a Single-Salary System (Focus Groups)**

	Percentages				
	1	2	3	4	5
<b>Total</b>	33%	29%	34%	3%	1%

Source: IDA Analysis of Research Participant Responses.

While “no impact” received the greatest number of responses to this question regarding retention perceptions, 62 percent of research participants indicated that they would be “much more likely to leave” or “somewhat more likely to leave” as a response to the proposed change. We now consider responses to the same question in the SOFA.

**Table 37. Retention Perceptions Related to a Single-Salary System (SOFA)**

183. Would the change described in Q182 make you more likely to stay, more likely to leave, or have no impact on your decision to remain in service at the end of your service obligation/commitment?

- 1. Much more likely to leave
- 2. Somewhat more likely to leave
- 3. No impact
- 4. Somewhat more likely to stay
- 5. Much more likely to stay

	% Resp.	Percentages					Max ME	Percentage Reporting Somewhat More Likely to Stay/Much More Likely to Stay		
		1	2	3	4	5				
<b>OVERALL AND SERVICE</b>										
Total DoD	75	45	21	28	4	2	±2	6.0	±1.0	
Army	72	41	21	30	5	4	±3	8.0	±3.0	
Navy	77	49	21	24	3	2	±3	6.0	±2.0	
Marine Corps	71	38	16	38	5	3	±5	8.0	±4.0	
Air Force	82	51	24	22	2	1	±3	3.0	±1.0	
<b>PAYGRADE</b>										
Enlisted	73	44	19	30	4	3	±2	7.0	±2.0	
3 to 5 Years of Service	71	43	15	34	6	3	±4	8.0	±3.0	
6 to 9 Years of Service	75	52	20	24	1	3	±5	4.0	±3.0	
E1-E4	69	35	18	36	7	4	±4	11.0	±3.0	
E5-E9	77	51	20	24	2	2	±3	4.0	±2.0	
Officers	84	51	28	19	1	1	±2	2.0	±1.0	
W1-W5	81	56	22	18	2	1	±4	3.0	±2.0	
O1-O3	83	51	29	18	1	1	±3	2.0	±1.0	
O4-O6	86	49	28	21	2	1	±2	2.0	±1.0	
<b>LOCATION</b>										
U.S. (Incl. Territories)	75	47	21	26	3	3	±2	6.0	±2.0	
Overseas	75	38	20	34	5	2	±4	7.0	±3.0	
Europe	79	45	21	28	4	2	±5	6.0	±4.0	
Asia and Pacific	74	37	20	36	5	3	±5	7.0	±3.0	
On Base	71	31	20	38	7	5	±3	11.0	±3.0	
Off Base	78	55	22	21	1	1	±2	3.0	±1.0	
<b>DEPLOYMENT STATUS</b>										
Deployed in Past 24 Months	76	50	19	26	3	2	±3	5.0	±2.0	
Not Deployed in Past 24 Months	75	43	22	28	4	3	±2	7.0	±2.0	
<b>EDUCATION</b>										
No College	69	34	18	37	7	4	±4	11.0	±4.0	
Some College	76	48	19	27	3	2	±3	5.0	±2.0	
4-Year Degree	79	50	25	20	2	2	±3	4.0	±2.0	
Grad/Prof Degree	85	50	26	21	2	1	±2	3.0	±1.0	
<b>FAMILY STATUS</b>										
Single	73	35	22	34	6	4	±3	10.0	±2.0	
With Child(ren)	72	49	20	26	3	2	±6	5.0	±5.0	
Without Child(ren)	73	33	22	34	7	4	±3	11.0	±3.0	
Married	77	54	20	23	2	1	±2	3.0	±1.0	
With Child(ren)	78	54	21	23	2	1	±3	3.0	±1.0	
Without Child(ren)	75	54	20	23	2	1	±4	3.0	±2.0	
Working Spouse	76	56	20	22	1	1	±3	2.0	±1.0	
Dual Service Spouse	75	60	21	17	1	1	±5	2.0	±2.0	

Note. Percent responding are active duty members who answered the question.

Source: OPA SOFA Survey 2019.

In terms of retention, 66 percent of SOFA respondents indicated a proclivity to leave military service, compared to 62 percent of those participating in the focus groups. Here, “much more likely to leave” received the largest percentage of responses at 45 percent. Next, we ask for perceptions associated with recruiting. Table 38 summarizes the responses to this question from the focus groups, and Table 39 summarizes the responses to the same question in the SOFA.

c. For those considering joining the military, do you think the change described above would make them more likely to join, less likely to join, or have no impact on their decision to join?

1. Much less likely to join      2. Somewhat less likely to join      3. No impact      4. Somewhat more likely to join      5. Much more likely to join

**Table 38. Recruiting Perceptions Related to a Single-Salary System (Focus Groups)**

	Percentages				
	1	2	3	4	5
<b>Total</b>	20%	33%	31%	12%	4%

Source: IDA Analysis of Research Participant Responses.

Focus group participants indicated that they thought the proposed change to compensation would potentially have an adverse impact on recruiting (53 percent “much less likely to join” or “somewhat less likely to join”). However, roughly one-third (31 percent) indicated that there would be “no impact” to recruiting at all.

**Table 39. Recruiting Perceptions Related to a Single-Salary System (SOFA)**

184. For those considering joining the military, do you think the change described in Q182 would make them more likely to join, less likely to join, or have no impact on their decision to join?

- 1. Much less likely to join
- 2. Somewhat less likely to join
- 3. No impact
- 4. Somewhat more likely to join
- 5. Much more likely to join

	% Resp.	Percentages					Max ME	Percentage Reporting Somewhat More Likely to Join/Much More Likely to Join		
		1	2	3	4	5				
<b>OVERALL AND SERVICE</b>										
Total DoD	75	35	24	31	6	3	±2	9.0	±1.0	█
Army	72	32	24	33	7	4	±3	11.0	±3.0	█
Navy	77	38	23	28	7	3	±3	10.0	±2.0	█
Marine Corps	71	26	23	38	11	3	±5	14.0	±4.0	█
Air Force	81	42	27	27	3	1	±3	5.0	±1.0	█
<b>PAYGRADE</b>										
Enlisted	73	35	23	32	7	3	±2	11.0	±2.0	█
3 to 5 Years of Service	71	34	21	33	9	4	±4	13.0	±3.0	█
6 to 9 Years of Service	75	41	23	28	5	3	±5	8.0	±3.0	█
E1-E4	69	29	23	34	10	4	±4	14.0	±3.0	█
E5-E9	77	40	23	30	5	3	±3	8.0	±2.0	█
Officers	84	38	31	27	3	1	±2	4.0	±1.0	█
W1-W5	82	40	22	31	6	1	±4	7.0	±3.0	█
O1-O3	83	41	31	24	3	1	±3	4.0	±1.0	█
O4-O6	87	33	33	30	3	1	±2	5.0	±1.0	█
<b>LOCATION</b>										
U.S. (Incl. Territories)	75	36	25	30	6	3	±2	9.0	±2.0	█
Overseas	75	31	24	35	8	3	±4	11.0	±3.0	█
Europe	79	35	25	30	8	2	±5	10.0	±5.0	█
Asia and Pacific	74	31	24	36	5	4	±5	9.0	±4.0	█
On Base	71	26	23	36	10	5	±3	14.0	±3.0	█
Off Base	78	41	25	27	4	2	±2	6.0	±1.0	█
<b>DEPLOYMENT STATUS</b>										
Deployed in Past 24 Months	76	38	24	31	5	3	±3	7.0	±2.0	█
Not Deployed in Past 24 Months	75	34	25	31	7	3	±2	10.0	±2.0	█
<b>EDUCATION</b>										
No College	69	29	22	36	9	4	±4	13.0	±3.0	█
Some College	76	37	22	31	7	3	±3	10.0	±2.0	█
4-Year Degree	79	40	29	25	4	2	±3	6.0	±2.0	█
Grad/Prof Degree	85	35	31	28	4	2	±2	5.0	±2.0	█
<b>FAMILY STATUS</b>										
Single	73	30	25	32	8	4	±3	12.0	±2.0	█
With Child(ren)	72	37	23	33	6	2	±6	7.0	±4.0	█
Without Child(ren)	73	29	26	32	9	4	±3	13.0	±3.0	█
Married	77	40	24	30	5	2	±2	7.0	±2.0	█
With Child(ren)	78	38	24	31	5	2	±3	7.0	±2.0	█
Without Child(ren)	75	43	23	27	4	3	±4	7.0	±2.0	█
Working Spouse	77	41	23	30	4	2	±3	6.0	±2.0	█
Dual Service Spouse	75	45	27	24	3	2	±5	5.0	±3.0	█

Note. Percent responding are active duty members who answered the question.

Source: OPA SOFA Survey 2019.

When queried about impacts to recruiting, 59 percent of SOFA respondents indicated a negative (less likely to join) impact to varying degrees, while 31 percent, just like in the focus group responses, indicated that there would be no impact.

In the final section of the close-ended instrument and in the SOFA, research participants were asked a series of questions regarding their retention perceptions based on after-tax impacts to their income due to a change to a salary system. First, participants were asked to comment on their perceptions based on a 5 percent increase to their earnings,

followed by the same question, only with a 5 percent decrease in their earnings. The questions were asked again at the 10 percent level, followed by a final query regarding a 20 percent increase in earnings. Responses are exhibited in Table 40 below.

- |                              |                                  |              |                                 |                             |
|------------------------------|----------------------------------|--------------|---------------------------------|-----------------------------|
| 1. Much more likely to leave | 2. Somewhat more likely to leave | 3. No impact | 4. Somewhat more likely to stay | 5. Much more likely to stay |
|------------------------------|----------------------------------|--------------|---------------------------------|-----------------------------|

**Table 40. Retention Perceptions with Changes in Earnings (Focus Groups)**

Change to Earnings	Percentages				
	1	2	3	4	5
Increase 5%	5%	5%	39%	37%	14%
Decrease 5%	32%	44%	22%	1%	1%
Increase 10%	3%	4%	22%	43%	28%
Decrease 10%	56%	27%	15%	1%	1%
Increase 20%	3%	3%	15%	26%	53%

Source: IDA Analysis of Research Participant Responses.

With a 5 percent increase in earnings, one can observe that 39 percent of research participants indicated that this would have “no impact” in terms of their retention perceptions. At the same time, 37 percent indicated that they would be “somewhat more likely to stay,” with another 14 percent indicating that they would be “much more likely to stay.” With a 5 percent decrease in earnings, we observe a very different response from research participants. Instead of 39 percent indicating that a 5 percent increase in earnings would have “no impact” on their retention perceptions, and a combined 51 percent indicating a likelihood to stay, we see that only 22 percent indicated that a 5 percent decrease would have “no impact” and a combined 76 percent suggest that they would have a likelihood to leave.

At the 10 percent increase in earnings query, 22 percent of research participants indicated that such an increase would have “no impact” on their retention perceptions. Additionally, 71 percent indicated a likelihood to stay. When the same question is posed with a 10 percent decrease in earnings, 56 percent of focus group participants indicated that they would be “much more likely to leave,” the largest number of responses to this question. Finally, with a 20 percent increase in earnings, we observe likelihood-to-stay responses by research participants similar to that of the likelihood-to-leave responses with a 10 percent decrease in earnings. As we next observe in Table 41 through Table 45, responses in the SOFA were not too dissimilar from the responses obtained during focus group sessions.

**Table 41. Retention Perceptions with a 5 percent Increase in Earnings (SOFA)**

**185. If a change to a salary system....**

**a. Increased your earnings (after taxes) by 5%, how would that impact your decision to remain in service?**

- 1. Much more likely to leave
- 2. Somewhat more likely to leave
- 3. No impact
- 4. Somewhat more likely to stay
- 5. Much more likely to stay

	% Resp.	Percentages					Max ME	Percentage Reporting Somewhat More Likely to Stay/Much More Likely to Stay		
		1	2	3	4	5				
<b>OVERALL AND SERVICE</b>										
Total DoD	74	7	6	43	32	13	±2	44.0	±2.0	
Army	70	6	5	42	31	15	±3	47.0	±3.0	
Navy	76	9	6	43	32	11	±3	43.0	±3.0	
Marine Corps	70	6	5	49	30	10	±5	41.0	±5.0	
Air Force	80	8	6	42	32	12	±3	44.0	±3.0	
<b>PAYGRADE</b>										
Enlisted	72	7	6	42	31	14	±2	45.0	±2.0	
3 to 5 Years of Service	70	8	4	48	30	9	±4	40.0	±4.0	
6 to 9 Years of Service	74	8	6	40	28	18	±5	46.0	±5.0	
E1-E4	68	5	4	44	33	14	±4	47.0	±4.0	
E5-E9	76	9	7	41	29	14	±3	43.0	±3.0	
Officers	84	6	5	46	35	8	±2	42.0	±2.0	
W1-W5	80	9	10	42	29	10	±4	39.0	±4.0	
O1-O3	83	5	4	47	35	8	±3	43.0	±3.0	
O4-O6	86	7	6	45	35	7	±2	42.0	±2.0	
<b>LOCATION</b>										
U.S. (Incl. Territories)	74	8	6	42	32	12	±2	44.0	±2.0	
Overseas	74	5	4	46	30	14	±4	44.0	±4.0	
Europe	79	6	6	49	26	14	±5	40.0	±5.0	
Asia and Pacific	73	6	4	44	33	13	±5	47.0	±5.0	
On Base	70	6	5	44	32	14	±3	46.0	±3.0	
Off Base	77	8	6	43	31	11	±2	43.0	±2.0	
<b>DEPLOYMENT STATUS</b>										
Deployed in Past 24 Months	74	8	6	42	31	13	±3	44.0	±3.0	
Not Deployed in Past 24 Months	74	7	5	43	32	13	±2	44.0	±2.0	
<b>EDUCATION</b>										
No College	68	6	4	42	33	15	±4	48.0	±4.0	
Some College	74	8	6	43	30	13	±3	43.0	±3.0	
4-Year Degree	78	8	5	43	33	11	±3	44.0	±3.0	
Grad/Prof Degree	85	7	7	45	34	7	±2	41.0	±2.0	
<b>FAMILY STATUS</b>										
Single	72	5	4	45	33	13	±3	46.0	±3.0	
With Child(ren)	71	10	8	35	30	17	±6	47.0	±6.0	
Without Child(ren)	72	4	4	46	33	12	±3	46.0	±3.0	
Married	76	9	7	41	30	13	±2	43.0	±2.0	
With Child(ren)	77	9	7	40	31	13	±3	44.0	±3.0	
Without Child(ren)	73	10	6	43	29	12	±4	42.0	±4.0	
Working Spouse	75	9	7	42	30	11	±3	42.0	±3.0	
Dual Service Spouse	73	9	8	41	29	13	±5	42.0	±5.0	

Note. Percent responding are active duty members who answered the question.

Source: OPA SOFA Survey 2019.

With a 5 percent increase in earnings, we observe that 45 percent of survey participants indicated, to varying degrees, an intent to remain in service with 43 percent, the largest number of responses, indicating that such a change would have no impact. When we ask the same question with a 5 percent loss of earnings, we obtain the following responses.

**Table 42. Retention Perceptions with a 5 percent Decrease in Earnings (SOFA)**

185. If a change to a salary system....

b. Decreased your earnings (after taxes) by 5%, how would that impact your decision to remain in service?

- 1. Much more likely to leave
- 2. Somewhat more likely to leave
- 3. No impact
- 4. Somewhat more likely to stay
- 5. Much more likely to stay

	% Resp.	Percentages					Max ME	Percentage Reporting Somewhat More Likely to Stay/Much More Likely to Stay	
		1	2	3	4	5			
<b>OVERALL AND SERVICE</b>									
Total DoD	74	40	36	22	1	0	±2	2.0	±1.0
Army	70	41	34	23	2	1	±3	2.0	±2.0
Navy	76	41	35	21	2	0	±3	2.0	±2.0
Marine Corps	70	33	37	28	2	1	±5	2.0	±2.0
Air Force	80	41	40	18	1	1	±3	1.0	±1.0
<b>PAYGRADE</b>									
Enlisted	72	40	35	23	2	1	±2	2.0	±1.0
3 to 5 Years of Service	70	42	33	23	1	0	±4	1.0	±1.0
6 to 9 Years of Service	74	41	35	21	2	1	±5	3.0	±2.0
E1-E4	68	37	33	27	2	1	±3	3.0	±2.0
E5-E9	76	43	36	20	1	0	±3	2.0	±1.0
Officers	84	40	42	18	1	0	±2	1.0	±1.0
W1-W5	80	51	34	13	1	1	±4	1.0	±2.0
O1-O3	83	39	42	18	0	0	±3	1.0	±1.0
O4-O6	86	39	43	17	1	0	±2	1.0	±1.0
<b>LOCATION</b>									
U.S. (Incl. Territories)	74	41	36	21	1	0	±2	2.0	±1.0
Overseas	74	34	37	28	2	1	±4	2.0	±2.0
Europe	79	35	42	21	2	0	±5	2.0	±2.0
Asia and Pacific	73	37	33	29	1	0	±5	1.0	±1.0
On Base	70	36	34	27	2	1	±3	3.0	±2.0
Off Base	77	43	37	19	1	0	±2	1.0	±1.0
<b>DEPLOYMENT STATUS</b>									
Deployed in Past 24 Months	74	45	34	19	1	0	±3	2.0	±1.0
Not Deployed in Past 24 Months	74	38	37	23	1	1	±2	2.0	±1.0
<b>EDUCATION</b>									
No College	67	32	35	29	2	1	±4	3.0	±2.0
Some College	74	43	35	21	1	0	±3	1.0	±1.0
4-Year Degree	78	43	37	18	1	1	±3	2.0	±1.0
Grad/Prof Degree	85	40	42	17	1	0	±2	1.0	±1.0
<b>FAMILY STATUS</b>									
Single	72	33	37	27	2	1	±3	3.0	±2.0
With Child(ren)	70	41	40	18	1	0	±6	1.0	±2.0
Without Child(ren)	72	33	37	28	2	1	±3	3.0	±2.0
Married	76	45	35	18	1	0	±2	1.0	±1.0
With Child(ren)	77	46	35	17	1	0	±3	1.0	±1.0
Without Child(ren)	73	44	35	20	1	0	±4	1.0	±1.0
Working Spouse	75	46	35	17	1	0	±3	1.0	±1.0
Dual Service Spouse	73	51	34	14	1	0	±5	1.0	±2.0

Note. Percent responding are active duty members who answered the question.

Source: OPA SOFA Survey 2019.

With a 5 percent decrease in earnings, 76 percent of survey respondents indicated a likelihood to leave service, with 22 percent indicating that this level of decrease would have no impact on their decision. An interesting observation is that a 5 percent decrease in earnings impacted survey respondent likelihood to leave service (76 percent) much more than a 5 percent increase impacted respondent likelihood to remain in service (45 percent). We now pose the same set of questions at the 10 percent level of earnings.

**Table 43. Retention Perceptions with a 10 Percent Increase in Earnings (SOFA)**

185. If a change to a salary system...  
 c. Increased your earnings (after taxes) by 10%, how would that impact your decision to remain in service?

1. Much more likely to leave                      2. Somewhat more likely to leave                      3. No impact  
 4. Somewhat more likely to stay                      5. Much more likely to stay

	% Resp.	Percentages					Max ME	Percentage Reporting Somewhat More Likely to Stay/Much More Likely to Stay		
		1	2	3	4	5				
<b>OVERALL AND SERVICE</b>										
Total DoD	74	6	4	26	41	23	±2	63.0	±2.0	
Army	70	5	4	28	38	26	±3	63.0	±3.0	
Navy	76	8	4	25	41	21	±3	63.0	±3.0	
Marine Corps	70	5	3	33	40	19	±5	59.0	±5.0	
Air Force	80	6	5	22	44	23	±3	67.0	±3.0	
<b>PAYGRADE</b>										
Enlisted	72	6	4	27	39	24	±2	63.0	±2.0	
3 to 5 Years of Service	70	6	4	34	36	20	±4	56.0	±4.0	
6 to 9 Years of Service	74	7	4	23	39	26	±5	66.0	±5.0	
E1-E4	68	4	3	30	40	24	±4	63.0	±4.0	
E5-E9	76	8	5	25	38	24	±3	62.0	±3.0	
Officers	84	5	4	25	47	19	±2	66.0	±2.0	
W1-W5	80	8	7	25	42	20	±4	61.0	±4.0	
O1-O3	83	5	4	26	48	18	±3	66.0	±3.0	
O4-O6	86	5	4	23	48	19	±2	67.0	±2.0	
<b>LOCATION</b>										
U.S. (Incl. Territories)	74	6	5	26	41	23	±2	64.0	±2.0	
Overseas	74	5	3	30	39	23	±4	62.0	±4.0	
Europe	79	5	4	28	42	22	±5	64.0	±5.0	
Asia and Pacific	73	5	3	29	40	23	±5	63.0	±5.0	
On Base	70	4	3	29	39	24	±3	63.0	±3.0	
Off Base	77	7	5	25	41	22	±2	64.0	±2.0	
<b>DEPLOYMENT STATUS</b>										
Deployed in Past 24 Months	75	7	4	26	40	23	±3	63.0	±3.0	
Not Deployed in Past 24 Months	74	5	5	27	41	23	±2	64.0	±2.0	
<b>EDUCATION</b>										
No College	67	3	3	30	39	24	±4	63.0	±4.0	
Some College	74	7	4	26	38	24	±3	63.0	±3.0	
4-Year Degree	78	6	5	24	44	20	±3	65.0	±3.0	
Grad/Prof Degree	85	6	5	24	47	19	±2	66.0	±2.0	
<b>FAMILY STATUS</b>										
Single	72	4	3	30	42	22	±3	64.0	±3.0	
With Child(ren)	71	7	6	22	37	27	±6	65.0	±6.0	
Without Child(ren)	72	4	2	30	42	21	±3	64.0	±3.0	
Married	76	7	6	24	40	24	±2	63.0	±2.0	
With Child(ren)	77	7	6	23	39	24	±2	64.0	±3.0	
Without Child(ren)	73	8	5	26	40	22	±4	62.0	±4.0	
Working Spouse	75	8	6	24	40	22	±3	62.0	±3.0	
Dual Service Spouse	72	9	5	24	40	23	±5	63.0	±5.0	

Note. Percent responding are active duty members who answered the question.

Source: OPA SOFA Survey 2019.

With a 10 percent increase in earnings, 64 percent of survey respondents indicated a likelihood to remain in service, with 26 percent indicating that there would be no impact on their retention perceptions. The largest number of respondents, 41 percent, indicated that they would be “somewhat more likely to stay.” Next, we look at responses associated with a 10 percent decrease in earnings.

**Table 44. Retention Perceptions with a 10 Percent Decrease in Earnings (SOFA)**

185. If a change to a salary system...

d. Decreased your earnings (after taxes) by 10%, how would that impact your decision to remain in service?

- 1. Much more likely to leave
- 2. Somewhat more likely to leave
- 3. No impact
- 4. Somewhat more likely to stay
- 5. Much more likely to stay

	% Resp.	Percentages					Max ME	Percentage Reporting Somewhat More Likely to Stay/Much More Likely to Stay	
		1	2	3	4	5			
<b>OVERALL AND SERVICE</b>									
Total DoD	74	57	26	15	1	1	±2	2.0	±1.0
Army	70	55	26	17	1	1	±3	2.0	±2.0
Navy	76	59	24	15	1	1	±3	2.0	±2.0
Marine Corps	69	49	29	19	2	1	±5	3.0	±3.0
Air Force	80	59	29	11	1	1	±3	1.0	±1.0
<b>PAYGRADE</b>									
Enlisted	72	55	26	17	1	1	±2	2.0	±1.0
3 to 5 Years of Service	70	56	24	17	2	1	±4	2.0	±2.0
6 to 9 Years of Service	73	58	26	14	1	1	±5	2.0	±2.0
E1-E4	68	49	28	21	2	1	±4	3.0	±2.0
E5-E9	76	60	25	13	1	0	±3	2.0	±1.0
Officers	84	62	27	10	0	0	±2	1.0	±1.0
W1-W5	81	69	20	9	1	1	±4	2.0	±2.0
O1-O3	83	61	29	9	0	0	±3	1.0	±1.0
O4-O6	86	63	27	10	0	0	±2	1.0	±1.0
<b>LOCATION</b>									
U.S. (Incl. Territories)	74	58	26	14	1	1	±2	2.0	±1.0
Overseas	73	50	28	20	1	1	±4	2.0	±2.0
Europe	78	54	30	15	2	0	±5	2.0	±2.0
Asia and Pacific	73	53	26	20	1	0	±5	1.0	±1.0
On Base	70	50	27	20	2	1	±3	3.0	±2.0
Off Base	77	61	26	12	1	0	±2	1.0	±1.0
<b>DEPLOYMENT STATUS</b>									
Deployed in Past 24 Months	75	63	22	13	1	0	±3	2.0	±1.0
Not Deployed in Past 24 Months	74	54	28	16	1	1	±2	2.0	±1.0
<b>EDUCATION</b>									
No College	67	45	29	24	2	1	±4	3.0	±2.0
Some College	74	59	25	14	1	0	±3	2.0	±1.0
4-Year Degree	78	61	26	11	1	0	±3	2.0	±1.0
Grad/Prof Degree	85	62	27	10	1	0	±2	1.0	±1.0
<b>FAMILY STATUS</b>									
Single	72	49	30	19	1	1	±3	2.0	±1.0
With Child(ren)	71	61	24	14	1	0	±6	1.0	±2.0
Without Child(ren)	72	47	31	20	1	1	±3	2.0	±2.0
Married	76	63	24	12	1	0	±2	2.0	±1.0
With Child(ren)	77	64	23	12	1	0	±3	1.0	±1.0
Without Child(ren)	73	60	25	13	1	1	±4	2.0	±2.0
Working Spouse	75	64	24	11	1	0	±3	1.0	±1.0
Dual Service Spouse	72	67	22	11	1	0	±5	1.0	±2.0

Note. Percent responding are active duty members who answered the question.

Source: OPA SOFA Survey 2019.

With a 10 percent decrease in earnings, 83 percent of survey respondents indicated a likelihood to leave service, with 57 percent of those indicating that they would be much more likely to leave. Fifteen percent of respondents indicated that such a decrease would have no impact on their retention decision. In the final survey question, we again ask retention perceptions with a 20 percent increase in earnings.

**Table 45. Retention Perceptions with a 20 Percent Increase in Earnings (SOFA)**

185. If a change to a salary system....  
 e. Increased your earnings (after taxes) by 20%, how would that impact your decision to remain in service?  
 1. Much more likely to leave                      2. Somewhat more likely to leave                      3. No impact  
 4. Somewhat more likely to stay                      5. Much more likely to stay

	% Resp.	Percentages					Max ME	Percentage Reporting Somewhat More Likely to Stay/Much More Likely to Stay		
		1	2	3	4	5				
<b>OVERALL AND SERVICE</b>										
Total DoD	74	5	3	18	25	49	±2	74.0	±2.0	
Army	70	4	2	19	24	50	±3	74.0	±3.0	
Navy	76	6	3	19	26	46	±3	73.0	±3.0	
Marine Corps	69	4	3	25	26	42	±5	68.0	±5.0	
Air Force	80	5	3	14	25	52	±3	77.0	±2.0	
<b>PAYGRADE</b>										
Enlisted	72	5	3	20	24	48	±2	72.0	±2.0	
3 to 5 Years of Service	70	5	2	24	28	40	±4	69.0	±4.0	
6 to 9 Years of Service	73	6	3	15	24	52	±5	76.0	±4.0	
E1-E4	68	4	2	23	25	46	±4	72.0	±3.0	
E5-E9	76	6	4	17	23	50	±3	73.0	±2.0	
Officers	84	4	3	14	30	50	±2	80.0	±2.0	
W1-W5	80	6	4	14	23	53	±4	76.0	±4.0	
O1-O3	82	3	2	14	32	48	±3	80.0	±3.0	
O4-O6	86	4	3	14	28	52	±2	79.0	±2.0	
<b>LOCATION</b>										
U.S. (Incl. Territories)	74	5	3	18	25	49	±2	74.0	±2.0	
Overseas	73	4	2	22	25	47	±4	72.0	±4.0	
Europe	79	4	3	19	24	50	±5	74.0	±5.0	
Asia and Pacific	72	5	2	21	27	46	±5	73.0	±5.0	
On Base	70	4	2	22	25	47	±3	71.0	±3.0	
Off Base	77	5	3	16	26	50	±2	75.0	±2.0	
<b>DEPLOYMENT STATUS</b>										
Deployed in Past 24 Months	74	6	2	18	25	49	±3	74.0	±3.0	
Not Deployed in Past 24 Months	74	4	3	19	25	48	±2	74.0	±2.0	
<b>EDUCATION</b>										
No College	67	4	2	24	25	45	±5	70.0	±4.0	
Some College	74	6	3	19	23	50	±3	73.0	±3.0	
4-Year Degree	78	5	3	14	30	48	±3	78.0	±2.0	
Grad/Prof Degree	85	4	4	14	29	50	±2	79.0	±2.0	
<b>FAMILY STATUS</b>										
Single	72	4	2	21	27	46	±3	72.0	±3.0	
With Child(ren)	71	6	3	16	23	52	±6	75.0	±5.0	
Without Child(ren)	72	4	2	22	27	45	±3	72.0	±3.0	
Married	76	5	3	16	24	51	±2	75.0	±2.0	
With Child(ren)	77	5	4	16	23	52	±3	75.0	±2.0	
Without Child(ren)	73	6	3	17	25	49	±4	74.0	±4.0	
Working Spouse	75	6	3	16	25	50	±3	75.0	±3.0	
Dual Service Spouse	73	7	3	15	26	49	±5	75.0	±5.0	

Note. Percent responding are active duty members who answered the question.

Source: OPA SOFA Survey 2019.

Here, we see that 74 percent of survey respondents indicated a likelihood to remain in service with a 20 percent increase in earnings. Another 18 percent of respondents indicated that at this level, there would be no impact on their retention decision.

### C. Conclusion

We observed a concordance between the responses of focus group participants and those completing the SOFA survey. Both in focus group sessions and SOFA responses,

service members indicated an overall negative view of the two proposed changes to compensation, with various subpopulations taking a more negative position than others. Research participants also indicated that there would be impacts to the proposed changes both in terms of retention and to the potential recruitment of those not yet in the military. When queried about retention perceptions associated with earning levels as a result of a proposed change to a salary system, research participants responded in an asymmetric way. Any loss of earnings resulted in more unfavorable responses compared to the favorable responses associated with the same percentage of increased earnings.



## 10. Alternatives for Achieving the Objectives of a Salary System

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As noted at the beginning of this paper, the goal of the QRMC is to determine whether the structure of the current military compensation system remains appropriate, or whether an alternative compensation structure, such as a salary system, would enhance readiness and better enable the Department of Defense to recruit and retain tomorrow's military force.

A salary system would replace BAH and BAS with an increase in basic pay. Advocates of a salary system assert that it would improve readiness by increasing the efficiency and fairness of the compensation system:

- **Efficiency:** How well compensation is targeted to support the recruitment and retention of high-quality Service members.<sup>77</sup> Compensation should be no higher or lower than necessary to fulfill the basic objective of attracting, retaining, and motivating a sufficient quantity and quality of Service personnel.<sup>78</sup>
- **Fairness:** How well compensation supports readiness by providing similar compensation for Service members making comparable contributions. In other words, the compensation should be impartial. This principal requires that all Service members be allowed to compete equally for pay and promotion according to their abilities.<sup>79</sup>

Past QRMC studies have examined portions of the salary system (e.g., removing the marriage premium). Examining the system as a whole, however, uniquely reveals the complex interactions among variables and the parallel policy changes necessary to establish a salary system without inducing radical swings in compensation or cost. These interactions and policy changes include the following:

- DoD's budget would need to be increased by about \$9 billion.

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<sup>77</sup> The Fifth QRMC defines the objectives of military compensation as follows: The Uniformed Services compensation system should provide inducements and incentives which will help to attract and retain in the nation's Uniformed Services career motivated personnel with the intelligence, leadership and dedication necessary to insure successful accomplishment of the United States national security objectives. *Fifth Quadrennial Review of Military Compensation*, DoD, January 1984, I-3.

<sup>78</sup> Fifth QRMC, II-2.

<sup>79</sup> Fifth QRMC, II-2.

- Pays that are tied to basic pay, including retirement pay, would need to be recalibrated.
- Executive pay caps would need to be lifted.
- Congress would need to establish a separate pay table for inactive duty Reservists—and the Reserve Components would need to be willing to accept separate pay tables for active and inactive duty.
- The introduction of multiple pay tables (e.g., for retirement and inactive duty reserves) would introduce additional complexity and reduce the transparency of military compensation.
- A shift to federal locality pay would create significant winners and losers—and the losers are likely to feel more strongly about their losses than the winners do about their gains.
- The increased value of the Combat Zone Tax Exclusion (CZTE) would be an additional cost to the Federal Government.
- Pay-as-you-go (PAYGO) provisions would need to be adjusted to account for increases in deferred compensation.
- Rental policies and rates would need to be established for on-base housing.
- Military Housing Privatization Initiative (MHPI) agreements written with privatized housing owners would need to be renegotiated to address the elimination of BAH.
- Medicare and Social Security costs would increase, while benefit changes would be uncertain.

In weighing the transition to a salary system, it is also essential to consider alternative mechanisms—short of adopting a salary system—for improving the efficiency and fairness of the current system, and thereby enhancing readiness.

This chapter describes several compensation reforms that do not entail the complexity and risks of unintended consequences associated with the wholesale transition to a salary system. These reforms represent fundamental but more narrowly focused improvements that lend themselves to incremental adoption, pilot testing, and experimentation more readily than a transition to a salary system. We provide these improvements not to advocate for particular alternatives. Instead, we mean to suggest that the QRMC’s task of evaluating initiatives for improving readiness need not be limited to an all-or-nothing choice between a salary system and the status quo.

In sum, these narrower reform alternatives demonstrate two significant points. First, as noted, there are reasonable alternatives for reforming current compensation to improve efficiency and fairness short of the wholesale transition to a salary system. Second, even

the limited alternatives described here raise significant tradeoffs that require careful thought and analysis. Given limited budgets for compensation, careful analysis would be needed to ensure that any reallocation of available pay would increase readiness sufficiently in targeted areas to offset the potential readiness losses within communities that would lose pay.

## **A. Observations on the Current Cash Payment System and Ideas for Reform**

To illustrate our examples, the salient characteristics of the current cash compensation system are summarized in Table 46. Based on CBO’s data, total cash compensation equals \$89 billion annually (2019 dollars).<sup>80</sup> The various components of compensation—basic pay (63 percent), allowances for subsistence (6 percent), allowances for housing (22 percent), and special and incentive pays (8.6 percent)—contribute in varying degrees to the efficiency and perceived fairness of compensation.

Each component’s contribution to readiness depends on how well the component is targeted to members whose readiness is sensitive to that component of compensation (efficiency), while balancing this against considerations of fairness. For example, the field fact-finding for this study, reported in the previous chapter, found that most Service members believe those with significant responsibilities should be compensated accordingly. Most also believe those who have onerous duty assignments, or are pulling unusually long hours, should be compensated fairly. Therefore, compensation that encourages significant contributions is considered “efficient” while compensation for difficult duty is considered “fair.” However, striking the right balance between the two is largely a matter of subjective judgement.

As analyzed in the preceding chapters, the transition to a salary system would have complex implications for the compensation system, Service member welfare, and Service member behaviors. Not surprisingly, as we have shown, those implications can vary greatly across subpopulations of the force, depending on their current situation and the nature of the alternative salary system. In the remainder of this section, we evaluate how several major components of military pay contribute to readiness.

**Basic pay** (\$56.7 billion; 63.5 percent of cash pay): Each Service member’s basic pay depends on pay grade and years of service. Basic pay is also tied to other compensation components, such as retirement pay and continuation pay. The basic pay tables are intended to reward professional performance as a means to promotion and career longevity. Additionally, the pay tables are intended to foster fairness: the exact same pay is provided to every Service member of a given rank and career longevity. The basic pay tables thus

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<sup>80</sup> “Approaches to Changing Military Compensation,” Congressional Budget Office, January 2020.

are intended to provide both fairness as well as career progression incentives to foster readiness.

**BAH** (\$19.3 billion; 21.6 percent of cash pay): BAH is an allowance based on an index of housing costs near the Service member's assigned location. This allowance is geared to an entitlement to a standard size of house that varies by rank and whether the Service member has dependents. BAH is available to all Service members who are not provided government-owned housing. As shown in Chapter 2, the variability in BAH across Service members mainly reflects the substantial variations in the cost of housing across DoD's assignment locations. Housing costs are, of course, a major element of the cost of living. Providing a comparable housing benefit across locations is required to enable DoD to move Service members to new assignments without radically altering their ability to afford a reasonably stable lifestyle. Therefore, the locality pay component of BAH contributes to compensation stability and predictability across assignments, and, by supporting mobility, also contributes to readiness.

**BAS** (\$5.6 billion; 6.3 percent of cash pay): BAS depends only on whether the Service member is an officer or enlisted. Within those categories, BAS is set at a flat rate for all Service members. BAS, therefore, provides no direct behavioral incentives. However, its contribution to raising the overall level of compensation no doubt contributes to DoD's competitiveness in recruiting and retaining personnel.

**Table 46. Observations on Components of Current Cash Compensation**

Cash Compensation Component	Amount (\$ Billion in 2019)	Incentive Effects	External Linkages and Interdependencies	Common Reform Ideas
Basic Pay	56.7	<ul style="list-style-type: none"> <li>• Performance (readiness)</li> <li>• Promotion (rank)</li> <li>• Longevity</li> </ul>	<ul style="list-style-type: none"> <li>• Federal and state income tax liabilities</li> <li>• Retirement benefits</li> <li>• Eligibility for federal and college assistance</li> <li>• Earned income tax credit</li> </ul>	<ul style="list-style-type: none"> <li>• Steepen progression to incentivize productivity</li> <li>• Create multiple pay tables to tailor by occupation</li> <li>• Expand the basic pay pool by transferring funds from allowances with weak readiness incentives</li> </ul>
BAH	19.3	<ul style="list-style-type: none"> <li>• Equalizes cost of living across locations; incentivizes mobility</li> <li>• Weakly rewards rank and thus performance and readiness</li> </ul>	<ul style="list-style-type: none"> <li>• Avoids taxation</li> <li>• Not paid when Service member uses government-owned housing</li> </ul>	<ul style="list-style-type: none"> <li>• Eliminate all BAH and transfer funds to pay for readiness incentives; provide locality pay by adjusting basic pay</li> <li>• Eliminate “dependents’ premium” (\$2.4B) &amp; transfer funds to pay for readiness incentives</li> <li>• Equalize the benefit for BAH recipients and those in government-owned housing (i.e., equalize pay for everyone and charge rent for government owned-housing)</li> </ul>
BAS	5.6	<ul style="list-style-type: none"> <li>• No readiness incentives; per capita allowance for every Service member</li> </ul>	<ul style="list-style-type: none"> <li>• Tax-free BAS determines tax liability</li> </ul>	<ul style="list-style-type: none"> <li>• Eliminate BAS and transfer funds to pay for readiness incentives</li> </ul>
Targeted, Flexible Pays	7.7	<ul style="list-style-type: none"> <li>• Targets DoD readiness needs</li> </ul>	<ul style="list-style-type: none"> <li>• Most pays are taxable</li> <li>• Combat zone tax exclusion determines tax liability</li> </ul>	<ul style="list-style-type: none"> <li>• Improve targeting to focus on the most important readiness issues; remove outdated pays</li> <li>• Expand the pool by transferring funds from allowances with weak readiness incentives</li> </ul>

**Targeted, Flexible Pays** (\$7.7 billion; 8.6 percent of cash pay): Used effectively, the targeted, flexible pays have the clearest and most direct influence on readiness. DoD’s current cash compensation system already incorporates a high degree of flexibility, particularly through the many categories of special and incentive pays. As described in Chapter 2, Congress has provided DoD with substantial flexibility to target extra pay where necessary to address readiness issues.

## **1. Taxation, Federal Benefits, and Other Interdependencies**

The fourth column of Table 46 identifies the major linkages and interdependencies that must be accounted for when analyzing possible changes in the components of compensation. Each Service member's tax liability depends on his or her military income other than allowances, months of service in a combat zone, non-military income, marital status, spousal income, home-of-record state, years of service, and number of dependents. In addition, compensation in the form of tax savings can be a significant component of compensation. Social Security and retirement benefits are also significant forms of compensation that are tied to basic pay, as are a household's eligibility for federal benefits, such as food assistance or college tuition relief.

## **2. Common Pay Reform Ideas**

The right-hand column of Table 46 identifies several common ideas for reforming current cash compensation. It is worth noting that most of these reforms are not inherently tied to the idea of converting allowances to a salary system—that is, these reforms could be pursued whether or not a salary system is adopted.

We discuss four major reform examples here:

- Market-based adjustments to basic pay
- Assignment pay that better reflects Service member preferences
- Better use of targeted and flexible pays
- Better quality and equitable accessibility of in-kind benefits, particularly housing and childcare

## **B. Market-Based Adjustments to Basic Pay**

Consistent with the 2017 NDAA, this paper treats a single-salary system as using the same pay table for all people of a given rank and years of service, with the exception of locality variations. However, as part of its work for the Thirteenth QRMC, we were asked to consider two related topics that could involve revisions of basic pay tables:

- How a salary system might introduce market competitive pay to better compete with the civilian market for skills in high demand
- How a salary system might incorporate pay for performance

### **1. Market-Based Competitive Pay**

A common reform idea is to create alternatives of the basic pay table tailored to the competitive market conditions for specific occupations. Such a salary system is currently used for civilian physicians and dentists by both the Department of Veterans Affairs and

DoD. The DoD Civilian Physicians and Dentists Pay Plan (PDPP) applies to DoD civilian physicians and dentists at GS-15 and below who provide direct patient care services or services incident to direct patient care.<sup>81</sup> The GS system, with its pay grades and steps, is conceptually similar to the military basic pay system. The PDPP supplements basic pay with market pay. Market pay for individual employees is determined by evaluating seven criteria: level of experience, need for specialty, healthcare labor market, board certifications, professional accomplishments, unique circumstances, qualifications or credentials, and compliance with merit system principles. In other words, the PDPP system is a hybrid pay-banded system designed to compete for high-demand skills and reward outstanding accomplishments.

DoD follows the pay table and tier structure, shown in Table 47, established by the Secretary of the Department of Veterans Affairs. Four pay tables cover market pay for different medical specialties and two tables cover specified management assignments. Tiers incorporate pay ranges within a table based on factors pertaining to the position, such as scope and complexity, level of responsibility, location of practice, teaching responsibilities, and level of expertise.

Local Activity Compensation Panels and Authorized Management Officers have authority to determine the compensation of individual personnel. The pay range within each table and tier is quite large, allowing the flexibility to compensate physicians according to market conditions and individual qualifications.

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<sup>81</sup> “DoD Civilian Personnel Management System: DoD Civilian Physicians and Dentists Pay Plan (PDPP),” DoD Instruction 1400.25, Volume 543, OUSD (P&R), February 12, 2018.

**Table 47. Specialty-Based Pay Tables for the Civilian Physicians and Dentists Pay Plan (PDPP)**

**Final Approved Pay Ranges for Physicians and Dentists  
Effective January 7, 2018**

<b>Pay Table 1</b>	<b>Specialty/Assignment</b>	<b>Pay Table 2</b>	<b>Specialty/Assignment</b>
Tier 1: \$103,395 - 225,000 Tier 2: \$110,000 - 234,000 Tier 3: \$120,000 - 262,000	Endocrinology Endodontics General Practice – Dentistry Geriatrics Infectious Diseases Internal Medicine / Primary Care / Family Practice Palliative Care Periodontics Preventive Medicine Prosthodontics Rheumatology All other specialties or assignments not requiring a specific specialty training or certification	Tier 1: \$103,395 - 264,000 Tier 2: \$115,000 - 292,000 Tier 3: \$130,000 - 320,000	Allergy and Immunology Hospitalist Nephrology Neurology Pathology PM&R / SCI Psychiatry
<b>Pay Table 3</b>	<b>Specialty/Assignment</b>	<b>Pay Table 4</b>	<b>Specialty/Assignment</b>
Tier 1: \$103,395 - 348,000 Tier 2: \$120,000 - 365,000 Tier 3: \$135,000 - 385,000	Anesthesiology Pain Management Cardiology (Non-Invasive) Emergency Medicine Gynecology Hematology – Oncology Nuclear Medicine Ophthalmology Oral Surgery Pulmonary	Tier 1: \$103,395 - 400,000 Tier 2: \$125,000 - 400,000	Anesthesiology Cardiology (Invasive/Non-Interventional) Cardio-Thoracic Surgery Critical Care Dermatology Dermatology MOHS Gastroenterology General Surgery Interventional Cardiology Interventional Radiology Neurosurgery Orthopedic Surgery Otolaryngology Plastic Surgery Radiology (Diagnostic) Radiation Oncology Urology Vascular Surgery
<b>Pay Table 5</b>	<b>Specialty/Assignment</b>	<b>Pay Table 6</b>	<b>Specialty/Assignment</b>
Tier 1: \$150,000 - 309,000 Tier 2: \$145,000 - 289,000 Tier 3: \$140,000 - 270,000	VHA Chiefs of Staff – Tier assignments are based on published facility complexity level  Tier 1 – Complexity Levels 1a & 1b Tier 2 – Complexity Levels 1c & 2 Tier 3 – Complexity Level 3, facilities with no designated level, Deputy Chiefs of Staff at Complexity Levels 1a and 1b	Tier 1: \$145,000 - 265,000 Tier 2: \$145,000 - 245,000 Tier 3: \$130,000 - 235,000	Tier 1 – Principal Deputy; other Deputy Under Secretaries for Health; Chief Officers; Network Directors; Medical Center Directors; Network Chief Medical Officers Tier 2 – Executive Directors; other Assistant Under Secretaries for Health; VACO Chief Consultants; National Directors; National Program Managers Tier 3 – All VACO physicians or dentists not otherwise defined

Minimum annual rates of pay for Pay Tables 1 through 4 adjusted to reflect increase made to the Physician and Dentist Base and Longevity Pay Schedule effective Jan 7, 2018.

Although this flexibility could be built into a single-salary system for military personnel, it also could be built into the current system of pay and tax-free allowances. DoD could establish a “standard” pay table for all ranks and occupation-based pay tables for different occupations or specialties. Each table would have “tiers” that represent increasing levels of responsibility or onerous working conditions (e.g., long hours or risky work). Each tier could have a minimum and maximum value that would be multiplied by the standard pay for an individual of that rank to define the appropriate pay band.<sup>82</sup> For example, suppose the standard pay table assigns \$3,000 per month to an E-5. A particular E-5 could be assigned to Pay Table 1 (based on occupation) and Tier 3 (based on level of responsibility), which might have a multiple range of 1.3 to 1.8 or a pay band of \$3,900 to \$5,400 per month. More accomplished Service members, or members in billets with greater responsibilities or more strenuous duties, could be paid on the higher end of the pay band for their table and tier. Leaders could evaluate critical occupations annually and assign

<sup>82</sup> Alternatively, a singular factor could be used (e.g., 1.2) for each tier, eliminating the flexibility of pay bands but simplifying the administrative requirements of such a system.

occupations to new tables as market conditions change; pay levels could be similarly adjusted.

Such alternative pay tables could be adopted for occupations where the current uniform table does not account for the value of experience and the competitiveness of external markets for needed skills. Examples include language skills, cyber workforce skills, and other areas where education and experience are more important than youth and vigor. It is not clear, however, that introducing a “market pay” element into pay tables would be as flexible as or any more effective than the current system of special and incentive pays.

This alternative system would grant flexibility; however, it would also come at some cost. New administrative processes would have to be set up annually both to determine the pay multiples for each table and tier, and to determine the specific pay for each Service member within his or her respective pay band. In addition, rules would have to be set up to determine when and how to evaluate each Service member’s pay.

## **2. Pay for Performance**

Pay-for-performance systems represent another dimension of a market-based compensation system. They are designed to be competitive in attracting and retaining high achievers—those who would be in the top deciles of earners in national markets. In practice, such systems are designed to reward individuals for achieving specific organizational objectives or for exceptional achievement. These systems can take many forms, including merit increases in base salary or discretionary bonuses that are tied to performance evaluations.

Generally speaking, pay for performance contradicts the military ethos, which mainly emphasizes national service and duty, and the subjugation of individual ambition to the good of the Service and unit. In DoD, the acknowledged reward for exceptional achievement is greater responsibility—to rise through the ranks with the accompanying growth in duties, responsibility, and rank.

One common recommendation for strengthening pay for performance within the military culture is to “steepen” the base pay versus rank structure to more strongly reward advancement. The basic pay table built on rank is already geared to reward professional performance to achieve promotions and career longevity. However, the basic pay table could be recalibrated by steepening the progression of pay with rank to incentivize advancement. This steepening could be implemented to different extents for enlisted, officers, and warrant officers to meet DoD requirements for numbers of high-quality personnel over the distribution of ranks and career lengths. Because this approach would be administered within the existing personnel system, it would not require new administrative mechanisms.

For the reasons noted earlier, the current compensation system does not provide a direct mechanism to pay for performance. Outstanding achievers can expect to get better assignments and to be promoted more rapidly, with corresponding increases in pay and benefits. However, other avenues for increasing their compensation are not available. If pay for performance were deemed desirable, a system incorporating pay banding, like the PDPP described above, could provide the needed mechanism. In essence, this pay banding would arise from incorporating an additional factor to the compensation process described earlier. That is, the pay-banding system would need to evaluate achievements and to determine the appropriate compensation. The administration of a pay-for-performance mechanism would be challenging, and would require extensive training to ensure the new authorities are implemented effectively and fairly.

To return to the underlying theme of this chapter, it must be noted that the example of pay banding for military medical professions shows that the adoption of pay bands is already feasible within the current compensation system. If pay banding is deemed desirable—to strengthen market-based pay or to adopt pay-for-performance incentives—it could be incorporated into the current compensation system just as readily as it could be adopted as a feature of a single-salary system.

### **C. Convert BAH to “Assignment Pay” to Reflect Service Member Preferences**

As outlined in Chapter 2, BAH is determined by a Service member’s rank and local housing costs. However, Service members’ relative preferences across possible assignments depend on many other factors. DoD could use individuals and available funding more effectively if it could better match individuals with assignments.

DoD already has the authority to provide assignment incentives.<sup>83</sup> For example, beginning December 1, 2019, the Army instituted Assignment Incentive Pay for soldiers reporting for extended duty in Alaska. Incoming soldiers at Wainwright and Greely without command-sponsored dependents receive a \$2,000 lump sum; those with command-sponsored dependents receive \$4,000.<sup>84</sup> As another example, Service members who involuntarily extend their tours in Iraq and Kuwait combat zones receive an additional \$200 in hardship duty pay and another \$800 in assignment incentive pay monthly. Additionally,

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<sup>83</sup> The National Defense Authorization Act for Fiscal Year 2003, Public Law No. 107-314, 116 Stat. 2569 (2002), provided for a new type of special pay, called assignment incentive pay (AIP), to be offered to volunteers for duty in hard-to-fill positions specifically designated by the Secretary concerned. Current rates of pay authorized: not to exceed \$3,000 per month.

<sup>84</sup> Jim Absher, “Army Authorizes Assignment Incentive Pay for Alaska,” March 26, 2020, <https://www.military.com/daily-news/2020/03/26/army-authorizes-assignment-incentive-pay-alaska.html>.

Service members with certain skills who have served 12 months in Iraq and Afghanistan and volunteer to extend their tours receive this assignment incentive military pay.<sup>85</sup>

The Navy has an intriguing assignment incentive system that allows Service members to bid online for a monthly incentive pay associated with hard-to-fill assignments. The system specifies a maximum for each location, occupational qualification, and pay grade. Service members who submit a “winning” bid receive that amount. For example, certain sailors in grades E-4 to E-9 may bid up to \$600 per month for duty aboard the USS Emory S. Land home ported in Guam.<sup>86</sup>

Independent of whether DoD adopts a salary system, the locational component of pay could be converted to assignment pay. This pay could be calibrated to better reflect locational factors beyond the cost of housing. For example, an assignment pay for each location could be established that clears the market by balancing the talent needed in a given location with the willingness of Service members to serve in each location. Desirable locations would have relatively low assignment pays; less-desirable locations would have relatively high assignment pays. An effective assignment-pay mechanism would improve both efficiency and fairness.

#### **D. Convert BAS and the Dependents’ Allowances to Pays that Strengthen Readiness Incentives**

BAS is provided to all Service members. This allowance lifts the overall level of compensation and so influences Service members’ stay-versus-leave decisions. The \$5.5 billion provided through BAS might better contribute to readiness if the BAS were shifted into targeted, flexible pays such as special and incentive pays. Overall readiness would be enhanced if the marginal improvement to recruiting and retention of those receiving targeted pays more than offset the reductions in recruiting and retention associated with the reduction in BAS. This mechanism would involve the same tax-related issues that affect a full-blown salary system.

The \$2.4 billion “dependent’s premium” in BAH is a frequently cited flaw in current allowances. However, the field work described in Chapter 9 shows that Service members have mixed views on the fairness of this premium. BAH could be reformed to remove the premium by establishing a single level of BAH for each location and rank: single Service members and Service members with dependents would receive an equal BAH allowance. However, as shown in Chapter 2, the premium represents only about 12 percent of BAH

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<sup>85</sup> “Assignment Incentive Pay (AIP),” Department of Defense, <https://militarypay.defense.gov/Pay/Special-and-Incentive-Pays/AIP/>.

<sup>86</sup> “AIP Eligibility Chart,” Navy Bureau of Personnel, <https://www.public.navy.mil/bupers-npc/career/payandbenefits/Documents/AIP%20Eligibility%20Chart%2024%20Jan%202020.pdf>.

and only 2.6 percent of total cash compensation. It would be easier to reform the “dependents’ premium” than to revamp the entire pay system.

The combined allocation of \$7.9 billion for BAS and the “dependents premium” in BAH represents about 9 percent of the total pool of DoD cash compensation. These funds could, in concept, be reallocated to support payments with greater marginal readiness contributions than those achieved under current policy. For example, such funds might be allocated to expand the available pool of targeted, flexible pays. Although such a transfer represents a much smaller and narrowly focused reallocation than transitioning to a salary system, it nevertheless could represent meaningful changes in income for some Service members. Careful analysis would be needed to ensure that the increased readiness of those who receive reallocated pay would more than offset the potential readiness losses within the communities that would lose pay. Even these limited alternatives of eliminating BAS and the “dependents’ premium” raise significant tradeoffs that require careful thought and analysis.

### **E. Improve the Targeting of Flexible Pays to Increase Readiness**

Used effectively, the targeted, flexible pays have the clearest and most direct influence on readiness. Although there are dozens of specific categories, in general these pays serve one of four purposes:

- Compensate occupational groups to recruit and retain high-competency Service members (e.g., aviation, medical, nuclear occupations)
- Incentivize Service members to acquire demanding skills (e.g., language proficiency)
- Compensate for onerous duty (e.g., hardship, hazardous duty)
- Meet force structure requirements

Today’s military compensation system deals with market differences across occupations through a system of special and incentive pays. These pays include selective reenlistment bonuses (SRBs) that vary by occupation and term of service, flight pay, and various special pays for physicians. SRBs are calculated as a multiple of monthly basic pay.

The current system of special and incentive pays provides significant flexibility in dealing with variations in market conditions. Arguably it provides more flexibility than a system with multiple, occupation-oriented pay tables as outlined earlier in this chapter. In particular, the Services have extensive experience tailoring selective reenlistment bonuses to adjust to changes in either the supply of people or their need for people in specific fields and years of service.

Ongoing attention is required to ensure the use of flexible pays is efficient and fair. For example, the Twelfth QRMC examined ways to improve the targeting of Hazardous Duty pay and the Combat Zone Tax Exclusion (CZTE). The supporting analysis found there was a negative relationship between the risk a Service member faced within a combat zone and the member's targeted compensation.<sup>87</sup>

To a great degree, the policies for using targeted pays are under continual review. A large body of work exists of the accession, education and training, career management, and retention of career fields such as aviators, medical professionals, language and cultural experts, cyber specialists, and STEM degree holders. Similarly, the Military Departments continually adjust targeted pays associated with Service member recruitment and retention to meet their current needs and market conditions, and to channel Service members into needed occupations.

The purpose here is not to critique DoD's use of targeted, flexible pays but rather to note this is a powerful tool already at DoD's disposal. In addition, this tool can and should be employed effectively and efficiently to address readiness, regardless of whether a salary system is adopted.

## **F. Improve the Quality and Availability of In-Kind Benefits**

One powerful theme from the field fact-finding for this study, summarized in the preceding chapter, is that Service members would prefer DoD to improve basic in-kind services than to embark on a complex reform of the pay system. The junior ranks, in particular, greatly appreciate the stability of DoD employment and health benefits. These Service members also expressed a strong desire for improvements in the quality and availability of childcare and on-base housing.

Strictly speaking, in-kind benefits such as housing and childcare are not within the scope of consideration in the creation of a salary system. Nevertheless, they are highly valued components of compensation that must be factored into any overall restructuring of the compensation system. Most relevant to the current discussion is the fact that policies and programs for in-kind benefits can be addressed whether or not a salary system is adopted.

## **G. Summary**

The analyses presented in earlier chapters amply demonstrate that the current cash compensation system is complex and offers many different kinds of incentives. The brief survey in this chapter reveals that many compensation reform ideas are not inherently tied

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<sup>87</sup> Stanley A. Horowitz et al., "Risk and Combat Compensation," IDA Paper P-4747 (Alexandria, VA: Institute for Defense Analyses, August 2011).

to the idea of converting allowances to a salary system—that is, these reforms could be pursued whether or not a salary system is adopted.

To summarize:

- A salary system could incorporate pay for performance while adjusting to occupation-related market differences by using the flexible salary-based compensation approach embodied in the PDPP. One could argue, though, that this would not be a *single*-salary system.
- The possibility of incorporating pay for performance and occupation-based pay is not unique to a salary system. The current system could introduce an element of market pay to address pay for performance and adjust to market differences related to occupation.
- The current system already has a variety of time-tested mechanisms for addressing occupational market differences. These mechanisms may well provide greater flexibility than a PDPP-based system would.

Given these significant lessons, one important, overall conclusion of our work is that the DoD would be well served to broaden the range of alternatives to be considered for improving compensation. To the extent that there are problems with the efficiency and fairness of the current compensation system, it is far from clear that moving to a salary system is an important part of the solution.

## 11. Conclusions

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The goal of the QRMC analyses has been to determine whether a salary-based compensation system promises to be more effective than the current system in creating ready military forces. The existing military compensation system has many components, including basic pay, allowances for housing and subsistence, special and incentive pays, pays associated with deployment, continuation pay, retirement pay, and non-cash compensation. These components contribute in varying degrees to “readiness.” Further, a component’s contribution to readiness depends on how well that component targets members whose readiness is sensitive to it (“efficiency”). Its contribution also depends on whether the component offers equal opportunity and treatment across the force (“fairness”). A pay system that shifts pay from inefficient or unfair components of compensation to those that are more efficient or fairer would improve readiness by encouraging the accession of better personnel and their retention.

Advocates of a salary system have asserted that it would improve the efficiency and fairness of the compensation system. This paper evaluates that assertion and does not find support for it. A salary system would replace basic allowances for housing (BAH) and subsistence (BAS) with an increase in basic pay. However, this transaction would have complex implications for the compensation system and for the welfare and behaviors of Service members. Not surprisingly, as we have shown, those implications can vary across subpopulations of the force, depending on their current situation and the assumptions of the alternative salary system. Each Service member’s basic pay depends on pay grade and years of service. Other compensation components, such as retirement pay and continuation pay, are tied to basic pay. BAS depends on whether the Service member is an officer or enlisted. BAH depends on housing costs near the Service member’s assigned location, pay grade, whether the Service member has dependents, and whether the Service member lives in government housing. Each Service member’s tax liability depends on their military income other than allowances, months of service in a combat zone, non-military income, marital status, spousal income, home-of-record state, years of service, and number of dependents.

This paper reports on three major lines of research into how a salary system might work in comparison to the current compensation system. The first focuses on creating a Salary System Assessment Tool (SSAT). We apply the tool to representative cases to illustrate how moving to a salary system would affect the after-tax income of various categories of Service members, paying particular attention to variations in effect by rank, dependents’ status, and receipt of BAH. The second line of research provides an

econometric analysis for predicting likely Service member retention behavior in response to the take-home pay changes. The third involves field research to investigate the attitudes of more than 700 military personnel toward a potential salary system. We summarize our major findings here:

- 1. Simple reallocations of allowances to a salary system in proportion to current basic pay would greatly skew after-tax income toward higher pay grades and Service members who do not currently receive BAH, creating major swings in after-tax income.**
  - Eliminating allowances and increasing all members' basic pay by a constant multiple would be unfair to junior personnel now receiving BAH because allowances are a greater share of their income.
  - Service members who live in government housing do not currently receive BAH and would enjoy an increase in after-tax income if not given special treatment.
- 2. As illustrated by the alternative cases examined, the rules for a salary system could be adjusted to neutralize the skewing observed in the simple base case.**
  - The salary system could be tailored to offset imbalances between junior and senior ranks.
  - The salary system could institute rent payments for personnel in government-owned housing to offset imbalances between those Service members and those who now receive BAH.
- 3. Any salary system must incorporate several policy changes to avoid major swings in after-tax income and thereby serve the concepts and principles of military compensation.**
  - Rent on government-owned housing, to equalize after-tax income across housing situations.
  - A basic pay table specific to reservists not on active duty, to maintain balance across reserve and active duty compensation.
  - Locality pay, to balance Service member satisfaction across locations.
  - Elimination or substantial enlargement of the Executive Schedule pay caps, to maintain increases in compensation with pay grade for senior officers.
  - Revision of the retirement pay formula or use of a pay table like that suggested for reservists, to maintain the magnitude of retirement pay relative to after-tax, active duty compensation.

- A \$9 billion increase in DoD’s budget to compensate Service members for the additional cost of federal taxes, including Social Security and Medicare taxes.
- 4. Any salary system that holds cost to the Federal Government constant will entail a reduction in the aggregate after-tax income of Service members.**
- This effect is due to the increase in required state tax payments, which introduces a gap between after-tax income of Service members and cost to the Government.
  - Under a salary system that incorporates rents for government-owned housing and increases in basic pay that are tailored by rank, married BAH recipients would suffer a 5.5 percent average reduction in after-tax income. Single BAH recipients would suffer a 2.5 percent loss.
- 5. The two criteria specified by Congress, that compensation not fall and that cost to the Federal Government not rise, cannot be satisfied simultaneously.**
- A salary system that is cost-neutral to the Federal Government would increase Treasury receipts by about \$8 billion per year.
  - Service members’ state income tax liabilities would increase by about \$500 million per year, and their after-tax income would decline by the same amount.
- 6. The field research indicates that Service members in the main**
- Value pay and benefits, but also join for the employment stability and education and career development opportunities in the military. Service members are more concerned with the value of national service, childcare, health care, education benefits and loan forgiveness, and stability in compensation than the precise level of compensation.
  - Strongly favor fairness in pay that reflects work demands, risks, and rank. There is wide support for greater differentials in pay for assignment responsibility, hours, and onerous or risky duty.
  - Express strong concerns about “fixing” childcare and housing allowances while hoping for improvements in other non-cash benefits. Service members see inadequate childcare as a particularly major issue that also relates to the fairness of family compensation.
  - Express strong skepticism about major restructuring of the military compensation system. Service members view the current system as imperfect but “fair enough.” They see uncertainty in how a salary system

would work, and its implications for themselves. Their major feedback focused on the needed improvements within the current system.

**7. Prior research implies that a salary system would strongly affect accessions and retention. This study, however, has not established reliable statistical predictions of the responses of Service members to the adoption of a salary system.**

- Financially, there will be “winners” and “losers” in the transition to a salary system.
- A long history of prior econometric estimates finds that retention and recruiting are sensitive to changes in pre-tax compensation. In the cases examined, a salary system would substantially increase the pay of junior personnel and therefore should improve recruiting. At the same time, pay cuts to career enlisted personnel receiving BAH could well lead to retention problems.
- These estimates from the literature may not generalize to the specific implementation of a salary system for two main reasons:
  - The literature examines the effect of changes in pre-tax compensation only. Our econometric study of retention responses to *after-tax* compensation differentials did not find a significant response to modest changes in after-tax income across jurisdictions.
  - Behavioral economic theory and evidence from our field fact-finding suggests that (1) the responses to pay losses may exceed the responses to gains in income, and (2) the uncertainty created in changing to a salary system could undermine Service members’ valuations of their compensation in transitioning to such a system.

**8. On balance, the changes inherent to a salary system would be unprecedented in nature and magnitude, so Service member responses cannot confidently be predicted with existing econometric tools and data.**

- In modeling the transition to a salary system, the study identified many possible mechanisms—short of adopting a salary system—for improving the efficiency and fairness of the current system, and thereby enhancing readiness.
- Shift BAS and the “marriage premium” portion of BAH into basic pay and targeted, flexible pays such as special and incentive pays.
- Target flexible pays, such as special and incentive pays, more precisely to resolve readiness issues.

- Tailor the basic pay table by occupation to target readiness issues.
- Reform BAH to reflect locational factors beyond the cost of housing.
- None of these mechanisms requires a salary system.

The tools and methods created for this study provide an analytic platform for evaluating “what if” scenarios for transitioning to a salary system. The SSAT provides a means to evaluate a wide range of policies that shift budget dollars across categories of pays, or that shift relative compensation across individuals. This compensation depends on an individual’s rank, location, dependents’ status, and living situation. The cases presented in this study illustrate the complex interactions among variables. In addition, the study demonstrates that it would also be possible to examine many other cases in which salary system rules target occupations, demographic groups, or locations where readiness is a challenge.

One important lesson for identifying possible cases for analysis is that state tax considerations can make the reallocation of funding between the Federal Government and Service members a less-than-zero-sum game. There is a budgetary cost to the Federal Government (and to DoD specifically) of reducing tax-exempt allowances and shifting the monies to pay categories that are taxed. This cost must be weighed against any improved incentive effects of a reformed pay system.

Another important lesson is that several policy changes must be adopted within any salary system to ensure it is efficient and fair. These changes are highlighted in finding 3 above. It is important to note that, although the current approach for calculating BAH may be flawed, it nevertheless plays an essential role in leveling living standards for Service members who frequently move. If BAH were eliminated altogether, then it would have to be replaced by another form of locality pay.

This study has not generated precise estimates of the likely response of Service members to the adoption of a salary system. However, we find that the Service members who participate in the fact-finding are generally skeptical of major systemic changes in the pay system. Instead, they are focused on a range of specific improvements that could be made in the current system. Although a long history of experience and studies argue that Service members will predictably respond to adjustments in their cash compensation, it will be far more challenging to predict with confidence their responses to a systemic change to a salary system that will create a great deal of uncertainty as well as both “winners” and “losers” within the ranks.

Finally, it must be noted that DoD’s current system of cash compensation already incorporates a high degree of flexibility, particularly through the many categories of special and incentive pays and enlistment and retention pays. Moreover, many of the mechanisms

by which a salary system could improve efficiency and fairness could be individually implemented.

Given these significant lessons, one important overall conclusion of our work is that the DoD would be well served to broaden the range of alternatives it considers for improving compensation beyond the wholesale elimination of BAH and BAS and the adoption of a salary system.

# **Appendix A.**

## **FY 2017 NDAA Excerpt and September 2017 Presidential Memo on a Single-Salary Pay System**

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### **FY2017 NDAA Instructions for a Report on a Single-Salary Pay System**

SEC. 604. REPORTS ON A NEW SINGLE-SALARY PAY SYSTEM FOR MEMBERS OF THE ARMED FORCES.

(a) Report on Plan To Implement New Pay Structure.--Not later than March 1, 2017, the Secretary of Defense shall submit to the Committees on Armed Services of the Senate and the House of Representative a report that sets forth the following:

- (1) The military pay tables as of January 1, 2017, reflecting the Regular Military Compensation of members of the Armed Forces as of that date in the range of grades, dependency statuses, and assignment locations.
- (2) A comprehensive description of the manner in which the Department of Defense would begin, by not later than January 1, 2018, to implement a transition between the current pay structure for members of the Armed Forces and a new pay structure for members of the Armed Forces as provided for by this section.

(b) Report on Elements of New Pay Structure.--Not later than January 1, 2018, the Secretary shall submit to the Committees on Armed Services of the Senate and the House of Representative a report that sets forth the following:

- (1) A description and comparison of the current pay structure for members of the Armed Forces and a new pay structure for members of the Armed Forces, including new pay tables, that uses a single-salary pay system (as adjusted by the same cost-of-living adjustment that the Department of Defense uses worldwide for civilian employees) based on the assumptions in subsection (c).
- (2) A proposal for such legislative and administrative action as the Secretary considers appropriate to implement the new pay structure, and to provide for a transition between the current pay structure and the new pay structure.
- (3) A comprehensive schedule for the implementation of the new pay structure and for the transition between the current pay structure and the new pay structure, including all significant deadlines.

(c) New Pay Structure.--The new pay structure described pursuant to subsection (b)(1) shall assume the repeal of the basic

allowance for housing and basic allowance subsistence for members of the Armed Forces in favor of a single-salary pay system, and shall include the following:

(1) A statement of pay comparability with the civilian sector adequate to effectively recruit and retain a high-quality All-Volunteer Force.

(2) The level of pay necessary by grade and years of service to meet pay comparability as described in paragraph (1) in order to recruit and retain a high-quality All-Volunteer Force.

(3) Necessary modifications to the military retirement system, including the retired pay multiplier, to ensure that members of the Armed Forces under the pay structure are situated similarly to where they would otherwise be under the military retirement system that will take effect on January 1, 2018, by reason part I of subtitle D of the National Defense Authorization Act for Fiscal Year 2016 (Public Law 114-92; 129 Stat. 842), and the amendments made by that part.

(d) Cost Containment.--The single-salary pay system under the new pay structure provided for by this section shall be a single-salary pay system that will result in no or minimal additional costs to the Government, both in terms of annual discretionary outlays and entitlements, when compared with the continuation of the current pay system for members of the Armed Forces.

# September 2017 Presidential Memo Establishing the Thirteenth Quadrennial Review of Military Compensation

THE WHITE HOUSE  
WASHINGTON

September 15, 2017

MEMORANDUM FOR THE SECRETARY OF DEFENSE

SUBJECT: Thirteenth Quadrennial Review of Military Compensation

In addition to our support and gratitude, we owe our men and women in uniform the tools, equipment, resources, and training they need to fight and win. Our military compensation system must recognize their sacrifices and adequately and fairly reward them for their efforts and contributions. It also must encourage the next generation of men and women to answer the call to serve their fellow citizens as members of our uniformed services. Although the world and the threats to our Nation have changed over time, the structure of our military compensation system, with the exception of recent changes to military retirement, has remained largely the same.

Pursuant to the authority vested in me by the Constitution and the laws of the United States, including section 1008(b) of title 37, United States Code, I hereby determine that you shall be my Executive Agent for the Thirteenth Quadrennial Review of Military Compensation, conducting the review required by section 1008(b). As directed by statute, the review should assess the principles and concepts of the compensation system for members of the uniformed services.

At a minimum, the review should:

1. assess the adequacy of military compensation and each of its underlying components;
2. determine whether the structure of the current military compensation system, as a system of basic pay, housing, and subsistence allowances, remains appropriate, or whether an alternate compensation structure, such as a salary system, would enhance readiness and better enable the Department of Defense to recruit and retain tomorrow's military force; and



OSD011467-17/CMD015285-17

3. survey the usage of Supplemental Nutrition Assistance Program benefits, as well as any other supplemental sources of income or support you deem significant, by military members on active service and their families, and consider the results of the review in assessing the adequacy of overall military compensation.

As Executive Agent, you shall ensure representatives of other executive departments and agencies participate in this review, as appropriate.

A large, bold, handwritten signature in black ink, appearing to be "A. M. ...".

## **Appendix B.**

# **Background on Basic Allowance for Housing (BAH)**

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This appendix provides an overview of BAH, including the authorities for administering it, rules for dispersing it, recent legislation affecting it, and guidelines for determining the eligibility of reserve component members to receive it.

### **Statutory Authority for BAH**

Statutory authority for DoD to pay BAH is contained in Section 403 of title 37, United States Code (37 USC 403). The current description is based on that source, on information available at the Defense Travel Management Office’s website, and on a primer published by DoD’s Office of Military Compensation Policy.<sup>1</sup>

BAH is potentially available to members of all the “uniformed services,” including the Army, Navy, Air Force, and Marine Corps (all under the Department of Defense); the Coast Guard (under the Department of Homeland Security); and the Commissioned Corps of the National Oceanic and Atmospheric Administration (NOAA, under the Department of Commerce); and the Public Health Service (under the Department of Health and Human Services).

BAH rates are calibrated to median market rents on housing units, plus average expenditures on utilities (electricity, water, sewer, and heating fuel) in each local market area. Since 2015, renter’s insurance is no longer included in the calculation. Housing costs are estimated and applied in about 340 military housing areas (MHAs)—each defined as a collection of zip codes—and less-populous County Cost Groups. MHAs are named for the military installation or closest city (e.g., Fort Hood; Wright-Patterson AFB; Washington, DC; or Denver). New BAH rates take effect on January 1<sup>st</sup> of each year.

A Service member who is assigned to permanent duty within the 50 states and is not furnished government housing is eligible for BAH. The amount of BAH is determined by a member’s pay grade, dependency status, and zip code of the member’s permanent duty station. The two values of dependency status are either “with dependents” or “without

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<sup>1</sup> “Basic Allowance for Housing (BAH), Frequently Asked Questions,” updated September 20, 2018, Defense Travel Management Office, [www.defensetravel.dod.mil/site/faqbah.cfm](http://www.defensetravel.dod.mil/site/faqbah.cfm); and “A Primer on the Basic Allowance for Housing (BAH) for the Uniformed Services,” updated January 2019, Office of Military Compensation Policy, [www.defensetravel.dod.mil/Docs/perdiem/BAH-Primer.pdf](http://www.defensetravel.dod.mil/Docs/perdiem/BAH-Primer.pdf).

dependents.” No further distinction is made based on the Service member’s actual family size; the “with dependents” rate is based on the average family size among comparable civilians. DoD applies a complex algorithm to map a member’s pay grade and dependency status into a type of housing unit, such as a 2-bedroom townhouse/duplex or a 3-bedroom, single-family, detached house. The “anchor points” at which a member’s BAH corresponds to a larger housing unit are illustrated in Figure B-1. The complexity arises in that BAH rates for members between anchor points are interpolated. The member’s BAH rate is set equal to the sum of the median market rent and the average costs of utilities for the prescribed type of unit within the MHA.

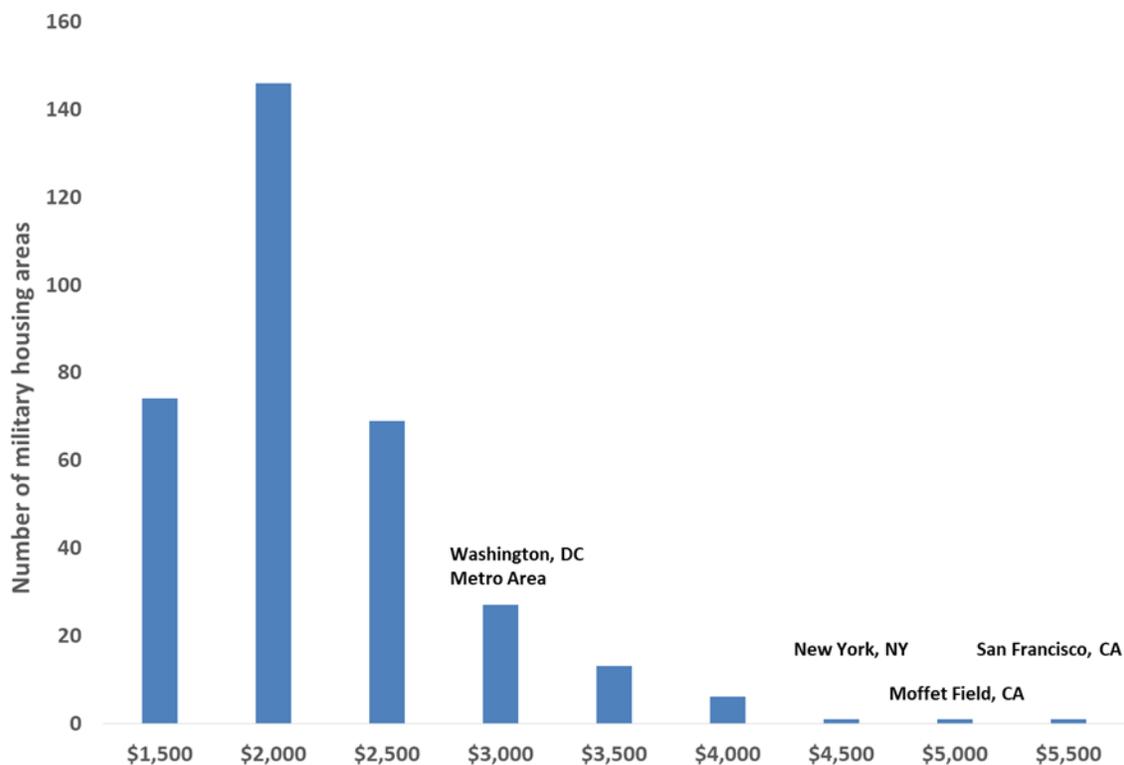
E-1 to E-4 receive midpoint of 2BR apt. and 2BR townhouse

Profile	Grade With Dependents	Grade Without Dependents
<b>1 Bedroom Apartment</b>		E-4
<b>2 Bedroom Apartment</b>	↓	O-1
<b>2 Bedroom Townhouse/Duplex</b>	E-5	O-1E
<b>3 Bedroom Townhouse/Duplex</b>	E-6	O-3E
<b>3 Bedroom Single Family Detached House</b>	W-3	O-6
<b>4 Bedroom Single Family Detached House</b>	O-5	

Source: Adapted from DoD, Office of Military Compensation Policy, “A Primer on the Basic Allowance for Housing (BAH) for the Uniformed Services,” p. 2, [www.defensetravel.dod.mil/Docs/perdiem/BAH-Primer.pdf](http://www.defensetravel.dod.mil/Docs/perdiem/BAH-Primer.pdf).

**Figure B-1. Anchor Points that Determine a Service Member’s BAH**

BAH rates vary by a factor of about 5 across the range of MHAs. That variation is illustrated in Figure B-2 for an E-8 with dependents in 2019.



Note: Although not many military personnel are stationed in New York City, there is a four-service recruiting station in Manhattan's Times Square. Recruiters may live within the city boundaries.

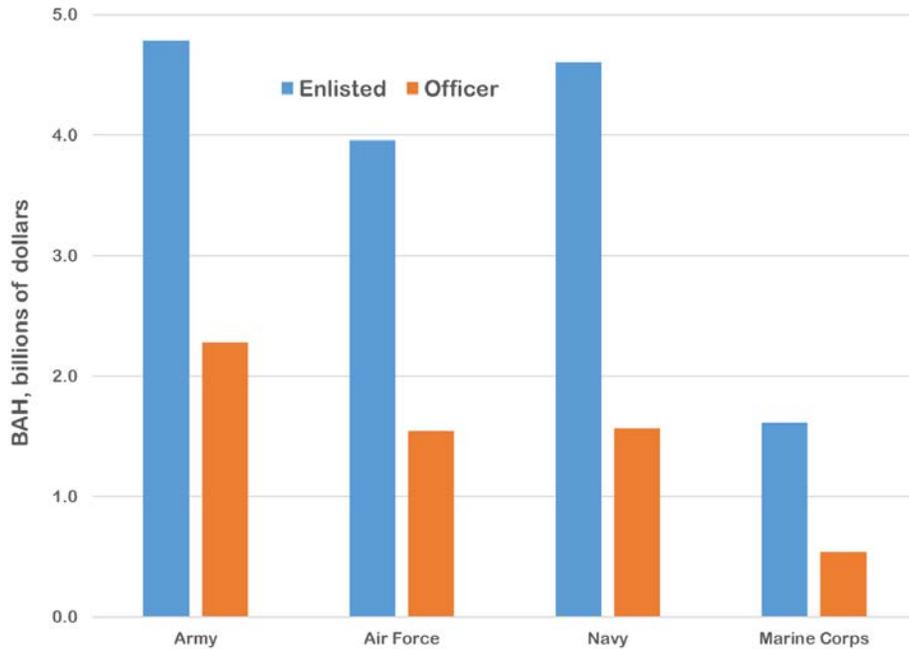
**Figure B-2. Monthly BAH Rates for an E-8 with Dependents, 2019**

One important feature of BAH is *rate protection*. This feature ensures that even if housing costs in a member's location decline from one calendar year to the next, the member's BAH rate does not decline as long as he or she remains in the same location and does not have a reduction in pay grade or a change in dependency status. However, BAH may decline if the member moves to a lower-cost housing area in his or her next assignment.

Section 604 of the National Defense Authorization Act (NDAA) for FY 2015 (Public Law 113-291) authorized a reduction of a maximum 1 percent in BAH relative to market-based housing costs, as determined by the Secretary of Defense. The following year, section 603 of the NDAA for FY 2016 (Public Law 114-92) extended the maximum reduction to 5 percent, phased in over 5 years. In effect, rather than fully compensating for market-based costs, the 2016 NDAA decreased BAH to cover only 98 percent of those costs in 2016, 97 percent in 2017, 96 percent in 2018, and 95 percent from 2019 on (codified at 37 USC 403(b)(3)(B)). The process of paying less than 100 percent BAH is known as *absorption*.

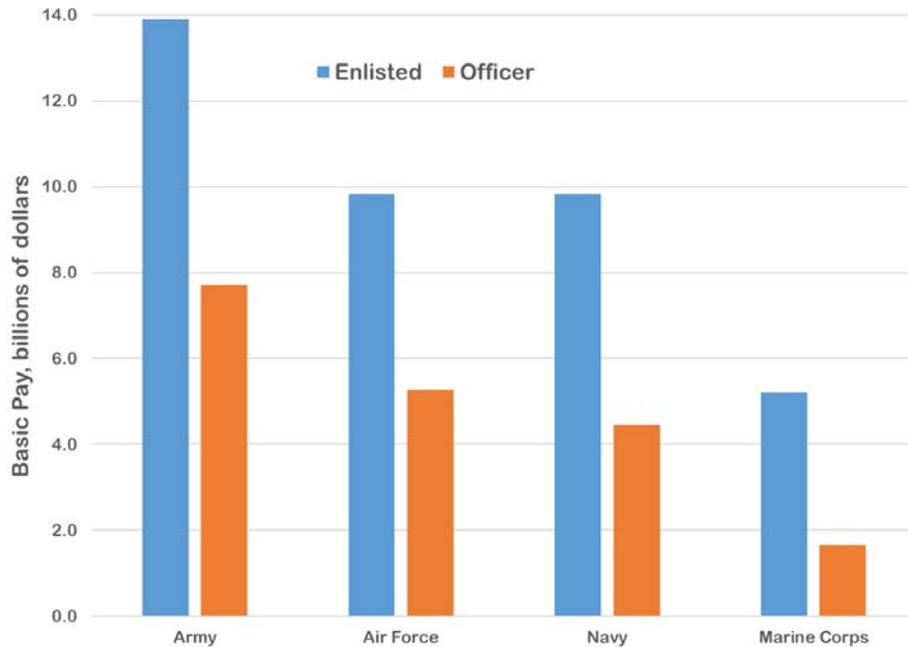
The distribution by military branch of the \$20.9 billion that DoD spent on BAH in FY 2019 is shown in Figure B-3. That total is 36 percent as large as basic pay of \$57.9

billion in the same year (see Figure B-4). The U.S. Coast Guard (not included in either figure) paid \$871 million in BAH in FY 2019, some 40 percent as much as the \$2.19 billion in basic pay. Much smaller amounts of BAH were paid by the Commissioned Corps of NOAA and of the Public Health Service.



Source: Department of Defense, "Defense Budget Materials – FY2021, Military Personnel Programs (M-1)," <https://comptroller.defense.gov/Budget-Materials/>.

**Figure B-3. Appropriations for BAH by Military Branch, 2019**



Source: Department of Defense, "Defense Budget Materials – FY2021, Military Personnel Programs (M-1)," <https://comptroller.defense.gov/Budget-Materials/>.

**Figure B-4. Appropriations for Basic Pay by Military Branch, 2019**

## Disbursement of BAH

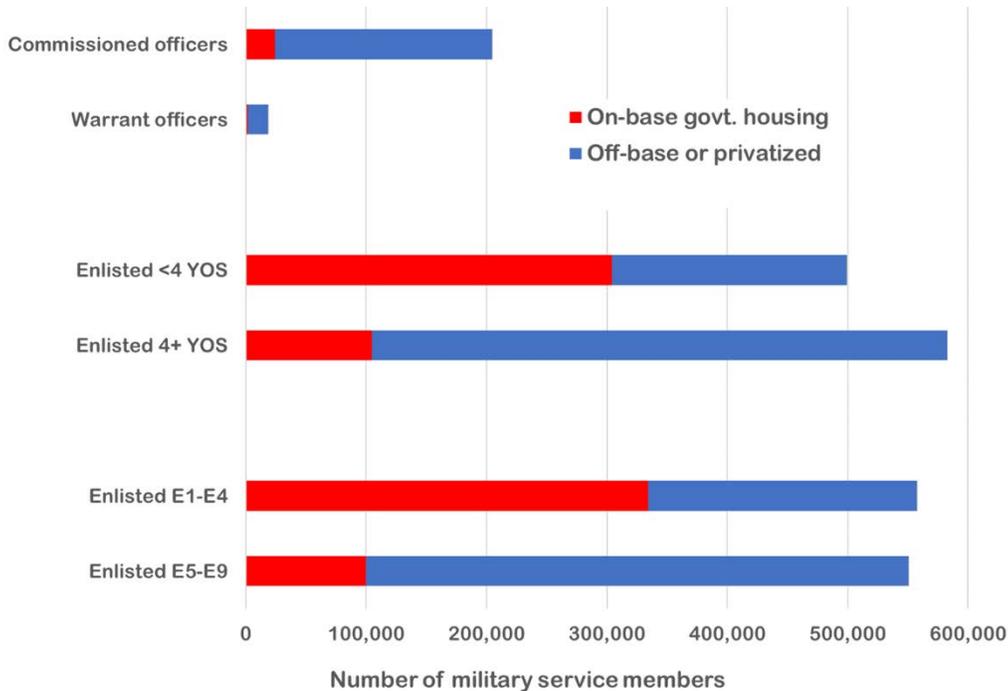
The disbursement of BAH depends on where and in which type of housing the Service member lives. At any time, a member who is potentially eligible for BAH (for example, all members of the active military components) is assigned to exactly one of those three categories:

- On-base, receiving quarters in kind
- On-base, in privatized housing
- Off-base, in commercial housing

In addition, special rules apply to members who are deployed overseas, depending on whether they are accompanied by family members.

## On-base, quarters in kind

In the first case, Service members receiving on-base government housing (“quarters in kind”) are not paid BAH. Depending on the Service branch, most unmarried enlisted members with fewer than 4 years of service or in the lowest 4 or 5 pay grades are typically required to live in barracks. (Those two criteria are highly correlated; see the red bars in Figure B-5). At the high end, quarters in kind include large, single-family, detached houses for senior officers.



Source: Department of Defense, “Selected Military Compensation Tables, 1 January 2019,” Directorate of Compensation, Tables A-7 and A-8, <https://militarypay.defense.gov/References/Greenbooks/>.

**Figure B-5. Distribution of Military Members by On-Base or Off-Base Housing, 2019**

An exception is that some single, junior enlisted sailors receive *partial BAH*. This exception occurs under a program that allows sailors to share apartments on base rather than living aboard the ships to which they are assigned. Two such apartment projects were built in Hampton Roads, Virginia (project known as Homeport), and in San Diego, California (project known as Pacific Beacon), under authority granted in Section 2803 of the FY 2003 NDAA (Public Law 107-314) and codified at Title 10 U.S. Code, Section 2881a. The authority to run as many as three such pilot programs was initially granted through September 30, 2007, and extended to September 30, 2009, in Section 2812 of the FY 2007 NDAA (Public Law 109-364). The Navy had not yet established a third program when the authority expired, so only the two listed apartment projects were completed.

## **On-base, privatized housing**

In the mid-1990s, DoD determined that more than 60 percent of its domestic family housing stock needed repair or complete replacement. DoD estimated that completing these activities would take 30 years at a total cost of \$20 billion. Rather than pursuing that approach, Congress provided DoD with new authorities in Sections 2801 through 2802 of the NDAA for FY 1996 (Public Law 104-106).<sup>2</sup> The new authorities enabled DoD to “obtain private-sector financing and management to repair, renovate, construct, and operate military housing.”<sup>3</sup> In response to that Congressional action, DoD launched the still-ongoing Military Housing Privatization Initiative (MHPI), under which DoD has currently privatized 99 percent of its domestic family housing stock.

Members who live in privatized housing are eligible for BAH. However, the BAH payment is not included in their paycheck, and they are not expected to pay the MHPI partners themselves. Rather, BAH is treated as an *allotment*, bypassing the member’s paycheck and instead being paid to the housing partner through a third-party vendor. The current vendor is Fort Knox National Company through its subsidiary, Military Assistance Company (also known as MAC). In addition, the housing partners sometimes negotiate discounts with members to maintain occupancy rates in their developments, and charge monthly rents below BAH rates (though never more than BAH rates). When discounts are offered, the allotment covers the discounted rent and the member retains the discount.

For about 4 years, absorption caused the MHPI partners to receive at most a few percentage points less than the sum of median market rents and the average costs of utilities for comparable housing units in their local areas. Although the loss of a few percentage points of revenue certainly does not justify the situation, numerous complaints have recently surfaced about the quality of privatized base housing, including severe health and safety concerns.<sup>4</sup>

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<sup>2</sup> “Military Construction and Military Family Housing”, Subchapter IV, codified as amended at 10 U.S. Code, Chapter 169, “Alternative Authority for Acquisition and Improvement of Military Housing”, §§ 2871–2886.

<sup>3</sup> “Military Housing Privatization: DOD Should Take Steps to Improve Monitoring, Reporting, and Risk Assessment,” Government Accountability Office,” GAO-18-218, March 2018, 6.

<sup>4</sup> “Preliminary Research Report: Living Conditions of Families in Privatized Military Housing,” Military Family Advisory Network, Report to the United States Committee on Armed Services, Joint Subcommittee on Personnel, Readiness, and Management Support, February 13, 2019. That report was covered in the *Washington Post* on the day of its release, [www.washingtonpost.com/national-security/2019/02/13/survey-military-families-paints-slum-like-picture-housing-bases-across-country/?utm\\_term=.442651c3c8b8](http://www.washingtonpost.com/national-security/2019/02/13/survey-military-families-paints-slum-like-picture-housing-bases-across-country/?utm_term=.442651c3c8b8). The Senate Committee on Armed Service conducted a hearing on March 7, 2019, with testimony from the three Secretaries of the military departments and the four uniformed Service chiefs, [www.armed-services.senate.gov/hearings/19-03-07-chain-of-commands-accountability-to-provide-safe-military-housing-and-other-building-infrastructure-to-servicemembers-and-their-families](http://www.armed-services.senate.gov/hearings/19-03-07-chain-of-commands-accountability-to-provide-safe-military-housing-and-other-building-infrastructure-to-servicemembers-and-their-families).

The Congress provided MHPI partners with partial, temporary relief in 2018; with full, permanent relief in 2019; but then backtracked somewhat in 2020. Section 603 of the NDAA for FY 2018 (Public Law 115-91) required DoD to pay MHPI partners an additional 1 percent of housing costs in calendar year 2018, boosting the effective BAH rate from 96 percent of housing costs to 97 percent:

*For each month during 2018, the Secretary of Defense shall pay to a lessor of covered housing 1 percent of the amount calculated under section 403(b)(3)(A)(i) of title 37, United States Code, for the area in which the covered housing exists.*<sup>5</sup>

Section 606 of the NDAA for FY 2019 (Public Law 115-232) boosted the additional payments to 5 percent of housing costs and made them permanent, beginning in September 2018 (the month after enactment). The BAH amount that is both credited to and debited from the Service member's paycheck (through allotment) would remain at 95 percent of housing costs. However, DoD would supplement that payment to the MHPI partner with an additional 5 percent of housing costs, effectively "making the partner whole":

*Payment authority.—Each month beginning on the first month after the date of the enactment of this Act, the Secretary shall pay a lessor of covered housing 5 percent of the amount calculated under section 403(b)(3)(A)(i) of title 37, United States Code, for the area in which the covered housing exists. Any such payment shall be in addition to any other payment made by the Secretary to that lessor.*<sup>6</sup>

There were additional developments in the FY 2020 NDAA (Public Law 116-92). Sections 3036 and 3067 divide the 5 percent subsidy into 2.5 percent for all covered housing units and a second 2.5 percent more narrowly targeted at *older* (built pre-FY 2015), *underfunded* units:

*“... housing procured, acquired, constructed, or for which any phase or portion of a project agreement was first finalized and signed, under the ... Military Housing Privatization Initiative, on or before September 30, 2014.”*

*“... to make additional payments to certain lessors responsible for underfunded MHPI housing projects identified ... for the purposes of*

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<sup>5</sup> National Defense Authorization Act for Fiscal Year 2018, Public Law 115-91, Section 603, December 12, 2017.

<sup>6</sup> National Defense Authorization Act for Fiscal Year 2019, Public Law 115-232, Section 606, August 13, 2018.

*future sustainment, recapitalization, and financial sustainability of the projects. ...*<sup>7</sup>

*The Chief Housing Officer of the Department of Defense, in conjunction with the Secretaries of the military departments, shall assess MHPI housing projects for the purpose of identifying all MHPI housing projects that are underfunded. Once identified, the Chief Housing Officer shall prioritize for payments ... those MHPI housing projects most in need of funding to rectify such underfunding.”*<sup>8</sup>

Implementation of the subdivision of the 5 percent subsidy into two components has been delayed from FY 2020 until FY 2021.

### **Off-base, commercial housing**

The third case is actually the most numerous, with about 80 percent of Service members living off base and receiving BAH in their paychecks. Those members pay their full housing and utility costs plus renter’s insurance (if they choose to purchase it). BAH is paid according to a formula and does not reimburse actual rental expenditures. As a result, members must pay net out-of-pocket costs if they choose to rent larger housing units than are assumed in the BAH calculation (which is based on the member’s pay grade and dependency status). This stipulation also applies if members choose more expensive units than the median of the prescribed size. Conversely, members may choose to rent smaller or less expensive units without forfeiting any of their BAH payments. Further, members who own rather than rent housing may face higher monthly expenditures for expenses such as homeowners’ association fees.

### **Deployed overseas**

For Service members who have dependents, an overseas tour is classified as either *accompanied* (with dependents) or *unaccompanied* (without dependents). For example, an accompanied tour to the Eighth Army (based in the Republic of Korea) lasts for 24 months. Command sponsorship of dependents must be approved before an Army family moves overseas. Additionally, the full name of each dependent must be listed on the soldier’s orders. Conversely, consider an unaccompanied Eighth Army tour that lasts for 12 months.

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<sup>7</sup> National Defense Authorization Act for Fiscal Year 2020, Public Law 116-92, Section 3036, December 20, 2019.

<sup>8</sup> Sections 3036 and 3037 of the FY 2020 NDAA reflect the House language rather than an alternative subdivision of the 5 percent subsidy proposed by the Senate. See “Conference Report 116-333 to accompany S. 1790, National Defense Authorization Act for Fiscal Year 2020,” December 9, 2019, 1516, [www.congress.gov/116/crpt/hrpt333/CRPT-116hrpt333.pdf](http://www.congress.gov/116/crpt/hrpt333/CRPT-116hrpt333.pdf).

Soldiers may elect an unaccompanied tour if they are unable to move their families or if command sponsorship of dependents is denied.<sup>9</sup>

A member on an *accompanied* tour overseas (including U.S. protectorates but excluding Alaska and Hawaii) who is not furnished government housing is eligible for an Overseas Housing Allowance (OHA) at the “with dependents” rate. However, that member no longer draws BAH. If the member and his or her family had been living in a residence in the U.S. that they own—and retain for investment purposes—it is up to that family to rent out their residence to preserve cash flow.

A member without dependents on an *unaccompanied* overseas tour, who is not furnished government housing, is eligible for OHA at the “without dependents” rate. Married members on unaccompanied tours are also eligible for the same OHA at the “without dependents” rate, plus BAH at the “with dependents” rate based on their dependent’s U.S. residence zip code.<sup>10</sup> Thus, provision is made for married members to both rent a housing unit overseas and maintain a housing unit for their families back in the United States.

Unlike BAH—which is paid as an allowance regardless of actual expenses incurred—OHA is a reimbursement system with caps. OHA consists of three components:

- Rental allowance
- Utility and recurring maintenance allowance
- Move-in housing allowance (one time only)

The rental allowance is calibrated so that 80 percent of members have their rental payments fully reimbursed. The “without dependent” rental allowance is set at 90 percent of the “with dependent” rental allowance.<sup>11</sup>

## **Recent Legislative Proposals Regarding BAH**

Recent legislative proposals from the Senate Committee on Armed Services (SASC) would have modified the payment structure for BAH. Although the proposals did not survive to the final versions of the respective NDAAs, they illustrate that the structure of BAH remains an active topic of policy debate.

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<sup>9</sup> “Eighth Army: PCS Orders,” <https://8tharmy.korea.army.mil/site/newcomers/pcs-orders.asp>, accessed April 5, 2019.

<sup>10</sup> “Different Types of BAH,” Office of Military Compensation Policy, [https://militarypay.defense.gov/PAY/Allowances/bah\\_types.aspx](https://militarypay.defense.gov/PAY/Allowances/bah_types.aspx); and “Overseas Housing Allowance (OHA),” Defense Travel Management Office, [www.defensetravel.dod.mil/site/oha.cfm](http://www.defensetravel.dod.mil/site/oha.cfm).

<sup>11</sup> “Overseas Housing Allowance Fact Sheet,” Defense Travel Management Office, [www.defensetravel.dod.mil/Docs/Fact\\_Sheet\\_OHA.pdf](http://www.defensetravel.dod.mil/Docs/Fact_Sheet_OHA.pdf); and “Overseas Housing Allowance (OHA) Briefing Sheet,” [www.defensetravel.dod.mil/Docs/AB-OHABRIEF-01.pdf](http://www.defensetravel.dod.mil/Docs/AB-OHABRIEF-01.pdf).

The policy proposals in question involve dual-military couples—Service members who are married to other Service members—as well as Service members who choose to live with other Service members to whom they are not married. Aside from the recent legislative activity, dual-military couples continue to receive two BAH payments. Couples who have children receive one payment at the higher “with dependents” rate and a second payment at the lower “without dependents” rate. Couples who do not have children receive two payments, each at the “without dependents” rate. Service members who are not married but choose to live with other Service members each receive their BAH at the full monthly rate.<sup>12</sup> Particularly noteworthy is the proposal in the NDAA for FY 2017, under which the BAH rate would still vary by pay grade and geographic location, but would remove the distinction between members with and without dependents.

## **2016 NDAA**

Section 604 of the SASC version of the NDAA for FY 2016 would have modified BAH in the following way: dual-military couples whose duty stations were within “normal commuting distance” of each other (as defined in Service regulations) would receive only a single BAH payment, which would be set at the “with dependents” rate regardless of whether they had children. Couples who lived in military housing, or whose duty stations were outside normal commuting distance, would not be affected by this proposal.

*SINGLE ALLOWANCE FOR MARRIED MEMBERS ASSIGNED FOR DUTY WITHIN NORMAL COMMUTING DISTANCE. at the “without dependents” rate. In the event two members of the uniformed services entitled to receive a basic allowance for housing under this section are married to one another and are each assigned for duty within normal commuting distance, basic allowance for housing under this section shall be paid only to the member having the higher pay grade, or to the member having rank in grade if both members have the same pay grade, and at the rate payable for a member of such pay grade with dependents (regardless of whether or not such members have dependents).*

Section 604 would also have capped BAH for unmarried Service members who chose to live together.

*Reduced allowance for members living together.—(1) In the event two or more members of the uniformed services who are entitled to receive a basic allowance for housing under this section live together, basic allowance for*

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<sup>12</sup> The rules for BAH are complex and are detailed in Chapter 10 of the DoD Joint Travel Regulations, [www.defensetravel.dod.mil/Docs/perdiem/JTR\\_Chapters\(8-10\).pdf](http://www.defensetravel.dod.mil/Docs/perdiem/JTR_Chapters(8-10).pdf). This description of current policy is adapted from “Cost Estimate for S. 1376: National Defense Authorization Act for Fiscal Year 2016, as reported by the Senate Committed on Armed Services on May 19, 2015,” Congressional Budget Office (CBO), June 3, 2015, [www.cbo.gov/sites/default/files/114th-congress-2015-2016/costestimate/s13761.pdf](http://www.cbo.gov/sites/default/files/114th-congress-2015-2016/costestimate/s13761.pdf).

*housing under this section shall be paid to each such member at the rate as follows:*

*(A) In the case of such a member in a pay grade below pay grade E-4, the rate otherwise payable to such member under this section [i.e. no change from then-current law].*

*(B) In the case of such a member in a pay grade above pay grade E-3, the rate equal to the greater of—*

*(i) 75 percent of the rate otherwise payable to such member under this section; or*

*(ii) the rate payable for a member in pay grade E-4 without dependents.*

## **2017 NDAA**

Section 604 of the SASC version of the NDAA for FY 2017 would have modified BAH in three ways:

- Service members would be reimbursed for their actual cost of housing up to a maximum BAH rate.
- Service members who share housing with other Service members, including those who are married to other Service members, would receive a monthly BAH payment divided by the number of members who live together.
- The maximum BAH rate would vary by pay grade and geographic location, without regard to whether or not a member has dependents.

The Congressional Budget Office (CBO) presented an interesting perspective on how DoD might implement this section—particularly the third bullet point—had it been enacted. In response to the clause “without regard to whether or not a member has dependents,” DoD might react by boosting the “without dependents” rate to match the “with dependents” rate. Conversely, DoD could reduce the “with dependents” rate to match the “without dependents” rate. CBO deemed the former a more likely outcome, with attendant increased cost.

*On the basis of information from DoD, CBO expects that DoD would implement those changes in a way that provides the most favorable outcome for Service members. Following that reasoning, CBO assumes that DoD would no longer provide two BAH rates—one for those with dependents and one for those without dependents—and thus would pay one BAH at the higher of the two rates. Therefore, the ... third change [i.e., removing the*

*connection to dependent status] would increase BAH payments, compared to such payments under current law.<sup>13</sup>*

Here follows the exact legislative proposal.

*Basic allowance for housing inside the United States.—*

*(1) IN GENERAL.—The monthly rate of basic allowance for housing payable under this section to a member of the uniformed services covered by this section who is assigned to duty in the United States shall be the rate prescribed by the Secretary of Defense for purposes of this section.*

*(2) ELEMENTS.—Subject to the provisions of this subsection, the rates of basic allowance for housing payable under this subsection shall meet the following requirements:*

*(A) A maximum amount of the allowance shall be established for each military housing area, based on the costs of adequate housing in such area, for each pay grade.*

*(B) The amount of the allowance payable to a member may not exceed the lesser of—*

*(i) the actual monthly cost of housing of the member; or*

*(ii) the maximum amount determined under subparagraph (A) for members in the member's pay grade.*

*(C) In the event two or more members occupy the same housing, the amount of the allowance payable to such a member may not exceed—*

*(i) the amount of the allowance otherwise payable to such member pursuant to subparagraph (B); divided by*

*(ii) the total number of members occupying such housing.*

*(D) So long as a member on [BAH] retains uninterrupted eligibility to receive the allowance and the actual monthly cost of housing for the member is not reduced, the monthly amount of the allowance may not be reduced as a result of changes in housing costs in the area or the promotion of the member [“rate protection”].*

## **2018 NDAA**

By law, dual-military couples with children who are assigned duty in the same area receive one BAH payment at the “with dependents” rate and a second BAH payment at the “without dependents” rate. Under section 603 of the SASC version of the NDAA for FY

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<sup>13</sup> “Cost Estimate for S. 2943: National Defense Authorization Act for Fiscal Year 2017, as Reported by the Senate Committed on Armed Services on May 18, 2016,” Congressional Budget Office (CBO), June 10, 2016, [www.cbo.gov/sites/default/files/114th-congress-2015-2016/costestimate/s2943.pdf](http://www.cbo.gov/sites/default/files/114th-congress-2015-2016/costestimate/s2943.pdf).

2018, those couples would have earned two BAH payments but both would be at the lower “without-dependents” rate.<sup>14</sup>

*Ineligibility for with dependents rate of certain members.—A member who is married to another member, is assigned to the same geographic location as such other member, and has one or more dependent children with such other member is not eligible for a basic allowance for housing at the with dependents rate.*

## **2019 NDAA**

Neither the Senate (SASC) nor the House Armed Services Committee (HASC) versions of the 2019 NDAA included language that would curtail the generosity of BAH from the Service members’ perspective.

### **BAH for Reserve Component Members**

Under certain circumstances, reserve component (RC) members who are called to active duty (“activated”) qualify for BAH. Whether the amount of BAH they receive is adequate to cover their median housing costs depends broadly on three factors:

- Whether they are Selected Reserves (members of SELRES) or Active Guard Reserves (AGRs)
- The type of duty for which they are activated
- The duration of their active duty assignment

For the purposes of this report, the Selected Reserves include members of all six military Guard and Reserve components: Army National Guard, Army Reserve, Air National Guard, Air Force Reserve, Navy Reserve, and Marine Corps Reserve.

### **Selected Reserves versus Active Guard Reserves**

SELRES numbers about 740,000 members who report to duty or “drill” a notional 39 days per year: 1 weekend (2 days) per month (= 24 days), plus 2 weeks (= 15 days) once per year. They draw basic pay and other types of pay during their drill days, but they are not ordinarily eligible for BAH.

AGRs are members of the Army National Guard, Army Reserve, Air National Guard, and Air Force Reserve who are activated for 180 or more days to support the following functions of the Army National Guard and the Air National Guard: organizing, administering, recruiting, instructing, or training. The Navy has a similar category called

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<sup>14</sup> This summary is adapted from “Cost Estimate for S. 1519: National Defense Authorization Act for Fiscal Year 2018, as Reported by the Senate Committed on Armed Services on July 10, 2017,” Congressional Budget Office (CBO), August 3, 2017, [www.cbo.gov/system/files?file=115th-congress-2017-2018/costestimate/s1519\\_1.pdf](http://www.cbo.gov/system/files?file=115th-congress-2017-2018/costestimate/s1519_1.pdf).

Training and Administration of the Reserve (TARs). There was a total of 79,000 members in those categories during 2018.<sup>15</sup> AGRs receive the same pay and benefits, including BAH, as their counterparts who initially enlisted or commissioned in the active components.

### **Types of duty for which RC members are activated**

BAH may become problematic when RC members are activated for long periods of duty in any one of these categories:

- **Active duty for training (ADT).** A tour of active duty for training RC members to fill the needs of the Armed Forces in time of war or national emergency and such other times as the national security requires.<sup>16</sup>
  - *Initial skills training.* Not initial active duty training (IADT, which would include basic military training and technical skill training), but training for mid-grade personnel who are transitioning to a new occupational specialty.
  - *Other training duty (OTD).* Full-time attendance at organized and planned specialized skill training, refresher and proficiency training, and professional development programs.
- **Active duty other than training (ADOT).** Training authorized under 14 USC 721, “Active duty for emergency augmentation of regular forces.” RC members may perform a variety of service types, ranging from deploying overseas to backfilling active or reserve personnel who have already deployed overseas.
  - *Active duty operational support (ADOS).* All voluntary active duty authorized by section 10 USC 12301(d) (“Reserve components generally”) other than AGR duty. ADOS also includes all 1-year or multi-year voluntary tours of active service by RC Service members; or
  - *Involuntary active duty.* Active duty performed by RC members, including Title 10 of U.S. Code, sections 331 through 332, 12301(a), 12301(b), 12302, 12304, 12304a, 12304b, and 12406.

### **Duration of active duty assignment**

The duration of an RC member’s active duty assignment determines which type of BAH they receive. This rule applies whether the member is expected to execute a

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<sup>15</sup> *Compensation Greenbook*, “National Defense Budget Estimates for FY 2019 ( ),” Table 7-5, Under Secretary of Defense (Comptroller), <https://comptroller.defense.gov/Budget-Materials/Budget2019/>.

<sup>16</sup> This and the subsequent block of definitions are taken from “Duty Status: Terms of Reference,” Office of the Assistant Secretary of Defense (Manpower and Reserve Affairs), 2018.

permanent-change-of-station (PCS) move, and whether his or her BAH is paid at the prevailing rate at their home station or the rate at their destination location.

Reservists who are activated for 30 or fewer days receive BAH Reserve Component/Transit (BAH RC/T). That type of pay is based on national average housing costs and does not vary with geographic location; however, it does vary with pay grade and dependency status.<sup>17</sup> Reservists with mid-length training assignments (ADT for 31 to 139 days) or other-than-training assignments (ADOT for 31 to 180 days) receive BAH at the rate prevailing at their home station.<sup>18</sup>

Reservists with long training assignments (more than 140 days) are placed in PCS status at the training destination. Likewise, reservists with long periods of ADOT (more than 181 days) are placed in PCS status at the new duty location. Active component personnel who rotate through training or duty assignments of similar length are presumed to move their families and household goods to the new location. From there they would most likely move to yet a third location, rather than immediately returning to their original location. (However, it is not uncommon for members to retain and rent a home they may have purchased at the original location). Reservists, on the other hand, generally do not bring their families to the new training or duty location; bring only limited amounts of household goods; and immediately return to their original location at the completion of their assignments.

Nonetheless, reservists who are activated to long assignments for any type of duty described previously begin to receive BAH at the prevailing rate in the new training or duty location. Whether the amount of BAH is adequate to meet their housing costs depends on whether, prior to activation, the RC members were AGRs or drilling reservists. Next, we examine both cases.

### **Active Guard Reservist**

In the first case, consider an Army National Guard staff sergeant (grade E-6) with dependents who lives in Springfield, Virginia, in the National Capital Region (NCR).<sup>19</sup> She is an AGR supporting the Army National Guard, assigned to the Temple Army National Guard Readiness Center in Arlington, Virginia, also in the NCR. As a full-time soldier she receives BAH of \$2,595 per month.

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<sup>17</sup> “Different Types of BAH,” Office of Military Compensation Policy, [https://militarypay.defense.gov/PAY/Allowances/bah\\_types.aspx](https://militarypay.defense.gov/PAY/Allowances/bah_types.aspx).

<sup>18</sup> “Joint Travel Regulations,” Chapter 10 (“Housing Allowances”), Defense Travel Management Office, updated January 1, 2019, [www.defensetravel.dod.mil/Docs/perdiem/JTR\\_Chapters\(8-10\).pdf](http://www.defensetravel.dod.mil/Docs/perdiem/JTR_Chapters(8-10).pdf).

<sup>19</sup> These cases are adapted from “Reserve Component Travel: DoD Should Assess the Effect of Reservists’ Unreimbursed Out-of-Pocket Expenses on Retention,” Government Accountability Office, GAO-18-181, October 2017, 13.

Then, she is activated to a training assignment of more than 140 days in Fort Huachuca, AZ. She is placed in PCS status at that location even though she does not bring her family or move substantial amounts of household goods. In addition, she intends to immediately return to Springfield at the completion of her assignment.

Her prior BAH of \$2,595 per month is replaced by the Fort Huachuca rate of \$1,113 per month. The new (lower) BAH rate is calibrated to local housing costs around Fort Huachuca and is only 43 percent of the NCR rate. Now she maintains two residences with only the one, smaller BAH payment. If she breaks even between her rental expenses and the BAH at Fort Huachuca, she still has to pay an uncompensated expense on the order of \$2,595 per month to maintain her permanent residence in Springfield, (that being the median cost at the latter location).

The financial hardship would be eased if she had moved, instead, from a low-cost housing area to a higher-cost one. For example, suppose she moved from Draper, Utah, (BAH = \$1,593) to Fort Meade, Maryland, (BAH = \$2,604). If she broke even between her rental expenses and the BAH at Fort Meade, she would still have uncompensated costs but now on her (presumably) lower-cost permanent residence in Draper.

### **Member of SELRES**

The parameters of the second case differ in that our staff sergeant still lives in Springfield, Virginia, but is a part-time Guardsman who drills with the 3rd Battalion, 116th Infantry Regiment in Warrenton, Virginia, some 44 miles from home. As a part-timer she does not receive BAH.

Then, as in the previous case, she is activated to a training assignment of more than 140 days in Fort Huachuca, Arizona. She is placed in PCS status to that location and the Army no longer considers her a resident of Springfield in the NCR.

Our staff sergeant either is provided with base housing or must rent housing in the Fort Huachuca area while receiving BAH of \$1,113 per month. BAH rates are calibrated to median market rents, so the staff sergeant may or may not break even on local housing costs around Fort Huachuca. She still maintains her home in Springfield, to which she intends to return. She did not receive BAH related to that home before her PCS and does not now. Her ability to maintain that home is not related to BAH policy or rates. Instead, it is more a matter of *income replacement*: Are her earnings as a full-time, activated E-6 higher than the sum of her civilian earnings in the Springfield area plus the drill pay she received as a part-time Guardsman?

A civilian dentist who also serves as a part-time Guardsman might lose so much income while activated that she has difficulty maintaining her home in the NCR. However, a civilian handyman who works only sporadically may earn considerably more when

activated to full-time status, so that he can break even with BAH in Fort Huachuca while *more easily* affording his house in Springfield.

### **Evidence on earnings losses**

Whether activated reservists earn more or less than they did as civilians appears to depend on their education level and, especially, their civilian occupation. Further, survey data on civilian earnings tend to show earnings losses during periods of activation. On the other hand, administrative data show lower civilian earnings than the activated reservist's military earnings.

A 2005 IDA study by Colin Doyle and Glenn Gotz found higher military earnings during activation except for reservists in a few high-end civilian occupations. Doyle and Gotz relied on DoD's Civilian Employer Information database, in which reservists self-reported information on their civilian employer, position, dates of employment, and occupation:

*Median civilian earnings in most occupations—representing a large majority of reservists—were less than median military incomes while on active duty ... Occupations with median earnings losses for officers included physicians and surgeons, lawyers, and dentists. Occupations with median earnings losses for senior enlisted personnel with bachelor's degrees included various types of engineers, managers, and other professionals.*

*Median income comparisons cannot tell us the actual percentages of reservists who experienced losses or gains when called to active duty. There surely were reservists in "loss" occupations who actually gained income on active duty and reservists in "gain" occupations who lost income. The results are clear, however, that income losses are not widespread and suggest that losses are likely to be concentrated in a small group of occupations, e.g., physicians, engineers, and other professionals.<sup>20</sup>*

A 2011 study by RAND researchers Jacob Klerman and David Loughran matched the pay records of activated reservists to their civilian earnings subject to Medicare taxes as recorded by the Social Security Administration. They, too, found a pattern in which most reservists earn more when activated than they did in their civilian employment:

*The results presented in this paper indicate that activation leads to large average earnings gains for reservists. Averaging across all reservists, our estimates imply that activation increases the average earnings of reservists by \$9,252. This figure represents an increase of 23% over earnings prior to activation. For reservists serving for 271 or more days on active duty, a group about whom policy makers might be particularly concerned, the average increase in earnings attributable to activation is even larger,*

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<sup>20</sup> Colin M. Doyle and Glenn A. Gotz, "Income Gains and Losses of Mobilized Reservists," IDA Paper P-4013 (Alexandria, VA: Institute for Defense Analyses, August 2005).

*\$23,844, or 60% over earnings prior to activation. We stress here that these results apply only to the earnings of reservists during their period of active-duty service. Additional research is needed to assess how activation affects the earnings of reserve spouses (and, therefore, household earnings) and whether the civilian earnings of reservists suffer when they return from active-duty service.*<sup>21</sup>

Klerman and Loughran contrasted their findings from administrative data on civilian earnings to those of Martorell et al., which were based instead on reservists' self-reported responses to the Defense Manpower Data Center's 2004 Status of Forces Survey of the Reserve Components (SOFRC).<sup>22</sup> As summarized by Klerman and Loughran:

*For example, about half of reservists surveyed by the 2004 [SOFRC] reported that their earnings declined while serving on active duty. The average change in earnings among surveyed reservists was a loss of \$287 per month, about 8% of pre-activation earnings...*<sup>23</sup>

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<sup>21</sup> Jacob A. Klerman and David S. Loughran, "What Happens to the Earnings of Military Reservists When They Are Activated? Evidence from Administrative Data," *Defense and Peace Economics* 22, no. 1, 2011, <https://doi.org/10.1080/10242694.2010.491685>.

<sup>22</sup> Paco Martorell, Jacob A. Klerman, and David S. Loughran, "A Reconciliation of Estimates Derived from Survey and Administrative Data," RAND Corporation, TR-565-OSD, 2008.

<sup>23</sup> Jacob A. Klerman and David S. Loughran, "What Happens to the Earnings of Military Reservists When They Are Activated? Evidence from Administrative Data," *Defense and Peace Economics* 22, no. 1, 2011, <https://doi.org/10.1080/10242694.2010.491685>.



## **Appendix C.**

### **Survey/Closed-Ended Focus Group Questions**

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#### Section 1:

1. What is your Service?
  - Army
  - Navy
  - Marine Corps
  - Air Force
  
2. What is your Component?
  - Active Component
  - Reserve Component
  
2. If Reserve Component, what is your Reserve Status?
  - Traditional Reservist
  - Technician
  - Individual Mobilization Augmentee
  - Active Guard & Reserve
  - Other, please specify: \_\_\_\_\_
  
3. What is your legal state of residence for tax purposes? \_\_\_\_\_
  
4. What is your current pay grade? \_\_\_\_\_
  
5. How many years have you been in military service? \_\_\_\_\_
  
6. What is your primary military occupational specialty code, career branch, or designator? \_\_\_\_\_
  
7. How would you describe where you live?
  - On-base housing (barracks/dorms, base housing)
  - Private or contracted military housing
  - Off base (house, townhouse, or apartment)
  
8. What is your marital status?
  - Married
  - Separated
  - Divorced

- Widowed
  - Never married
9. Do you have children or other legal dependents?
- Yes
  - No
10. *(Skip if not applicable to you)* Is your family a single- or dual-income family?
- Single
  - Dual
  - i. [If a dual income family] Is your spouse also in the military?
    - Yes
    - No
11. Do you currently receive Basic Allowance for Housing (BAH)?
- Yes
  - No
  - Do not know
12. Are you planning to continue in service for the next 5 years?
- Yes
  - No
  - Do not know
13. Are you planning to continue in service until you reach retirement?
- Yes
  - No
  - Do not know

Section 2:

Every four years, DoD is asked by Congress to review the military pay system. As part of this research, DoD wants to know how Service members would react if their pay changed. The questions below describe hypothetical changes to pay—no changes are currently taking place and there are currently no plans to make such changes in the future. DoD wants Service member input to help decide whether changes should be made and how to make potential changes.

1. Suppose DoD increased basic pay but removed the *dependent rate* on the Basic Allowance for Housing. This would mean:
  - Service members *with dependents* and *without dependents* would receive the same pay

- On average, Service members *with dependents* would see a decrease in their earnings (after taxes); and Service members *without dependents* would see an increase in their earnings (after taxes)

b. Would you support or oppose the change described above?

<i>Strongly support</i>	<i>Somewhat support</i>	<i>Neither support nor oppose</i>	<i>Somewhat oppose</i>	<i>Strongly oppose</i>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

c. Would the change described above make you more likely to stay, more likely to leave, or have no impact on your decision to remain in service at the end of your service obligation/commitment?

<i>Much more likely to stay</i>	<i>Somewhat more likely to stay</i>	<i>No impact</i>	<i>Somewhat more likely to leave</i>	<i>Much more likely to leave</i>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

d. For those considering joining the military, do you think the change described above would make them more likely to join, less likely to join, or have no impact on their decision to join?

<i>Much more likely to join</i>	<i>Somewhat more likely to join</i>	<i>No impact</i>	<i>Somewhat less likely to join</i>	<i>Much less likely to join</i>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. Suppose DoD increased basic pay for Service members but removed the Basic Allowance for Housing. This would mean:

- Service members living in civilian/privatized housing that they own or rent would receive the *same pay* as Service members living in rent-free government-owned housing
- On average, Service members living in civilian/privatized housing that they own or rent would see a decrease in their earnings (after taxes)

- On average, Service members living in government-owned housing that they do not pay rent for would see an increase in their earnings (after taxes); however, they may have to start paying rent for their housing

a. Would you support or oppose the change described above?

<i>Strongly support</i>	<i>Somewhat support</i>	<i>Neither support nor oppose</i>	<i>Somewhat oppose</i>	<i>Strongly oppose</i>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

b. Would the change described above make you more likely to stay, more likely to leave, or have no impact on your decision to remain in service at the end of your service obligation/commitment?

<i>Much more likely to stay</i>	<i>Somewhat more likely to stay</i>	<i>No impact</i>	<i>Somewhat more likely to leave</i>	<i>Much more likely to leave</i>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

c. For those considering joining the military, do you think the change described above would make them more likely to join, less likely to join, or have no impact on their decision to join?

<i>Much more likely to join</i>	<i>Somewhat more likely to join</i>	<i>No impact</i>	<i>Somewhat less likely to join</i>	<i>Much less likely to join</i>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Section 3:

Suppose DoD changed military pay to a **salary system** such that basic pay would increase but the Basic Allowance for Housing (with or without dependents) and the Basic Allowance for Subsistence would be removed. As a result, some Service members would see a decrease in their earnings, after tax, due to a loss of tax benefits (unless Congress authorized DoD to compensate members for the additional tax they would pay). Other Service members would see an increase in their earnings, after tax.

Please read the following scenarios and indicate (X) whether the hypothetical changes in pay would make you more likely to leave, more likely to stay, or have no impact on your decision to remain in service at the end of your service obligation/commitment. The questions below describe hypothetical changes to pay—no changes are currently taking place and there are currently no plans to make such changes in the future.

	<b>Much more likely to stay</b>	<b>Somewhat more likely to stay</b>	<b>No impact</b>	<b>Somewhat more likely to leave</b>	<b>Much more likely to leave</b>
If a change to a salary system increased your earnings (after taxes) by 5%, how would that impact your decision to remain in service?					
If a change to a salary system decreased your earnings (after taxes) by 5%, how would that impact your decision to remain in service?					
If a change to a salary system increased your earnings (after taxes) by 10%, how would that impact your decision to remain in service?					
If a change to a salary system decreased your earnings (after taxes) by 10%, how would that impact your decision to remain in service?					
If a change to a salary system increased your earnings (after taxes) by 20%, how would that impact your decision to remain in service?					



## **Appendix D.**

### **Open-Ended Focus Group Questions**

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1. To what extent was pay a factor that influenced your decision to join the military?
2. Overall, do you think you are fairly paid for the work you do? Why do you feel that way?
  - a. [If not fair] Are there changes you would like to see in the pay system to make it fairer?
3. How does your compensation for what you do compare to what you would earn as a civilian?

As part of a review of military compensation that takes place every 4 years, Congress wants to understand Service members' general attitudes and opinions about military pay and the pay system. This study is part of that and no specific policy decision has been made; any concrete proposal would receive further study and input from the military Services anyway.

4. What do you think if the DoD moved to a single-salary system that combines basic pay, BAS, and BAH? A single-salary system would mean:
  - a. Overall, the system would be revenue neutral to the Federal Government (i.e., this is not about saving money; the Government would not be spending more or less on compensation in total).
  - b. Service Members with and without dependents would receive the same or equal pay.
  - c. Basic pay would increase and change, depending on the cost of living where you are stationed.
  - d. Bonuses, special pays, and other benefits would remain as separate pays (i.e., it would remain the same).
  - e. All salary would be taxable.
5. [If RC] What would you think if the salary rate remains the same regardless of your active duty status?
6. How important to your standard of living are housing and subsistence allowances [Basic Allowance for Housing (BAH) and Basic Allowance for Subsistence (BAS)]?

7. How much would you estimate that your basic pay would need to be increased to offset a reduction or elimination of these allowances?
8. Under a salary system, people who live on-base may be required to pay rent for their on-base housing. (This includes those people who live in barracks). How do you think people would respond to paying rent for their housing?
9. Are there any non-monetary benefits that would help offset the elimination of allowances? For example, being able remain in the same geographic location for multiple tours? Or being allowed to telecommute? Is there anything else that might offset an elimination of allowances?
10. How likely are you to stay in uniform 5 years from now? [Whatever response is provided] What are some of the reasons for that?
11. How much does your pay factor into your decision to stay or not?
12. How would changes to the compensation system affect your plans to stay in uniform?

## **Appendix E.**

# **How the Tax Cuts and Jobs Act Affected the BAH/BAS Tax Advantage**

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The BAH/BAS tax advantage is the additional amount of taxes Service members would pay if BAH and BAS were taxable. The tax advantage depends on federal and state tax regimes. The Tax Cuts and Jobs Act of 2017 (TCJA) changed the federal tax regime in many ways, most importantly by reducing income tax rates. Thus, the TCJA reduced the BAH/BAS tax advantage beginning in 2018.

We measure the BAH/BAS tax advantage in 2018 by computing 2018 income taxes for all active duty Service members, then doing so again treating BAH/BAS as taxable income.<sup>1</sup> The difference in taxes paid is the tax advantage. We then measure the tax advantage under the 2017 tax regime for the same set of Service members. The difference in the tax advantages we measure represents the effect of the TCJA. We compute tax advantages of \$3,682 and \$4,092 per Service member under the 2018 and 2017 tax regimes, respectively.<sup>2</sup> Therefore, the TCJA reduced the allowance tax advantage by about \$410 per Service member, or about 10 percent of what the tax advantage would have been without the TCJA.

Table E-1 shows how the effects of the TCJA vary by pay grade. The TCJA decreased the tax advantage most for senior officers in absolute and percentage terms. Each grade of O-6 and above experienced a decrease in tax advantage of more than 15 percent. All grades below O-6 experienced a decrease in tax advantage between 6 percent and 13 percent, except cadets in years 2 through 4, who experienced a decrease around 14 percent. Because cadets usually do not receive BAH, their mean tax advantages are on the order of \$100 per year. As a share of basic pay, the tax advantage decreased most for E-5s, E-6s, O-1s, O-2s, and O-7s. The same pay grades experienced the greatest decrease in tax advantage as a share of all military pay. The decrease in tax advantage over all Service members was 0.81

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<sup>1</sup> We compute taxes using a local executable copy of TAXSIM version 27 software provided by the National Bureau of Economic Research. See <https://users.nber.org/~taxsim/taxsim27>.

<sup>2</sup> An allowance tax advantage in calendar year 2018 of \$3,682 per Service member corresponds to a total allowance tax advantage of \$5.4 billion. That estimate agrees with a Joint Committee of Taxation estimate of a total allowance tax advantage in fiscal year 2018 of \$5.5 billion. See *Estimates of Federal Tax Expenditures for Fiscal Years 2018-2022*, Table 1, Joint Committee on Taxation, panel on National Defense, <https://www.jct.gov/publications.html?func=startdown&id=5148>.

percent of all military pay. No pay grade experienced a decrease in tax advantage greater than 1.15 percent of all military pay.

**Table E-1. Effects of the Tax Cuts and Jobs Act (TCJA) on the 2018 Allowance Tax Advantage**

Pay Grade	Count	Allowance Tax Advantage (\$)	Tax Advantage without TCJA (\$)	TCJA Effect as Share of:		
				Tax Advantage	Basic Pay	All Military Pay
C01	3,810	30	27	-9.90%	-0.04%	-0.04%
C02	3,613	104	90	-14.08%	-0.12%	-0.12%
C03	3,373	98	85	-13.94%	-0.11%	-0.11%
C04	3,353	103	88	-14.12%	-0.11%	-0.11%
E01	80,514	229	202	-11.50%	-0.44%	-0.36%
E02	79,083	737	659	-10.64%	-0.58%	-0.45%
E03	205,552	1,641	1,466	-10.69%	-0.86%	-0.63%
E04	292,904	2,734	2,435	-10.94%	-1.22%	-0.83%
E05	259,431	4,374	3,883	-11.22%	-1.58%	-1.00%
E06	175,555	5,950	5,357	-9.97%	-1.46%	-0.92%
E07	104,045	6,377	5,877	-7.84%	-1.01%	-0.69%
E08	31,103	6,965	6,516	-6.45%	-0.80%	-0.57%
E09	12,480	8,027	7,452	-7.17%	-0.81%	-0.62%
O01	19,742	3,458	3,023	-12.59%	-1.48%	-1.03%
O01E	2,083	6,513	5,914	-9.20%	-1.25%	-0.84%
O02	22,351	6,092	5,441	-10.69%	-1.36%	-0.99%
O02E	2,975	7,037	6,527	-7.25%	-0.85%	-0.61%
O03	53,470	7,302	6,685	-8.45%	-0.97%	-0.71%
O03E	11,674	8,472	7,849	-7.36%	-0.79%	-0.60%
O04	43,397	8,904	8,060	-9.48%	-1.00%	-0.73%
O05	29,478	9,577	8,492	-11.32%	-1.09%	-0.81%
O06	12,781	10,202	8,631	-15.40%	-1.30%	-1.01%
O07	473	10,721	8,808	-17.84%	-1.32%	-1.15%
O08	363	10,282	8,387	-18.43%	-1.20%	-1.06%
O09	185	9,066	7,437	-17.97%	-0.98%	-0.87%
W01	391	6,353	5,894	-7.24%	-0.86%	-0.59%
W02	1,886	6,582	6,147	-6.60%	-0.75%	-0.54%
W03	4,492	7,057	6,606	-6.39%	-0.67%	-0.50%
W04	3,288	7,503	6,923	-7.73%	-0.75%	-0.58%
W05	954	8,917	8,058	-9.63%	-0.91%	-0.72%
<b>Total</b>	<b>1,464,799</b>	<b>4,092</b>	<b>3,682</b>	<b>-10.00%</b>	<b>-1.17%</b>	<b>-0.81%</b>



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## Abbreviations

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2SLS	Two-Stage Least Squares
AC	Active Component
ADM	Active Duty Master
ADOS	Active Duty Operational Support
ADOT	Active Duty Other than Training
ADP	Active Duty Payments
ADT	Active Duty Transactions
AFB	Air Force Base
AGR	Active Guard Reserve
AIP	Assignment Incentive Pay
BAH	Basic Allowance for Housing
BAS	Basic Allowance for Subsistence
BLB	Bag of Little Bootstraps
BP	Basic Pay
CBO	Congressional Budget Office
CNA	Center for Naval Analyses
CP	Continuation Pay
CPS ASEC	Current Population Survey Annual Social and Economic Supplement
CZTE	Combat Zone Tax Exclusion
DMDC	Defense Manpower Data Center
DoD	Department of Defense
FICA	Federal Insurance Contributions Act
GS	General Schedule
HASC	House Armed Services Committee
HORSITL	Home of Record State Income Tax Liability
IADT	Inactive Duty Training
IDA	Institute for Defense Analyses
JCT	Joint Committee on Taxation
LATE	Local Average Treatment Effects
MHA	Military Housing Area
MHPI	Military Housing Privatization Initiative
NBER	National Bureau of Economic Research
NCR	National Capital Region
NDAA	National Defense Authorization Act
NOAA	National Oceanic and Atmospheric Administration

OHA	Overseas Housing Allowance
OLS	Ordinary Least Squares
OPA	Office of People Analytics
OTD	Other Training Duty
OUSD (P&R)	Office of the Under Secretary of Defense (Personnel and Readiness)
PAYGO	Pay-As-You-Go
PCS	Permanent Change of Station
PDPP	Physicians and Dentists Pay Plan
PERSTEMPO	Personnel Tempo
QRMC	Quadrennial Review of Military Compensation
RC	Reserve Component
RC/T	Reserve Component/Transit
RMC	Regular Military Compensation
SASC	Senate Armed Services Committee
SELRES	Selected Reserves
SOFA	Status of Forces Survey for Active Duty Personnel
SOFRC	Status of Forces Survey of the Reserve Components
SRB	Selective Retention Bonus
SSAT	Salary System Assessment Tool
TAR	Training and Administration of the Reserve
TCJA	Tax Cuts and Jobs Act of 2017
TSP	Thrift Savings Plan
U.S. BLS	United States Bureau of Labor Statistics
USDA	United States Department of Agriculture
YOS	Years of Service

**REPORT DOCUMENTATION PAGE**

*Form Approved  
OMB No. 0704-0188*

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1. REPORT DATE (DD-MM-YYYY) xx-09-2020	2. REPORT TYPE Final	3. DATES COVERED (From - To) Aug 2018 - May 2020
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4. TITLE AND SUBTITLE Analysis of a Salary-Based Pay System for the Quadrennial Review of Military Compensation	5a. CONTRACT NUMBER HQ0034-19-D-0001
	5b. GRANT NUMBER
	5c. PROGRAM ELEMENT NUMBER

6. AUTHOR(S) Huff, Nancy M.; Adams, Joseph F.; Alrich, Amy A.; Biltoc, Claudio C.; Bishop, James M.; Bracken, Jerome; Cotting, Dave I.; Cotton, Norman L.; Dozier, Meredith J.; Eliezer, Dina; Graham, David R.; Holland, R. Abraham; Horowitz, Stanley A.; Mease, Nigel J.; Mithal, Neil V.; Oswald, Christopher D.; Reutter, Heidi C.; Robertson, Jenns A.; Schutzmeister, Scott; Williams, Ashlie, M.	5d. PROJECT NUMBER BE-7-4565
	5e. TASK NUMBER
	5f. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Institute for Defense Analyses 4850 Mark Center Drive Alexandria, VA 22311-1882	8. PERFORMING ORGANIZATION REPORT NUMBER IDA Document D-13204 H 20-000185
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9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) Thirteen Quadrennial Review of Military Compensation Office of the Under Secretary of Defense (Personnel and Readiness) 1500 Defense Pentagon, Rm. 2D573 Washington, DC 20301-1500	10. SPONSOR/MONITOR'S ACRONYM(S) QRMC (OUSD (P&R))
	11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION/AVAILABILITY STATEMENT  
Approved for public release; distribution is unlimited.

13. SUPPLEMENTARY NOTES

14. ABSTRACT  
This paper supports the goal of the Quadrennial Review of Military Compensation (QRMC) of understanding how a compensation system that combines basic pay, housing, and subsistence allowances into a single taxable "salary" would affect Service members' earnings and behavior. This paper also considers the readiness, cost, and tax-revenue implications of such a system. We undertook three lines of effort. First, we modeled the after-tax income effects of transitioning to a salary system. We found that any salary system that maintains constant Federal Government costs will reduce Service members' aggregate after-tax income. Second, we used econometric models to estimate the likely responses of Service members to changes in after-tax income. We found no significant effect of state military tax exemptions on retention, suggesting that other factors are more influential than raw compensation changes. Third, we conducted focus groups with 740 Service members in every Service by visiting Active and Reserve Component installations in four states. Service members generally expressed strong skepticism of major restructuring of military compensation systems; they view the current system as imperfect, but "fair enough." Finally, we discuss other possible mechanisms—short of adopting a salary system—that could improve the efficiency and fairness of the current system.

15. SUBJECT TERMS  
Military compensation; salary; basic pay; basic allowance for housing; basic allowance for subsistence; military retirement benefits; locality pay; military housing; Quadrennial Review of Military Compensation; Service member attitudes to military compensation

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT Unclassified	b. ABSTRACT Unclassified	c. THIS PAGE Unclassified			Emswiler, Thomas 19b. TELEPHONE NUMBER (Include area code) (703) 697-9832





