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Assessing the Impact of Removing Demographic Indicators from Military Selection Boards

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***This research was conducted between August 2021 – November 2022**

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Executive Summary

This research was conducted between August 2021 – November 2022

Background and Methodology

Manpower and Reserve Affairs (M&RA), Military Personnel Policy (MPP), Office of the Under Secretary of Defense (USD) for Personnel and Readiness (P&R) asked the Institute for Defense Analyses (IDA) to assess the potential impact of removing data that directly or indirectly identifies race, ethnicity, and gender in statutory and non-statutory selection procedures and to develop an implementation plan specifying the data elements that should or should not be removed from selection boards. IDA's assessment is responsive to the requirements specified in Section 524 of National Defense Authorization Act (NDAA) for Fiscal Year 2021 as well as recommendations in the Department of Defense (DOD) Diversity and Inclusion Board report to address disparities in promotion through a holistic focus on the entire career development process.

IDA deployed a mixed-methods approach to this research, including quantitative analyses of officer promotion outcomes, interviews with enlisted members and officers who served on promotion boards as well as service staff responsible for policy/execution of selection boards (76 interview sessions; 131 individuals), and legal, policy, and literature reviews. IDA's analytic approach centered on three key questions:

- **Effectiveness**: Is there sufficient evidence that removing indicators of race/ethnicity and gender will reduce bias and/or improve selection diversity?
- **Feasibility:** Is it possible to remove all indicators that may reflect race/ethnicity and gender and/or feasible to do so given available resources and other constraints?
- **Prioritization:** Are there other strategies to reduce the potential for bias that could be more viable or impactful?

Effectiveness

To assess the potential effectiveness of removing demographic indicators from promotion/selection board files, we reviewed relevant literature, interviewed service staff/board members, and analyzed officer promotion board outcomes. Across these lines of research, we did not find clear and compelling evidence that removing indicators of race/ethnicity and gender from promotion/selection board files would make a significant impact on selectee diversity.

Although there is a large body of research suggesting that women and ethnic/racial minorities experience discrimination due to their group membership, only a small set of studies has directly examined the impact of redacting information about group membership from selection contexts. Research in this area is generally mixed and ongoing. Promotion board members and service staff

generally agreed that removing demographic indicators would not have a significant impact on board outcomes, with a subset of individuals arguing that removing this information would hamper their ability to proactively value diversity and/or fully understand selection board files.

To further assess the potential efficacy of removing demographic indicators, IDA analyzed historical records of officer promotion data for the Army, Navy, Marine Corps, and Air Force, pursing three lines of effort. First, we assessed whether prior policies to partially blind promotion boards impacted relative promotion rates of ethnic/racial minorities and women. Specifically, we examined the impact of the removal of a minority designator in the Air Force (June 2002) and the removal of the candidate photograph in the Army (in August 2020) and Navy (in September 2005 and August 2016)* using a difference-in-difference regression analysis. After controlling for rank, year, competitive category, and linear time trends, and correcting for multiple hypothesis testing, we find that the policy changes examined did not have a significant impact on minority officer promotion rates.

In the second line of analysis, we examined whether names indicative of minority status predict promotion. Some minority officers have names that are more commonly associated with their racial/ethnic group than others; if promotion boards are biased against minority officers, one would expect minority officers with names that more directly imply their group membership to have lower promotion rates than minority officers with more ambiguous names. To examine this question, we regressed officer selection on name-predicted ethnic/racial category in a series of models, adding progressively more control variables. Although minority-indicative names are associated with lower promotion rates in initial models, once appropriate control variables are introduced (i.e., socio-economic status based on home of record, actual race/ethnicity, year, rank, competitive category), the relationship between minority-indicative names and promotion is no longer significant. This suggests that minority-indicative names do not directly influence the decisions of the boards.

In the final line of analysis, we assessed whether policy changes to remove demographic indicators differentially impacted promotion rates of officers with minority-indicative names. That is, if boards are biased against a certain minority category, then partial blinding would disproportionately benefit those who cannot otherwise be identified as members of that minority category (i.e., their name does not imply their ethnic/racial group). Overall, we found that the examined policy changes in the Army, Navy, and Air Force did not significantly increase promotion rates of minority officers with white-sounding names relative to those with non-white-sounding names. Taken together, our quantitative analyses find little evidence of bias in promotion boards and no grounds for optimism that removal of additional indicators of race/ethnicity and gender will increase minority promotion rates.

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* The Navy and Marine Corps also removed photographs in September 2020, but there was insufficient data to examine the effects of photograph removal on promotion during the narrow time period.

Feasibility

IDA examined the feasibility of removing identifying information from records that populate promotion and non-statutory selection boards by reviewing policy and speaking with service staff responsible for policy/execution of selection boards. We conclude that the feasibility of removing identifying information is very low given current resources and systems and only worth pursing if there is clear evidence that doing so would improve selectee diversity; as explained in the previous section, we did not find such evidence.

Removing identifying information (i.e., names and pronouns) from files would involve manual redaction of millions of records across multiple decades, a lengthy quality review process, and a system to store redacted content. Further, policy changes, along with accompanying training processes and compliance checks, would be required to remove names from forms and prohibit the use of pronouns. The services could take a limited approach and only redact names and pronouns from future records through changes to policy. However, a policy-only approach is not without its challenges, as omitting names may complicate record validation and require lengthy compliance reviews and new training. Even if the services removed all demographic indicators from selection boards, they could not be completely blind to race/ethnicity and gender because this information could be inferred, correctly or incorrectly, from career history/assignments (e.g., combat role during a period in which service was restricted to men), and could be directly stated in letters to the board if candidates choose to do so (i.e., by signing their name).

Prioritization

Given the lack of evidence regarding the effectiveness of removing demographic indicators from records and the extremely low feasibility of doing so, IDA examined other domains that could be more fruitful for action through discussions with board members and service staff and a review of the research literature. Overall, we found that promotion boards have already adapted many best practices to mitigate bias, however, there are several domains in which the services could strengthen their procedures to better align with evidence-based practices.

Strategies to Reduce Bias in Decision-Making and Relevance to Selection Board Processes

Board Process	Strategy to Reduce Bias	Current State
Review and voting of records	Structured (i.e., standardized) evaluation processes and sufficient time for review	The Navy and Marine Corps processes are relatively less structured than Air Force and Army processes, as files are briefed by different board members, but offer more time for careful deliberation
Board membership	Demographically diverse decision-makers	Women and ethnic/racial minorities are disproportionally tasked with participation in boards; unclear if the requirement to mirror diversity of the force (rather than the eligible population) is feasible and/or necessary
Memorandum of Instruction (MOI)/Precepts	Organizational support for D&I*, including accountability mechanisms	Board members are unable to follow board guidance to value D&I-related leadership skills as this information is not well specified in performance evaluations
Training on bias	Evidence-based training on diversity and/or unconscious bias that goes beyond raising awareness to building skills	The Army and Navy offer training during promotion boards but the short duration and minimal opportunity to practice skills may be insufficient to change behavior
Analysis of board records	Analysis to track diversity across career stages and assess the impact of diversity policies	Capacity to analyze and conduct research on promotion board outcomes is expanding in the Army and Air Force with new research organizations.

*D&I: Diversity and Inclusion

Across the services, board members and service staff overwhelmingly emphasized the fairness of board procedures. Board members often noted how impressed they were with the professionalism and rigor of the process. Board members and service staff alike contended that promotion boards were not "the problem" when it came to gender and racial/ethnic disparities, instead they noted that disparities may arise earlier in the career process, such as through differential access to key developmental experiences, ineffective and/or unfair performance evaluations, and disparities in adverse information. The services may see a greater impact on promotion diversity by addressing these key inputs to promotion files than by removing names and gender pronouns.

Conclusion and Recommendations

Given the lack of evidence to support the removal of demographic indicators and the low feasibility of doing so, IDA does not recommend this course of action. Instead, we provide the following recommendations based on our analysis of changes that DOD and the services should prioritize for further consideration and possible action.

Add Structure (i.e., Standardization) to Board Processes

- Consider extending training for board members, for example, by lengthening or adding practice evaluation sessions and improving preparation to evaluate different career fields.
- Consider adding structure to Navy and Marine Corps briefing processes, for example, by providing standardized guidance on briefing and discussion, prohibiting discussion of information not included in files (i.e., positive information not in files), and omitting discussion/display of scores/grades board members assign to candidates.
- Consider options to extend time for review of promotion files, including limits to the number of records that can be reviewed each day, convening smaller boards, and omitting non-essential information from files.
- Consider adding evaluation scales to ensure board members weigh common criteria to decide their recommendation for promotion.

Continue to Address Key Career Milestones and Outcomes That Impact Competitiveness for Promotion

- Evaluate the impact of changes to non-statutory selection processes in the Air Force and Army and share results across services.
- Assess and improve performance evaluation processes, to include additional training for effective and objective rating and better accounting for leadership actions to foster inclusion and manage diversity.
- Address racial/ethnic disparities in military investigative and justice processes and assess the potential impact of disparities on promotion outcome**s.**

Monitor and Evaluate Board Inputs, Processes, and Outcomes

- Monitor the impact of women and ethnic/racial minorities' disproportionate participation on selection boards and conduct research to determine the optimal level of board member diversity.
- Evaluate the effectiveness of current anti-bias training for rating officials and in selection boards and consider providing more in-depth evidence-based training that aims to build skills.
- Continue to expand analysis of promotion board outcomes, to include research to experimentally assess the impact of demographic indicators on promotion.

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Contents

1. Introduction

A. Background

On July 14, 2020, former Secretary of Defense Esper issued a memorandum directing actions to address diversity, inclusion, and equal opportunity in the military services. The memorandum directed the Office of the Under Secretary of Defense for Personnel and Readiness (USD(P&R)) to implement policy prohibiting the use of photographs in promotion boards and selection processes, effective September 1, 2020. Accordingly, USD (P&R) issued a memorandum on August 21, 2020, to the Secretaries of the Military Departments, Chairman of the Joint Chiefs and Staff and the Chief of the National Guard Bureau containing the prohibition. The prohibition included statutory promotion boards and non-statutory selection boards for assignment, training, education, and command.

Subsequently, §524(a) of the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021 (FY21) (Pub. L. 116-283, 134 Stat. 3599, note to 10 Unites States Code (USC) §615) created a legal requirement for the Secretary of Defense to prohibit the inclusion of an official photograph in the information furnished to promotion boards for active duty and reserve officers and enlisted personnel. Section 524 also called for a study to understand the potential impact of the removal of other indicators of race, ethnicity, and gender in promotion boards and to specify an implementation plan for the redaction or removal of such information.

B. Purpose and Scope

Manpower and Reserve Affairs (M&RA), Military Personnel Policy (MPP), USD for P&R asked the Institute for Defense Analyses (IDA) to assess the potential impact of removing data that directly or indirectly identifies race, ethnicity, and gender in statutory and non-statutory selection procedures and to develop an implementation plan specifying the data elements that should or should not be removed from selection boards. The intent of IDA's assessment is to meet the requirements specified in the National Defense Authorization Act (NDAA) FY21 Section 524, but also to extend beyond these requirements to address non-statutory selection processes (e.g., command selection and professional military education (PME)) in addition to statutory selection processes (i.e., promotion). In doing so, this assessment is also responsive to recommendations made in the Department of Defense (DOD) Diversity and Inclusion (D&I) Board report to address disparities in promotion through a holistic focus on the entire career development process. In the current report, IDA examines officer promotion in relatively greater detail, but extends to assess enlisted promotions that use centralized board processes (i.e., for E7 to E9) as well as non-statutory selection processes.

Promotion boards cannot be considered in isolation as one's potential for promotion depends on a host of professional milestones, experiences, assignments, and evaluations. Although the services could remove most indicators of race/ethnicity and gender from selection board files, key inputs to these files (e.g., evaluations, awards) are generated by leaders who directly interact with service members and would thus be aware of their gender and race/ethnicity. For example, promotion boards rely heavily on performance evaluations to determine the best and fully qualified, however, raters are aware of the gender of service members they evaluate, and often surmise their race/ethnicity as well. Any unconscious or conscious bias that negatively influences performance evaluations would go on to influence promotion board decisions, even if board members are completely blind to race/ethnicity or gender of candidates. IDA's assessment primarily addresses the narrow question posed to us regarding the removal of demographic indicators within selection files, but also considers the broader talent management context that informs and determines promotion decisions.

C. Definitions

Throughout this report, we use the term bias. In its broadest conceptualization, bias can be described as "a propensity to make decisions while already being influenced by an underlying belief."[1] That is, biased decision-making is systematically skewed by extraneous factors. In the current research, we mainly focus on a specific form of bias, intergroup bias, which is "the systematic tendency to evaluate one's own membership group (the ingroup) or its members more favorable than a non-membership group (the outgroup)."[2] In other words, intergroup bias occurs when the "underlying belief" that influences decisions is an individual's group membership. Intergroup bias can happen consciously, with an individual's full awareness, or unconsciously, through automatic associations generated without conscious awareness but that nonetheless influence behavior.[3]

D. Methodology

IDA utilized a mixed-method approach, including quantitative analyses of officer promotion outcomes, interviews with service staff and board members, and legal, policy, and literature reviews.

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1 Inga Chira, Michael Adams, and Barry Thornton, "Behavioral Bias Within the Decision Making Process," *Journal of Business & Economics Research* 6, no. 8 (August 2008): 12, https://www.researchgate.net/publication/238754061_Behavioral_Bias_Within_The_Decision_Making_Process.

2 John F. Dovidio, Miles Hewstone, Peter Glick et al., "Prejudice, Stereotyping and Discrimination: Theoretical and Empirical Overview," part 1 in *The SAGE Handbook of Prejudice, Stereotyping and Discrimination* (Washington, DC: SAGE Publications, August 2010), 3, http://www.sagepub.com/sites/default/files/upm-binaries/54590_dovido,_chapter_1.pdf.

3 Dovidio et al., "Prejudice, Stereotyping and Discrimination," 3-28.

Quantitative analyses assessed the impact of past policy changes on promotion (i.e., removal of photographs or removal of indicators noting race/ethnicity). Further, these analyses assessed whether names indicative of minority race/ethnicity were associated with different promotion outcomes than names indicative of White/Caucasian race. Chapter 3 provides specific details.

IDA conducted semi-structured interviews by phone or Microsoft Teams with 131 individuals (76 interview sessions). We began by speaking with service staff who set policy for and/or execute statutory and non-statutory selection boards as well as General Counsel and/or Judge Advocates involved in reviewing promotion policy and/or defending the services in court. To gain a historical perspective, we also interviewed a small sample of retired military leaders and former service secretaries. Based on the results of these interviews with service staff and former military leaders, IDA developed a structured discussion guide to speak with officers and enlisted members who recently served on promotion boards. Discussions were grouped by service and enlisted/officer status with one to four participants per session. Table 1 presents counts of interview participants by service affiliation.

Table 1. Interview Participants

Organization	Count of Interview Sessions	Count of Interview Participants
Staff involved in selection board policy/execution[1]	**42**	**72**
DoD	2	3
Army	10	18
Navy	12	17
Marine Corps	5	7
Air Force	12	23
Coast Guard	1	4
Enlisted members who served on promotion boards	**12**	**25**
Army	4	9
Navy	3	7
Marine Corps	2	4
Air Force	3	5
Officers who served on promotion boards	**16**	**28**
Army	4	7
Navy	2	4
Marine Corps	3	5
Air Force	7	12
Retired military officers and former Service Secretaries[2]	**6**	**6**
Total	**76**	**131**

Notes: 1. Includes General Council and/or Judge Advocates from each Service and Office of the Secretary of Defense (OSD).

2. Three affiliated with the Army, one affiliated with the Navy, and one affiliated with the Air Force.

IDA also conducted a policy review, examining Title 10 and DOD and service policies regarding officer and enlisted promotions as well as past litigation related to promotion board outcomes. To directly observe promotion proceedings, one to two members of IDA's research team attended officer promotion boards for the Army, Navy, Marine Corps, and Air Force. IDA viewed Navy and Marine Corps boards in full and viewed the introductory briefs and practice sessions for Army and Air Force promotion boards. Finally, IDA conducted a review of the literature addressing the impact of race/ethnicity and gender on selection outcomes, the effectiveness of strategies to blind selection/evaluation processes to race/ethnicity and gender, and the available evidence to support other strategies to reduce bias in selection/evaluation processes.

E. Analytic Approach

To assess the potential impact of removing demographic indicators from selection boards and to determine which indicators to remove or maintain, IDA considered three key questions, each discussed in separate chapters of this report.

- **Effectiveness**: *Is there sufficient evidence that removing indicators of race/ethnicity and gender will reduce bias and/or improve selection diversity?* We explore this question in the next two chapters of the report, first by reviewing past research on the interventions to blind selection processes to race/ethnicity and gender (Chapter 2), and then through quantitative analyses that explore the impact of past policy changes to partially blind boards to race/ethnicity/gender on officer promotion outcomes (Chapter 3).
- **Feasibility:** *Is it possible to remove all indicators that may reflect race/ethnicity and gender and/or feasible to do so given available resources and other constraints?* In Chapter 4, we explore this question by identifying data elements in promotion board files that may indicate race/ethnicity and gender, whether directly or indirectly, and delineating the processes and resources that would be required to redact identifying information, particularly names and gender pronouns.
- **Prioritization:** *Are there other strategies to reduce the potential for bias that could be more viable or impactful?* In Chapter 5, we explore this question by reviewing the literature on evidence-based strategies to reduce the impact of bias in decision-making and comparing those strategies to selection board procedures to identify areas for potential improvement beyond removal of demographic indicators.

Notably, the intent of this research is not to assess whether or not statutory and non-statutory processes are biased against women and ethnic racial/minorities. Ideally, one would fully examine whether processes are biased before proceeding to examine possible strategies to combat bias, however, this was beyond the scope of the work with which IDA was tasked. Our quantitative analyses (Chapter 2) provides insight on this question, providing no evidence to suggest bias in

the promotion process. Past research in in the Air Force has also found no evidence of ethnic/racial and gender bias in promotion board decision-making (Chapter 1).[4]

[4] Nelson Lim, Louis T. Mariano, Amy G. Cox, David Schulker, and Lawrence M. Hanser, *Improving Demographic Diversity in the U.S. Air Force Officer Corps* (Santa Monica, CA: RAND Corporation, 2014), https://www.rand.org/pubs/research_reports/RR495.html.

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2. Effectiveness of Removing Indicators of Race/Ethnicity and Gender: Literature and Interviews

A. Overview

To assess the potential effectiveness of removing demographic indicators from promotion/selection board files, we reviewed the literature on this area. Research in civilian employment contexts finds compelling evidence of discrimination against racial/ethnic minorities and women. Experimental evidence suggests substantial hiring discrimination against Black/African American and Latino job-seekers and a number of studies suggest that women and ethnic/racial minorities are disadvantaged in promotion. Taken together, this research suggests that employer awareness of race/ethnicity and gender may disadvantage minority applicants and women. However, research that directly examines the impact of removing information about race/ethnicity and gender from selection contexts is small and evidence is mixed. Experimental research in military settings is needed to directly examine the impact of removing indicators of race/ethnicity and gender from promotion/selection files; this research is still ongoing in the Army and the Air Force. In the final section of this chapter, we summarize service staff and board members' perspectives on the impact of removing demographic indicators from selection boards. Most interviewees did not believe that removing demographic indicators would have a significant impact on board member decision-making, with some noting that it would hamper board members' ability to proactively value diversity and/or fully understand promotion board files.

B. Discrimination Against Women and Ethnic/Racial Minorities in Employment Contexts

Despite legal protections, social norms favoring equality, and an expansion of opportunities for historically disadvantaged groups, women and ethnic/racial minorities continue to experience discrimination due to their group membership.[5] Societal stereotypes (i.e., generalizations about social groups), whether consciously or unconsciously held, can negatively influence individuals'

[5] Sara N. Bleich, Mary G. Findling, Logan S. Casey et al., "Discrimination in the United States: Experiences of Black Americans," *Health Services Research* 54, no. S2 (2019): 1399-1408, https://doi.org/10.1111/1475-6773.13220; Gillian K. SteelFisher, Mary G. Findling, Sara N. Bleich et al., "Gender Discrimination in the United States: Experiences of Women," *Health Services Research* 54, no. S2 (December 2019): 1442-1453, https://doi.org/10.1111/1475-6773.13217; C. Matthew Snipp and Sin Yi Cheung, "Changes in Racial and Gender Inequality Since 1970," *The American Academy of Political and Social Science* 663, no. 1 (2016): 80-98, https://journals.sagepub.com/doi/10.1177/0002716215596959.

thoughts about and behaviors towards women and ethnic/racial minorities.[6] Ingroup favoritism, i.e., the tendency to like and reward those who are most similar to oneself, can disadvantage members of minority groups underrepresented in positions of power.[7] In addition, legacy policies, systems, and practices historically implemented to advantage majority groups can continue to limit opportunities for women and ethnic/racial minorities.[8]

Accordingly, research in civilian employment contexts suggests that women and ethnic/racial minorities experience discrimination in hiring and/or promotion outcomes. That is, women and ethnic/racial minorities experience more negative employment outcomes than white males due to their group membership. Although the impact of group membership may be difficult to disentangle from related characteristics that could influence employment outcomes, for example different preferences or educational attainment, experimental studies can isolate the impact of gender or race/ethnicity on employment outcomes by holding all other factors constant.

Racial/ethnic discrimination in hiring is often studied using a naturalistic experimental method in which identical resumes are sent to real employers containing randomly assigned white or non-white identifiers (e.g., names, activities, affiliations). The number of responses from employers are tracked to gauge hiring likelihood discrepancies. For example, a field experiment of the New York City low-wage labor market found that resumes sent with black-identifiers had to apply to twice as many jobs as resumes with white identifiers to receive a callback or job offer. Further, resumes with white identifiers indicating a felony conviction faired equally well compared to resumes with black or Latino identifiers without a criminal record.[9] A meta-analysis (a large, aggregated analysis using many studies) was conducted to assess all naturalistic resume studies between 1990-2015. It found the majority of studies conducted in this manner detected a race/ethnicity bias.[10] This finding indicates subtle markers of race/ethnicity group can influence real-world hiring decisions. This is not simply an issue in the U.S. A recent large-scale study

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6 Asia A. Eaton, Jessica F. Saunders, Ryan K. Jacobson et al., "How Gender and Race Stereotypes Impact the Advancement of Scholars in STEM: Professors' Biased Evaluations of Physics and Biology Post-Doctoral Candidates," *Sex Roles* 82, no. 3 (2020): 127-141, https://doi.org/10.1007/s11199-019-01052-w; Joyce C. He, Sonia K. Kang, Kaylie Tse et al., "Stereotypes at Work: Occupational Stereotypes Predict Race and Gender Segregation in the Workforce," *Journal of Vocational Behavior* 115 (December 2019): 103318, https://doi.org/10.1016/j.jvb.2019.103318.

7 Jim A.C. Everett, Nadira S. Faber, and Molly Crockett, "Preferences and Beliefs in Ingroup Favoritism," *Frontiers in Behavioral Neuroscience* 9 (February 2015): 15, https://doi.org/10.3389/fnbeh.2015.00015.

8 Dovidio et al., "Prejudice, Stereotyping and Discrimination," 3-28.

9 Devah Pager, Bruce Western, and Bart Bonikowski, "Discrimination in a Low-Wage Labor Market: A Field Experiment," *American Sociological Review* 74, no. 5 (October 2009): 785, https://doi.org/10.1177/000312240907400505.

10 Lincoln Quillian, Devah Pager, Ole Hexel, and Arnfinn H. Midtbøen, "Meta-Analysis of Field Experiments Shows no Change in Racial Discrimination in Hiring Over Time," *Proceedings of the National Academy of Sciences* 114, no. 41 (September 2017): 10870-10875, https://doi.org/10.1073/pnas.1706255114.

identified hiring discrimination against people of color in all nine countries studied.[11] That is, despite progressive changes in race/ethnic equity in the U.S., hiring gaps based on race/ethnicity remain. A smaller body of research has used naturalistic experimental methods to examine gender discrimination.[12] However, research findings are inconsistent and vary depending on occupation[13] (e.g., white women are sometimes favored in hiring, but only for occupations traditionally dominated by women).[14]

Research also demonstrates a negative relationship between promotion outcomes and race/ethnicity and gender. In a seminal study on this topic, managers at a Fortune 500 company were asked to rate 2,200 well-performing employees on promotion potential. Minority employees were consistently rated lower for promotion potential than white employees despite similar age, education, and experience.[15] Potentially due to promotion biases, minorities are consistently underrepresented in management positions across varying organizational contexts (e.g., in the federal government,[16] in police forces,[17] etc.). There are a number of studies that suggest women may be overlooked for promotion as well. For example, in a recent large study which examined 300,000 employment records, females were less likely to be promoted despite having higher job ratings.[18]. Similarly, in a study examining likelihood of professors obtaining tenure, females were less likely to obtain tenure and their tenure positions were less prestigious than those of their male counterparts.[19] Although there were differences in productivity between males and females in this study (partially due to maternity leave), the productivity gap did not fully explain the promotion

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11 Lincoln Quillian, Anthony Heath, Devah Pager et al., "Do Some Countries Discriminate more than Others? Evidence from 97 Field Experiments of Racial Discrimination in Hiring," *Sociological Science* 6 (June 2019): 467-496, https://doi.org/10.15195/v6.a18.

12 Stijn Baert, "Hiring Discrimination: An Overview of (Almost) All Correspondence Experiments Since 2005," chapter 3 in Audit Studies: Behind the Scenes with Theory, Method, and Nuance, edited by S. Michael Gaddis, 63-79 (Cham, Switzerland: Springer International Publishing, 2018).

13 Ibid.

14 Valentina Di Stasio and Edvard N. Larsen, "The Racialized and Gendered Workplace: Applying an Intersectional Lens to a Field Experiment on Hiring Discrimination in Five European Labor Markets," *Social Psychology Quarterly* 83, no. 3 (July 2020): 229-250, https://doi.org/10.1177/0190272520902994.

15 Jacqueline Landau, "The Relationship of Race and Gender to Managers' Ratings of Promotion Potential," *Journal of Organizational Behavior* 16, no. 4 (July 1995): 391-400, https://doi.org/10.1002/job.4030160409.

16 Sungjoo Choi, "Diversity and Representation in the U.S. Federal Government: Analysis of the Trends of Federal Employment," *Public Personnel Management* 40, no. 1 (March 2011): 25-46, https://doi.org/10.1177/009102601104000103.

17 Victor Ray, Kasim Ortiz, and Jacob Nash, "Who is Policing the Community? A Comprehensive Review of Discrimination in Police Departments," *Sociology compass* 12, no. 1 (January 2018): e12539, https://doi.org/10.1111/soc4.12539.

18 Alan Benson, Danielle Li, and Kelly Shue, "'Potential' and the Gender Promotion Gap," working paper, University of Minnesota (July 26, 2021), https://conference.nber.org/conf_papers/f157211.pdf.

19 Katherine Weisshaar, "Publish and Perish? An Assessment of Gender Gaps in Promotion to Tenure in Academia," *Social Forces* 96, no. 2 (December 2017): 529-560, https://doi.org/10.1093/sf/sox052.

gap. Thus, even in academic settings where concerted efforts to increase diversity are common, a gender-related promotion gap persists.

In military settings, the relationship between promotion likelihood and gender and race/ethnicity is complex and multi-faceted. When discussing this topic, retention (in addition to promotion) must be considered. The RAND Corporation conducted two large-scale studies to look at the relationship between these factors across all services (in 2012 and 2016). The studies found the relationship between promotion and retention differs for each gender, each race/ethnicity, and each rank. For instance, the 2012 study[20] found that black males and those of other ethnicities generally had a lower promotion rate than white males, yet they often had higher rates of retention at certain ranks. At times, promotion and retention rates offset each other and made those subgroups equally as likely to reach a specified rank as white males. Similarly complex results were found for females. The follow-up study in 2016[21] found that certain features such as deployment time and family status (e.g., presence of dependents) accounted for some, but not all, of the discrepancies between males and females. In a study focused on the Air Force specifically, RAND did not find any evidence of bias in the promotion system. Specifically, RAND compared minorities and women to white men with matched (i.e., similar) records and found that promotion outcomes did not vary by race/ethnicity and gender in the vast majority of comparisons (93%).[22]

C. Interventions to Reduce Discrimination by Removing Demographic Indicators

Although there is a large body of research suggesting that women and ethnic/racial minorities experience discrimination due to their group membership, only a small set of studies has directly examined the impact of removing information about group membership from selection contexts. Research in this area is generally mixed and still ongoing.

Some studies point to positive (equalizing) effects of removing demographic information. For instance, the U.S. Army conducted a mock promotion board study during which board members rated the same set of several hundred files, both with a photo and without a photo.[23] This research found some evidence of same-race bias; board members rated candidates of their own race slightly higher than candidates of other races, but only with the photograph included. Photos did not provide additional information that led to more efficient voting. In fact, the inclusion of

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20 Beth J. Asch, Trey Miller, and Alessandro Malchiodi, *A New Look at Gender and Minority Differences in Officer Career Progression in the Military* (Santa Monica, CA: RAND Corporation, 2012), https://www.rand.org/pubs/technical_reports/TR1159.html.

21 Beth J. Asch, Trey Miller, and Gabriel Weinberger, *Can We Explain Gender Differences in Officer Career Progression?* (Santa Monica, CA: RAND Corporation, 2016), https://www.rand.org/pubs/research_reports/RR1288.html.

22 Nelson Lim, *Demographic Diversity.*

23 U.S. Army, "Talent Based Promotions: Impact of Department of the Army Photo on Promotion Outcomes" (Washington, DC: Department of the Army, June 2020).

the photo increased rating time by 10%. The Army is continuing to assess the impact of removing photographs on promotion outcomes.

An additional study tested whether removing demographic markers could reduce gender biases in a professional orchestra setting.[24] Judges viewed orchestra candidates with a view-blocking screen between them or as they typically would, directly viewing the candidates. Judges did not receive any other information about the candidates, including their names. The analysis examined data from fourteen thousand individual auditions, finding that the chances of women being hired by the orchestra increased by 14.8% with a view-blocking screen present. This study, examined in conjunction with the Army promotion board study discussed above, suggests that removing demographic information during a promotion or hiring process may reduce discrimination against women and ethnic/racial minority populations.

On the other hand, in some studies, removing demographic information *reduced* the likelihood of minority promotion/hiring. Three studies in Europe and Australia tested the real-world impact of removing demographic information from resumes during the hiring process[25,26,27]. In each of those studies, the minority candidates were less likely to receive interviews or be hired when resumes were anonymized, while non-minority candidates received a boost following anonymization. These findings may suggest that the individuals making hiring decisions were making a purposeful effort to elevate minority individuals when resumes were not anonymized.

It is important to remain cautious when comparing findings across these studies because the populations and settings examined may not be applicable to a military setting. The military promotion process is inherently different than business promotion processes, and these processes may not be directly comparable. Furthermore, we caution against making a direct comparison between U.S. studies and European/Australian studies, as there are known gender and racial/ethnic norm differences between the U.S. and Europe/Australia. For these reasons, it is important to conduct specific studies within the population of interest in order to determine how removing demographic markers impacts hiring and promotion likelihood. The Army's Office of Economic and Manpower Analysis (OEMA) and the Air Force's Office of Labor and Economic Analysis (OLEA) are planning experimental research to assess the impact of various facets of the promotion

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[24] Claudia Goldin and Cecilia Rouse, "Orchestrating Impartiality: The Impact of "Blind" Auditions on Female Musicians," *American Economic Review* 90, no. 4 (September 2000): 715-741, https://doi.org/10.1257/aer.90.4.715.

[25] Annabelle Krause, Ulf Rinne, and Klaus F. Zimmermann, "Anonymous Job Applications of Fresh Ph.D. Economists, "Economics Letters 117, no. 2 (November 2012): 441-444, https://doi.org/10.1016/j.econlet.2012.06.029.

[26] Luc Behaghel, Bruno Crépon, and Thomas Le Barbanchon, "Unintended Effects of Anonymous Resumes," American Economic Journal: Applied Economics 7, no. 3 (July 2015): 1-27, https://doi.org/10.1257/app.20140185.

[27] Michael J. Hiscox, Tara Oliver, Michael Ridgeway et al., Going Blind to see more Clearly: Unconscious Bias in Australian Public Service Shortlisting Processes, (June 2017), https://behaviouraleconomics.pmc.gov.au/sites/default/files/projects/unconscious-bias.pdf.

file (e.g., MOIS, evaluations, race/ethnicity and gender) on promotion decision-making. Internal experiments on this topic are in progress at other government institutions, including the National Institutes of Health (NIH).[28] Specifically, NIH has anonymized peer review for one of its research grants and is currently evaluating the impact on diversity of awardees.

D. Military Perspectives on the Potential Effectiveness of Removing Demographic Indicators

Service members who served on promotion boards as well as service staff responsible for selection board policy/execution expressed mixed opinions about the likely impact of removing demographic indicators from board files (i.e., names and gender pronouns). Overall, the majority of interviewees did not believe that removing names and gender pronouns would have a positive effect on board outcomes; most interviewees argued that removing names and pronouns would make little to no impact but others suggested that it could even have a negative impact and impair board decision-making. Conversely, a small subset of interviewees favored removing names and gender pronouns to eliminate the potential for unconscious bias (Table 2).

Table 2. Summary of Board Member and Service Staff Perspectives on the Effectiveness of Removing Names and Gender Pronouns from Selection Board Records

Perspectives on Removal of Names and Gender Pronouns	Excerpts from Interviews
Unlikely to make a significant impact: The majority of interviewees noted that board members did not have time to attend to names/pronouns and that potential bias in processes prior to promotion boards (e.g., assignments and evaluations) were more impactful and necessary to address.	• With so many records, I didn't have time to look at names and pronouns. I was concentrating on content to get them promoted. • Where bias lies is prior to the board process. So many things prior to the board process that have opportunity for bias…has to be looked at more holistically. Don't think we need to change the board process.
Negative impact: Service staff noted that the removal of names/pronouns would take away board members' ability to proactively value diversity, all else being equal between files. Board members noted that removing names/pronouns would make files too impersonal and/or would impede their ability to understand incongruities in files (e.g., career breaks due to pregnancy, raters that may be biased).	• Our guidance is to increase diversity, you're handcuffing the board if you can't tell who is diverse and who is not. • Taking away pronouns would do more harm than good. Board member may ask why hasn't this person led people in combat - is it because they had no opportunities, or weren't trusted to do it?

[28] Mike Lauer, "Anonymizing Peer Review for the NIH Director's Transformative Research Award Applications," *NIH Extramural Nexus*, May 27, 2020, https://nexus.od.nih.gov/all/2020/05/27/anonymizing-peer-review-for-the-nih-directors-transformative-research-award-applications/#:~:text=Concerns%20also%20exist%20about%20bias%2C%20be%20it%20unconscious,anonymize%20the%20review%20of%20Transformative%20Research%20Award%20applications.

Perspectives on Removal of Names and Gender Pronouns	Excerpts from interviews
Positive impact: A small subset of interviewees favored removal of names/pronouns to ensure a completely unbiased process; some noted that it was more important to remove names than pronouns as personal knowledge of candidates could unfairly sway board members, regardless of gender or race/ethnicity.	• Human nature to have biases…I suppose removal could only be benefit to most fair board process possible. • Everyone tries to be super fair and objective, but it's impossible if you know the people you're evaluating… if you remove any of those identifiers, it would make it a much more objective process.

Board members and service staff involved in selection processes frequently stated that they did not believe removing names and gender pronouns from promotion and other non-statutory selection boards would make a significant impact. Board members often indicated that they did not have time to pay attention to names and gender given the large volume of records assigned for review. They often noted that they did not care about a candidate's race/ethnicity or gender and only concentrated on their record (e.g., their evaluations, assignments, and developmental experiences) and whether they were qualified for promotion. Staff and board members described board processes as exceptionally fair and indicated that senior leaders serving on boards could and should be trusted to make impartial decisions based solely on the strength of the record.

Other board members or service staff acknowledged that unconscious bias could influence decision-making and understood the rationale for removing names and gender pronouns. However, they ultimately concluded that the "juice would not be worth the squeeze" given the enormous effort required to redact names and gender pronouns and the small potential benefit. Regardless of their perspective on removing names and gender pronouns, interviewees overwhelmingly agreed that unfair bias against women and ethnic/racial minorities was more likely to accrue prior to the board, for example through differential assignments or more negative evaluations, than as a result of board processes.

A minority of board members and service staff argued that removing names and gender pronouns would have a negative impact on board outcomes. Some service staff argued that the presence of names and gender pronouns allowed board members to proactively value diversity by giving a selection preference to diverse members in cases where files were otherwise equal. Other staff noted that removing related indicators of race/ethnicity and gender, like identity-based awards or activities (e.g., Black History month committee) "might inadvertently strip away demonstrated ability and leadership accomplishments." Board members, however, did not echo the sentiments of service staff and instead described alternative reasons for maintaining names and gender pronouns. Some Air Force board members noted that removing names and gender pronouns would impede their ability to fully understand records. For example, names or gender pronouns could provide context for atypical career paths or breaks due to pregnancy and could help explain performance evaluations that appeared more negative than warranted based on the rest of the file (i.e., suggests possibility of racial/ethnic or gender bias). Navy and Marine Corps' board members

had a different perspective and argued that removing names and gender pronouns would make records too impersonal and would impede their ability to consider professional reputations and share positive experiences and personal knowledge about candidates.

Finally, the smallest minority of board members and service staff believed that removing names and/or gender pronouns would be of value and worth pursuing. Staff and board members noted that removing names and gender pronouns would eliminate the potential for unconscious bias and would make the board process more transparent, objective, and fair. This could be of value not only for board decision-making, but also to communicate the legitimacy and fairness of selection processes to the force. Some board members indicated that it would be of more value to remove names than pronouns. They explained that it would be easier to redact names than pronouns from records and that names introduce bias not only based on race/ethnicity/gender but also based on personal knowledge. Specifically, a few board members noted that objectivity might be compromised when board members know an individual personally; for example, they may discount performance evaluations that did not match their personal experience with the individual.

E. Conclusion

Our review of the literature and service staff/board members' perspectives does not find clear and consistent evidence to suggest that removing indicators of race/ethnicity and gender (e.g., gender pronouns and names) from selection board records will have a significant impact on selection diversity. Experimental research is needed to directly assess the impact of removing demographic indicators from promotion/selection board files on selection decisions; this research is ongoing in the Army and Air Force, but not yet complete.

3. Effectiveness of Removing Indicators of Race/Ethnicity and Gender: Quantitative Analyses

In this section, we analyze historical records of officer promotion boards for the Army, Navy, Marine Corps, and Air Force. We do so to assess the plausibility that total blinding (removing all potential indicators of race, ethnicity, or sex—henceforward "minority categories") will reduce bias or increase diversity of promoted officers in the services.

We pursue three different lines of effort. First, we assess whether prior *partial blinding* policies (those that remove some—but not all–potential indicators of minority category) have impacted relative promotion rates of officers in minority categories. Two such partial blinding policies are amenable to analysis: 'minority designator' removal from Air Force promotion packets (in June 2002) and photograph removal from promotion files in the Army (in August 2020) and Navy (in September 2005 and August 2016).[29] If partial blinding has no detectable effect on minority promotion rates, then we should be less optimistic that total blinding will have salubrious effects on minority promotion rates.

Second, we investigate whether minority-indicative names predict promotion after including increasingly fine control variables. It is neither feasible nor wise to "control for everything," but if an appropriate but coarse set of control variables eliminates significant associations between minority-indicative names and promotion, we should be less optimistic that total blinding, to include removal of names from promotion files, will have a beneficial effect on minority promotion rates.

Third, we assess whether prior partial blinding policies differentially impacted promotion rates of officers with minority-indicative names. That is, if boards are biased against a certain minority category, then partial blinding would disproportionately benefit those who cannot otherwise be identified as members of that minority category. Thus, partial blinding would have relatively larger effects on those officers whose names suggest non-membership of that minority category; partial blinding would have relatively smaller effects on those officers whose names clearly indicate membership of that minority category. If, when other indicators of minority status are removed, officers with ambiguously minority-indicative names see no differential change in promotion rates relative to those with decisively minority-indicative names, then it is unlikely that indicators of minority status affect promotion rates.

[29] The Navy and Marine Corps also removed photographs in September 2020, but there was insufficient data to examine the effects of photograph removal on promotion during the narrow time period.

Although each line of effort relies on different assumptions, results are largely consistent: we find little evidence of bias in promotion boards (Table 3). We find no grounds for optimism that total blinding will increase the diversity of promoted officers.

Table 3. Summary of Quantitative Analyses

LOE	Summary of Findings
Impact of partial blinding policies on promotion	• The policy-change to remove photographs in the Army and Navy did not significantly impact promotion rates of minority officers. • The policy-change to remove a minority designator in the Air Force did not significantly impact the promotion rates of minority officers.
Associations of minority-indicative names	• Minority-indicative names are associated with lower promotion rates in initial models, however, once appropriate control variables are introduced, the relationship between minority-indicative names and promotion is no longer significant. • Specifications successively add controls for: rank, year, and competitive category; Socio-economic Status (SES) covariates by Home of Record zip code; and both.
Impact of partial blinding on promotion moderated by minority-indicative names	• The policy-change to remove photographs in the Army and Navy did not significantly impact promotion rates of minority officers with white-sounding names relative to those with non-white-sounding names. • The policy-change to remove a minority designator in the Air Force decreased promotion rates for black officers with white-sounding names and increased the promotion rate of black officers with black-sounding names. This suggests a bias in favor of black officers in the Air Force in the early 2000's. However, these results were only marginally significant (at the 10% level) and should be interpreted with caution.

Note: Significance is at the 5% level after Bonferroni correction for tested hypotheses in each line of effort. Lines of effort control for rank, year, competitive category, linear time trend (LOE 1); actual minority category (LOE 2); rank, year, competitive category, linear time trend (LOE3).

In the following sections, we build up to and provide our three lines of effort. First, we provide a conceptual framework, which justifies the lines of effort we pursue. Second, we display and interpret trends in minority category promotion rates, juxtaposing these against relevant policy changes. In the third, fourth, and fifth sections, we provide our three lines of effort, linking these lines of effort with our conceptual framework. To focus discussion, these sections highlight only key results; we present additional results in the appendices. We also provide additional methodological details and data background in the appendices.

A. Conceptual Framework and Empirical Challenges

Our lines of effort indirectly assess evidence of bias. In general, these lines of effort cannot quantify the magnitude of bias (that is, how much minority officer promotion rates would change in the absence of bias). Rather, our analysis presents key estimates for which a null hypothesis of no bias can be tested. More direct approaches, which can quantify the magnitude of bias, rely on stronger, less credible assumptions.

In our conceptual framework, promotion boards use evidence x_i from the promotion packets to assess the quality q_i of each officer i, forming predictions of officer quality $\widehat{q_i}(\mathrm{x})$, which might be approximated with a linear model $\widehat{q_i} = \mathrm{x_i}\beta$.[30] Boards then select for promotion s_i those officers with predicted quality above a threshold κ_{ib}, which may depend upon the particular promotion board b. We represent this process with the indicator

$$s_i = 1\left[\widehat{q_i} \geq \kappa_{i,b}\right]$$

which can be approximated with a linear probability model $s_i = \alpha_b + x_i\rho + e_i$ where board-specific constants α_b account for different board thresholds, the error term e_i captures approximation error, and ρ are parameters.

If promotion boards are biased, then the minority category of the officer c_i impacts the officer's assessed quality holding all else constant:[31] [32]

$$\widehat{q_i} = \mathrm{x_i}\beta + \mathrm{c_i}\gamma$$

and γ does not equal zero. Thus, γ represents the "full-knowledge" bias of the promotion board.

Even if boards do not know the minority category of the officer, other information in the promotion packet w_i may lead the board to draw inferences about minority category $\widehat{c_i} = \mathrm{w_i}\delta \equiv \mathrm{E}[\,\mathrm{c_i} \mid \mathrm{w_i}\,]$; these inferences may bias the officer's assessed quality:

$$\widehat{q_i} = \mathrm{x_i}\beta + \mathrm{w_i}\delta\gamma$$

When boards use information w to infer officer category, the aggregate impact of bias on the assessed quality of officer i in minority category a, which we denote as $B_i^{\mathrm{w,a}}$, equals the full-

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[30] We use our conceptual model to illustrate ideas; aiming for simplicity, we use linear approximations throughout.

[31] When there are more than two mutually exclusive categories, $\mathrm{c_i}$ is a vector of indicators and γ is a parameter vector.

[32] This formulation of bias is consistent with Becker's *statistical discrimination*. For alternative formulations, boards might be influenced by implicit bias or even explicit racial animus. Under our data, these alternative formulations are observationally equivalent. Gary S. Becker, *The Economics of Discrimination, 2nd ed.* (Chicago, IL: The University of Chicago Press, 2010)

knowledge bias against each category weighted by the inferred probability of these categories for all members of category a:[33] [34]

$$B_i^{\mathrm{w,a}} = E[\,\mathrm{w_i}\delta\gamma \mid \mathrm{c_i} = \mathrm{a}\,]$$

In this case, the officer's assessed quality would on average equal

$$\widehat{q_\iota} = \mathrm{x_i}\beta + \mathrm{c_i}B_i^{\mathrm{w}}$$

for the biases B_i^{w}.[35] Holding $\mathrm{x_i}$ constant, minority category associates with assessed quality due to the board's inferences about minority category. The magnitude of bias B_i^{w} depends upon both the full-knowledge bias γ and the predictions of minority category $\mathrm{w_i}\delta$.

This conceptualization suggests a test for bias commonly used in the labor economics and sociology literatures: regress promotion on minority category and controls (e.g. all data in promotion packets).[36] The coefficients on minority categories indicate the magnitude of bias in promotion decisions. If the board is unbiased, then the coefficients on minority categories should equal zero.

Unfortunately, this approach relies on three strong assumptions: first, that the researcher can indeed control for all variables, $\mathrm{x_i}$, affecting assessed quality, $\mathrm{q_i}$, and potentially correlated with minority category; second, that none of the control variables causally mediate an effect of bias; and third, that those variables affecting inferences about minority category are not a subset of those impacting quality $W \nsubseteq X$. We cannot credibly satisfy any of these assumptions. Most saliently, we do not possess the promotion packets, with their rich and nuanced data; even if we did, converting these data into numerical fields would be infeasible and statistically fraught. Instead, we have a few crude controls, including promotion board indicators and background SES aggregates merged through Home-of-Record.

Given that we cannot plausibly satisfy the assumptions required to directly estimate the magnitude of bias, we favor lines of effort that indirectly assess bias. These leverage how information in the promotion packets $\mathrm{w_i}$ might be used to infer minority category and thereby impact the vector of biases B_i^{w}. We cannot estimate the magnitude of full-knowledge bias γ, but we can test whether it equals zero. Each line of effort rely on different, weaker assumptions; taken

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[33] If boards actually express bias a nonlinear but monotonic function of minority probabilities, such as a step function, then our conceptual framework can be thought of as a linear approximation to this nonlinear function and all results go through.

[34] This expression normalizes $E[\mathrm{w_i}\delta\gamma]$ to zero in the difference $b_a^{\mathrm{w}} \equiv E[\,\mathrm{w_i}\delta\gamma \mid \mathrm{c_i} = \mathrm{a}\,] - E[\mathrm{w_i}\delta\gamma]$.

[35] B^w is the vector of biases across A minority categories, defined as $B^w \equiv (B_1^{\mathrm{w}}, B_2^{\mathrm{w}}, \cdots, B_A^{\mathrm{w}})'$.

[36] David Neumark, "Experimental Research on Labor Market Discrimination," *Journal of Economic Literature* 56, no. 3 (September 2018), https://doi.org/10.1257/jel.20161309; Ronald Oaxaca, "Male-Female Wage Differentials in Urban Labor Markets," *International Economic Review* 14, no. 3 (October 1973), https://doi.org/10.2307/2525981.

together, they provide stronger evidence. In each section for each line of effort, we express the methodology for that line of effort within the overarching conceptual framework.

Because we consider a large number of hypotheses across our models, we use Bonferroni corrections to control for the Family-Wise Error Rate. That is, the significance-level of a hypothesis test is the probability of falsely discovering an effect (under the null hypothesis of no effect). With many hypothesis tests, false discovery becomes inevitable. Bonferroni corrections adjust significance thresholds so that the chance of false discovery does not increase with additional hypotheses. However, Bonferroni corrections also reduce the true discovery rate. For this reason, it is crucial to exercise discipline and focus on core specifications and minority categories. We deliberately avoid intersectional categories for this reason (i.e., exploring effect of gender crossed with race/ethnicity).

Because the grouping of hypotheses used for Bonferroni correction is somewhat subjective, we emphasize the plausibility of alternative groupings.[37] A lax Bonferroni correction would group only those coefficients of interest in a given specification. A severe Bonferroni correction would group all coefficients of interest estimated in the totality of our analysis (over 50 in the body, more than 100 if including alternative specifications). Under severe Bonferroni correction, statistical significance at the 1% level would require a p-value of less than 0.0001. A *moderate* Bonferroni correction would group all coefficients of interest within a given line of effort for the preferred specification. When discussing results, we report estimates that are significant after moderate Bonferroni correction. Across all lines of effort, four results survive moderate Bonferroni correction at the 10% level and none at the 5% level. When interpreting such marginally significant estimates, it is crucial to consider whether they form a pattern across different lines of effort and services.

B. Promotion Rate Trends in Relation to Partial Blinding Policies

Over the last two decades, each service has implemented multiple policies governing promotion boards that have potential to impact the promotion rates of minority officers. To assess the extent of bias, we focus on policies satisfying two criteria:

1. The policy changed over the date range for which we have selection data.
2. The policy removed information indicative of minority status (i.e., gender or race/ethnicity).

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[37] Bonferroni corrections can be done ex-post, so readers may correct estimates under alternative groupings. Only the single hypothesis p-value and the number of tests are required to perform Bonferroni correction. If the number of tests is T, the family-wise error rate is E (the chosen probability of at least one false-positive across all tests under the null that all coefficients equal zero), and the P-value is P, then a result is statistically significant under Bonferroni correction if PT<E. That is, multiply the P-value by the number of tests and compare with the significance threshold. For convenience, we list p-values in brackets under standard error estimates in our regression tables.

Policies satisfying these criteria consist of photo removal from promotion packets (Navy, Army) and removal of 'minority designator' from promotion packets (Air Force). The Marine Corps removed "minority designator' in approximately 2010 and removed photos from promotion packets in 2020; these dates are on the edges of our selection data for the Marine Corps, so we cannot analyze the effects of these policies on Marine Corps officer promotion rates.

Below, we display two examples of trends in minority selection rate gaps in the Navy, juxtaposing these trends against date ranges during which photos were included in selection packets (we present a comprehensive set of trends in the appendix).[38] We construct these gaps after subtracting out the mean promotion rate within promotion board, rank, and year. Thus, these adjusted selection rates reflect deviations from what could be expected, and trends in the adjusted gap do not reflect changes in minority composition across boards and ranks. These two figures illustrate the basic facts of selection rate gaps across minority categories and services, as well as what information we exploit to determine the impacts of policy changes on minority category selection rates.

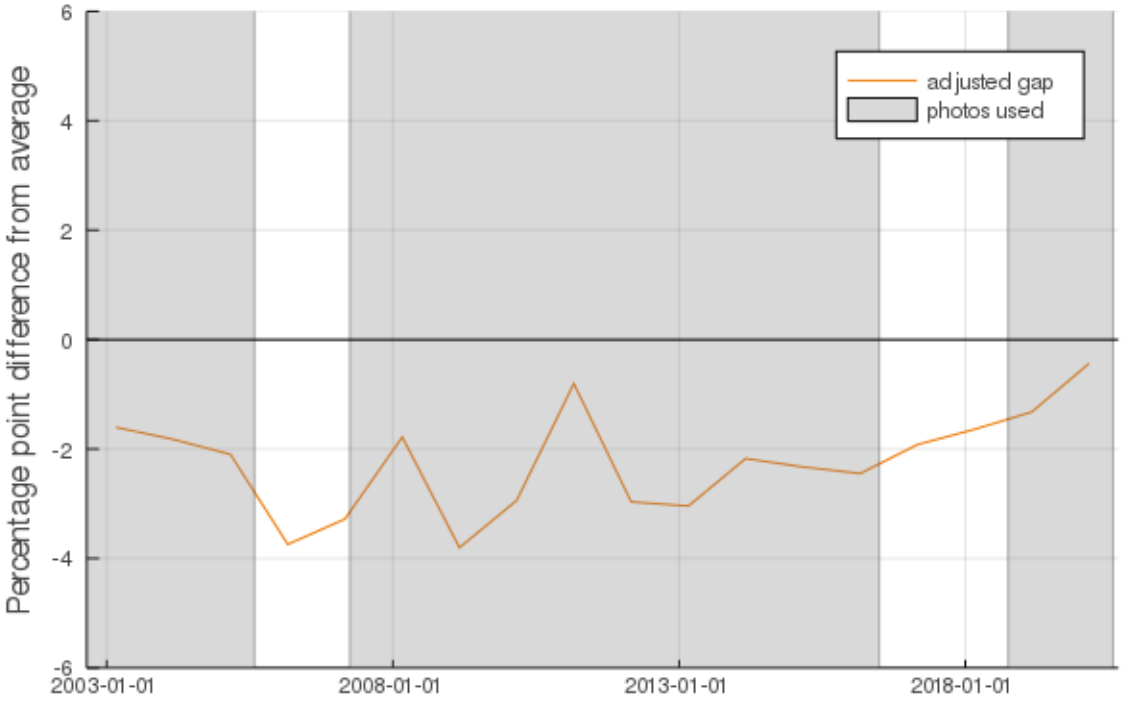

Figure 1. Navy: Black Officer Selection Rate Gap – Adjusted for Competitive Category, Rank, and Year

Three features of Figure 1 merit discussion. First, in most years, black officers (male and female) in the Navy are promoted about two percentage points less often than could be expected,

[38] We encode the policies according to when they were in effect. To the best of our knowledge, these polices were fully implemented in the indicated windows and did not operate on a lag.

after controlling for interactions between competitive category, rank, and year, but this gap has been shrinking in the last half-decade and is not significant in the most recent year.[39]

Second, adjusted promotion rates are volatile, often jumping between one and two percentage points between years.[40] Given the size of the black officer population, the magnitude of this volatility can be explained by "luck" (or sampling variance from a binomial distribution).

Third, there is no clear relationship between photo removal and black officer promotion rates. During the first photo removal, black officer promotion rates dropped almost two percentage points, then increased almost a half of a percentage point; when photos were reinstated, black officer promotion rates increased about a percentage point, then plummeted almost two percentage points. These up-and-down changes are difficult to distinguish from noise. During the second photo removal, black officer promotion rates rose half a percentage point and half again; after photos were reinstated, black officer promotion rates continued to rise at about the same rate, indicating no departure from the local trend. Our first line of effort analyzes these same trends but with statistical rigor, confirming no statistically significant effect of photo removal on black officer promotion rates.

Figure 2 displays trends for all female adjusted promotion rates in the Navy. As previously, there is no obvious relationship between photo removal and adjusted female promotion rates. In contrast with the previous figure, female promotion rates are less volatile (owing to larger sample sizes), and gaps in adjusted promotion rates are smaller or non-existent, particularly in later years.

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[39] In contrast, the unadjusted gap (Appendix C) is smaller in more years but does not trend upwards. This is because black Navy officers are relatively lower ranked in the early 2000's and are more likely to be in competitive categories with higher promotion rates. Adjusting for these factors lowers black officer promotion rates; in recent years, black officers are relatively more likely to be promoted within their competitive categories.

[40] Interestingly, the volatility is larger for the unadjusted promotion rate gap. This is probably because demand factors cause swings in the promotion rates of competitive categories, and black officers are unevenly distributed across competitive categories. Interestingly, volatility in adjusted promotion rates appears to decrease after 2012.

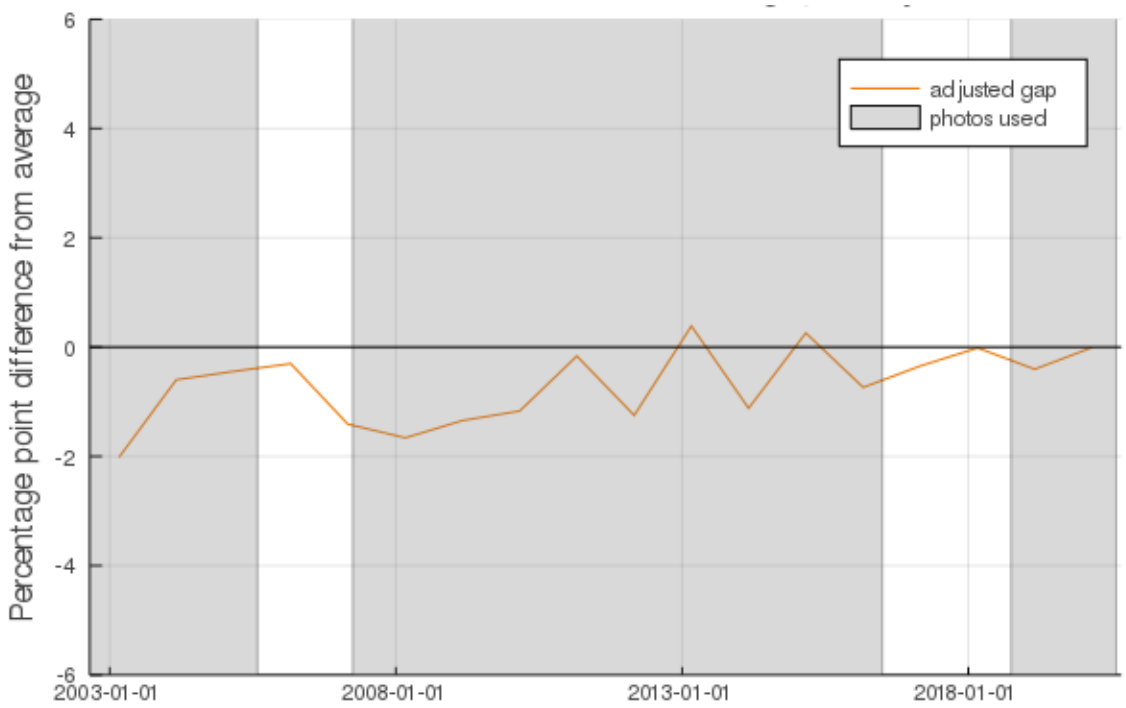

Figure 2. Navy: The Female Officer Selection Rate Gap – Adjusted for Competitive Category, Rank, and Year

C. Line of Effort 1: Difference-in-Difference Analysis to Assess the Effect of Partial Blinding Policies

In this line of effort, we estimate the effects of policies that remove some information particularly indicative of race, ethnicity, or sex: photos for the Army and Navy, and 'minority designator' for the Air Force.

From the perspective of our overarching conceptual framework, removing especially strong indicators of minority category, such as photos or 'minority designator,' will reduce the extent to which boards can distinguish between categories. Thus, the aggregate bias for minority category a given an information set W, $B^{W,a}$, will be reduced when strong indicators of minority category are removed from promotion packets:

$$|B^{W,a}| > \left|B^{W \setminus \text{photos},a}\right|$$

where $B^{W \setminus \text{photos},a}$ represents the aggregate bias for category a when photos have been removed from the set of information W from which promotion boards can draw inferences about category.

This suggests that we can interpret any treatment effect of partial blinding on the selection rate gap as evidence of bias. For this interpretation to be valid, we must assume that the blinded information (photos, minority indicator) is excluded from the variables assessing officer

quality x.[41] This assumption would be violated if, for example, photos contained information about officer quality, such as adherence to rules governing placement of medals, and correct placement of medals correlated with minority category.

We estimate the treatment effect of partial blinding on minority selection rates using a linear probability[42] difference-in-difference regression:

$$s_{i,t} = \alpha_{b,r,y} + c_i\alpha_1 + R_t\alpha_2 + c_iR_t\alpha_3$$

where s_i indicates selection for promotion, c_i indicates minority category of officer i,[43] R_t indicates that photos/minority designator was not included in promotion packets in month t.[44] In our primary specification, we include separate intercepts $\alpha_{b,r,y}$ for each board b for officers of rank r in fiscal year y.[45] In this model, the parameter α_3 represents the causal impact on minority categories of removing photos/minority indicator from promotion packets.[46] We additionally interact linear time trends with minority categories; for the Army, results are sensitive to specification of trends (e.g. specifying quadratic or cubic time trends instead); this is because Army

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[41] Alternatively, if photos are in x, then the quality prediction from photos must also be mean independent of minority category conditional on other covariates in x.

[42] We estimate a linear probability model, both for interpretability and for statistical reasons. If we were to use a non-linear probability model, such as a probit, then the large number of fixed-effect terms would generate incidental parameters bias. Although linear probability models can also suffer from bias when fitted values lie outside the unit interval, our highly saturated models keep most fitted values close to or inside the unit interval. Error terms in linear probability models tend to suffer from substantial heteroskedasticity, so we estimate Huber-White standard errors. Linear probability models often fail to pick up tail behavior, but tail behavior is not of primary interest in this study.

[43] If there are many minority categories, then c_i is a vector of non-reference group indicator variables.

[44] If the policy is implemented on a lag (e.g., photos are not actually removed from promotion packets until three months after the policy was nominally implemented) and the model does not account for the lag, then treatment effects would be estimated with statistical bias. To the best of our knowledge, policy changes were fully implemented at their nominal start.

[45] Note that the fixed-effects demean selection rates within fiscal years. When policy changes align with the fiscal year, α_2 is not separately identified from the fixed-effects, and we drop $\alpha_2 R_{i,t}$ from the model. When policy changes do not align with the fiscal year, the term $\alpha_2 R_{i,t}$ does not substantially affect results, so we drop it from all models. In a difference-in-difference model without year fixed effects, the intercept describes the mean outcome for the reference group before policy implementation, α_1 describes the mean outcomes of the non-reference groups before policy implementation, α_2 describes the change in outcome for the reference group after policy implementation, and α_3 describes the additional change in outcomes for the non-references groups after policy implementation. With year fixed-effects, the interpretation of the treatment-effect parameter α_3 does not change, but α_1 and α_2 must also be interpreted as relative to the within-year mean.

[46] Causal interpretation of a difference-in-difference estimator (or triple-difference estimator) requires a parallel trends assumption. This assumption can be relaxed somewhat by including group specific trends in the estimator. In this case, additional observations before or after the policy are necessary to identify the trends, and identification relies of the specification of the trend; fully non-parametric estimates of group trends cannot be separately identified from treatment effects of the policy. In essence, difference-in-difference and triple-difference estimators rely on the assumption that something coincidental with the policy change would not also cause deviation from the group-specific trends. We include group-specific linear trends as our primary specification.

removed photos in only the final year of data; thus, identified effects rely on extrapolations from the prior five years.

The 'fixed-effects' $\alpha_{b,r,y}$ should not be thought of as primarily controlling for unobserved confounding variables. Rather, selection rates within a given competitive category can swing wildly from year to year, and this is not plausibly due to swings in officer quality from year to year. Instead, a service's demand for officers of a given rank in a given competitive category probably drives this variability. Because minority categories are not evenly divided across competitive categories, minority category selection rates also swing wildly. Thus, including these fixed-effects tightens standard errors and improves statistical power.

Below, we display and discuss a difference-in-difference regression table for the Navy, Air Force, and Army, using conventional census racial-ethnic categories (see Table 4). The coefficients of interest are those corresponding to the interaction terms (e.g. "Black & No Minority Designator"). In each table, we present coefficient estimates. In smaller font beneath these estimates, we present heteroskedastic-robust standard errors in parenthesis, and t-test p-values for null hypotheses of zero in square brackets. The presented results include racial-ethnic linear time trend controls; we evaluated additional specifications as robustness checks (results not shown).

Table 4. Difference-in-Difference Estimates on Racial-Ethnic Minority Categories

Estimates in table correspond to: Coefficient (Standard Error) [P-Value]	**Air Force: Selected** (1)	**Navy: Selected** (2)	**Army: Selected** (3)
Black	**-0.069**	**-0.037**	**-0.075**
	(0.007)	(0.006)	(0.023)
	[0.000]	[0.000]	[0.001]
Hispanic	**-0.035**	**-0.008**	**-0.085**
	(0.011)	(0.006)	(0.028)
	[0.001]	[0.213]	[0.002]
Asian	**-0.041**	**0.004**	**-0.093**
	(0.031)	(0.008)	(0.034)
	[0.182]	[0.618]	[0.007]
Other	**-0.038**	**0.006**	**-0.150**
	(0.011)	(0.006)	(0.039)
	[0.000]	[0.315]	[0.000]
Black & Partial Blinding	**-0.004**	**-0.008**	**-0.007**
	(0.008)	(0.005)	(0.008)
	[0.633]	[0.131]	[0.364]

Hispanic & Partial Blinding	**0.007**	**-0.006**	**-0.024**
	(0.013)	(0.005)	(0.009)
	[0.559]	[0.272]	[0.006]
Asian & Partial Blinding	**0.094**	**0.001**	**-0.026**
	(0.033)	(0.007)	(0.010)
	[0.004]	[0.852]	[0.011]
Other & Partial Blinding	**0.018**	**0.006**	**-0.010**
	(0.012)	(0.005)	(0.013)
	[0.154]	[0.286]	[0.450]
Ethnicity-Linear Trend Interaction	Yes	Yes	Yes
Board-FY-Rank Fixed Effect	Yes	Yes	Yes
Estimator	OLS	OLS	OLS
N	429,918	494,335	341,400
R^2	0.349	0.392	0.413

No results survive moderate Bonferroni correction at the 5% level. For the Air Force, minority designator removal significantly increased the promotion rate of Asians, which does not survive moderate Bonferroni correction at the 5% level (p*14 > 0.05). For the Navy, no results are significant. For the Army, photo removal significantly decreased the promotion rate of Asians and Hispanics, but these results are not robust to model specification and do not survive Bonferroni correction at the 5% level.

Taken as a whole, these results do not provide evidence that information indicative of minority status contributes to bias in promotion boards. Some results are significant with less stringent Bonferroni corrections or with lower significance thresholds, but the signs of these significant effects are not consistent across services. For example, the point estimates indicate that minority designator removal benefitted Asian officers in the Air Force but harmed Asian officers in the Army. These inconsistent results make us wary that the findings are spurious, and they do not survive stringent Bonferroni correction. In no case did we detect statistically significant effects on black officers—even without Bonferroni correction. For all services, point estimates for black officers are opposite in sign of what would be expected if boards were biased against black officers.

In Table 5 and Table 6, we perform the same difference-in-difference analysis but with sex as the minority category, considering only photo removal as the relevant policy change. For the Navy, the estimate is marginally significant and does not survive Bonferroni correction. For the Army, effect remains significant after Bonferroni correction but is not robust to alternative specifications. In particular, significant results disappear when the specification removes the linear trend in female selection rates or replaces the linear trend with a quadratic trend. Visual inspection of the Army female adjusted promotion gap trend suggests a quadratic trend, which the linear trend specification misses. Local to the policy change, the female promotion gap trends upwards, and

the trend does not accelerate with the removal of photos. For this reason, this significant result of photo removal on Army female promotion rates may be the result of specification error.

Table 5. Difference-in-Difference Model on Sex for Navy and Army

Estimates in table correspond to: Coefficient (Standard Error) [P-Value]	**Navy: Selected** (1)	**Navy: Selected** (2)	**Army: Selected** (3)	**Army: Selected** (4)
Female	**-0.011**	**-0.024**	**-0.003**	**0.107**
	(0.002)	(0.004)	(0.002)	(0.018)
	[0.000]	[0.000]	[0.038]	[0.000]
Female & Partial Blinding	**0.008**	**0.007**	**0.009**	**0.031**
	(0.004)	(0.004)	(0.005)	(0.006)
	[0.040]	[0.075]	[0.041]	[0.000]
Gender-Linear Trend Interaction		Yes		Yes
Board-FY-Rank Fixed Effect	Yes	Yes	Yes	Yes
Estimator	OLS	OLS	OLS	OLS
N	494,335	494,335	341,400	341,400
R^2	0.392	0.392	0.412	0.412

D. Line of Effort 2: Minority-Indicative Names and Promotion Rates

In this line of effort, we investigate whether names indicative of minority category ('minority-indicative names') predict promotion after including increasingly fine control variables. Specifically, we control for potential confounding variables (i.e., that may account for the relationship between name and promotion), including actual minority category, interacted year, rank, competitive category, and SES. Although we have incomplete data on SES based on home of record[47] (see Appendix B), this is an important variable to control for as SES may be related to one's name and thus explain any relationship between name and promotion.

This line of effort is most directly pertinent to proposed redaction of names, but it relies on strong assumptions. From our conceptual framework, a board's inference of officer minority category $\widehat{c_i} = E[\,\mathrm{c}_i \mid \mathrm{w}_i\,]$ would influence a biased board's assessment of officer quality. We can directly estimate a component of these inferences using name data, $E[\,\mathrm{c}_i \mid \mathrm{name}_i\,]$, which we define as pred_i. Conditional on the information x_i that boards use to assess officer quality, name-predicted category should be uncorrelated with promotion if the board is unbiased $s_i \perp \mathrm{pred}_i \mid x_i$.

[47] Depending on the service, the home of record variable is missing for about 85% of officers. We do not observe correlations between home of record missingness and variables other than file date (such as component, non-commissioned officer, or selection rate), so we treat missingness as completely-at-random; this missingness reduces statistical power of analyses relying on SES controls, but is unlikely to causes statistical bias.

Conversely, we would expect minority-indicative names to influence the decisions of biased boards. Even if boards have access to other predictors of minority category, we should expect that minority-indicative names can improve board inferences about minority category; photos and other information in promotion packets do not always decisively indicate minority category.

Unfortunately, we do not observe the rich and nuanced data of promotion packets. Unconditional associations between minority-indicative names and selection rates may be confounded by other information in promotion packets used to assess officer quality. Given that minority-indicative names correlate with SES background variables even after conditioning on actual minority category, we should expect that associations between selection rates and minority-indicative names remain confounded even after conditioning on actual minority category.

In this light, we regress officer selection on name-predicted category in a series of specifications, adding progressively more controls. All of these specifications rely on strong assumptions, but how the coefficient estimate evolves as we add more controls can help to elucidate whether associations between name-predicted category and selection rates are due to bias or to uncontrolled confounding variables. In the first specification, we control for only actual minority category. In the second, we control for interacted year, rank, and competitive category. In the third, we drop the interacted controls but add SES controls. In the final specification, we include all controls. The final specification controls for more potential confounds but loses statistical power due to missingness in SES covariates. As a consequence, the second specification has the most precision but probably somewhat more statistical bias than the fourth. Given that all specifications likely use inadequate controls, it is crucial to avoid focusing too much on one specification and instead evaluate how point estimates evolve across specifications.

In Table 6, Table 7, Table 8, and Table 9 we display results for the Navy, Marine Corps, Army, and Air Force using the standard racial-ethnic categorization. Three patterns stand out. First, the coefficients on minority-indicative names tend to decrease in magnitude as more controls are added. This is consistent with confounding variables driving associations between selection rates and minority-indicative names.

Second, few coefficients in specification 2 (controlling for actual race/ethnicity) or 4 (controlling for race/ethnicity and SES) are significant at conventional levels even without Bonferroni correction. None are significant after Bonferroni correction (with the exception of predicted Hispanic ethnicity in the second specification for Air Force).

Third, the magnitudes of coefficients in the second specification (controlling for actual race/ethnicity) tend to be small. For example, black-associated names predict a 0.5 percentage point decrease in selection rates for officers in the Navy. Given that the median name-predicted-black probability is about 0.3 for black officers and about 0.05 for white officers, this indicates an average effect size of about 0.1 percentage points on black officers relative to white officers.

Fourth, the direction of the effect of predicted minority category on promotion is inconsistent across services. For example, Hispanic-predicted names are significantly associated with a higher

probability of promotion in the Marine Corps but a lower probability of promotion in the Army (without Bonferroni correction).

Taken together, associations between minority-indicative names and selection rates are small, inconsistent across services, almost entirely statistically insignificant after Bonferroni correction, and shrink towards zero with additional controls. These analyses do not provide evidence indicating bias and suggest little to no benefit on diversity from redacting names.

Table 6. Selection Status Regressed on Name Predictions for Navy

Estimates in table correspond to: Coefficient (Standard Error) [P-Value]	**Selected** (1)	**Selected** (2)	**Selected** (3)	**Selected** (4)
(Intercept)	**0.297**		**0.177**	
	(0.001)		(0.052)	
	[0.000]		[0.001]	
Name Predicted Black	**0.057**	**-0.005**	**0.046**	**0.018**
	(0.008)	(0.006)	(0.021)	(0.021)
	[0.000]	[0.392]	[0.029]	[0.400]
Name Predicted Hispanic	**0.007**	**-0.011**	**0.008**	**0.006**
	(0.009)	(0.007)	(0.024)	(0.024)
	[0.432]	[0.126]	[0.729]	[0.796]
Name Predicted Asian	**0.059**	**-0.011**	**-0.039**	**-0.033**
	(0.010)	(0.008)	(0.033)	(0.033)
	[0.000]	[0.138]	[0.243]	[0.318]
Name Predicted Other	**-0.028**	**-0.013**	**-0.012**	**-0.023**
	(0.010)	(0.008)	(0.026)	(0.025)
	[0.004]	[0.101]	[0.651]	[0.356]
Actual Race/Ethnicity	Yes	Yes	Yes	Yes
SES controls			Yes	Yes
Board-FY-Rank Fixed Effect		Yes		Yes
Estimator	OLS	OLS	OLS	OLS
N	319,619	319,589	27,132	26,815
R^2	0.001	0.385	0.001	0.155

Table 7. Selection Status Regressed on Name Predictions for Marine Corps

Estimates in table correspond to: Coefficient (Standard Error) [P-Value]	**Selected** (1)	**Selected** (2)	**Selected** (3)	**Selected** (4)
(Intercept)	**0.224**		**0.267**	
	(0.003)		(0.066)	
	[0.000]		[0.000]	
Name Predicted Black	**-0.024**	**-0.009**	**-0.004**	**-0.033**
	(0.023)	(0.023)	(0.050)	(0.050)
	[0.315]	[0.703]	[0.930]	[0.512]
Name Predicted Hispanic	**0.066**	**0.040**	**-0.023**	**-0.050**
	(0.021)	(0.021)	(0.055)	(0.054)
	[0.002]	[0.054]	[0.680]	[0.356]
Name Predicted Asian	**0.112**	**0.044**	**0.112**	**0.039**
	(0.031)	(0.031)	(0.093)	(0.092)
	[0.000]	[0.154]	[0.224]	[0.673]
Name Predicted Other	**0.075**	**0.009**	**0.067**	**0.020**
	(0.017)	(0.017)	(0.047)	(0.046)
	[0.000]	[0.579]	[0.152]	[0.660]
Actual Race/Ethnicity	Yes	Yes	Yes	Yes
SES controls			Yes	Yes
Board-FY-Rank Fixed Effect		Yes		Yes
Estimator	OLS	OLS	OLS	OLS
N	141,174	141,174	22,194	22,194
R^2	0.002	0.027	0.003	0.023

Table 8. Selection Status Regressed on Name Predictions for Army

Estimates in table correspond to: Coefficient (Standard Error) [P-Value]	**Selected** (1)	**Selected** (2)	**Selected** (3)	**Selected** (4)
(Intercept)	**0.536**		**0.108**	
	(0.001)		(0.066)	
	[0.000]		[0.104]	
Name Predicted Black	**-0.078**	**-0.012**	**0.013**	**0.004**
	(0.007)	(0.006)	(0.022)	(0.022)
	[0.000]	[0.033]	[0.576]	[0.836]
Name Predicted Hispanic	**-0.080**	**-0.017**	**0.046**	**0.053**
	(0.009)	(0.007)	(0.033)	(0.033)
	[0.000]	[0.017]	[0.164]	[0.106]

Name Predicted Asian	**-0.083**	**-0.007**	**-0.042**	**-0.024**
	(0.010)	(0.008)	(0.041)	(0.040)
	[0.000]	[0.401]	[0.305]	[0.545]
Name Predicted Other	**-0.017**	**-0.017**	**-0.033**	**-0.043**
	(0.010)	(0.007)	(0.034)	(0.034)
	[0.079]	[0.021]	[0.339]	[0.210]
Actual Race/Ethnicity	Yes	Yes	Yes	Yes
SES controls			Yes	Yes
Board-FY-Rank Fixed Effect		Yes		Yes
Estimator	OLS	OLS	OLS	OLS
N	341,400	341,400	20,215	20,107
R^2	0.006	0.413	0.002	0.086

Table 9. Selection Status Regressed on Name Predictions for Air Force

Estimates in table correspond to: Coefficient (Standard Error) [P-Value]	**Selected** (1)	**Selected** (2)	**Selected** (3)	**Selected** (4)
(Intercept)	**0.338**		**0.035**	
	(0.001)		(0.059)	
	[0.000]		[0.554]	
Name Predicted Black	**-0.037**	**0.004**	**-0.005**	**0.013**
	(0.011)	(0.009)	(0.025)	(0.023)
	[0.001]	[0.656]	[0.830]	[0.582]
Name Predicted Hispanic	**-0.065**	**-0.037**	**-0.054**	**-0.053**
	(0.013)	(0.010)	(0.031)	(0.029)
	[0.000]	[0.000]	[0.083]	[0.067]
Name Predicted Asian	**0.000**	**-0.025**	**0.029**	**0.033**
	(0.014)	(0.010)	(0.054)	(0.050)
	[0.986]	[0.013]	[0.584]	[0.500]
Name Predicted Other	**-0.064**	**-0.011**	**-0.006**	**-0.011**
	(0.010)	(0.008)	(0.025)	(0.024)
	[0.000]	[0.174]	[0.803]	[0.635]
Actual Race/Ethnicity	Yes	Yes	Yes	Yes
SES controls			Yes	Yes
Board-FY-Rank Fixed Effect		Yes		Yes
Estimator	OLS	OLS	OLS	OLS
N	223,403	223,403	27,950	27,927
R^2	0.002	0.370	0.002	0.183

Because name-predicted sex has such low variance, we do not perform a comparable analysis with officer sex as the minority category.

E. Line of Effort 3: Difference-in-Difference-in-Difference

Our third line of effort deploys a difference-in-difference-in-difference model to assess whether removal of some indicators of minority category (photos/minority indicator) modulate the effect of other indicators of minority category (minority-indicative names). This approach is less direct than the prior line of effort but relies on weaker, more credible assumptions. These assumptions fall into two sets: those needed to identify a moderated treatment effect of policy change, and those needed to interpret such a treatment effect as evidence of bias. Our results provide no evidence of bias against minority categories in any of the three services we investigate.

From the perspective of our conceptual framework, a biased board would use all information in the promotion packets to infer the minority category of an officer—including both photos (if available) and names. For simplicity, suppose the board's inference of minority category is a vector of probabilities, $\hat{c}_i$, equaling an average of predictions made using photos and names:

$$\hat{c}(photos_i, names_i) = \frac{1}{2}(E[c_i|photos_i] + E[c_i|names_i])$$

When photos are removed, the board's inference is simply that made using names:

$$\hat{c}(names_i) = E[c_i|names_i] = prob(class_i|name_i)$$

Thus, removing photos will cause white-looking officers with black-sounding names to be inferred as relatively more likely black. Likewise, removing photos will cause black-looking officers with white-sounding names to be inferred as relatively more likely white. If boards were biased against black officers, then white-looking officers with black-sounding names should on average see lower promotion rates after photos are removed, and black-looking officers with white-sounding names should see higher promotion rates after photos are removed. That is, the treatment effect of photo removal would be moderated by minority-indicative names if boards were biased.

We test for a moderated treatment effect using a difference-in-difference-in-difference, or triple-difference, regression model. In particular, we estimate the model

$$s_{i,t} = \alpha_{b,r,y} + c_i\alpha_1 + R_t\alpha_2 + \widehat{c_i}\alpha_3 + c_iR_t\alpha_4 + \widehat{c_i}R_t\alpha_5 + \widehat{c_i}c_i\alpha_6 + \widehat{c_i}c_iR_t\alpha_7$$

where c_i are minority category indicators, $\widehat{c_i}$ are name-based probabilities of minority categories, R_t indicates that photos/minority designator has been removed from promotion packets, and $\alpha_{b,r,y}$ are interacted board-rank-year intercepts.[48] α_7 are the coefficients of interest,[49] representing how

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[48] When minority category is a vector of non-reference group indicators, the product of vectors in the specification above is a Kronecker product representing the interaction of indicators.

[49] As in the first line-of-effort, the intercept terms are not separately identified from the policy indicator term when the policy aligns with the fiscal year, and the policy indicator term must be dropped. This does not threaten identification of the model, as the intercept terms serve the same purpose as the policy indicator. When the policy indicator term does not exactly align with the fiscal year, we observe that dropping the policy indicator

the effect of the policy change on a minority category depends on the officer's minority-indicative name.[50] For parsimony, our model considers only name-predicted-white probabilities rather than probabilities for all minority categories.[51]

As with standard difference-in-difference, identification of treatment effect from a triple-difference regression requires a parallel trends assumption.[52,53] [54] In essence, this assumption rules out anything coincidental to the policy change that might also drive name-moderated changes in minority category promotion rates. This assumption is weaker than that required for a standard difference-in-difference regression; events or policies coinciding with photo removal that might increase or decrease minority officer promotion rates across the board are more plausible than those that would disproportionately affect minorities with minority-indicative names. Likewise, this assumption is weaker than that that required by the second line of effort[55].

Table 10 presents results for the Air Force, Army, and Navy using standard racial-ethnic definitions for minority categories. In these tables, only two coefficients of interest are statistically significant at conventional levels without Bonferroni correction: the triple interaction for black

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term does not substantively affect results. Thus, for parsimony, we drop the policy indicator term from all models.

[50] Our conceptual framework assumes that bias is a linear function of the officer's minority category probability. If instead, bias were some nonlinear (but monotonic) function of this probability (such as a step function—the board is biased by a fixed amount against only those officers who are obviously minorities), then the bias would still generate an effect that the triple-difference estimator identifies.

[51] Due to interaction terms, using minority-indicative names for all categories would result in 16 coefficients of interest per specification. Bonferroni correction for all such coefficients would substantially reduce statistical power.

[52] Andreas Olden and Jarle Møen, "The Triple Difference Estimator," *The Econometrics Journal* 25, no.3 (September 2022), https://doi.org/10.1093/ectj/utac010.

[53] As with the difference-in-difference estimator, the parallel trends assumption required triple-difference estimators can be relaxed by including group specific trends in the estimator. In this case, additional observations before or after the policy are necessary to identify the trends, and identification relies of the specification of the trend; fully non-parametric estimates of group trends cannot be separately identified from treatment effects of the policy. In essence, difference-in-difference and triple-difference estimators rely on the assumption that something coincidental with the policy change would not also cause deviation from the group-specific trends. We include group-specific linear trends as our primary specification.

[54] An additional implicit assumption is that policy implementation timeline is correct. That is, if the policy is actually implemented on a delay, then the estimator will confuse an effect of the policy for the pre-policy baseline. To the best of our knowledge, the policies did indeed take effect (e.g. photos were absence from promotion packets) at policies' nominal start dates.

[55] From the perspective of our conceptual framework, the second line of effort requires that minority-indicative names do not covary with quality predictors conditional on controls: $\mathrm{x_i}\beta \perp \widehat{c^{\frown}}(names_i)|SES_i, c_i$. In contrast, the triple-difference estimator merely requires that any such covariance is stable over the implementation of the policy: $Cov(\widehat{c^{\frown}}(names_i), \mathrm{x_i}\beta|R_t, c_i) = Cov(\widehat{c^{\frown}}(names_i), \mathrm{x_i}\beta|c_i)$. Conditional non-covariance within each period implies that the covariance is stable over the implementation of the policy, but the reverse is not true; in this sense, line of effort 3 relies on weaker assumptions.

officers for the Air Force, and for the Navy. Only the Air Force result survives the moderately stringent Bonferroni correction at the 10% level ($T * P = 0.0086$), but not at the 5% level.

The point estimate for black officers in the Air Force indicates that removal of photos or minority designator causes black officers with white-sounding names to be selected for promotion at lower rates. Given that our first line of effort indicates no effect from the removal of photos or minority designator on black officer selection rates in aggregate, the results also imply the removal of photos or minority designator causes black officers with black-sounding names to be promoted at higher rates. If these results are not false-positives, then our interpretive framework indicates that boards in the Air Force were biased in favor of black officers in the early 2000's.

The magnitudes of these estimated effects are relatively modest. The point estimates for the Air Force imply that minority designator removal in June 2002 increased the average black officer's[56] selection for promotion probability by three percentage points relative to that of a black officer with a white-sounding name. If no other information on promotion packets could be used to infer minority category, these point estimates and the assumptions of our interpretive framework indicate that total blinding would have reduced black promotion rates in the Air Force of 2002 by less than three percentage points[57].

Table 10. Difference-in-Difference-in-Difference Estimates

Estimates in table correspond to: Coefficient (Standard Error) [P-Value]	**Air Force: Selected** (1)	**Navy: Selected** (2)	**Army: Selected** (3)
Black & Partial Blinding & Name Predicted White	**-0.104**	**-0.041**	**0.002**
	(0.040)	(0.024)	(0.033)
	[0.009]	[0.087]	[0.963]
Hispanic & Partial Blinding & Name Predicted White	**-0.027**	**-0.033**	**-0.012**
	(0.052)	(0.027)	(0.037)
	[0.610]	[0.222]	[0.743]
Asian & Partial Blinding & Name Predicted White	**-0.027**	**0.009**	**0.010**
	(0.109)	(0.031)	(0.040)
	[0.802]	[0.773]	[0.804]

[56] The average name-predicted probability of black officers being black is about 30%. For reference, the average name-predicted probability of white officers being black is about 5%.

[57] Due to the statistical phenomenon of the "winner's curse," actual effect sizes—if real—are likely smaller than those implied by statistically significant point estimates.

Other & Partial Blinding & Name Predicted White	**0.005**	**0.005**	**0.014**
	(0.049)	(0.023)	(0.042)
	[0.919]	[0.845]	[0.740]
Ethnicity-Name Interaction	Yes	Yes	Yes
Actual Race/Ethnicity	Yes	Yes	Yes
Name Predictions	Yes	Yes	Yes
Ethnicity-Policy Interaction	Yes	Yes	Yes
Ethnicity-Linear Trend Interaction	Yes	Yes	Yes
Policy-Name Interaction	Yes	Yes	Yes
Board-FY-Rank Fixed Effect	Yes	Yes	Yes
Estimator	OLS	OLS	OLS
N	429,918	494,335	341,400
R^2	0.349	0.392	0.413

F. Conclusion

We provide an interpretative framework under which certain coefficients from three different lines of effort would be different from zero if boards were biased; we then test if these coefficients are significantly different from zero. These lines of effort rely on different identification assumptions. Across all lines of effort, between few and no coefficients are significantly different from zero (depending on significance threshold and the severity of multiple hypothesis testing correction). Those that are significant without Bonferroni correction tend to indicate opposite effects in different services or lines of effort, indicating that stringent Bonferroni correction is warranted. Isolated marginally significant results suggest that total blinding might decrease minority promotion rates. One example is for the Air Force, for which the removal of 'minority designator' in June 2002 may have caused a decrease in the promotion rate of black officers with white-sounding names and a countervailing increase in the promotion rate of black officers with black-sounding names.

Altogether, we find little evidence of bias in promotion boards. What little evidence we do find suggests the possibility that blinding promotion boards might decrease diversity of promoted officers. These analyses provide no grounds for optimism that total blinding will increase minority promotion rates.

4. Feasibility of Removing Indicators of Race/Ethnicity and Gender

A. Overview

Chapters 2 and 3 examined available evidence regarding the effectiveness of removing indicators of race/ethnicity and gender. IDA did not find clear evidence to suggest that removing indicators of race/ethnicity and gender would improve promotion of women and ethnic/racial minorities. In the current chapter, we examine the feasibility of removing identifying information from records that populate promotion and non-statutory selection board files and conclude that the feasibility of doing so is very low given current resources and systems.

To date, the services have removed most direct indicators of race/ethnicity and gender, as well as other personal information, from board files. Gender pronouns and first and last names remain the most widespread indicators of gender and race/ethnicity used in board files. College/University, identity-related volunteer activities, identity-based awards, and height/weight may also imply race/ethnicity and gender, albeit imperfectly. Career history and letters to the board may identify gender or race/ethnicity in some circumstances, but could never be removed from selection boards as they are essential to board decision-making and required by law, respectively.

Redacting identifying information (i.e., names and pronouns) from historical and current records used in selection board files would require a substantial investment of time and resources not currently available to the services. Specifically, removal of names and pronouns would likely involve manual redaction of millions of records across multiple decades, a lengthy quality review process, and a system to store redacted content. Further, policy changes, along with accompanying training processes and compliance checks, would be required to remove names from forms and prohibit use of pronouns in evaluations and awards.

B. Indicators of Race/Ethnicity and Gender in Selection Board Records

In recent years, the services have updated promotion and selection board records to omit information that may identify members' gender, or race/ethnicity, or reveal personal characteristics not pertinent to board deliberations. The Air Force removed photographs in 1999 and the Army, Navy, and Marine Corps removed photographs in 2020 in response to Secretary of Defense direction. At various times, the services have also removed fields indicating gender, race, and ethnicity, as well as other personal information (e.g., religion, marital status, dependents).

Based on IDA's policy review and discussion with service staff responsible for policy and/or execution of selection boards, we determined that only a few direct indicators of gender or

race/ethnicity remain in selection board files; that is, indicators that unambiguously identify one's group membership (e.g., field denoting one's race/ethnicity, gender pronouns). However, a number of indirect indicators of race/ethnicity and gender remain. These elements do not definitely denote group membership but could be used by board members to guess group membership, whether correctly or not (e.g., university or college, height/weight). See Table 11. In this section, we consider whether it would be possible to remove or modify these indicators to make board deliberations completely blind to race/ethnicity and gender, without degrading board member decision-making. In the sections that follow (C and D) we address the technical and logistical challenges of removing gender pronouns and names in particular as this is the primary source of gender and racial/ethnic information in selection board files and the main focus of the current research.

Table 11. Indicators of Race/Ethnicity, Gender, and other Personal Information in Selection Board Files

Direct Identifiers (unambiguously denotes gender or race/ethnicity)	Indirect Identifiers (may imply gender or race/ethnicity but not with certainty)	Other Personal Information not directly Related to Gender or Race/Ethnicity
Gender pronouns	First and last names	Date of birth (Army, Navy, Marine Corps)
Race/ethnicity on oath and acceptance form (Navy and Marine Corps)	Career field previously closed to women (limited to male gender at higher ranks)	Date of commissioning (all)
Race/ethnicity in files on training/education and miscellaneous remarks (Navy enlisted[58])	Assignments (i.e., in smaller communities/higher ranks identity may be known without name)	Dependent information (Marine Corps)
Race/ethnicity and gender on non-statutory board files (Air Force)		Home of record (Army, Navy, Marine Corps)
	Height/weight (Army and Marine Corps only)	Religion (Navy, enlisted only)
	Identity-related awards or activities (e.g., Black History Month Committee, Woman Engineer of the Year)	
	University/College (e.g., historically black college or university (HBCU), women's colleges)	
	Letter to the board (service members can include identifying information, if they choose)	

[58] Officers may have these forms if they discharged/separated and then re-affiliated.

1. Direct Indicators of Race/Ethnicity and Gender

Gender pronouns (he/she, her/him) are the only direct indicator of gender in promotion board files. Gender pronouns are found in a range of records, particularly those that involve free-text and/or narrative context, most notably performance evaluations and awards. The largest obstacle to removing gender pronouns from promotion and other selection board file is logistical as this may involve manual redaction of information from historical files and policy changes to alter the way in which members write evaluations and other free-text content (as discussed in sections C and D). Further, the broader cultural and political climate around pronoun-use is polarized, this may lead to some backlash on both sides of the political divide if pronouns were to be omitted (e.g., some may resist gender neutral terms (they/them) while others may wish to use preferred pronouns to foster inclusivity). Although all the services include gender pronouns in records, U.S. Pacific Air Forces has recently issued an order to prohibit use of gender pronouns and any indicators of race/ethnicity in all written records, including performance evaluations and awards.[59]

The Navy and Marine Corps include direct indicators of race/ethnicity on isolated records. Specifically, the Navy and Marine Corps have an oath and acceptance form that includes a code that corresponds to race/ethnicity. According to Navy and Marine Corps staff and board members, the oath and acceptance form is not relevant to board member decision-making and could be excluded without impacting board decisions and with minimal technical difficulty. Additionally, the Navy includes race/ethnicity in some enlisted files. Navy staff indicated that one section (field code 34) with miscellaneous professional remarks lacks information relevant to board decision-making and could be removed. However, another section (field code 36) that includes race/ethnicity also contains important training and education information that could not be omitted.

Although the Air Force does not include any direct indicators of race/ethnicity on its promotion board files, it has recently added fields to denote race/ethnicity and gender on files for non-statutory selection boards (e.g., command selection, PME). In concert with this change, the Air Force has also specified in the Memorandum of Instruction (MOI) to the selection board that members should consider diversity of experience and background (including race/ethnicity and gender). Thus, the intent of including race/ethnicity and gender in non-statutory files is to provide selection board members with sufficient information to proactively value race/ethnicity and diversity, among a range of other factors, to select leaders that represent the diversity of the force and bring unique perspectives and experiences. Importantly, the Air Force plans to apply this change for the next several years and evaluate its impact on non-statutory selection board outcomes.

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[59] Adam Kredo, "U.S. Forces Ordered to Stop Using Gender Pronouns to Improve 'Lethality,'" *The Washington Free Beacon*, August 31, 2022, https://freebeacon.com/national-security/u-s-forces-ordered-to-stop-using-gender-pronouns-to-improve-lethality/.

2. Indirect Indicators of Race/Ethnicity and Gender

First and last names are the most widespread indirect indicator of race/ethnicity in promotion and non-statutory selection files as they can be found on records throughout the file. Although one's name does not definitively indicate gender and/or race/ethnicity, many names are commonly associated with specific genders, races, and ethnicities. As discussed in sections C and D of this chapter, removing names from all records, current and historical, would require a great deal of manpower and effort to manually redact content and change policy to update forms.

In some cases, assignments, career field, and career history may reveal gender and race/ethnicity. Service staff and board members alike acknowledged that even if names and pronouns were to be removed from records, some board members may be able to ascertain the identity of an individual based on their past assignments. This is particularly likely as the selection pool narrows (e.g., at higher ranks or in small communities) since some board members may know individuals personally or by reputation. Occupational specialty may disclose gender in particular as certain positions were previously closed to women (i.e., combat roles). As such, senior infantry members up for promotion, for example, may be assumed to be male. Information about members' career history is essential to board member deliberations and cannot be removed from records.

The Army and Marine Corps include height and weight information in performance evaluation reports, which could be used to infer gender as women tend to be shorter and weigh less than men, on average. Information about height and weight would be challenging to redact from historical records (similar to the challenges for names and pronouns), but could be more easily removed from future records and instead replaced with an indicator of whether the member meets height/weight standards, as done in the Navy and Air Force. However, the Army and Marine Corps strongly value physical fitness and health and may view removal of height/weight as at odds with their culture.

Service staff and board members noted that attending a university or college that historically served minorities or are limited to women (e.g., HBCU or women's colleges) may imply service members' race/ethnicity or gender, but had mixed opinions about whether this information should be removed. Some noted that inclusion of university or college could lead to biased decision-making, particularly when it comes to service academy attendance. However, others noted that specific university or college is important to certain career fields (e.g., engineers may view attendance at an elite school like MIT as indicative of one's skill). Some staff and board members also noted that identity-related awards or activities could denote one's identity, sometimes quite directly (e.g., Woman Engineer of the Year), but more often indirectly, for example, serving on cultural committees and events that are open to all individuals, but may be more common among minority members (e.g., Black History Month Committee). However, service staff and board members noted that this information would typically not be included in promotion files unless a rater wrote about it in an evaluation.

Finally, service members are legally entitled to submit a letter to the board, if they choose. Service staff, including General Counsel and Judge Advocates, noted that they would not and could not restrict or redact content presented in those letters under current law and policy. Thus, even if the services removed all other indicators of race/ethnicity and gender, service members could theoretically disclose identifying information in letters to the board.

3. Other Personal Information Included in Files

Although not directly related to race/ethnicity and gender, board files include a few remaining data elements that reference personal information irrelevant for merit-based promotion decisions. Specifically, the Army, Navy, and Marine Corps include date of birth and all the services included date of commissioning on the summary page displayed to board members along with other records in the file (dates of rank are also included in the file). Given evidence of age discrimination in the workplace,[60] information related to age could potentially bias board member decision-making. In discussions with board members, a few individuals in the Air Force also pointed out that the date of commissioning could inform board members on whether an airmen is above, below, or in the zone for promotion, which is at odds with recent board guidance that prohibits them from using this information to influence their decision-making. Indeed, research on Navy selection decisions found improved promotion rates for individuals below and above the zone after the Navy removed an overt indicator of officers' promotion zone status.[61]

The Marine Corps includes information about dependents on one record in the promotion file, which could introduce undue bias and is at odds with language in the Department of Navy precept, which forbids consideration of marital status. The Army, Navy, and Marine Corps also include information about home of record and the Navy includes religion on one form for enlisted members. As described in Chapter 6, most of these extraneous data elements could be removed with relative ease and with little to no impact on board member deliberations.

C. Redacting Indicators of Race/Ethnicity and Gender from Selection Board Files

Staff responsible for executing statutory selection boards overwhelmingly agreed that redacting direct and indirect indicators of race/ethnicity and gender (i.e., names and pronouns) from records would be an enormous task for which they lack sufficient resources and appropriate systems. The elements of the promotion board file (i.e., records) requiring redaction are distributed across multiple data systems and are typically only available as image files (Figure 3). As such,

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[60] Gretchen A. Petery and James W. Grosch, "Broadening the View of Workplace Ageism," *Work, Aging and Retirement* (May 30, 2022), https://doi.org/10.1093/workar/waac015.

[61] Tom Ahn, Jason Niven, and Andrew Veilleux, "How Long have you been Waiting? Explaining the Role of Irrelevant Information in the Promotion of US Navy Officers," *Economics Bulletin* 41, no. 2 (2021): 604-614, https://ideas.repec.org/a/ebl/ecbull/eb-20-01150.html.

staff across the services noted that manual redaction would be necessary, a task that would be cost- and resource-prohibitive as it would require a manual review and edit of millions of documents spanning multiple decades.

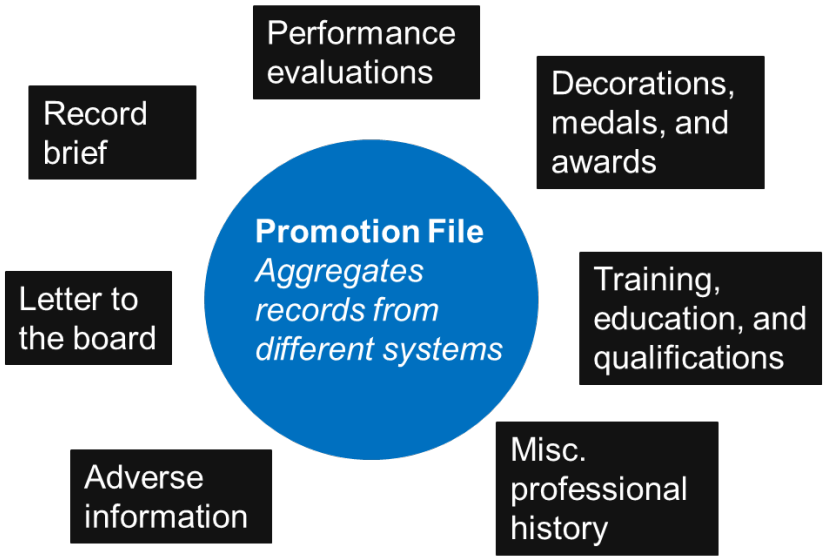

Figure 3. Indicators of Race/Ethnicity and Gender included in Multiple Records across Disparate Data Systems

In the section below, we review, at a high level, the steps required to redact names and gender pronouns from files included in promotion and other selection board files. This is not intended to provide a roadmap for how the services should redact information, but rather, to assess the feasibility of completing each step and detail the challenges the services may encounter. Table 12 provides a summary.

Table 12. Steps to Redact Selection Board Records and Corresponding Challenges

Redact names and pronouns	Records could be redacted manually or automatically (if image files are digitized). Service representatives indicated that they lacked the infrastructure or resources to support either strategy.
Ensure redaction completed through quality review	Either manual or automatic redaction would require a quality review process which would occur manually. If names or pronouns were incompletely redacted in some files, this could lead to more frequent special boards (i.e., board convened to re-evaluate candidates).
Store redacted content	A system would be required to store and update redacted files separately from permanent files. Alternatively, redacted files could be stored in place of the permanent file. Service staff did not have a system in place to support either strategy.

1. Redaction of Names and Pronouns

Service staff responsible for administering promotion boards noted that manual redaction of names and pronouns would be necessary given current systems and record formats (i.e., TIFF or PDF image files). Specifically, this would require staff to print out each promotion board file, review each page to mark out names and pronouns, and then scan and upload the record back into the promotion board file repository. Staff noted that standardized data fields (e.g., names at the top of forms) would be relatively easier to redact, but narrative content (e.g., performance evaluations or descriptions in awards) would be particularly challenging as it would involve reading/scanning large blocks of text. Further, given the distribution of name and pronoun information across multiple record types (e.g., performance evaluations, adverse information, awards, training), this would likely require staff to review each file in full, rather than simply redacting an isolated section of each file. Indeed, the Air Force counted a total of 78 different document types within promotion board files. Staff across the services noted that they did not have personnel available to redact promotion board files, echoing the sentiment expressed by one individual below:

> *To blind the full…process, it would require an unimaginable amount of work, we would need a whole new department.*

The Navy conducted a limited test of manual redaction by recording the time required to redact a single promotion board record. Record review and redaction spanned 99 minutes, not including an additional 24 minutes to print the file and an unknown amount of time to scan and upload the file. The Navy identified names and pronouns for redaction in nearly every section of the promotion file, with the majority present in performance evaluations.[62] Army staff informally

[62] Some Navy staff suggested that promotion files could be more easily redacted if they limited redaction to the information seen in the "tank" (i.e., room where board deliberations take place) as this is only a subset of the promotion file. In the Navy, board members do not review each file in full, rather, all board members review a

estimated that it would take five to eight years to redact all names and pronouns from files. The Marine Corps estimated the cost of redaction to be $57.5 million across five years.

Staff mentioned the possibility of automatic redaction, but did not view it as a viable option given the preponderance of image records in promotion files, with the exception of the Marine Corps (noted they would use Kofax software to redact content). To enable automatic redaction, image files would need to be converted to machine-readable formats (i.e., digitized). Optical Character Recognition (OCR) can be used to digitize images by converting each image to a grayscale pixel representation (bitmap) and then identifying specific characters based on the relative intensity and location of pixels. Specifically, OCR uses pattern recognition (comparing pixels to an existing corpus of text) and/or feature detection (machine learning modeling to identify components of characters and predict characters based on components). On standardized, typed text, many modern OCR programs have near-100% accuracy rates.[63] After converting an image into machine-readable text, the text can then be searched for specific words, phrases, or character sequences targeted for redaction. Finally, the text identified for redaction must be separated from the remaining text. If the information will be converted back into a PDF or image file, then the redacted text can be covered with black or white boxes.

The Army has digitized the performance files, which are a key component of promotion files, but only since 2014. The Marine Corps is in the process of modernizing its systems, but staff expressed uncertainty as to whether automated screening for pronouns/names could be added to established plans. Air Force and Navy staff were not aware of any plans to digitize records. Although automatic redaction of promotion files is technically feasible, it would require a large-scale document digitization process that does not appear viable for the services in the short- to medium-term.

The services could reduce the cost of redaction by limiting redaction to the most recent years of service (e.g., last ten years of service) as board members often noted that they paid the most attention to recent records. Leaving older, unredacted records in the file would mean that race/ethnicity and gender could be known for a subset of more senior candidates. Alternatively, the services could change policy to limit promotion records to more recent years of service, however, it is unclear how this would impact the promotion process, especially in competitive boards where board members may need full records to differentiate between similarly qualified candidates.

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subset of files in full and then convene in the tank to brief the files they graded. A "tank-only" redaction would mean that board members would still see identifying information for a subset of files and this could potentially influence their briefing to the rest of the board.

[63] Cem Dilmegani, "Best OCR: Benchmark on Text Extraction / Capture Accuracy," *AI Multiple*, updated September 26, 2022, https://research.aimultiple.com/ocr-accuracy/.

2. Ensure Redaction Completed Through Quality Review

Regardless of the redaction method used (automatic or manual), staff across the services noted that a quality review process would be required to ensure names and gender pronouns were properly redacted. Board recorders, non-voting members who execute administrative functions for the board, currently review records to identify and correct administrative errors. However, a more detailed review to screen for unredacted names/pronouns is beyond the scope of recorders' current activities and would require additional resources and time. Further, with such a large-scale redaction process, unredacted names and pronouns may remain, even after quality review. This, in turn, may increase the number of individuals referred for special selection boards. Under 10 USC §628(b),[64] individuals denied promotion may be reconsidered at a special selection board if there was a "material unfairness" at their promotion board:

1. "the action of the promotion board that considered the person was contrary to law in a matter material to the decision of the board or involved material error of fact or material administrative error; or"
2. "the board did not have before it for its consideration material information"

Inclusion of information that could indicate one's gender or race/ethnicity, when that information is absent from peers' records, could potentially constitute a "material unfairness."

3. Store Redacted Content

Promotion board and non-statutory selection board files are compiled by pulling records from various systems of records and aggregating them in a database for board members to review. For each promotion or non-statutory selection board, records are pulled anew from source databases as even historical records can be amended over time. If the services redacted information from records that populate promotion/selection files, they would require a system to store *and* update redacted records to be pulled for future selection boards. Otherwise, files would have to be redacted again for each promotion/selection board. Several storage options could be explored, however, staff across the services did not indicate any specific plans or available infrastructure to accommodate any of the options below:

- Redacted records could be stored and maintained in systems parallel to permanent records. As updates are made to historical files in the permanent record, those updates would be replicated in the redacted record. Although this option would have the benefit of maintaining the original permanent record, it would double the records stored in systems and require inefficient duplication of effort.
- Redacted records could be stored as the permanent record across personnel systems. This would reduce redundant processes (e.g., updating of redacted and non-redacted

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[64] Office of the Law Revision Counsel of the United States House of Representatives, *10 USC §628(b)*, (2011), https://www.law.cornell.edu/uscode/text/10/628.

records or multiple rounds of redaction), but could present challenges as the services may require identifying information on certain records (e.g., awards) and may need to update systems to ensure redacted records could be linked to identifying information.

- Records could be digitized and automatically redacted. Redacted versions could then be stored as the permanent record but identifying information (i.e., names/pronouns) would still be available as the underlying data would be present underneath digitally-inserted white/black boxes. A feature could potentially be developed to toggle the redacted view on or off while maintaining a single source-record. As discussed, digitization of records comprising promotion files is not viable in the near or medium-term.

D. Change Policies to Exclude Demographic Indicators

Staff across the services noted that, in addition to redaction of historical records, new policies to remove names and pronouns from forms used in future selection boards would be required. For example, the services could change evaluation forms to replace names with DOD IDs and prohibit the use of pronouns, names, or nicknames in narrative summaries. Some staff noted that it would be more viable to solely change policy moving forward without redacting names and pronouns from historical records. This is the approach currently taken by the Coast Guard. In 2018, the Coast Guard issued a policy change to prohibit the use of gender pronouns and last names in evaluations, but did not redact names/pronouns from historical evaluations. Further, last name is still displayed in candidates' summary sheets and names and gender pronouns remain in other portions of the promotion file, although removal of this information is in progress. Coast Guard staff involved in promotion board policy/execution noted that the policy change proceeded without significant challenges as raters tended to omit names and pronouns prior to the official change.

Although some service staff suggest a policy-change-only approach, similar to the Coast Guard, others described potential challenges involved in changing policy (e.g., ensuring compliance). Further, some staff questioned the value of an unevenly applied change as only the most junior members would have files without pronouns/names while more senior members would retain this information in their historical records for decades to come. In the section below, we review, at a high level, the steps required to change policy to remove names and gender pronouns from records that populate promotion/selection files. This is not intended to provide a roadmap for service action, but rather to assess the feasibility of completing each step. Table 13 provides a summary.

Table 13. Steps to Change Policy to Omit Names and Gender Pronouns from Forms and Corresponding Challenges

Change policy to remove names and pronouns from forms	Removing names and pronouns may not be appropriate or possible for certain forms (e.g., awards, civilian education) and could complicate record validation
Communicate and train	A communication plan to convey a compelling rationale for the change would be needed along with training on new processes (e.g., how to phrase evaluations without pronouns)
Quality review to ensure compliance	Performance evaluations and awards with free-text narrative content are already reviewed for compliance but a more in-depth review for pronouns and names may lengthen the process and require additional personnel

1. Change Policy to Remove Names and Pronouns from Forms

Staff across the services indicated that policy changes would be necessary to remove names from forms and prohibit the use of gender pronouns in narrative summaries. A few individuals raised concerns about removing names from certain forms, particularly awards, as these documents must be personalized to honor individual achievements. The promotion file could simply list service members' awards, without including the specific document, but board members would lose information about the nature of the accomplishment. Certain documents that come from external sources, for example civilian education, could not be changed through policy and would require manual redaction indefinitely.

Staff also remarked that updating forms in online systems to omit names may be challenging on old systems. For example, the Navy and Marine Corps noted that the digital interfaces they use to enter evaluations and manage promotion files, respectively, are undergoing modernization. However, on current systems, even simple changes to remove names would be time-consuming and costly. Air Force staff added that removing names would complicate record verification as their quality review process for performance evaluation matches names to social security numbers. Without names on performance evaluations, review and approval of evaluations may be more cumbersome and prone to error as number strings may be harder to differentiate than words.

2. Communicate About and Train on Policy Changes

Service staff discussed the need for communication and training to inform the force about new procedures to remove names and pronouns from forms. In particular, individuals noted that omitting names and pronouns from performance evaluations could make writing difficult and unwieldy, especially when using narrative formats as opposed to bulleted formats. The Coast Guard emphasized the importance of their communication plan to ensure awareness of and compliance with their policy change. They also instituted training, which provided specific instruction on how to phrase evaluations without the use of names and gender pronouns.

Some service staff noted a degree of sensitivity regarding names and pronouns. Service members work hard to establish a reputation and some may be discouraged to learn that their name will not be considered. Further, with the drive to foster inclusion and use preferred pronouns, omitting pronouns may seem like a step backward to some elements of the force. Alternatively, some service members may be resistant to the concept of preferred pronouns and bristle at the use of gender-neutral pronouns (i.e., they, them). Given the polarized political climate around diversity initiatives and pronoun-use, the services would require a communication plan that not only clearly conveys that nature of the policy changes but also provides a compelling rationale for why the change is essential.

3. Ensure Compliance Through Quality Review

Service staff noted that records with free-text content (e.g., performance evaluations and awards) would require a review process to ensure compliance with a policy change to omit names and gender pronouns. Given the time it takes for socialization of policy changes, and the unusual nature of the specific change, some error is to be expected, particularly at the beginning. The services currently have processes in place to review records for compliance with policy, both at the local unit and higher headquarters levels, however, a more thorough review to check for names and pronouns will likely require additional time and resources. For example, the Marine Corps noted that a minor policy change (additional comment line on evaluation reports) resulted in a considerable labor burden with a 40% increase in reports returned for correction.

E. Conclusion

Although the services have removed most indicators of race/ethnicity and gender in promotion and non-statutory selection board files, a few key indicators remain, most notably gender pronouns and first and last names. Even if the services removed all direct and indirect indicators of race/ethnicity and gender from selection boards, they could not be completely blind to race/ethnicity and gender because this information could be inferred, correctly or incorrectly, from career history and assignments, and could be directly stated in letters to the board.

Pronouns and names present the most significant hurdle to blinding selection board processes. Redacting names and gender pronouns from historical files (i.e., millions of records across multiple decades) would involve manual processes and require additional personnel and new systems that exceed the services' current resources and capabilities. Although automatic redaction of records is technically feasible, this would require a large-scale effort to digitize all image files, which is not part of current modernization plans. The services could take a limited approach and only redact names and pronouns from future records through changes to policy (i.e., removing names/pronouns from forms and prohibiting use of names/pronouns in free-text portions of records). However, a policy-only approach is not without its challenges, as omitting names may complicate record validation and require lengthy compliance reviews and new training processes.

IDA concludes that the feasibility of redacting indicators of gender and race/ethnicity from selection board files is very low given current resources and systems and only worth pursuing if there is clear and compelling evidence that doing so would improve diversity in promotion outcomes. As Chapters 2 and 3 demonstrate, IDA did not find clear and compelling evidence that removing indicators of race/ethnicity and gender would make an appreciable difference in selection outcomes.

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5. Prioritization of Strategies to Reduce the Potential for Bias in Promotion Processes

A. Overview

Given the lack of evidence regarding the effectiveness of removing names and gender pronouns from records (Chapters 2 and 3) and the low feasibility of doing so (Chapter 4), IDA examined other domains that may be more fruitful for action to reduce the potential for bias in promotion processes and improve the quality of decision-making. Specifically, we reviewed the literature to identify strategies to reduce bias in decision-making and compared those strategies to current service promotion board procedures. Based on this comparison, we discuss strengths and weaknesses in current promotion processes that form the basis of many of our recommendations, discussed in the next chapter. Although we focus on promotion boards, non-statutory boards follow similar procedures and many of the challenges we discuss apply to non-statutory boards as well. It is important to note that actions to reduce the potential for bias in selection processes may not result in a significant increase in selectee diversity as there may not be substantial racial/ethnic and gender bias in the promotion process as it currently stands (see Chapter 2). Nonetheless, improving processes will reduce current or future bias with respect to race/ethnicity/gender *and* other factors, and ultimately improve the quality and fairness of decision-making.

In the final section of the chapter (section G), we examine antecedent factors in the career life cycle that strongly influence service members' competitiveness for promotion. Indeed, across all our interviews, service staff and board members argued that to make a real impact on diversity in promotion, one must intervene earlier in the process and address any disparities or areas of unfairness in the factors that influence promotion (e.g., assignments and evaluations).

B. Promotion Board Procedures

Across the services, boards are run systematically, with professionalism and adherence to precise and well-founded procedures. Nearly all the service staff and promotion board members to whom we spoke emphasized the unimpeachability of the process. Overall, we found that promotion boards have already adapted many best practices to mitigate bias, however, there are several domains in which the services could strengthen their procedures to better align with evidence-based practices (Table 14). In the sections that follow, we review the elements/phases of the board process, described in Table 14. This begins with a brief review of the literature, followed by a summary of current procedures, informed by our discussions with service staff, and concluding with board members' perspectives.

Table 14. Strategies to Reduce Bias in Decision-making and Relevance to Selection Board Processes

Board Process	Strategy to Reduce Bias	Current State
Review and voting of records	Structured (i.e., standardized) evaluation processes and sufficient time for review	The Navy and Marine Corps processes are relatively less structured than Air Force and Army processes, as files are briefed by different board members, but offer more time for careful deliberation
Board membership	Demographically diverse decision-makers	Women and ethnic/racial minorities are disproportionally tasked with participation in boards; unclear if the requirement to mirror diversity of the force (rather than the eligible population) is feasible and/or necessary
MOIs/Precepts	Organizational support for D&I, including accountability mechanisms	Board members are unable to follow board guidance to value D&I-related leadership skills as this information is not well specified in performance evaluations
Training on bias	Evidence-based training on diversity and/or unconscious bias that goes beyond raising awareness to building skills	The Army and Navy offer training during promotion boards but the short duration and minimal opportunity to practice skills may be insufficient to change behavior
Analysis of board records	Analysis to track diversity across career stages and assess the impact of diversity policies	Capacity to analyze and conduct research on promotion board outcomes is expanding in the Army and Air Force with new research organizations. Anonymous voting in the Navy and Marine Corps limits the ability to perform certain analyses

C. Review and Voting of Records

A robust body of literature suggests that adding structure (i.e., standardization) to employment interviews not only improves the quality of decision-making, but also reduces discrimination based on protected categories (e.g., gender, disability, race/ethnicity).[65] Researchers have also applied structured processes to other group decision-making contexts, beyond the employment interview, and found similar advantages.[66]

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[65] Julia Levashina, Christopher J. Hartwell, Frederick P. Morgeson, and Michael A. Campion, "The Structured Employment Interview: Narrative and Quantitative Review of the Research Literature," *Personnel Psychology* 67, no. 1 (Spring 2014): 241-293, https://doi.org/10.1111/peps.12052; Julie M. McCarthy, Chad H. Van Iddekinge, and Michael A. Campion. "Are Highly Structured Job Interviews Resistant to Demographic Similarity Effects?" *Personnel Psychology* 63, no. 2 (Summer 2010): 325-359, https://doi.org/10.1111/j.1744-6570.2010.01172.x.

[66] Daniel Kahneman, Dan Lovallo, and Olivier Sibony, "A Structured Approach to Strategic Decisions," *MIT Sloan Management Review*, March 04, 2019, https://sloanreview.mit.edu/article/a-structured-approach-to-strategic-decisions/.

Across the literature, researchers outline two main components of structured interviews: structuring the *content* of the interview itself (e.g., same questions for all interviewees, minimizing follow-up questions, longer duration/more questions) and structuring the *evaluation* (e.g., multiple interviewers and the same interviewers for all candidates, consistent rating scales, training for interviewers).[67] The literature on structured *content* in employment interviews is less relevant to military promotion boards because board content is already quite structured (e.g., no interaction with candidates, consistent information reviewed). However, the literature on *evaluation* structure is more relevant to a military context as board members evaluate candidates and make selection decisions. In the following section, we review key elements of structured evaluation relevant for promotion boards and identify opportunities to improve structure, and potentially reduce bias.

Table 15. Structured and Non-Structured Elements of Selection Board Evaluation Processes

Strategies to Add Structure to Evaluation Processes	Current State in Military Promotion and other Selection Boards
Include multiple raters and the same raters across candidates	All promotion and selection boards include multiple board members, and the same raters, to vote records.
Train evaluators	All boards include detailed training on the board procedures, but only Army and Air Force include sessions where board members can practice evaluation/voting.
Structure discussion between evaluators/Ensure consistent content reviewed	The Army allows almost no discussion between board members; board members can choose to have a discussion to resolve differences in scoring (i.e., splits), but rarely choose this option. The Air Force only allows discussion to resolve splits. The Marine Corps and Navy allow extensive discussion as each member reviews a subset of files in-depth and briefs those files to the other members. Discussion may reduce board member objectivity as they may be influenced by their peers' opinions.
Time for deliberation	The Navy and Marine Corps briefing process allows board members to carefully review a subset of files, spending as much as 45 minutes per file. Army and Air Force members review all files, but have far less time to spend on each (e.g., a few minutes each).
Use evaluation scales with descriptions (i.e., anchors)	All the services instruct board members to use a scale to vote/evaluate files that includes descriptions that correspond with numeric or alphabetic scores

[67] Allen I. Huffcutt and Winfred Arthur, "Hunter and Hunter (1984) Revisited: Interview Validity for Entry-Level Jobs," *Journal of Applied Psychology* 79, no. 2 (1994): 184, https://doi.org/10.1037/0021-9010.79.2.184.

1. Training Board Members

The research literature suggests that training raters in interviews or other evaluation scenarios improves the consistency of evaluations and often the quality. A meta-analysis of the literature found two key strategies for training on evaluation: (1) conducting practice trials and discussing discrepancies between ratings/raters, and (2) anchoring examples to rating scale endpoints. The authors noted that trainings lasting longer than five hours in duration were more effective at reducing bias than trainings shorter than five hours, although the effectiveness of training likely depends more on content than length.[68] Although military selection boards include extensive training on board proceedings, training/practice on evaluation specifically is brief.

Promotion and other selection board proceedings begin with a half-day training/orientation, only a small fraction of which includes practice evaluation/voting (for the Army and Air Force only). The order of the in-brief varies across the services, but generally includes, but is not limited to, the following elements:

- **Leadership guidance.** Statement and guidance from the board president and an in-depth review of the MOI/precept (see section 5.F) The Navy, Marine Corps, and Air Force also include pre-recorded videos from the secretaries of the Navy and Air Force.
- **Briefing on board procedures.** Details the process, to include the evaluation scale, the voting procedure, and the digital system used for reviewing and voting files.
- **Career field briefings.** Board members receive briefings on the communities/specialties included in the competitive category of their board.
- **Bias briefing.** The Army includes a briefing and the Navy includes a video on bias (see section 5.E)
- **Practice voting.** The Army and the Air Force provide board members with files from prior years and ask them to vote the files. After the vote, board members view how other board members voted and discuss discrepancies and general approach. This is one of the few opportunities for discussion about records during Army and Air Force boards. The Navy and Marine Corps boards do not hold practice sessions, although the board president may choose to do so on occasion.

a. Board Member Perspectives

Board members agreed that the board introductory briefs and training sufficiently prepared them for the board process. Army and Air Force personnel frequently referred to the practice sessions as the most important portion of the in-brief. Board members explained that the practice session built their confidence as they could see how they compared to their peers in grades

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[68] William T. Hoyt and Michael-David Kerns, "Magnitude and Moderators of Bias in Observer Ratings: A Meta-Analysis," *Psychological Methods* 4, no. 4 (1999): 403, https://psycnet.apa.org/doi/10.1037/1082-989X.4.4.403.

assigned, fine-tune their personal approach to voting, receive clarification about terminology and technical details across specialties, and discuss how to interpret and apply the MOI.

Many Army and Air Force board members stated that they had sufficient time to practice, but others indicated that additional time to practice would be beneficial to establish a consistent approach to voting or to score more difficult/atypical files that would generate group discussion (e.g., file with early-career derogatory information, varying quality of files). Notably, when scoring real files, board members frequently explained that their pace accelerated over time as they became more comfortable and "established a rhythm." This asymmetry in record review time suggests that more practice may indeed be necessary to ensure board members have their evaluation approach well-established before scoring real files. Otherwise, boards may be subject to order effects such that files are differentially evaluated based on the order in which they are presented. As an Army board member noted, additional practice may help members establish and refine their individual voting philosophy before they begin reviewing real files:

> *[We] could spend more time on practice voting to better establish your true voter philosophy. As a realist, even the most experienced board members are still establishing their voting philosophy when they're starting live voting.*

Navy and Marine Corps boards do not normally include practice sessions. However, some board presidents may choose to prepare members by providing sample briefs, moving to the briefing process after only a small number of files have been graded/prepared, or allowing board members to view other boards in progress. Navy and Marine Corps board members appreciated these efforts to better prepare members and frequently noted that practice scoring and briefing on "dummy" records would be an improvement. Enlisted board members in particular reported feeling overwhelmed with the amount of information conveyed during the orientation and ill-prepared to begin reviewing/grading records. Navy and Marine Corps board members explained that people varied in their comfort with grading and briefing files and that it could be challenging to review the initial set of files as board members were still figuring out the process and the standard for grading. Board members noted that adding an extra half-day or even full day to grade and brief files would set expectations for briefing and reduce errors; in the end, some noted, this may even save time:

> *Taking a day to train, practice, having a debrief of how we did and what it would have looked like if we went into the tank….At least a dummy record graded and a dummy tank session done before we grade the actual records. It'd take 4 hours up front but would accelerate the first couple of panels in the long run.*

Some Navy or Marine Corps members suggested that only first-time board members required practice and could arrive to the board a day early to do so. Others felt sufficiently prepared across all levels of experience.

Across the services, board members described significant challenges understanding and evaluating career fields outside of their own. Board members often had difficulty deciphering evaluations with specialty-specific acronyms and jargon or understanding the favored career path, assignments, and qualifications for certain career fields. The services provide briefs about career fields as part of their introductory training and/or information provided to board members to prepare for the boards. Board members frequently explained the limitations of these briefs/prepared materials. Some members noted that the quality of briefs varied depending on the career field and that greater standardization would be beneficial. Army board members in particular noted that the proponency briefs included out-of-date information. Navy and Marine Corps board members often relied on discussions during their board and the expertise of fellow board members to better understand unfamiliar career fields:

> *That would have been most unfair for me, grading without conversation. I had zero exposure to ratings I graded. I relied on and trusted those SMEs placed in positions of responsibility.*

The Army and Air Force board members did not have as much opportunity to speak with fellow board members as discussion is limited during their boards. Thus, Army and Air Force members largely depended on board recorders to answer general questions about career fields, not specific to any record.

Board members and some service staff also noted promotion disadvantages for certain specialties due to their grouping in a particular category. For example, Army staff observed that chemical officers do not compete as well as other specialties within their competitive category. The Marine Corps is the only service that does not divide boards by competitive category and some board members believed that this hindered promotion for support MOSs. Some Marine Corps staff and board members noted that it may be preferable to divide boards into career categories (e.g., ground combat, air, and combat service support), while others maintained that combined boards obviated the need to apply selection quotas by career field and ensured the selection of the best candidates across the Marine Corps.

High-quality training for evaluators is a key strategy to establish structured (i.e., standardized) selection processes and thereby improve the quality and fairness of decision-making. Discussions with promotion board members suggest that additional training may be warranted to provide opportunities to practice scoring and to better understand career fields represented on the board. Army and Air Force board members cited practice voting as the most important component of board training and Navy and Marine Corps members often stated that practice with dummy files

would improve the board process. Additional practice could allow board members to firmly establish their scoring approach before evaluating real files, thus ensuring greater consistency and fairness in the process. Further, additional training or preparation on career fields represented, or standardization of career field briefings and products, may better prepare board members to evaluate service members from career fields outside of their own.

2. Discussion During Selection Boards

Another strategy to increase structure during evaluation is to limit discussion between evaluators once scoring has begun and/or ensure that the discussions are systematized. Discussion may introduce extraneous details and/or change criteria for scoring over the course of the evaluation session.[69] Further, a substantial body of research suggests that social interaction during decision-making reduces the objectivity of individuals' assessments as they are influenced by their peers' opinions, often without their conscious awareness.[70] Further, under certain conditions, group-based decision-making can lead to lower quality decisions, particularly when people are motivated to conform with the group (normative influence).[71] However, the negative impacts of group decision-making may lead to better outcomes in contexts where group members are motivated to be accurate (informational influence)[72] and when decision-making proceeds under structured conditions.[73]

Navy and Marine Corps promotion boards are less structured than Army and Air Force boards because they allow for extensive discussion and ask each board member to brief (i.e., summarize and interpret) a subset of files. Air Force boards only allow for discussion when resolving discrepancies between evaluations (i.e., splits). Army boards also allow for discussion when resolving scoring discrepancies, but boards more often opt to resolve discrepancies by individually re-voting files. The relatively less structured Navy and Marine Corps boards offer the advantage of information-exchange between experts and more time for deliberative review, but may also reduce the independence and objectivity of evaluations as board members can influence each other.

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69 Michael A. Campion, David K. Palmer, and James E. Campion, "A Review of Structure in the Selection Interview," *Personnel psychology* 50, no. 3 (September 1997): 655-702, https://doi.org/10.1111/j.1744-6570.1997.tb00709.x.

70 Robert B. Cialdini and Noah J. Goldstein, "Social Influence: Compliance and Conformity," *Annual Review of Psychology* 55, no. 1 (2004): 591-621, https://doi.org/10.1146/annurev.psych.55.090902.142015.

71 Solomon E. Asch, "Effects of Group Pressure upon the Modification and Distortion of Judgments," chapter 17 in *Organizational Influence Processes* (New York City, NY: Taylor & Francis, 2015): 295-303; David Dryden Henningsen and Mary Lynn Miller Henningsen, "A Preliminary Examination of Perceptions of Social Influence in Group Decision Making in the Workplace," *International Journal of Business Communication* 52, no. 2 (2015): 188-204, https://doi.org/10.1177/2329488414525448.

72 Henningsen, "A Preliminary Examination of Perceptions of Social influence."

73 Andrew H. Van De Ven and Andre L. Delbecq, "The Effectiveness of Nominal, Delphi, and Interacting Group Decision Making Processes," *Academy of Management Journal* 17, no. 4 (December 1974): 605-621, https://doi.org/10.5465/255641.

Importantly, however, the Navy and Marine Corps board context emphasize the importance of individual judgement, as board members are encouraged to "vote their conscience," thus, they may be less subject to conformity pressures which can undermine decision-making. Table 16 and the paragraph below summarize the unstructured elements of the Navy and Marine Corps board processes.

Table 16. Unstructured Elements of Navy and Marine Corps Selection Board Procedures

Unstructured Element	Description
Board-specific guidance on briefing	Briefers receive individualized guidance from board presidents on what and how to brief, thus the content of briefings may vary across boards.
Briefing	Briefers provide a summary and their own evaluation of candidates, often including the grade they assigned. Thus, the content highlighted in files may vary across briefers and board members evaluations' may shift depending on the briefer's score and presentation style.
Display of scores (Navy only)	In the Navy, board members view an average score after each file is briefed and voted. As a result, board members' evaluation approach may shift over time to arrive at greater consensus.
Positive information presented outside of files (Officer only)	In officer promotion boards, board members can introduce positive information outside of the promotion file. This adds variance to the content presented across candidates as board members will not know all candidates.
Partial file reviewed in the tank (Navy only)	In the Navy, board members do not view every file in full, rather, they only see the full file when preparing briefs and a partial summary file in the tank. This amplifies the influence of the briefer as he/she can choose the content presented to board members.

Board members in the Navy and Marine Corps are randomly assigned a subset of records which they review in-depth, prepare notes about, and brief to their fellow board members. Board presidents give board members guidance about what and how to brief, but this guidance is not standardized across boards, thus the content of briefings may vary from board to board. Briefers summarize the candidate's file and also include their assessment of the record along with the specific score they assigned. As such, the content of information presented may vary from briefer to briefer and the score briefers provide may anchor members on a particular value and shift their own evaluations. In the Navy, board members view an average score after each member has voted on a file; this may subtly shift board members' subsequent evaluations to fall more in line with the group average. Officers, but not enlisted members, can introduce information outside the candidate's file as long as it is positive (e.g., positive experience working with a candidate), adding further variance to the information presented during briefings as not all candidates will have board members to speak on their behalf. In the Navy, only board members who brief a particular file will

see it in full when they are preparing their briefs. When board members convene in the "tank" for briefing and voting they only see summary information about each file. However, to narrow down the list of candidates selected, files are typically briefed multiple times by different briefers (i.e., "the crunch"). In the Marine Corps, all board members see the full record for each file, however, most files are not briefed multiple times.[74]

a. Board Member Perspectives

Board members with whom IDA spoke overwhelmingly approved of their service's strategy for record review and voting. Army and Air Force members emphasized the importance of independent voting without discussion. Board members explained that they would be inappropriately influenced by others' opinions if extensive discussion were allowed and that it would undermine their ability to consistently review and vote records. Air Force members did not cite any disadvantage to the discussion that occurred during splits, to the contrary, they found discussion to be useful in bringing to light other information board members may have missed.

Navy and Marine Corps' board members preferred the discussion-based approach to review and voting over independent review, but some members noted disadvantages. Navy and Marine Corps members often noted that briefing and discussion brought together trusted senior leaders to provide their expert judgement. One member explained the advantages of collaboration in the board process:

> *It's more collaborative to ensure all five minds are picking the best. Better result from the synergy five people can create. A lot of value is being in the tank, talking, asking questions, challenging the briefer on why they arrived on some of their conclusions. Lose that if everyone just reviews on their own.*

Without the briefing process, board members observed that a thorough and deliberate review of records would be impossible given the limited time available for boards. Navy and Marine Corps board members frequently emphasized the critical need for discussion to explain and understand different career specialties. For example, a few board members explained how line officers may misinterpret staff corps records; without discussion, line officers may not understand the accomplishments that are most important to the staff corps. Most Navy and Marine Corps board members indicated that they appreciated when briefers provided their personal score as it established trust and understanding without compromising their independence. Some officer-board members pointed out the importance of discussing positive information outside of the file to

[74] Above-zone files may be briefed multiple times. Above-zone files are first briefed after a short preparation, and if at least one board member votes yes on a file then it is included in the "premier population" of files to be briefed again, but with a lengthier preparation. Board presidents can also call for files to be briefed again when needed (e.g., during the iterative voting process).

incorporate professional reputations officers build throughout their careers, while other individuals, particularly enlisted members, found this practice to be unnecessary.

Navy and Marine Corps board members also noted some disadvantages to their board process. Board members acknowledged that briefers varied in effectiveness as some members are better at "the pitch selling records" than others, however, board members and the board president regularly intervene to point out information the briefer may have missed or challenge their conclusions. Some board members worried that differences in briefing effectiveness may unduly influence members or that "peer pressure" or "group think" could bias board members' assessments. A couple of Navy board members pointed out that standardized guidance may be helpful to ensure more consistency in information presented during briefs as some briefers did not provide enough information (e.g., comments about the written portion of evaluations which Navy board members do not see in the tank).

The Navy and Marine Corps promotion board processes offer less structure than Army and Air Force processes. Specifically, discussion during record review may reduce the independence and objectivity of evaluations as peers may influence board members' decisions, whether consciously or unconsciously. However, peer-influence also serves a valuable function as board members can account for expert opinions and learn critical information about the career fields represented in their board. Further, as pointed out by board members, the Navy and Marine Corps briefing process allows for more deliberative review of promotion files compared to the Army and Air Force processes. Nonetheless, the Navy and Marine Corps should consider adding structure to certain board processes, for example, by providing a template and uniform guidance for briefing, disallowing discussion of specific grades and sharing of average grades, and prohibiting discussion of any information outside of records (officer boards can currently discuss positive information not contained in files).

3. Time for Deliberation

Longer interview sessions are thought to enhance structure by providing additional information to review.[75] Further, a robust body of literature demonstrates that the quality of decisions is reduced when decisions are made under a time pressure.[76] For instance, in a study on military aviation in the Israeli Defense Force, decision-making quality of participating airmen was reduced when under a time pressure.[77] Airmen of greater seniority made better decisions overall but were still negatively impacted by time pressure. Making decisions under cognitively

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[75] Campion, "A Review of Structure;" Levashina, "The Structured Employment Interview."

[76] Steven J. Karau and Janice R. Kelly, "The Effects of Time Scarcity and Time Abundance on Group Performance Quality and Interaction Process," *Journal of Experimental Social Psychology* 28, no. 6 (November 1992): 542-571, https://doi.org/10.1016/0022-1031(92)90045-L.

[77] Niv Ahituv, Magid Igbaria, and A. Viem Sella, "The Effects of Time Pressure and Completeness of Information on Decision Making," *Journal of Management Information Systems* 15, no. 2 (1998): 153-172, https://doi.org/10.1080/07421222.1998.11518212.

demanding conditions, including time pressure, reduces controlled, deliberative processing and increases automatic (i.e., unconscious) processing, which can increase reliance on stereotypes.[78] For example, studies of medical providers have found greater racial disparities in decisions about patient-care under conditions of cognitive load or time constraint than not.[79]

All military promotion boards are time-constrained as the services schedule boards for a pre-defined time period, ranging from one week to several weeks, depending on the size of the board. Enlisted boards are particularly lengthy with the duration ranging from over a week to two months. Army and Air Force boards generally afford less time for review of each file than Navy and Marine Corps boards as every board member must review each file independently. Army and Air Force board staff typically set goals for the number of files board members should aim to review each day, but these goals are not strictly required and additional time is available to board members to continue reviewing files when members are not consistently meeting goals. As discussed, the briefing process employed by the Navy and the Marine Corps allows board members to review a subset of files in greater depth, spending as much as 45 minutes or longer per file. Although board members cannot review each file in-depth, the intent of the briefing is to share the detailed review with other board members to incorporate in their decision-making. The Navy and Marine Corps staff often redistribute files from board members working at a slower pace to board members completing their grading more quickly. Although expeditious, this redistribution of files means that some board members will have greater influence than other board members as they will brief a greater number of files.

a. Board Member Perspectives

The majority of board members, across the services, felt like they had sufficient time to review files. Board members often noted that their pace increased as they reviewed a greater number of records and "got their rhythm." Board members often attributed their faster pace to learning where in the files to focus their attention. Army and Air Force board members in particular explained that although they did not have enough time to review every piece of information in the record, they had sufficient time to review the most consequential elements to determine readiness for promotion:

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78 Jeffrey W. Sherman, C. Neil Macrae, and Galen V. Bodenhausen, "Attention and Stereotyping: Cognitive Constraints on the Construction of Meaningful Social Impressions." *European Review of Social Psychology* 11, no. 1 (2000): 145-175, https://www.tandfonline.com/doi/abs/10.1080/14792772043000022.

79 Irena Stepanikova, "Racial-Ethnic Biases, Time Pressure, and Medical Decisions," *Journal of Health and Social Behavior* 53, no. 3 (July 2012): 329-343, https://doi.org/10.1177/0022146512445807; Diana J. Burgess, Sean Phelan, Michael Workman et al., "The Effect of Cognitive Load and Patient Race on Physicians' Decisions to Prescribe Opioids for Chronic Low Back Pain: A Randomized Trial," *Pain Medicine* 15, no. 6 (June 2014): 965-974, https://doi.org/10.1111/pme.12378.

I had enough time to get through records and decipher which folks were ready for the next level. The first day was a struggle to get a rhythm because I was reading every single thing, and then realized I still had a thousand records left.

Most board members noted that they did not feel any pressure from board staff to evaluate quickly and received plenty of breaks to "manage…energy and concentration." Some individuals also explained that having a pre-determined time limit for the length of boards motivated them to work more efficiently than they would have been able to if completing evaluations in their own time.

A small subset of board members, particularly enlisted service members in the Navy, Marine Corps, and Army, often felt rushed when reviewing files and perceived the process to be quite grueling, with long days over several weeks. Enlisted board members explained that even though board staff told them not to rush, they often felt rushed anyways, especially when they were new to the process and could not review files as quickly as others. A few Army enlisted members noted that they felt particularly pressured when board staff would periodically update them on how close people were to meeting their quota for the day. A few enlisted board members noted that there should be a lower cap on how many records to review per day (e.g., 175 instead of 225) and/or more time allocated to the board process. The Navy recently reduced the size and time required for their boards from a month to 1-2 weeks by dividing ratings within a given community to smaller groups and combining E8 and E9 ranks.

Although most board members generally perceived time for review to be sufficient, a subset felt rushed and overwhelmed with the volume of files and expectations set for their progress. Given research which suggests that judgments are impaired under time pressure, the services should consider options to expand time for review, particularly in the Army and Air Force. Options to consider may include limiting the number of records to be reviewed each day, convening smaller boards (e.g., dividing competitive categories into smaller groups), and removing non-essential information from files.

4. Voting/Grading Scales

Use of rating scales with anchors (i.e., descriptions that accompany numeric/alphabetic values of a scale) is an important strategy to add structure to selection processes. Anchored rating scales improve consistency between raters in their evaluations, as they elicit a common understanding of the scale's meaning and improve the quality of evaluations.[80] Research also suggests that use of multiple rating scales improves decision-making outcomes. Specifically,

[80] Paul J. Taylor and Bruce Small, "Asking Applicants what they Would do Versus what they did do: A Meta-Analytic Comparison of Situational and Past Behaviour Employment Interview Questions," *Journal of Occupational and Organizational Psychology* 75, no. 3 (September 2002): 277-294, https://psycnet.apa.org/doi/10.1348/096317902320369712.

reliance on global evaluations alone may be subject to confirmation bias as evaluators may differentially weigh factors in their decision to arrive at their preferred outcome and/or confirm their initial impression.[81] Instead, researchers recommend using "mediating assessments," that is, multiple evaluations on different criteria that can then be more systematically applied to inform one's final global evaluation.[82] Even the specific numbers used in evaluation scales may influence judgements. One study found that faculty teaching evaluations using 1-10 scales elicited greater bias in favor of men than evaluations using 1-6 scales; the researchers surmised that the cultural significance of a "perfect 10" may activate gender stereotypes that disadvantage women.[83]

Promotion board members use anchored rating scales to vote files and/or to inform final decisions about which candidates to select for promotion (Table 17). However, board members only use a single scale. Additional evaluation scales to use as "mediating assessments" may help board members more systematically and uniformly weigh key facets of candidates' files to arrive at their global assessment/final recommendation for promotion. Board members often noted that their main considerations for selection include performance, assignments, and the guidance included in the MOI/precept (e.g., skills, characteristics, and experiences to prioritize); these elements could potentially be assessed directly through additional anchored rating scales.

Table 17. Anchored Rating Scales used in Promotion Boards

Army	6 (Superior), 5 (Outstanding), 4 (Solid/good), 3 (Average), 2 (Weak/not select), 1 (Show cause)
Navy	A (100%, Absolutely promote), B (75%, Probably promote), C (50%, Maybe promote), D (25%, Probably not promote), No (0%, Do not select)
Marine Corps	6 (Eminently qualified), 5 (With enthusiasm), 4 (With confidence), 3 (With reservation), 2 (Not recommended), 1 (Show cause)
Air Force	10 (Absolutely superior), 9.5 (Outstanding), 9 (Few could be better), 8.5 (Strong), 8 (Slightly above average), 7.5 (Average), 7 (Slightly below average), 6.5 (Well below average), 6 (Lowest), 1-5 (Not qualified)

D. Promotion Board Membership

On the whole, research suggests that increasing the diversity of selection panels may increase diversity of selectees. Mixed-gender boards tend to produce fairer judgements of males and females than single-gender boards, although the specific ratio of men to women needed for

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81 Eric Luis Uhlmann and Geoffrey L. Cohen, "Constructed Criteria: Redefining Merit to Justify Discrimination," *Psychological Science* 16, no. 6 (June 2005): 474-480, https://doi.org/10.1111/j.0956-7976.2005.01559.x.

82 Kahneman, "A Structured Approach."

83 Lauren A. Rivera and András Tilcsik, "Scaling Down Inequality: Rating Scales, Gender Bias, and the Architecture of Evaluation," *American Sociological Review* 84, no. 2 (March 2019): 248-274, https://doi.org/10.1177/0003122419833601.

equitable outcomes is not known. Specifically, in a meta-analysis on this topic, it was found that more men were hired than women when hiring boards were solely composed of men.[84] Research on racial/ethnic diversity in interview panels is limited. One study found that ratings between black and white candidates up for promotion were only equalized when the selection committee was evenly split between white and black members since individuals tended to rate members of their own race more favorably.[85] Internal research by Cisco Systems found an over 50% increase in hiring for black and Hispanic candidates with diverse interview panels, but did not specify the level of diversity on panels nor publish a report to detail their findings.[86]

The services include board members from diverse backgrounds, to include ethnic/racial minorities and women, for all centralized selection boards (statutory and non-statutory, officer and senior enlisted). Board member diversity is required by statute for officer promotion boards. Specifically, Title 10 USC §612 prescribes: "The members of a selection board shall represent the diverse population of the *armed force* concerned to the extent practicable." DOD issuances (DODI 1320.14), in contrast, specifies that board members should be representative of the "diverse population of *eligible officers* to the extent practicable."

Prior to the Title 10 update in 2020, the services followed DODI 1320.14 by matching the percentage of female and minority board members (i.e., non-white members) to the percentage of female and minority officers eligible for the specific board in session. With the current Title 10 language, the services are expected to match the percentage of female and minority board members to the percentage of female and minority individuals in the entire service (i.e., all officer and enlisted members). Title 10 prohibits service on the same board for consecutive years. However, because the services convene multiple boards each year (by rank for all services and by competitive category for the Army, Navy, and Air Force) service members could conceivably participate in several boards each year. With the requirement for a diverse and representative board, women and ethnic/racial minorities are often asked to serve more frequently than their white male peers.

The Navy and Marine Corps have been struggling to meet the requirement to make board membership representative of their force as officers are considerably less diverse than the broader service population, particularly in certain career fields (e.g., submarines, aviation, surface). Navy staff indicated the new requirement means that 46% of board members must be minorities and 21% must be women, far outpacing the percentage of minorities and women in the officer

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84 Chieh-Chen Bowen, Janet K. Swim, and Rick R. Jacobs, "Evaluating Gender Biases on Actual Job Performance of Real People: A Meta-Analysis," *Journal of Applied Social Psychology* 30, no. 10 (July 2006): 2194-2215, https://doi.org/10.1111/j.1559-1816.2000.tb02432.x.

85 Amelia J. Prewett-Livingston, Hubert S. Field, John G. Veres III, and Phillip M. Lewis, "Effects of Race on Interview Ratings in a Situational Panel Interview," *Journal of Applied Psychology* 81, no. 2 (1996): 178-186, https://psycnet.apa.org/doi/10.1037/0021-9010.81.2.178.

86 "Diverse Representation Framework & Diverse Interview Panels," CEO Act!on for Diversity & Inclusion, accessed October 14, 2022, https://www.ceoaction.com/actions/diverse-representation-framework-diverse-interview-panels/.

population (17% and 15% respectively). Navy staff indicated that some minority or female officers have refused to sit boards and say that their frequent participation is "hindering performance of their duties." To meet requirements, the Navy requests exceptions to Navy policy to allow for women and minorities of lower ranks or in different career fields to serve on boards. Some staff expressed concerns that in meeting the demographic diversity requirement, they end up reducing diversity of thought and experience as some of the same individuals participate each year. The Marine Corps noted similar challenges but typically asks for a waiver from the Secretary of the Navy as they are consistently unable to meet the requirement due to their small size.

Currently, the Air Force maintains board membership representative of the force, to the extent possible. Staff did not describe extensive problems in following through with the Title 10 requirement, but a few individuals noted that women and ethnic minorities are overtasked with boards, especially since non-statutory boards also seek diverse representation.

Finally, the Army ensures that board members are representative of the entire force, however, in cases where the eligible population is *more* diverse than the force (e.g., more minority and female nurses than the general Army population) they will go a step further and match the greater diversity of the eligible population. The Army did not express significant challenges meeting the board diversity requirement, but noted that some women or ethnic/racial minorities participate in different boards multiple times a year and that they often have difficulty meeting diversity requirements for General Officer boards.

1. Board Member Perspectives

Board members overwhelmingly viewed serving on a board as an honor and a privilege that ultimately made them a better leader and mentor. After attending the boards, members felt they could better explain the process to subordinates to prepare them for advancement and bolster their confidence in the system. In particular, board members noted that the board process improved their ability to write effective evaluations. Most board members acknowledged challenges stepping away from their responsibilities to serve on a board for several weeks, but viewed it as a duty that was worth accommodating, whether that meant working on the weekends or evenings or delegating to subordinates. A few board members indicated that participation could be better timed; for example, one individual noted that a board in March was difficult to manage as this coincided with the deadline for evaluations and a few individuals indicated that participation would be easier during certain types of assignments (e.g., staff positions) than others (e.g., command positions).

When asked about the relatively greater participation of women and ethnic/racial minorities in boards to ensure representation, board members affirmed the importance of diverse board membership but also noted that diversity of experience should be considered (e.g., life experiences, sub-specialties). Women and ethnic/racial minority board members often indicated that they were willing and able to participate more frequently than their peers if that was required to ensure diverse panels.

A small subset of board members cited more significant concerns about the disparate participation of women and ethnic/racial minorities. They noted that when you consider participation in statutory as well as non-statutory boards, there are just "not enough people to do the work." Some board members indicated that they declined participation on a few occasions because they were contacted too frequently. A few others noted that participation likely had both a positive and negative impact on their careers:

> *I think it impacts performance. It can't not. The cumulative time away disconnects you but can also help grow you.*

The requirement for officer promotion board members to represent the diversity of the general military population may not be feasible to implement in the near future given the lower diversity of the officer than enlisted corps. It is unclear whether the benefit of requiring this level of diversity on promotion boards outweighs the potential cost of disproportionally tasking women and ethnic/racial minorities. Limited research suggests that diversity on selection panels can increase selection of minority applicants, but additional research is needed to determine an optimal threshold for diversity based on gender and race/ethnicity. Although most of the ethnic/racial minority and female board members to whom we spoke did not view board participation as overly burdensome or a threat to their careers, even a small disparity between women/minorities and white men in time diverted from one's primary duties could accrue over the years and disadvantage careers. Women and ethnic/racial minorities' inordinate participation may not be limited to selection boards, they may also engage in other D&I-related service activities to a greater extent than their peers (e.g., affinity groups, recruiting/outreach events, cultural appreciation committees, etc.). Additional research is needed to ascertain the optimal threshold for diversity necessary in military promotion boards and to monitor the impact of women and ethnic/racial minorities' disproportionate participation in boards on their career outcomes.

E. Training on Bias

To reduce prejudice and discrimination and improve climate, organizations often turn to training intended to increase awareness of unconscious bias and support for diversity. Reviews and meta-analyses of this literature find mixed evidence for the effectiveness of such trainings. One meta-analysis of corporations found that, of all the diversity policies enacted, training had the smallest impact on diversity in management roles.[87] Other research finds some modest effects of diversity training, with one meta-analysis showing long-term gains in knowledge as a result of

[87] Alexandra Kalev, Frank Dobbin, and Erin Kelly, "Best Practices or Best Guesses? Assessing the Efficacy of Corporate Affirmative Action and Diversity Policies," *American Sociological Review* 71, no. 4 (August 2006): 589-617, https://doi.org/10.1177/000312240607100404.

training, but minimal impact on attitudes over time. Importantly, this research demonstrated the conditions under which diversity training is relatively more impactful, noting that trainings are more effective when conducted over longer time periods and when focused on raising awareness *and* developing skills.[88] For example, one evidence-based diversity training approach (Breaking the Prejudice Habit) focuses on developing awareness *and* skills by teaching participants about unconscious bias and providing specific strategies participants can use to reduce bias, for example, by taking the perspective of minority group members, increasing their contact with minority group members, and countering the stereotypes they may hold.[89]

The Army and Navy recently implemented a briefing and a video, respectively, on bias in decision-making during their promotion boards. The content is relatively brief (less than 15 minutes) and provides a broad overview of common cognitive biases (e.g., halo/horn effect, primacy/recency, central tendency, bandwagon) without discussion of how these biases apply to specific minority groups. The briefing and video largely focus on awareness of cognitive biases and spend relatively less time discussing strategies to overcome bias. The Army provides an overview of mitigation strategies (e.g., admitting bias, contrasting stereotypes, evaluating based on rubric, have empathy, rest/take breaks) but does not discuss any in great depth and the Navy video instructs sailors to be aware of their biases and focus on objective data. The effectiveness of these trainings has not been evaluated.

The Army and Air Force also include content on bias during their non-statutory boards. During its 2022 Command Screening Board, the Air Force held a 30-minute workshop on bias awareness, including a short video as well as a refresher session and video during the second week. The Army has an extensive briefing on bias, led by a psychologist, for panel members during command selection (i.e., Command Assessment Program (CAP)). The briefing on bias during promotion boards is a shortened version of CAP bias briefing. Notably, each day of CAP includes a refresher training and discussion on bias among panel members. Army and Air Force non-statutory selection boards will be discussed in greater detail in section 5.H.

1. Board Member Perspectives

The majority of Army and Navy board members with whom IDA spoke appreciated the bias training as a useful reminder, but many indicated that it did not noticeably impact the way they approached the board sessions. Although Air Force and Marine Corps board members did not view a video/briefing during their promotion boards, they expressed a similar sentiment: they would welcome additional training on the subject, but did not know whether it would make an appreciable

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[88] Bezrukova, Katerina, Chester S. Spell, Jamie L. Perry, and Karen A. Jehn, "A Meta-Analytical Integration of Over 40 Years of Research on Diversity Training Evaluation," *Psychological Bulletin* 142, no. 11 (2016): 1227, https://doi.org/10.1037/bul0000067.

[89] Patrick S. Forscher, Chelsea Mitamura, Emily L. Dix et al., "Breaking the Prejudice Habit: Mechanisms, Timecourse, and Longevity," *Journal of Experimental Social Psychology* 72 (September 2017): 133-146, https://doi.org/10.1016/j.jesp.2017.04.009.

difference. Board members explained that a 15-minute session would be insufficient to modify unconscious bias and change behavior and more in-depth discussion would be preferable to static briefings or videos. Board members also noted that education on mitigating bias should come much earlier than promotion boards and should be embedded in the curriculum at school houses, provided to raters before they begin writing evaluations, and given periodically to leaders, starting at the beginning of their careers:

> *At end of day, I don't know that the video alone is sufficient… It would make someone feel good that they added it, but it's a check in the box rather than making real change… We need to institutionalize the training and understanding in order for us to systematically and culturally get after it–can't just be at the promotion panel…*

A small number of board members, all in the Army, indicated some confusion about the bias briefing as they felt it contradicted other guidance. For example, one individual noted that the MOI prescribed bias, for example by instructing members to weigh more recent experience over prior experience, while the bias briefing cited the recency effect as a form of cognitive bias to avoid.

The bias briefing and video in the Army and Navy promotion boards, respectively, and the video in the Air Force non-statutory boards are certainly important steps forward, however, the short duration and focus on awareness over skills suggests that these efforts are unlikely to make a significant impact. Bias training during the Army CAP is more promising as it provides opportunities for in-depth discussion and is reinforced with daily refresher training. As several board members noted, diversity and bias training may prove more effective if reinforced early and often throughout service members' careers, and particularly before individuals begin writing evaluations. It is unclear whether current service training on equal opportunity and diversity is sufficient to build service members' skills to actively mitigate bias as they review and evaluate service members' records.

F. Instructions to the Board

Research suggests that individual-level training is more effective when augmented with organizational policies and practices that support diversity, equity, and inclusion from the top down.[90] One review of corporate diversity initiatives found that efforts to change organizational structure to increase focus on and accountability for diversity initiatives (e.g., diversity departments and taskforces) had a greater impact on ethnic/racial and gender diversity in

[90] Nicole M. Stephens, Lauren A. Rivera, and Sarah A. M. Townsend, "The Cycle of Workplace Bias and how to Interrupt it," *Research in Organizational Behavior* 40 (2020): 100137, https://www.sciencedirect.com/science/article/pii/S0191308521000101.

management than anti-bias training and mentoring/networking initiatives.[91] To convey support for diversity, equity, and inclusion, organizations often issue diversity statements, however, research suggests that such statements may have a limited impact[92] and could even backfire.[93] Specifically, diversity statements have been shown to elicit negative stereotypes about minority groups,[94] evoke feelings of exclusion and/or threat among white individuals,[95] and to give white individuals a false impression that organizations are fair, thereby reducing their awareness of extant discrimination.[96] To reduce the risk of backlash, researchers suggest framing diversity broadly, to include a range of categories beyond gender and race/ethnicity[97] and emphasizing the benefits of diversity for organizational performance.[98]

The services express organizational support for diversity and inclusion during promotion and non-statutory selection processes through the precepts/MOIs and board charges. Language about D&I has evolved over the years, most notably after litigation in the mid- to late-1990s. Specifically, both the Army and the Air Force have been involved in substantive litigation regarding board MOIs that were judged to give preferential treatment based upon race or gender (most cases involved Selective Early Retirement Boards; one or two cases arose from promotion boards).[99] See Appendix A.

Current MOIs and precepts across the services contain guidance regarding D&I that can be broadly categorized into three domains:

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91 Kalev, "Best Practices or Best Guesses?"

92 René F. Kizilcec and Andrew J. Saltarelli, "Can a Diversity Statement Increase Diversity in MOOCs?" paper presented at the ACM Conference on Learning@ Scale (Chicago, IL: June 24-25, 2019): 1-8, https://doi.org/10.1145/3330430.3333633.

93 Cheryl R. Kaiser, Brenda Major, Ines Jurcevic et al., "Presumed Fair: Ironic Effects of Organizational Diversity Structures," *Journal of Personality and Social Psychology* 104, no. 3 (2013): 504, https://doi.org/10.1037/a0030838.

94 Seval Gündemir, Astrid C. Homan, Anastasia Usova, and Adam D. Galinsky, "Multicultural Meritocracy: The Synergistic Benefits of Valuing Diversity and Merit," *Journal of Experimental Social Psychology* 73 (November 2017): 34-41, https://doi.org/10.1016/j.jesp.2017.06.002.

95 Tessa L. Dover, Brenda Major, and Cheryl R. Kaiser, "Members of High-Status Groups are Threatened by Pro-Diversity Organizational Messages," *Journal of Experimental Social Psychology* 62 (January 2016): 58-67, https://doi.org/10.1016/j.jesp.2015.10.006.

96 Kaiser, "Presumed Fair."

97 Molly Carnes, Eve Fine, and Jennifer Sheridan, "Promises and Pitfalls of Diversity Statements: Proceed with Caution," *Academic Medicine: Journal of the Association of American Medical Colleges* 94, no. 1 (January 2019): 20, https://doi.org/10.1097/ACM.0000000000002388.

98 Tessa L. Dover, Cheryl R. Kaiser, and Brenda Major, "Mixed Signals: The Unintended Effects of Diversity Initiatives," *Social Issues and Policy Review* 14, no. 1 (January 2020): 152-181, https://doi.org/10.1111/sipr.12059.

99 Christian v. United States, 337 F.3d 1338 (2003) United States Court of Appeals for the Federal Circuit; Berkley v. United States, 287 F.3d 1076 (2002) Berkley v. United States, 287 F.3d 1076; Saunders v. White, 191 F. Supp. 2d 95 (2002) United States District Court, District of Columbia

- *Equal treatment and opportunity for all members regardless of background* (e.g., "Equal opportunity is an essential element of our selection system. Your evaluation of all officers must afford them fair and equitable consideration"[100]).
- *Value of diversity for mission accomplishment* ("Diversity is about achieving peak performance. Our Navy should draw upon the entire possible set of talents and backgrounds to address new threats and challenges"[101]).
- *Selection of leaders with the ability to develop inclusive climates and lead/mentor diverse organizations and individuals* (Army, Navy, and Marine Corps only; e.g., "Select meritorious officers who create and maintain an inclusive environment where individual behaviors are recognized, accepted, and, most importantly, valued, regardless of race, color, national origin, religion, sex (including gender identity), or sexual orientation;"[102] Best qualified officers have demonstrated a willingness and ability to lead and mentor men and women from diverse ethnic and cultural backgrounds"[103]).

Service MOIs/precepts align with research-based recommendation to frame diversity broadly and emphasize the instrumental value of diversity. Further, if used appropriately, these statements could help hold leaders accountable by asking board members to consider performance/skills related to diversity, equity, and inclusion in their promotion decisions.

Table 18 includes diversity-related excerpts from service MOIs/precepts. In general, the language in the MOIs/precepts frames diversity quite broadly (e.g., diversity of experience, backgrounds, skills) and never states that any preference should be given based on demographic background. Accordingly, after discussing the value of diversity, Navy and Marine Corps precepts note: "This guidance shall not be interpreted as requiring or permitting preferential treatment of

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[100] Secretary of the Air Force, "Secretary of the Air Force Regular Air Force Field Grade Generic Memorandum of Instructions" (Washington, DC: Department of Defense, August 17, 2022: 1, https://mypers.af.mil/app/answers/detail/a_id/40298/p/9/c/656.

[101] Secretary of the Navy, "FY-22 Active-Duty Navy and Reserve Officer and Chief Warrant Officer Promotion Selection Board Precept," (Washington, DC: Department of Defense, November 24, 2020: 8, https://www.mynavyhr.navy.mil/Portals/55/Boards/Active%20Duty%20Officer/documents/FY22_Promotion_Board_Materials/FY-22_PSB_PRECEPT_AMENDED_12JAN2021.pdf?ver=awCC-ety1dg_iB3Z-B5EFA%3d%3d.

[102] Secretary of the Army, "Supplemental Instructions for the Fiscal Year 2021, (FY21) Colonel (COL), Army, Operations (OPS), Operations Support (OS), Force Sustainment (FS), and Information Dominance (lD) Promotion Selection Boards (PSB)," memorandum (Washington, DC: Department of Defense, November 5, 2020: 2.

[103] The Assistant Secretary of the Navy (M&RA), "Precept Convening the Fiscal Year 2022 U. S. Marine Corps Unrestricted Major Promotion Selection Board and Unrestricted Captain Continuation Selection Board" (Washington, DC: Department of Defense, June 29, 2020), 4, https://www.manpower.usmc.mil/webcenter/content/conn/WebCenterSpaces-ucm/path/Enterprise%20Libraries/MMPR_OP_PB/TAB%20C_FY22%20USMC%20MAJ%20PSB%20PRECEPT_ASN%20SIGNED.pdf.

any officer or group of officers on the grounds of race, religion, color, sex (including pregnancy), gender identity, sexual orientation, or national origin"[104]

Compared to the other services, the Air Force provides relatively less detail on diversity in its generic Memorandum of Instruction. In particular, the Air Force does not specifically refer to the selection of leaders with the ability to develop inclusive climates or lead diverse organizations, but includes more general language on leadership skills (e.g., "Officers must lead people effectively. They will have inspired confidence in subordinates and fostered good order, discipline, teamwork, and trust"[105]). The Air Force's MOIs for non-statutory boards (e.g., PME and command selection) contains more detail on diversity and directs board members to select a diverse range of officers, to include consideration of demographic diversity, alongside other forms of diversity (i.e., background, experience, education, etc.). The Air Force's approach to non-statutory boards will be discussed further in section 5.H.

Table 18. Excerpt from Promotion Board Precepts and MOIs on Diversity and Inclusion

Service	Excerpt of Diversity-related Language in MOI/Precept
Army	The strength of our Army comes from our diversity. Developing and maintaining qualified and demographically diverse leadership is critical for mission effectiveness and is essential to national security… It is vital that our Army is in fact one of equal opportunity - equal opportunity for all Soldiers is the only acceptable standard for our Army. This principle applies to every aspect of career development and utilization in our Army, but is especially important to demonstrate in the selection process… Select meritorious officers who create and maintain an inclusive environment…[106]
Navy	Today's Navy is composed of men and women representing many ethnic groups and cultural heritages…To be effective, the Navy officer corps must draw upon its depth and breadth of vision and its diversity of experience, backgrounds, perspective, and innovative talent. You should give careful attention to selecting officers who possess these valuable attributes and have demonstrated the potential to lead large organizations composed of men and women coming from widely varying backgrounds in a complex world…The Department of the Navy is dedicated to equality of treatment and opportunity for all personnel without regard to race, religion, color, sex (including pregnancy), gender identity, sexual orientation, or national origin…[107]

[104] Secretary of the Navy, "FY-22 Active-Duty Navy," 8.

[105] Secretary of the Air Force. "Secretary of the Air Force," 1.

[106] Secretary of the Army, "Supplemental Instructions for the Fiscal Year 2021," 4.

[107] Secretary of the Navy, "FY-22 Active-Duty Navy," A-5.

Service	Excerpt of Diversity-related Language in MOI/Precept
Marine Corps	The Marine Corps is composed of men and women representing different ethnic groups and hundreds of cultural heritages. Best and fully qualified officers must be capable of leading and mentoring Marines while executing the Marine Corps' strategic diversity initiatives… Accordingly, within this board's charter to select those officers who are "best and fully qualified," you must ensure that officers are not disadvantaged because of their race, religion, color, sex (including gender identity), sexual orientation, or national origin.[108]
Air Force	Equal opportunity is an essential element of our selection system. Your evaluation of all officers must afford them fair and equitable consideration…To remain competitive, the Department must have members from the entire spectrum of qualified talent available in the United States. Accordingly, the Department of Defense needs to make every effort to encourage service by individuals from all backgrounds by providing for the equal treatment and equitable consideration of all personnel considered for promotion.[109]

1. Board Member Perspectives

In IDA's discussions with promotion board members, participants frequently emphasized the importance of the precept/MOI and board charge/convening guidance for their decision-making. However, when asked how the content regarding diversity and inclusion influenced their decision-making, nearly all board members replied that it did not. Board members noted that they did not consider gender, race/ethnicity, or any other demographic information in their decision-making, rather they focused on selecting the most qualified individuals. If board members did consider diversity, they typically focused on diversity of professional experience and capabilities. Nonetheless, the vast majority of board members viewed the guidance on D&I as appropriate and necessary.

Although the precept/MOI language on D&I includes a reference to skills related to fostering inclusion and managing diversity, board members overwhelmingly noted that these skills were not apparent in promotion files. Board members explained that performance evaluations include sections on command climate and equal opportunity but that raters made fairly generic comments that did not distinguish between service members (i.e., viewed entries as "check the box"). According to board members, specific content related to D&I is rare in promotion files, and typically limited to descriptions of extreme behavior in performance evaluations (e.g., non-support for or violations of equal opportunity policy). A few individuals noted that D&I-related skills may be discernable through certain activities and duties (e.g., Sexual Assault Prevention and Response Office, equal opportunity), although this typically did not influence board member decision-making or could have a negative impact when particular assignments diverted members from their career path.

[108] The Assistant Secretary of the Navy (M&RA), "Precept Convening the Fiscal Year 2022," 7.

[109] Secretary of the Air Force, "Secretary of the Air Force," 1.

Some board members remarked that directly evaluating service members on their ability to create inclusive climates or lead/mentor diverse individuals would be challenging for most raters as these are difficult skills to assess in a uniform manner and raters are not typically instructed or taught to do so. As one individual noted:

> *I don't think this [D&I-related skills] is something we could write about. I haven't seen anywhere that we couldn't but I've never been encouraged to do it. It would take a very mature rater to be able to identify this behavior…There's a lot of training on this that we need in this organization.*

Other board members maintained that one could infer ability to develop inclusive climates and mentor/lead diverse teams through general leadership abilities. Board members could thus assume that service members with strong leadership skills are able to effectively lead diverse teams because most teams in the military are quite diverse.

Guidance to selection boards, through MOIs and precepts, is an important channel to demonstrate organizational support for D&I. However, current MOI/precept guidance regarding D&I is unlikely to have an impact on promotion outcomes due to vague language on diversity and insufficient information related diversity management skills in performance files. Clarifying the language on diversity to encourage consideration of demographic diversity and the barriers that minorities may face could raise the risk of litigation and may lead to backlash. The current approach of emphasizing leadership *skills* related to D&I is thus preferable and aligns with Title 10 USC requirements to promote the best qualified officers with particular skills needed by the military service and may serve as a mechanism to hold leaders accountable for promoting D&I. However, board members cannot adequately apply board guidance as they are unable to directly assess D&I-related skills in service members' records. If the services seek to advance leaders who effectively manage diversity and foster inclusion, they should explore approaches to ensure leaders can be more clearly evaluated in these areas.

G. Monitoring and Evaluation

Researchers and practitioners alike stress the importance of analysis, monitoring, and evaluation in making progress towards diversity goals.[110] Collecting demographic data allows organizations to monitor diversity at various phases of the career pipeline and detect disparities

[110] Elizabeth Hirsh and Donald Tomaskovic-Devey, "Metrics, Accountability, and Transparency: A Simple Recipe to Increase Diversity and Reduce Bias," chap. 2 in *What Works? Evidence-Based Ideas to Increase Diversity, Equity, and Inclusion in the Workplace* (Amherst, Massachusetts: University of Massachusetts Amherst, 2020), 16-23, https://www.umass.edu/employmentequity/sites/default/files/What_Works.pdf.

and areas for intervention.[111] Evaluation of diversity initiatives allows organizations to determine whether programs and policies are having their intended effect of improving diversity, equity, and inclusion.

After the conclusion of each board, the services conduct after action reviews and/or interviews/discussions with board members to identify challenges and potential process improvements. The services also analyze outcomes and present promotion data by demographic category (race/ethnicity and gender). To varying extents, the services also monitor disparities over time and evaluate the impact of policy changes to board outcomes. For example, the Air Force analyzes board outcomes through their Air Force's Personnel Center, which houses an archive of promotion data and conducts various analyses to examine diversity trends over time and assess the impact of specific policy changes. Assessing the impact of past policy changes can be limited by lack of clarity on specific dates of implementation. Across the services, IDA could not find any centrally-located information about historical policy changes. Maintaining a record of past policy changes relevant to promotion boards may facilitate analysis in this area.

As summarized in Chapter 2, the Army and the Air Force established research centers (OEMA and OLEA, respectively) with the capability to analyze promotion data in greater depth and conduct experimental analyses. As described in Chapter 2, OEMA experimentally assessed the impact of removing photographs using a mock board setting. Moving forward, OEMA is also considering the impact of guidance to the boards (i.e., MOIs) and evaluations on voting behavior. The Army has also prototyped a process to examine changes in board member voting behavior after manipulating various elements of the files (e.g., education, deployment history). With a capability like this, the Army could conduct experiments to test the impact of changing one element in promotion files (e.g., names, pronouns) while holding other information constant. The Navy and Marine Corps do not have research organizations to conduct experimental studies on promotion at the moment. Further, anonymous voting in the Navy and Marine Corps limits their ability to conduct certain analyses (e.g., detect same-race preferences in evaluation, compare board member evaluation behavior across boards).

As discussed in the next section, promotion outcomes are a direct function of antecedent personnel decisions that drive service members' careers (e.g., assignments, PME, awards). It is unclear whether the services analyze these personnel decisions in a holistic manner as many personnel decisions are managed in a de-centralized manner by individual career communities. Greater integration of data across the personnel lifecycle may help the services better identify when racial/ethnic and gender disparities emerge and how to best intervene. The Air Force's Independent Racial Disparity Review provides an excellent model as it assesses racial/ethnic disparities,

[111] Ibid.

starting with Black/African American airmen and guardians, across various facets of career development and progression and proposes actions to address disparities.[112]

H. Key Inputs to the Boards

Across the services, board members and service staff overwhelmingly emphasized the fairness of board procedures. Board members often noted how impressed they were with the professionalism and rigor of the process at their first board. A few board members suggested that additional education and transparency on the board process would be beneficial for more junior members. Some junior members assume that the process is unfair, thus, learning about the process in detail would increase confidence in the system and better prepare service members for promotion. Board members and service staff alike contended that promotion boards were not "the problem" when it came to gender and racial/ethnic disparities, instead they noted that disparities may arise earlier in the career process, for example, through differential access to key developmental experiences or ineffective and/or unfair performance evaluations. As one board member noted, the board itself is fair, but the career milestones and outcomes that board members consider may not be:

> *I don't think the promotion board process is where fairness can be adjudicated. It can't be any fairer. All those things, you can change at the board, but what the board will see is the manifestation of all the things pre-board. It's the things and decisions that lead up to [the board] that bother me more than the actual promotions board procedures. The cake is baked, can't separate the ingredients at the board.*

In the following section, we consider key inputs to promotion files that are particularly influential for board member decision-making: developmental experiences, performance evaluations, and adverse information. The services may see a greater impact on promotion diversity by addressing the key inputs to promotion boards than by removing names and gender pronouns from records.

1. Performance Evaluations

When discussing the possibility of removing names and gender pronouns from promotion files, service staff and board members frequently referenced performance evaluations, noting that raters could be biased by service members' race/ethnicity and gender. Thus, even if you could remove all indication of race/ethnicity and gender from promotion boards, performance

[112] The Inspector General Department of the Air Force, *Assessment Report (S8918P) Independent Racial Disparity Review Six-Month Assessment* (Washington, DC: Department of the Air Force, September 2021), https://www.af.mil/Portals/1/documents/2021SAF/09_Sept/RDR_6_Month_Assessment.pdf.

evaluations could introduce bias to the board process. Many echoed the sentiment expressed by one board member below:

> *If there was a problem where not promoting equitably, that may start with evaluators. Hard part – let's say the evaluator is biased because the individual is a different gender; the subjectivity of that evaluation will happen when evaluating. Briefer would not know that. Unequally promoting across ethnicities, race, etc. would start with the evaluators not with the promotion boards.*

Research on performance evaluations in civilian contexts validates these concerns as racial/ethnic minorities and women tend to be evaluated more negatively than white men[113] and evaluators use less favorable language to describe ethnic/racial minorities and women (e.g., greater use of superlatives to describe men and greater user of language related to "warmth" to describe women).[114]

Board members and some service staff noted general problems with evaluations, with individuals noting the inherent subjectivity of evaluations and the variance in raters' communication and writing skills. Several board members also contended that evaluations are often inflated as some raters are reluctant to evaluate subordinates negatively and have difficult conversations. Turnover also presents a challenge as service members new to positions may be disadvantaged in comparison to those raters have known longer. A few Air Force board members also criticized the planned change from a bulleted format to a narrative format in evaluations as they felt it would make evaluations too unstructured and difficult to read. Several board members explained that leaders required additional training on how to write effectively and in a more objective and even-handed manner. When discussing bias training during promotion boards, a few board members noted that such training would be especially useful for service members learning to write evaluations.

2. Developmental Experiences

Along with performance evaluations, board members and service staff often emphasized the importance of developmental experiences, difficult assignments, and achievement of key career

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[113] Landau, "The Relationship of Race and Gender;" Kerry Chávez and Kristina M. W. Mitchell. "Exploring Bias in Student Evaluations: Gender, Race, and Ethnicity," *PS: Political Science & Politics* 53, no. 2 (April 2020): 270-274, https://doi.org/10.1017/S1049096519001744.

[114] David A. Ross, Dowin Boatright, Marcella Nunez-Smith et al., "Differences in Words used to Describe Racial and Gender Groups in Medical Student Performance Evaluations," *PloS one* 12, no. 8 (August 2017): e0181659, https://doi.org/10.1371/journal.pone.0181659; Monica Biernat, M. J. Tocci, and Joan C. Williams, "The Language of Performance Evaluations: Gender-Based Shifts in Content and Consistency of Judgment," *Social Psychological and Personality Science* 3, no. 2 (2012): 186-192, https://doi.org/10.1177/1948550611415693.

milestones in promotion decisions. Many individuals noted that changes to the board process itself would have minimal impact as it is the experiences prior to the board that determine who is competitive for promotion, as stated by one board member below:

> *Bias is not on the promotion board it is on all the things that happened to get to the promotion board. I don't think we need to make changes to the board process. There are opportunities earlier in the pipeline to remove barriers to get people those opportunities that resonate at a promotion board.*

a. Non-Statutory Boards

Some key developmental experiences and career milestones are determined through non-statutory selection boards, for example, PME and command positions. For the most part, the services model the procedures used in non-statutory selection boards after statutory selection boards (i.e., promotion boards). However, some non-statutory boards, like command selection, are de-centralized as they are organized and hosted by specific career communities and have greater flexibility to modify procedures since they are not constrained by statutory requirements. The Army, however, runs non-statutory boards centrally, using the same facilities and staff as their promotion board and often combining a statutory board with a non-statutory board to be considered by the same board members (e.g., board members first vote candidates for promotion and then vote candidates for PME). The Army and the Air Force have taken advantage of the relatively greater flexibility afforded to non-statutory boards to make significant modifications to their processes in the interest of improving selection outcomes and/or increasing diversity.

Air Force PME, command screening boards, and developmental teams have unmasked race, ethnicity, and gender from candidates' files. In tandem with this change, the Air Force has also modified its MOI to the board to allow board members to consider race/ethnicity and gender, among various aspects of diversity: "In assessing diversity, you may consider the broad background and experiences of the candidates, including their demographics, education, experiences, source of military commission and training, prior enlistment and service experience, and any other factor. Diversity should not be interpreted as a mandate to apply weight solely based on a candidate's race, gender, or other demographic qualifier. Your assessment of each candidate must remain individualized and diversity is one consideration among many."[115] Service staff noted that airmen expressed some confusion about how to use race/ethnicity and gender information during PME boards, but not command screening boards. Staff surmised that members of PME boards may have had more difficulty because they were more junior than those who serve on command screening boards. The Air Force plans to update the language on diversity in its MOIs

[115] Central Board Memorandum of Instruction—Air Force, "Addendum to Memorandum of Instruction," (Washington, DC: Department of the Air Force, 2021).

to improve clarity. Additional diversity-related changes in Air Force non-statutory boards are detailed below:

- Command screening board results are now presented alphabetically rather than merit-ordered as everyone on the list was deemed ready for promotion and thus should be given equal consideration in hiring decisions;
- The Chief of the Air Force sent a letter to major commands commanders encouraging them to hire diverse candidates from the command screening list, when possible;
- Some boards (e.g., Central PME, command screening, and developmental teams) introduced unconscious bias training. The command screening board included a 30-minute session at the beginning followed by a 15-minute refresher during the second week.
- Selection boards present diversity data for their community/population at the onset. Some boards may also consider diversity of selectees and have the discretion to drop the cut line to include more diverse candidates in terms of experience and demographics;
- Set a goal that 30% of those *referred* to certain selection boards (e.g., residence PME, squad commander) are ethnic/racial minorities or women. After this change, the Air Force saw a 3% increase in Black/African American airmen selected for senior developmental education.

Beginning with a pilot program in 2019, the Army instituted a CAP to select soldiers for Battalion Command and Colonel Command. It has since expanded the program to the enlisted force with the Sergeant Major CAP. The non-statutory command selection board still proceeds through the centralized process used for other non-statutory boards, but board members simply select candidates to be *invited* for CAP and the final selections are made through the CAP process. CAP program staff noted that the legacy system of command selection provided a very limited set of information for board members to review (i.e., mainly centered on performance evaluations) with very little time allocated per record. CAP provides an expanded deliberation process for voting panel members and a broadened range of information to consider for a more holistic evaluation process, including physical fitness tests, assessments on written and verbal communication, feedback from peers and subordinates, cognitive and non-cognitive assessments, and the results of an interview with a psychologist.[116] A key goal of the CAP process is to screen out individuals who may be ineffective and/or counterproductive (i.e., toxic) leaders. The Air Force is piloting a similar process on a small sample for its wing commander selection. CAP has also introduced a number of processes to mitigate bias, including:

[116] COL Bob O'Brien, "CAP23 Summary to SECARMY" (Washington, DC: Army Talent Management, February 18, 2021).

- Candidate files excluding career branch information, name, ethnicity/race, gender, evaluations, and assignments, however, gender pronouns remain.
- Candidates being referred to by roster number and not allowed to make any comments that may identify their background during discussions with panel members.
- Panel members conducting a double-blind structured interview with candidates during which they can only hear each other's voices. CAP found that panel members could determine gender of candidates 100% of the time and could determine whether the candidate was a member of an ethnic/racial minority group 50% of the time.
- Extensive anti-bias training that includes an overview of biases, strategies to mitigate bias, and discussion among panel members. The training is conducted by a psychologist and is refreshed on a daily basis through group discussion.

Although it's too soon to determine whether the Air Force and Army non-statutory selection processes improve diversity in selection outcomes, plans are in place to keep these changes constant over several years to allow for evaluation. Results of these evaluations should be shared across the Department to allow the other services to consider implementing similar changes.

b. Assignments

Processes used to assign service members to particular jobs vary from service to service, but the services are all moving in the direction of providing more choice, transparency, and flexibility in the assignment process. For example, the Army's Talent Management Marketplace allows Army officers to upload information about their skills and abilities and indicate their preferences for jobs. Commands can then interview and select officers for positions.[117] Similarly, the Navy recently introduced MyNavy Assignment which allows sailors to view and apply for specific jobs. Some service staff noted that greater choice in assignment decisions could inadvertently harm careers as service members may avoid critical assignments needed for promotion because of personal considerations (e.g., more favorable living locations). A few Air Force board members explained that greater flexibility allows individuals to deviate from their expected progression of assignments for personal reasons (e.g., pregnancy as a pilot) but that board members are not provided with the context to understand those deviations. As a result, board members may penalize service members for deviations, despite guidance that board members should value broadening experiences and make allowances for career path variance.

Air Force developmental teams, responsible for vectoring airmen to opportunities and assignments, have implemented many of the same strategies to address diversity concerns as non-statutory boards. Further, developmental team panels also begin with a presentation of the demographic diversity within the career specialty and a discussion of the barriers that may explain

[117] "Army Talent Alignment Process," U.S. Army Talent Management, accessed October 14, 2022, https://talent.army.mil/atap/.

disparities that exist. Developmental Teams also hold annual barrier analysis working groups aimed at identifying and understanding barriers to career development. The areas of focus vary from year to year, on a 3-year cycle (i.e., selection processes and data, cultural perceptions and impacts, and demographics of accession and retention).

Some high-value assignments are determined through a nomination process by which a senior leader requests a slate of candidates from which he/she selects. These nominative assignments provide valuable and high-level leadership experience and exposure to the services most senior leaders whose evaluation and/or recommendation letter may be particularly influential in promotion board decision-making. The DOD Board on D&I issued a recommendation in 2020 for the services to "develop diverse pools of qualified candidates for nominative positions"[118] and DODI 1020.05, issued in 2020, requires to services to "prescribe procedures to ensure a diverse pool of candidates are considered for selection boards or selecting officials for assignments which lead to positions in senior leadership, such as general or flag officer aide-de-camp; military assistant, deputy; or other special leadership development positions."[119]

Service staff noted that leaders now request a diverse slate of candidates for nominative positions (e.g., provide at least one female and/or one minority candidate). For the Army and Marine Corps,[120] this is an informal practice not specified in policy. The Navy includes a policy reference regarding nominative positions in MILPERSMAN 1302-202, stating that: "for nominative packages requiring multiple candidates, every effort will be made to provide nominations consistent with the Navy's diversity policy so that a diverse slate of officers is considered."[121] Likewise, Department of the Air Force Instruction 36-2110, Attachment 18, specifies "hiring officials will develop and consider slates comprised of at least one underrepresented diverse candidate based on gender, race and/or ethnicity.[122]" The instruction also requires tracking and reporting of the race/ethnicity and gender of the slate of candidates considered as well as those hired for specific developmental positions (e.g., Senior Enlisted

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[118] Department of Defense, *Department of Defense Board on Diversity and Inclusion Report: Recommendations to Improve Racial and Ethnic Diversity and Inclusion in the U.S. Military* (Washington, DC: Department of Defense, December 2022), 28, https://media.defense.gov/2020/Dec/18/2002554852/-1/-1/0/DOD-DIVERSITY-AND-INCLUSION-FINAL-BOARD-REPORT.PDF.

[119] Office of the Under Secretary of Defense for Personnel and Readiness, "DoD Diversity and Inclusion Management Program," DoDI 1020.05 (Washington, DC: Department of Defense, September, 9 2020), 8, https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodi/102005p.pdf?ver=2020-09-09-112958-573.

[120] The Marine Corps is updating their Officer Assignment Policy to include direction regarding nominative billets, however, details are not yet available.

[121] NAVPERSCOM, "MILPERSMAN 1301-202: Officer Special Assignments – Nominative Billets/Nomination of Officers" (Washington, DC: Department of the Navy, July 23, 2021), 2, https://www.mynavyhr.navy.mil/Portals/55/Reference/MILPERSMAN/1000/1300Assignment/1301-202.pdf?ver=QJ7KJBpspK3k1jG23Z9J4w%3D%3D.

[122] Secretary of the Air Force, "Department of the Air Force Instruction 36-2110, Attachment 18" (Washington, DC: Department of the Air Force, August 2, 2021), 517, https://static.e-publishing.af.mil/production/1/af_a1/publication/dafi36-2110/dafi36-2110.pdf.

Leader, Aide-de-Camp). A few service staff noted that it could be challenging to find women or minority available to nominate for certain positions as the pool of diverse candidates at such high-levels is often small.

3. Adverse Information

Section 502 of the FY20 NDAA requires the services to include "adverse information" about promotion candidates at the O4 and above for active duty officers, and O-6 and above for reserve officers. Previously, the services only included adverse information during promotion boards for O-7 and above.[123] DODI 1320.14 further requires the inclusion of adverse information "that has received significant media attention or is of interest to the Senate Armed Services Committee.[124]" DODI 1320.04 defines adverse information as "any substantiated adverse finding or conclusion from an officially documented investigation or inquiry or any credible information of an adverse nature. To be credible, the information must be resolved and supported by a preponderance of the evidence. To be adverse, the information must be derogatory, unfavorable, or of a nature that reflects clearly unacceptable conduct, integrity, or judgment on the part of the individual."[125]

A few Air Force officers, but mostly Army enlisted board members, expressed some confusion about how to weigh adverse information in their decision-making process, particularly when it happened earlier in the candidate's career. Board members noted that if the service did not discharge the individual when the adverse action originally occurred, they do not understand why it is relevant for board members to consider. Army board members suggested that board members require more guidance on how to assess and consider adverse information during promotion boards. Further, enlisted members noted that candidates required more training/guidance from their leadership to understand how and when they could remove adverse information from their files. One Air Force officer described the challenge of considering adverse information as the MOI cautioned against a "one mistake Air Force," but a past infraction may be a single mistake that differentiates between candidates when narrowing down selection decisions.

With clear guidance on how to assess adverse information, promotion boards may benefit from the consideration of this information to root out intractable problems like sexual assault and

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[123] Secretary of the Air Force Public Affairs, "All Services Including Department of the Air Force to Furnish Adverse Information to Officer Promotion Boards in Designated Grades, Circumstances," *Air Force News*, February 10, 2021, https://www.af.mil/News/Article-Display/Article/2499406/all-services-including-department-of-the-air-force-to-furnish-adverse-informati/.

[124] Office of the Under Secretary of Defense for Personnel and Readiness, "DoD Commissioned Officer Promotion Program Procedures," DoDI 1320.14 (Washington, DC: Department of Defense, December 16, 2020), 16, https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodi/132014p.pdf?ver=NTt066LoBvDdTP3twLaniQ%3D%3D.

[125] USD(P&R), "Military Officer Actions Requiring Presidential, Secretary of Defense, or Under Secretary of Defense for Personnel and Readiness Approval or Senate Confirmation," DoDI 1320.04 (Washington, DC: Department of Defense, January 3, 2014), 16, https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodi/132004p.pdf.

toxic leadership and to better infer future leadership potential. However, the files of ethnic/racial minorities may disproportionally include adverse information given extant disparities in the military investigative and justice systems.[126] In 2019, a Government Accountability Officer report described insufficient collection of data on race/ethnicity in investigative and judicial databases, limiting the services' ability to fully analyze potential racial/ethnic disparities. However, based on available data, the Office of the General Counsel found some disparities in outcomes based on race/ethnicity, particularly at the investigative stages and convening of courts-martial, but not in conviction.[127] As the services strengthen their capabilities to analyze and address disparities in investigative and judicial processes, they should consider how extant disparities may impact promotion board proceedings. The services should ultimately aim to eliminate such disparities, but in the meantime, the services should assess whether there are certain classes of adverse information for which there are substantial disparities and determine whether this has an undue impact on promotion outcomes for minorities.

[126] United States Government Accountability Office, *Military Justice: DOD and the Coast Guard Need to Improve Their Capabilities to Assess Racial and Gender Disparities*, Report to the Committee on Armed Services, House of Representatives, GAO-19-344 (Washington, DC: United States Government Accountability Office, May 2019), https://www.gao.gov/assets/gao-19-344.pdf.

[127] GAO found that male Marines were more likely to be convicted than female marines at general and special courts-martial.

6. Conclusion and Recommendations

To assess the potential impact of removing indicators of gender and race/ethnicity from selection boards, and to determine which, if any, elements to recommend for exclusion, IDA considered and answered three key questions:

- **Effectiveness:** *Is there sufficient evidence that removing indicators of race/ethnicity and gender will reduce bias and/or improve diversity outcomes?* IDA's review of the literature (Chapter 2) and quantitative analyses of promotion outcomes (Chapter 3) did not provide clear and convincing evidence that removal of demographic indicators would improve diversity of service members selected for promotion. The research literature on the efficacy of interventions to remove demographic indicators is small and mixed. Quantitative analyses found that past policy changes to remove photographs and indicators of minority status did not significantly impact minority promotion rates. Further, minority-indicative names were not associated with lower promotion rates.
- **Feasibility:** *Is it possible to remove all indicators that may reflect race/ethnicity and gender and/or feasible to do so given available resources and other constraints?* Based on our review of service policies and discussions with service staff and board members (Chapters 4), we concluded that the feasibility of redacting demographic information from historical records and current records is very low. Redaction of identifying information (i.e., names and pronouns) would require substantial investment of time and resources not currently available to the services. Further, career history and letters to the board may reveal gender and race/ethnicity, in some circumstances, but could never be removed from promotion boards as they are essential to decision-making and required by law, respectively.
- **Prioritization:** *Are there other strategies to reduce the potential for bias that could be more viable or impactful?* IDA's review of the literature and discussions with service staff and board members (Chapter 5) revealed a number of alternative strategies that could be pursued to strengthen board procedures and address key inputs to the board (e.g., evaluations, developmental experiences, and adverse experiences).

Given the lack of evidence to support the removal of demographic indicators, such as names and gender pronouns, and the low feasibility of doing so, IDA does not recommend this course of action. Instead, we provide recommendations below based on our analysis of areas that should be prioritized for consideration. In the final section, to support Section 524's requirement for an implementation plan to specify which data elements to remove from promotion files, we suggest relatively low-effort actions that could be taken to remove extraneous demographic indicators from promotion files.

A. Add Structure (i.e., Standardization) to Board Processes

In this section, we suggest process improvements to add structure to promotion board procedures. A strong body of evidence in the literature suggests that structured processes not only improve the quality of decision-making, but also reduce biases against women, ethnic/racial minorities, and other protected classes.[128] It is important to note, however, that changes to promotion processes themselves may not result in a significant increase in selectee diversity as there may not be substantial racial/ethnic and gender bias in the promotion process as it currently stands (see Chapter 2). However, improving selection processes, as described below, will reduce the potential for bias, whether current or future, or based on race/ethnicity/gender or other factors. Ultimately, this will improve the perceived and actual fairness of promotion processes and the quality of decision-making.

Consider extending training for board members, for example, by lengthening or adding practice evaluation sessions and improving preparation to evaluate different career fields. In-depth training for evaluators is one key strategy to structure decision-making processes.[129] Army and Air Force board members found practice voting to be extremely valuable, and some noted that additional practice would be beneficial. Navy and Marine Corps boards do not typically include practice voting, but board members agreed that additional practice would be beneficial. A lengthier session to practice voting for Army and Air Force boards, and the addition of practice voting for Navy and Marine Corps boards would allow board members to more firmly establish their approach to evaluation (i.e., voting philosophy) at the onset, thus ensuring greater consistency in evaluation throughout the board process and minimizing order effects. The services should carefully curate files for practice to ensure a range in quality and the inclusion of challenging or atypical content that may generate discussion. In addition to practice evaluation, board members may also benefit from additional training or preparation on career fields represented. Board members often described challenges in evaluating candidates from different career fields and noted that enhancement of and/or greater standardization of materials on career fields would be valuable. The services should also consider providing training to senior leaders before they attend their first board, both to prepare them for future participation, and to better equip them to inform subordinates about and the promotion process.

Consider adding structure to Navy and Marine Corps briefing processes by providing standardized guidance on briefing and discussion, prohibiting discussion of outside information not included in files, and/or omitting discussion/display of scores/grades assigned to candidates. Briefing and discussion during Navy and Marine Corps promotion boards may reduce the independence and objectivity of board members' evaluations as they may be influenced by their peers. However, peer-influence provides the benefit of exchanging expert opinions to guide decision-making. The Navy and Marine Corps can reduce the vulnerabilities

[128] Levashina, "The Structured Employment Interview."

[129] Hoyt and Kerns, "Magnitude and Moderators of Bias in Observer Ratings."

associated with briefing and discussion by adding more structure to their processes. Specifically, the Navy and Marine Corps should consider providing standardized guidance about briefing and discussion to maintain consistency within and across boards. This guidance may include a specific and detailed template for briefing as well as details about what board members can and cannot discuss. The Navy and Marine Corps could convene a panel of board presidents to generate a common set of instructions for briefing and discussion based on the individualized guidance board presidents typically provide. The common guidance could also prohibit the introduction of outside information and sharing of individual grades/scores, such as:

- In officer promotion boards, board members can discuss positive information not included in the promotion file; the Navy and Marine Corps should consider prohibiting this practice as it unfairly advantages candidates for whom board members have personal knowledge;
- During briefing, board members often provide their personal evaluation (i.e., score/grade) for the candidate; this practice could also be prohibited as it may anchor board members to a particular value and reduce evaluation independence;
- In the Navy, board members view an average score after each member has scored a file; this practice could be prohibited as it may subtly shift board members' subsequent evaluations to converge at the average

Consider options to extend time for review of promotion files, particularly in the Army and Air Force, including: limits to the number of records that can be reviewed each day, convening smaller boards, and omitting non-essential information from files. Although board members with whom IDA spoke felt that they had sufficient time to review files, a subset of board members felt rushed and overwhelmed by the volume of files and expectations set for their progress each day. Further, a robust body of literature suggests that decision-making quality is reduced under time pressure[130] and that cognitively demanding conditions can increase reliance on heuristics, such as stereotypes.[131] As such, the services should consider strategies to increase time for review, particularly during Army and Air Force boards, but also for the Navy and Marine Corps, where feasible. One strategy to increase time for review would be to convene smaller boards, for example, by dividing competitive categories into smaller subgroups. The services could also set a limit on the number of files each board member can review each day. A cap on the number of files to review each day would reduce the potential for board members to rush through files and thus, ensure more careful deliberation. Finally, board members and service staff noted that promotion files contain extraneous records to which board members did not attend; removing these records could help board members review files more efficiently without having to sort through unnecessary details.

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[130] Karau and Kelly, "The Effects of Time Scarcity."

[131] Sherman and, "Attention and Stereotyping."

Consider adding evaluation scales to ensure board members uniformly weigh key criteria in their final recommendation for promotion. Aligning with best practice, promotion boards provide anchored rating scales for board members to vote files and/or to inform final decisions about whether or not to select candidates for promotion. However, research suggests that the use of a single rating scale can lead to confirmation bias as evaluators may weigh contributing factors differently to arrive at their preferred outcome.[132] Board members may benefit from completing multiple evaluation scales on specific criterion that can then be used to inform their final global evaluation/decision, ensuring that board members consider consistent and common criteria. These additional evaluation scales can relate to candidates' performance, assignments, and developmental experiences, as well as priorities defined in the MOI/precept.

B. Continue to Address Career Milestones and Outcomes that Impact Competitiveness for Promotion

Monitor new non-statutory selection processes in the Air Force and Army. Given the greater flexibility afforded to non-statutory than statutory selection processes, the Army and the Air Force modified their non-statutory selection board procedures with the intent of increasing diversity and/or improving selection outcomes. Specifically, the Air Force modified its MOI to allow board members to consider demographic diversity, along with other aspects of diversity, and made a number of other changes to encourage greater diversity in selection decisions. The Army has established a comprehensive approach to command selection which incorporates a number of bias mitigation techniques. The Army and Air Force plan to continue and evaluate these practices. Results of these evaluations should be shared with the other services should they choose to consider similar changes.

Assess and improve evaluation processes, to include better accounting for leadership actions to foster inclusion and manage diversity. Board members identified performance evaluations as a potential source of bias that could directly impact promotion outcomes. The services should study the extent to which performance evaluations are subject to bias related to race/ethnicity and gender, to include rankings relative to peers as well as language used in narrative/bulleted content. Additional rater training and guidance may be needed to not only minimize bias but also improve written communication skills and objectivity in evaluations. Further, if the services seek to advance leaders who can effectively manage diversity and foster inclusion, as current precepts and MOIs dictate, they should ensure that raters are prepared to evaluate service members on their performance in this area. Currently, board members can not apply guidance in MOIs related to diversity management skills because performance evaluations only superficially reference this information. To strengthen evaluations in this area, raters will

[132] Uhlmann and Cohen, "Constructed Criteria."

require instruction on how to identify and assess diversity management skills and write with greater specificity in performance evaluations.

Address racial/ethnic disparities in military investigative and justice processes and assess the potential impact of disparities on promotion outcomes. Promotion boards are required to consider "adverse information" about officers O-4 and above (for active duty) and O-6 and above (for reserve duty); adverse information is also included in enlisted boards. Adverse information may disproportionally appear in the files of ethnic/racial minority candidates due to unexplained ethnic/racial disparities in investigative and justice actions, as noted in a 2019 GAO report.[133] Ultimately, the services should seek to understand and address these disparities. However, in the meantime, they should assess whether there are certain classes of adverse information for which there are substantial disparities and determine whether this has an undue impact on promotion outcomes for minorities.

C. Monitor and Evaluate Board Processes and Outcomes

Monitor the impact of women and ethnic/racial minorities' disproportionate participation on selection boards and conduct research to determine the optimal level of board member diversity. To meet Title 10 requirements to ensure board membership is representative of the diversity of the force, women and ethnic/racial minorities are often asked to participate in promotion boards to a greater extent than their white, male peers. Relatively greater participation of women and minorities also extends to non-statutory selection boards. Although research affirms the benefit of diverse selection panels for selectee diversity, the optimal threshold for diversity is not known. The services should conduct research to determine the appropriate level of diversity needed among board members to improve diversity in selection outcomes. If the optimal level of diversity falls below the Title 10 requirement, DOD should request a modification to that requirement. In the meantime, the services should assess the impact of women's and ethnic/racial minorities' disproportionate participation in selection boards on their career outcomes and work-related stress. Although most women and minority board members to whom we spoke did not perceive their participation to be an undue burden, even a small disparity in time diverted from one's career can accrue over time to a disadvantage. If the services find negative impacts of excessive selection board participation, they should consider mitigation strategies, to include imposing limits on how many total boards (statutory and non-statutory) service members can participate in each year and including a criterion on performance evaluations to assess "organizational citizenship," under which board participation can be considered.

Evaluate the effectiveness of current anti-bias training in selection boards and consider providing more in-depth evidence-based training that aims to build skills. The Army and Navy introduced a briefing and video, respectively, during their promotion boards, but it is unclear

[133] United States Government Accountability Office, *Military Justice.*

if these efforts will make a significant impact due to the short duration and focus on awareness of bias over development of skills to counteract bias. The Army's in-depth bias training during CAP shows promise since there is opportunity for discussion and content is refreshed daily. The services should evaluate current anti-bias training at selection boards to determine effectiveness in improving DEI outcomes. If a full evaluation is not feasible, the services should consider augmenting current institutional training to align with best practices in the literature, specifically by extending the duration of training and providing opportunities to learn and practice skills to mitigate bias.

Continue to expand analysis of promotion board outcomes, to include research to experimentally assess the impact of demographic indicators on promotion board outcomes. The Army and Air Force have established research centers (OEMA and OLEA) with the capability to conduct advanced analysis of promotion data and conduct experimental studies. Research is needed to experimentally assess the impact of removing demographic indicators, such as names and gender pronouns, from promotion board records. For example, by comparing board decision-making on identical files, with only the name and/or gender pronouns varied. If OEMA and OLEA conduct experimental analyses of this nature, they should share these results with the other services. Although the Navy and Marine Corps do not have research centers like OEMA and OLEA, they could conduct experimental analyses during promotion boards by introducing synthetic files in consultation with internal or external researchers. Further, all the services could expand analyses to assess the impact of policy changes on promotion outcomes. A centrally-located repository that tracks policy changes with specific dates of implementation would facilitate these analyses for both internal and external researchers.

D. Consider Removing Extraneous Demographic Indicators from Promotion Board Files

FY21 NDAA Section 524 specifies the inclusion of an implementation plan to dictate which data elements to remove from promotion files. Our analyses do not suggest much utility in removing indicators of race/ethnicity or gender from promotion files, but also do not suggest potential harm in doing so. Ultimately, we conclude that the services would likely benefit more from making process improvements to their selection boards and addressing career milestones that make one competitive for promotion. However, if DOD seeks to make modifications to the content of promotion file records, there are a few feasible courses of action that could be taken to remove extraneous demographic indicators that are not relevant for assessing candidates' readiness for promotion, specifically race/ethnicity (Navy and Marine Corps), age and/or date of birth (Army, Navy, and Marine Corps), home of record (Army, Navy, and Marine Corps), dependent information (Marine Corps), and religion (Navy). Although most of these indicators are not directly related to race/ethnicity or gender, they do introduce extraneous personal details that could bias board members' decisions. Specifically, age is a protected class and age discrimination has

been shown in civilian workplace contexts.[134] Dependent information, present in Marine Corps files, is at odds with precept guidance which prohibits consideration of marital status. Finally, religion and home of record could subtly bias board members in favor of candidates from the same region or religion.

- **Data elements to be removed:** Race/ethnicity, age and/or date of birth, home of record, dependent information, and religion.
- **Systems and process changes required and estimated cost:**
    - **Army:**
        - Remove date of birth and home of record fields from the Officer and Enlisted Record Briefs.
        - This would require a code change to the digital form which could be implemented under their current contract at no additional cost, as long as the request is not expedited.
    - **Navy:**
        - Remove forms from the promotion file which contain race/ethnicity (Oath and Appointment Form, Field Code 7; Miscellaneous Professional Remarks, Field Code 34; Member Data Summary Form, Field Code 36); date of birth (Statements of Service and DD-214, Field Code 9); age (Officer Summary Record); home of record (DD-214, Field Code 9); and religion (Member Data Summary Form, Field Code 36).
        - Most of these changes would just require a process change such that the field codes associated with the selected forms would be omitted when promotion board staff generate the promotion files. This would not require any additional cost.
        - The Officer Summary Record contains candidates' ages, but, according to Navy staff, removing this content would require a significantly higher level of effort, including a mainframe change. Further, an enlisted form (Member Data Summary Form, Field Code 36) contains information about race/ethnicity and religion. However, the field code could not be dropped from promotion files because it contains important information about civilian education. Changing the Member Data Summary form itself would also require significant system changes. The Navy could not provide a cost estimate for implementing these modifications. *If the modifications to the Officer Summary Record and Member Data Summary*

[134] Petery and Grosch, "Broadening the View of Workplace Ageism."

Form prove to be costly and time-consuming, it would not be worthwhile to make the change as the cost is likely to exceed the benefit.

- **Marine Corps:**
  - Remove forms from the promotion file which contain race/ethnicity and date of birth (Oath and Appointment Form, NAVMC 763); home of record (DD Form 4); and dependent information (NAVMC 10922).
  - This would require the development of a filter to remove the stated files from inclusion into the digital board room. The Marine Corps estimates that the development, coding, deployment, and testing of the filter would cost approximately $147,957 of government and contract labor.
- **Air Force:**
  - Not applicable. The Air Force does not include race/ethnicity, age, and/or date of birth, home of record, dependent information, or religion in promotion board records.

- **Timeline for completion:** The changes to the promotion file records should be completed within six months. Associated policy changes should be completed within a year.
- **Responsibility for implementing changes assigned to:** Deputy Chief of Staff, G1 (Army); Chief of Naval Personnel, N1 (Navy); Deputy Commandant, Manpower & Reserve Affairs (Marine Corps).

Appendix A. Legal Review

Title 10 USC Subtitle A, Part II, Chapter 36, Subchapter 1 and Subtitle E, Part III, Chapter 1403 address the services execution of selection boards for active duty and reserve officers, respectively. They pertain to selection boards for officer promotion and continuation on active duty and early retirement for active duty members and promotion and selective early separation for reserve officers. They do not pertain to special boards conducted by the services for selection of officers for command, training, education, etc. Under 10 USC §616 and §14108 selection boards are to recommend for promotion "those officers considered by the board, giving due consideration to the needs of the armed forces concerned for officers of particular skills" (as noted in the guidelines or information furnished the board under sections 615(b) and 14107(b)) and regarded to be "the best qualified." Section 615(b) and 14107(b) require the service secretaries to provide to each selection board "information or guidelines relating to the needs of the armed force concerned for officers having particular skills," including guidelines or information on the need for minimum or maximum number of officers with the particular skills within a competitive category. There are no diversity requirements in the selection criteria although there are diversity requirements for board composition in 10 USC §612. Thus, the law requires the focus of statutory selection boards be on promoting the best qualified officers with the particular skills required by the armed forces at the time.

Legal cases have arisen from statutory selection boards when they are instructed through board precepts to or give different treatment to certain individuals due to their race and/or gender through racial- or gender- based classifications in violation of equal protection under the 5th Amendment to the U.S. Constitution. Courts will review the board process under "strict scrutiny" or "heightened" scrutiny for race and gender respectively. The strict scrutiny standard requires the government to demonstrate that the use of a racial classification serves a compelling government interest and that it is narrowly tailored to meet the interest.[135] Heightened scrutiny requires the government show that the gender classification serves important government objectives and the discriminatory means employed are substantially related to the achievement of the objective.[136] Both the Army and the Air Force have been involved in substantive litigation regarding board precepts that were judged to give preferential treatment based upon race or gender. Research indicates that all such cases date back to the mid- to late-1990s and primarily involved selective early retirement boards; one or two cases arose from promotion boards. All of the cases

[135] Adarand Constructors v. Pena, 515 U.S. 200, 132 L. Ed. 2d 158, 115 S. Ct. 2097 (1995).

[136] United States v. Virginia, 518 U.S. 515, 532-33, 135 L. Ed. 2d 735, 116 S. Ct. 2264 (1999).

commenced in the Court of Federal Claims and, while a few of these cases rose to the appellate court level, none of them resulted in cases in front of the Supreme Court. Most of the cases have been remanded back to the Court of Federal Claims for further consideration or determination of appropriate remedies. They may have also resulted in additional cases in front of the services' board for correction of records. In at least one instance, a case resulted in several years of additional litigation and costly settlements. While the issue at hand does not involve the precepts provided for selection boards, these cases offer a cautionary lesson in developing precepts that address diversity or bias.

IDA interviewed General Counsel and/or Judge Advocates for each of the services who are involved in review of board precepts or in defending the services in court. None of them have been asked for or prepared a formal legal opinion on the removal of data signifying race, gender, or ethnicity. Some deferred to the DOD General Counsel as this is an OSD initiative. However, some of those spoken to did not anticipate that the removal of such data would create legal issues as the data was being removed from all service members' board materials and therefore could not give rise to an assertion of a racial or gender classification or suggest preferential treatment for any particular group. It was pointed out though that, if the data is removed from board records, it would be advisable to ensure consistent implementation across the DOD to avoid an issue arising under the Administrative Procedures Act due to inconsistent application of the removal of such data.

Appendix B. Empirical Data Background

Our analysis exploits four sets of data: IDA curated data derived from Defense Manpower Data Center (DMDC) personnel records, promotion board records provided by the four services, records of policy changes constructed from interviews with subject matter experts, and census-estimated socio-economic aggregates by zip code. In this section, we cover background on these data, discuss construction of key variables, and provide basic descriptive statistics.

IDA's curated DMDC data includes a panel of demographic variables (sex, race, ethnicity), occupation codes, officer rank, component, and home of record (HOR). For time invariant variables (such as HOR, race, ethnicity, and sex), we impute missing values as the (median) non-missing value.[137] For all reported analyses,[138] we encode self-reported race and ethnicity as falling into one of five categories: non-Hispanic White, non-Hispanic Black, Hispanic, Asian, and Other.[139] Other includes multiple self-reported races, Pacific Islanders, and American Indians.

For all services, promotion board records include the date that the board convened, the decision of the promotion board (e.g. "select for promotion"), officer rank at the time of the board, and the first and last name of the officer. In addition, the Air Force and Army promotion board records include fields indicating the particular group in which officers compete for a promotion (sometimes called "competitive category," sometimes loosely referred to as "board"). For the Army, the board variable is less granular than actual competitive categories, which we do not observe. For the Navy, we constructed competitive categories by combing DMDC occupation codes with information from competitive category billet tables provided by subject matter experts. For the marines, our data do not contain competitive categories; the marines use few competitive categories, so this data limitation is not likely to be very impactful for most of our lines of effort.

Competitive categories play a key role in our analysis. Minority categories are not uniformly distributed across competitive categories, and average promotion rates vary across different competitive categories. Consequently, aggregate promotion rates across minority categories can differ markedly even when minority promotion rates are comparable to non-minority promotion

[137] In addition, we construct a promoted-in-last-year indicator variable, which equals one if an officer's rank has increased in the last year and is zero otherwise. Because many officers exit service after being selected for promotion but before being promoted, this constructed variable provides a downward-biased measurement of the select-for-promotion rate. We find evidence that bias in this variable differs across minority categories, indicating why we must use the select-for-promotion variables provided by the services.

[138] We explored alternative encodings, which produced largely similar results.

[139] This encoding is consistent with conventional encodings used by Census.

rates within each given competitive category. Figure B-1 illustrates the aggregate impact of board-rank effects on minority category promotion rates. For example, board and rank effects for black officers drive down their selection rates by about five percentage points in the Army but increase their selection rates by about 2.5 percentage points in the Navy.

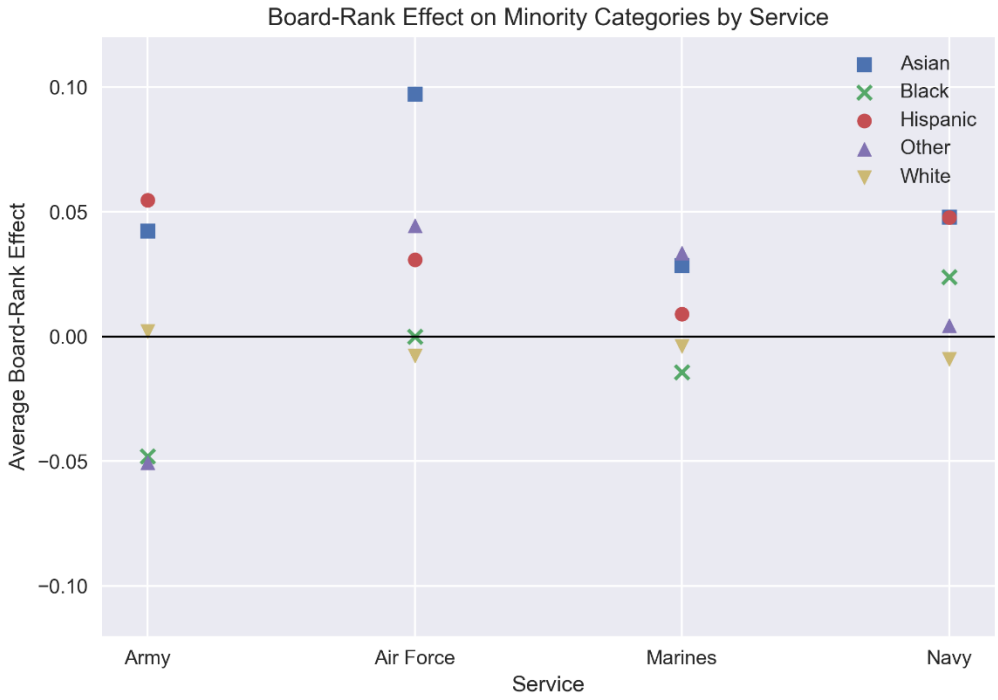

Figure B-1. Board-rank Effects Impact Aggregate Minority Selection Rates across Services.

The coverage of promotion boards records varies across the services. By service, date ranges of records are as follows:

- Air Force records stretch from January 2000 to September 2021;
- Navy (complete) records stretch from February 2003 to August 2020;
- Army records stretch from January 2015 to December 2021;
- Marine Corps records stretch from September 2010 through September 2020.

By service, officer rank coverage of records are as follows:

- Air Force O3 through O5;
- Navy O1 through O10;
- Army O1 through O8;
- Marines O3 through O7.

By service, observations counts are as follows:

- Air Force records include 97,880 unique officers for 430,290 officer-board pairs;
- Navy records include 139,070 unique officers and 519,772 officer-board pairs;
- Army records include 155,457 unique officers and 351,311 officer-board pairs;
- Marine records include 15,502 unique officers and 141,774 officer-board pairs.

We constructed records of policy changes from interviews with subject matter experts. Many of these policy changes were tangential to the primary analysis (such as minor changes in the wording of precepts); we focus analysis on those most closely related to blinding—those that remove information likely to inform the board of an officer's minority category such as promotion packets containing a "minority designator" and inclusion of officer photos. The Air Force added a "minority designator" to promotion packets in January of 1995, removing it in June of 2002. The Navy included photographs in promotion packets until they were removed in September of 2005, reinstated in April of 2007, removed again in August of 2016, reinstated again in October of 2018, and removed again in September of 2020; these frequent policy changes provide ample opportunity to estimate their impact. The Army included photos up until August of 2020, just prior to our last available fiscal year of data. The Marine Corps removed 'minority designator' in 2010[140] (before our Marine Corps selection data is first available) and removed photos in 2020 (after our Marine Corps data is last available); lack of overlap between these policies changes and Marine Corps selection data prevents us from investigating how these policies impacted Marine Corps officers.

We exploited census-estimated socio-economic aggregates by zip code to construct socio-economic controls. Census publicly provides many aggregate statistics at the Zip Code Tabulation Area (ZCTA), a geographic zone roughly corresponding to zip codes. The aggregates we downloaded[141] include total population, share of population with various levels of education (less than a high school degree, high school graduate, some college, bachelor's degree, more than a bachelor's degree), median income, and share of population below the poverty line. In addition, census provides separate aggregates for those 25 years old and younger and those over 25. We merged these ZCTA aggregates to the zip code using a publicly available crosswalk, then merged these aggregates to the HOR available in DMDC data. Depending on the service, the HOR variable is missing for about 85% of officers. We do not observe correlations between HOR missingness and variables other than file date (such as component, non-commissioned officer, or selection rate), so we treat missingness as completely-at-random; this missingness reduces statistical power of analyses relying on SES controls, but is unlikely to causes statistical bias.

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[140] Subject matter experts are uncertain of the date.

[141] "2007-2011 American Community Survey, S1501: Census Bureau Table," United States Census Bureau, accessed October 17, 2022, https://data.census.gov/cedsci/table?q=All%205-digit%20ZIP%20Code%20Tabulation%20Areas%20within%20United%20States%20Education&tid=ACSST5Y2011.S1501.

We use first and last names to construct the probabilities of minority categories (e.g. "pred White," "pred Black"). These variables play a key role in our analysis, reflecting what board members might reasonably intuit of an officer's race and ethnicity given the name displayed on a promotion packet. We construct these probabilities using a binning estimator.[142] For first and last names separately, we calculate the share of officers with a given name that are of each minority category. Let $n_i^n = 1\{name_i = n\}$ indicate that officer i has name n, let N_n equal the number of officers with a given name. Then the binning estimator is given by:

$$\hat{P}(c_i = C | name_i = n) = \hat{P}_{C,n} = \frac{\sum 1\{c_i = C\} n_i^n}{N_n}$$

This provides a consistent estimator of the probability of each minority category given a name. We then take a weighted average of first and last name predictions using the counts of each given name to determine the weights:

$$\hat{P}\left(c_i = C \middle| first\ name = n_f, last\ name = n_l\right) = \frac{\hat{P}_{C,Fn} N_{Fn} + \hat{P}_{C,Ln} N_{Ln}}{N_{Fn} + N_{Ln}}$$

The first and last name weighted average places more weight on predictions for which our probabilities are more precisely estimated, improving accuracy. In contrast, fitting a binning estimator to first and last name jointly would rely on small cell sizes and therefore lose accuracy due to overfitting.

It is important to recognize that this name-based prediction captures what boards might infer about minority category from a name—and not how well a data scientist might predict race using all information. Poor prediction accuracy in itself does not jeopardize our methodology; if some name-based predictions do not strongly indicate any particular minority categories, then these names present less opportunity for bias. Nevertheless, we performed 10-fold cross validation to assess the out-of-sample accuracy of our predictions. These indicate reasonable accuracy; for example, the correlation coefficient between fitted probability that an officer is black and an officer actually being black is about 0.33. This modest correlation approaches what can be expected for black officers given the British origin of many names common among black citizens of the United States; to a large extent, white names are black names and visa-versa. Unsurprisingly, correlation of predicted minority category and actual minority category are higher for Hispanic and Asian categories.

Minority-indicative names associate with HOR SES covariates, even after conditioning on actual minority category. For example, in Table B-1, we regress actual racial-ethnic minority category of Army officers on SES covariates and minority indicator controls. Many SES covariates significantly associate with minority category at conventional significance levels, several of which

[142] Initially, we trialed using publicly available pre-fitted machine learning models to predict race and ethnicity from first and last names. These pre-fitted models performed poorly, so we opted for constructing a simpler binning estimator using name data provided by the services.

survive Bonferroni correction for 40 hypotheses. This indicates that minority-indicative names are likely confounded. Given the crudeness of SES aggregates, including SES aggregates as controls is unlikely to remove all confounding variation.[143]

Table B-1. Associations between Minority-indicative Names and SES Covariates.

Estimates in table correspond to: Coefficient (Standard Error)	**Name Predicted White**	**Name Predicted Black**	**Name Predicted Hispanic**	**Name Predicted Asian**	**Name Predicted Other**
	(1)	(2)	(3)	(4)	(5)
(Intercept)	**0.358*** **	**0.075*** **	**0.062*** **	**0.093*** **	**0.277*** **
	(0.027)	(0.023)	(0.018)	(0.010)	(0.023)
Younger-Older Ratio	**-0.959*** **	**0.134**	**-1.135*** **	**-0.030**	**-0.604** **
	(0.223)	(0.174)	(0.183)	(0.108)	(0.227)
Older: Log Median Earnings	**0.000**	**0.005***	**-0.013*** **	**-0.03*** **	**-0.018*** **
	(0.002)	(0.002)	(0.001)	(0.001)	(0.002)
Older: Poverty Rate	**0.128*** **	**-0.027**	**0.282*** **	**-0.015***	**0.306*** **
	(0.024)	(0.017)	(0.020)	(0.007)	(0.022)
Younger: High School Grad Rate	**0.007**	**-0.007**	**0.018** **	**-0.006**	**0.025*** **
	(0.011)	(0.010)	(0.007)	(0.005)	(0.007)
Younger: College Grad Rate	**-0.006**	**-0.071*** **	**0.021***	**0.024** **	**0.051*** **
	(0.017)	(0.013)	(0.010)	(0.008)	(0.013)
Older: High School Grad Rate	**0.164*** **	**-0.020**	**0.023**	**-0.063*** **	**-0.225*** **
	(0.027)	(0.020)	(0.019)	(0.012)	(0.026)
Older: Some College Experience	**0.096*** **	**-0.021**	**0.022**	**-0.008**	**-0.109*** **
	(0.025)	(0.020)	(0.017)	(0.011)	(0.022)
Older: College Plus Rate	**0.001*** **	**0.000**	**0.001*** **	**0.000*** **	**-0.001*** **
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Actual Race/Ethnicity Controls	Yes	Yes	Yes	Yes	Yes
Estimator	OLS	OLS	OLS	OLS	OLS
N	20,215	20,215	20,215	20,215	20,215
R^2	0.515	0.543	0.724	0.501	0.258

[143] When we regress officer selection rates on HOR SES aggregates (for each of the four services), we find weak associations between SES covariates and selection rates. These results can be interpreted in two ways: officer quality does not much correlate with background characteristics; or, SES aggregates poorly control for the background characteristics associated with officer quality.

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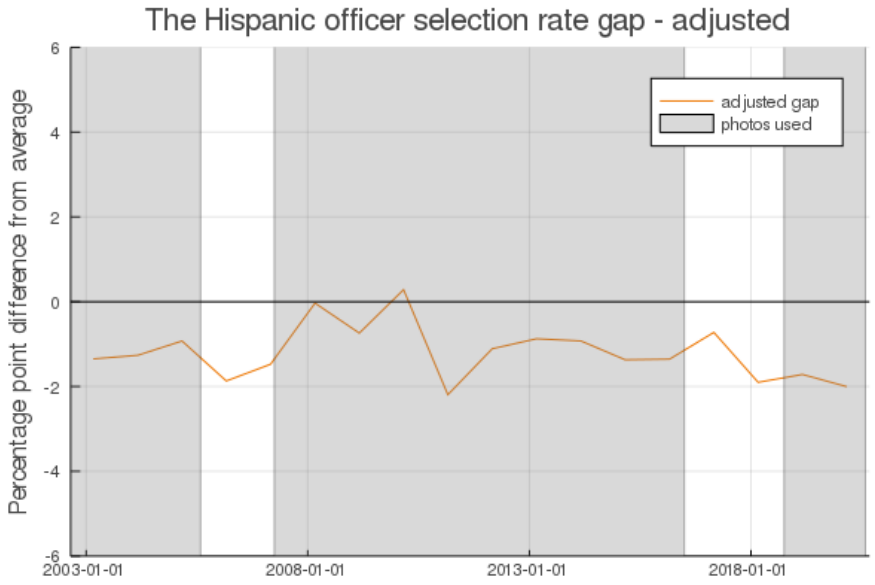
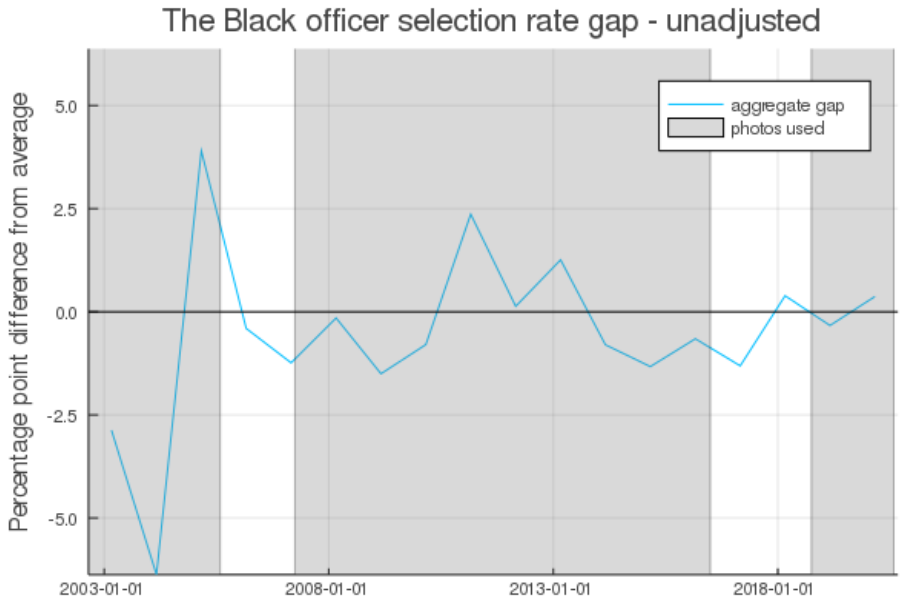
Appendix C. Additional Empirical Results

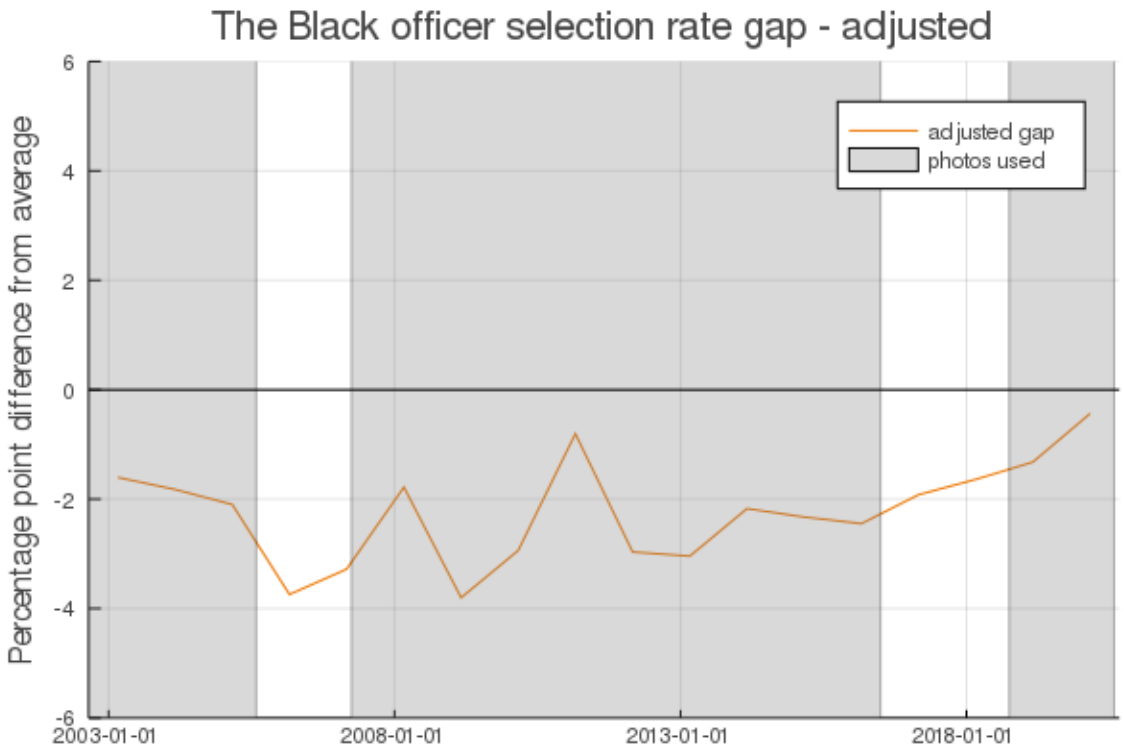
Figures

The following figures display selection rate gaps over time for the four services, juxtaposing these against relevant policy changes.

Navy






The Black officer selection rate gap - adjusted
Percentage point difference from average
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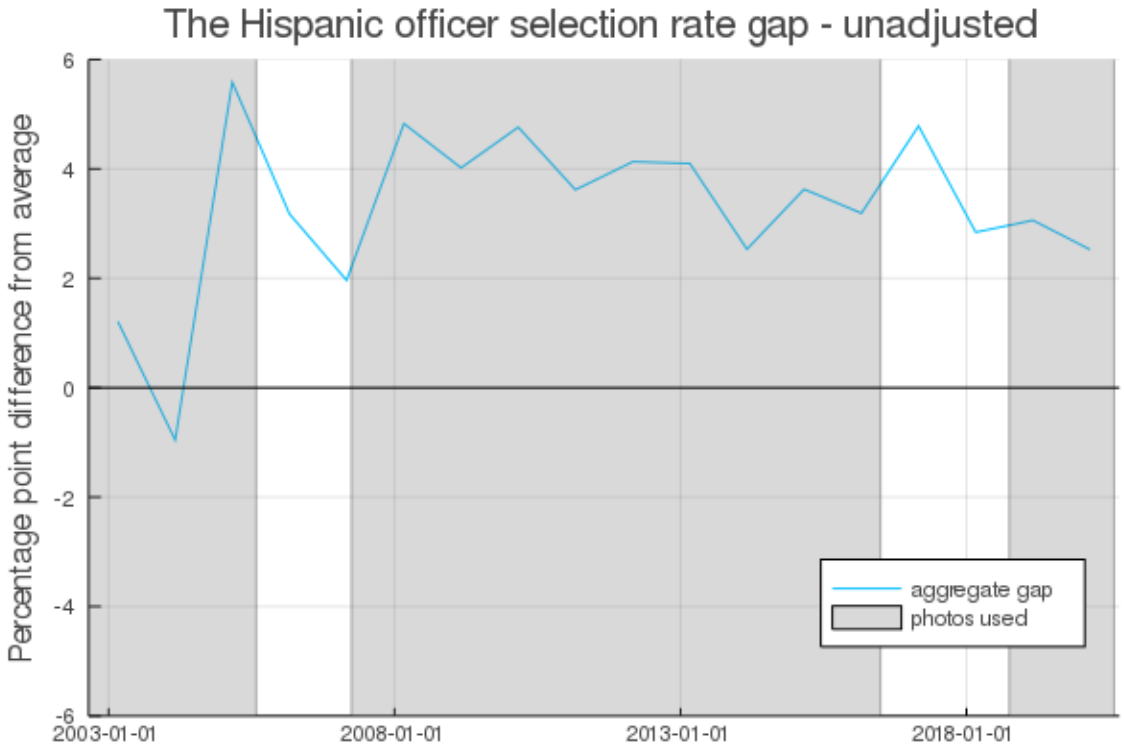
4
2
0
-2
-4
-6
2003-01-01
2008-01-01
2013-01-01
2018-01-01
adjusted gap
photos used


The Hispanic officer selection rate gap - unadjusted
Percentage point difference from average
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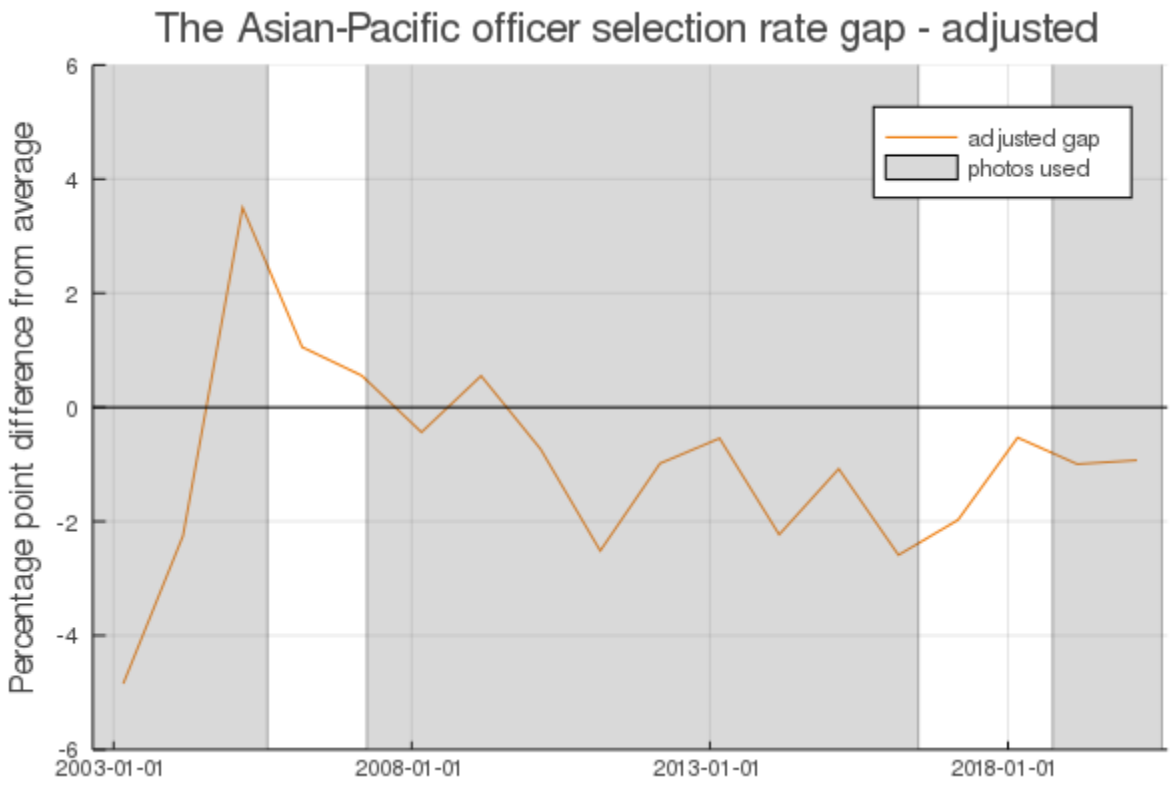
-2
-4
-6
2003-01-01
2008-01-01
2013-01-01
2018-01-01
aggregate gap
photos used


The Asian-Pacific officer selection rate gap - adjusted
Percentage point difference from average
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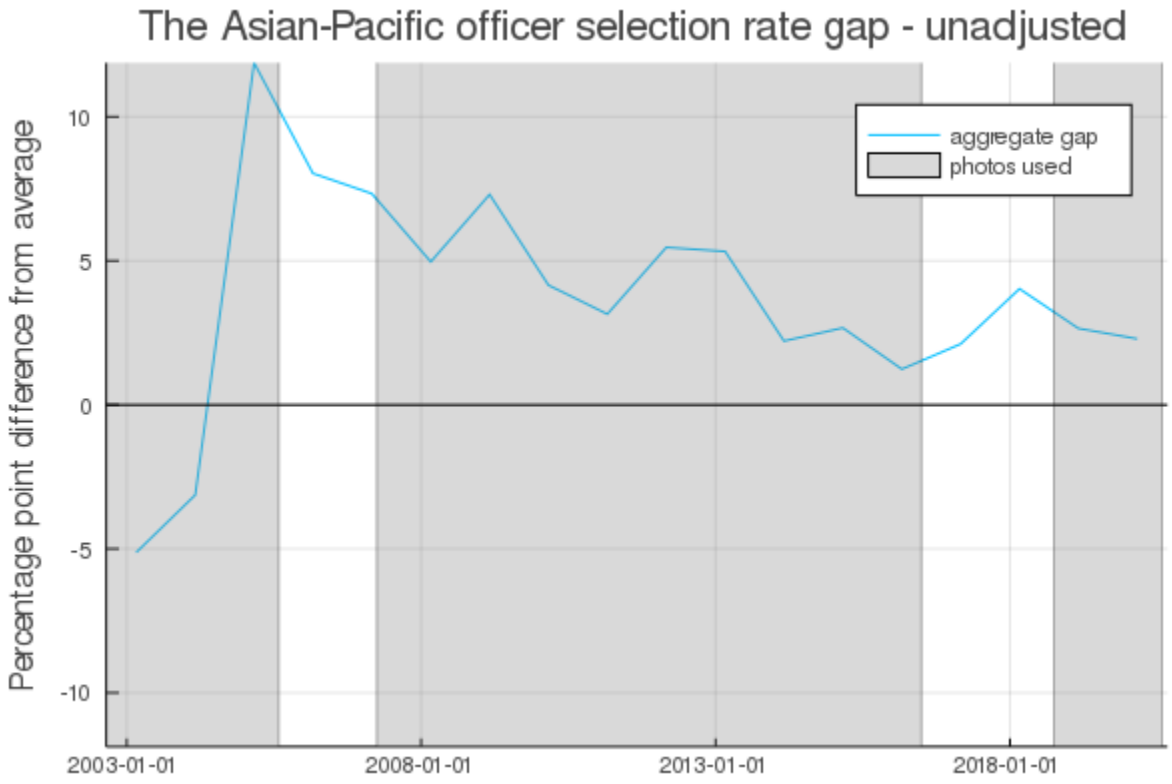
-2
-4
-6
2003-01-01
2008-01-01
2013-01-01
2018-01-01
adjusted gap
photos used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Percentage point difference from average
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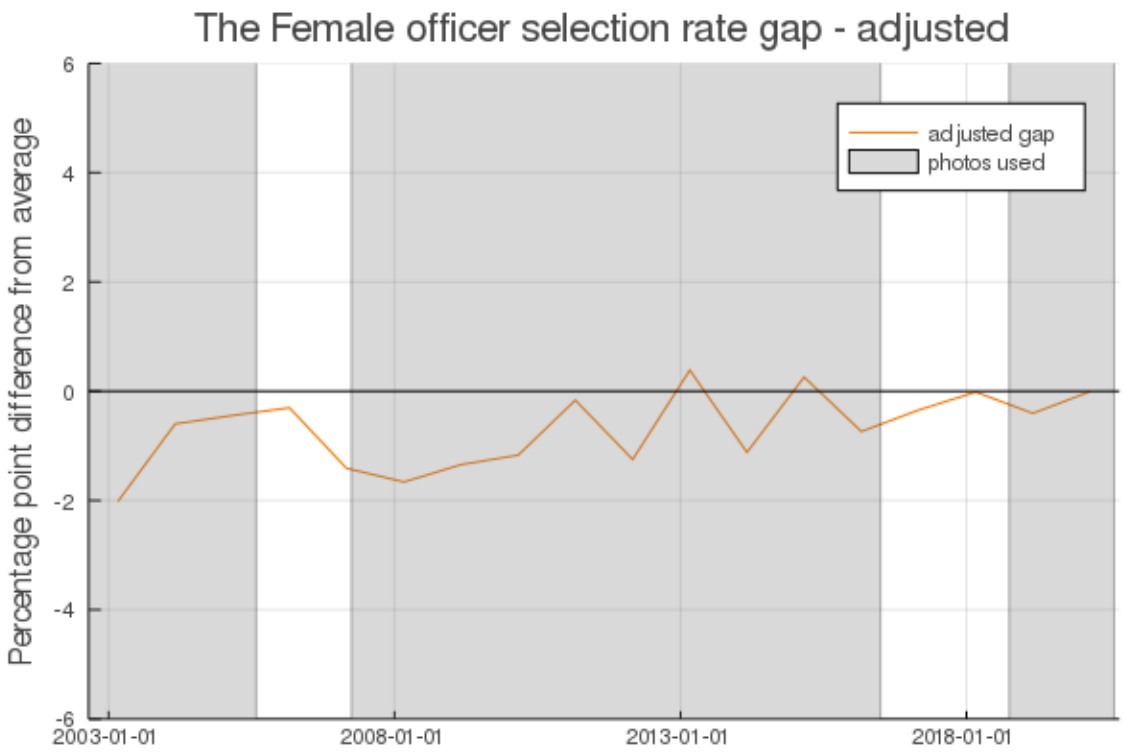
-5
-10
2003-01-01
2008-01-01
2013-01-01
2018-01-01
aggregate gap
photos used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Percentage point difference from average
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-2
-4
-6
2003-01-01
2008-01-01
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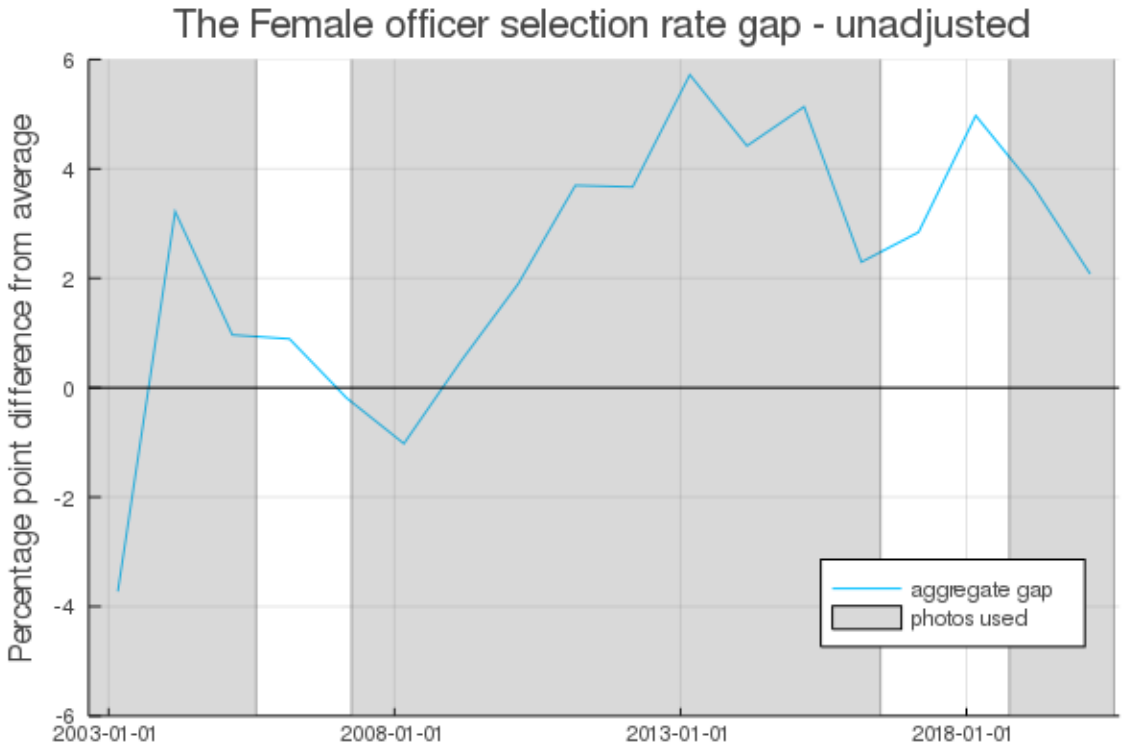
2018-01-01
adjusted gap
photos used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Percentage point difference from average
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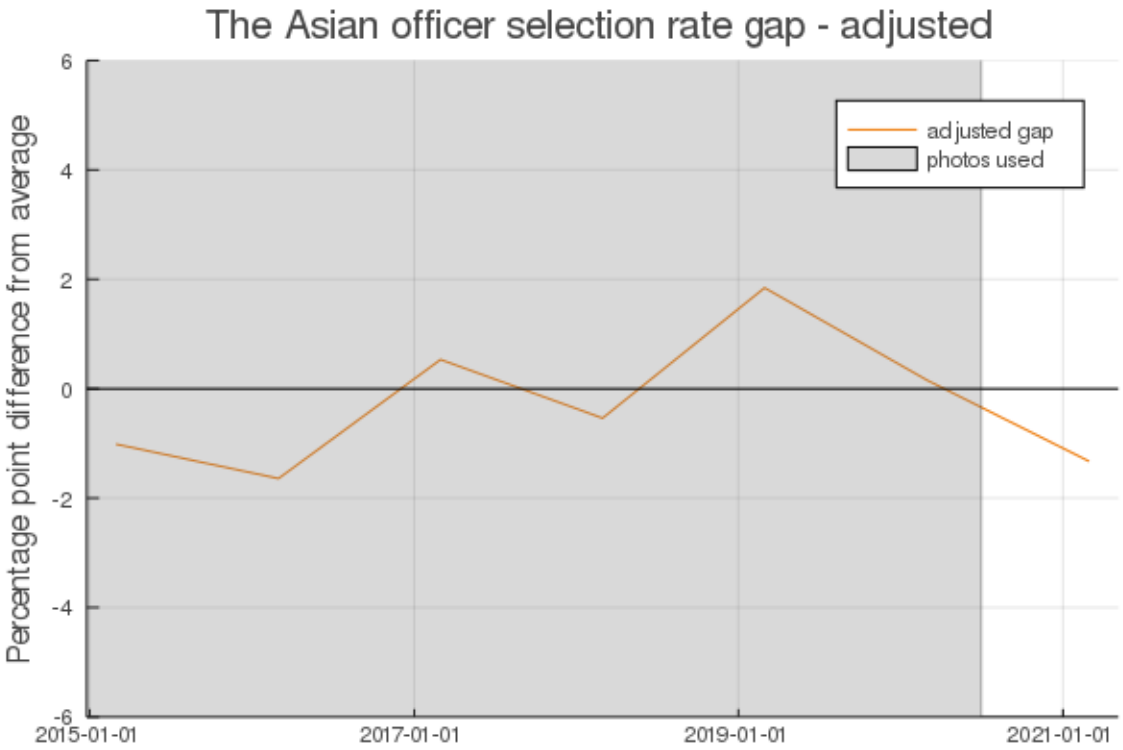
2008-01-01
2013-01-01
2018-01-01
aggregate gap
photos used

Army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Percentage point difference from average
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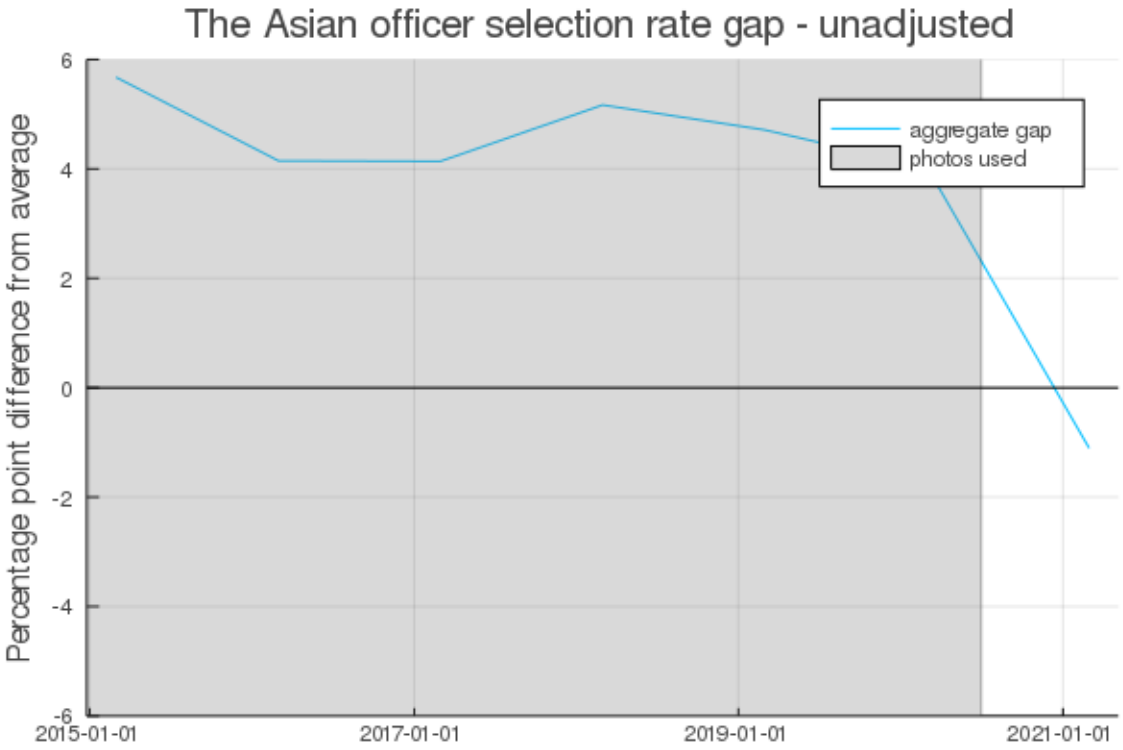
2017-01-01
2019-01-01
2021-01-01
adjusted gap
photos used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Percentage point difference from average
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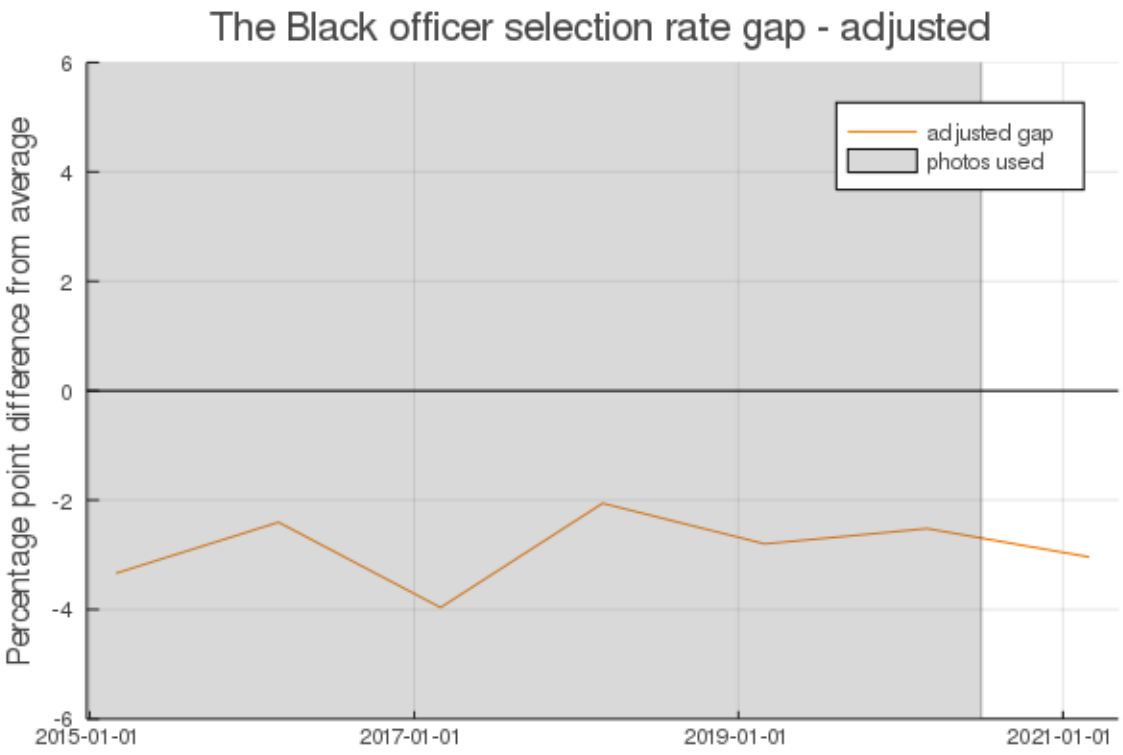
2017-01-01
2019-01-01
2021-01-01
aggregate gap
photos used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Percentage point difference from average
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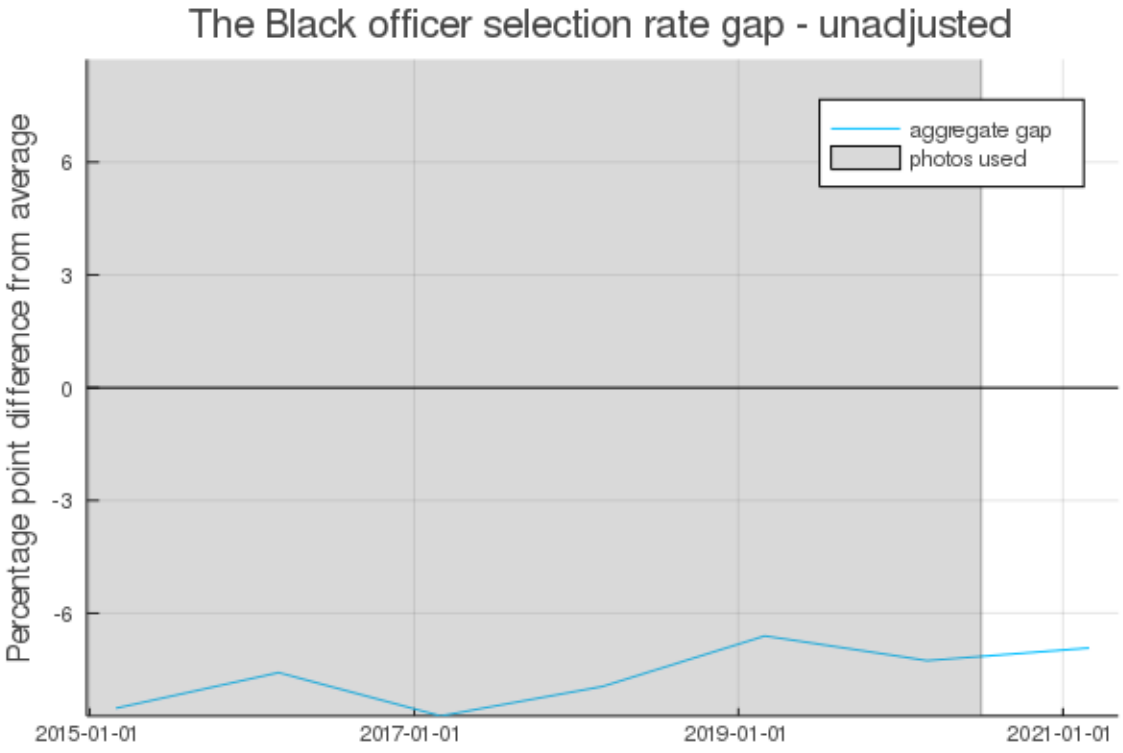
2019-01-01
2021-01-01
adjusted gap
photos used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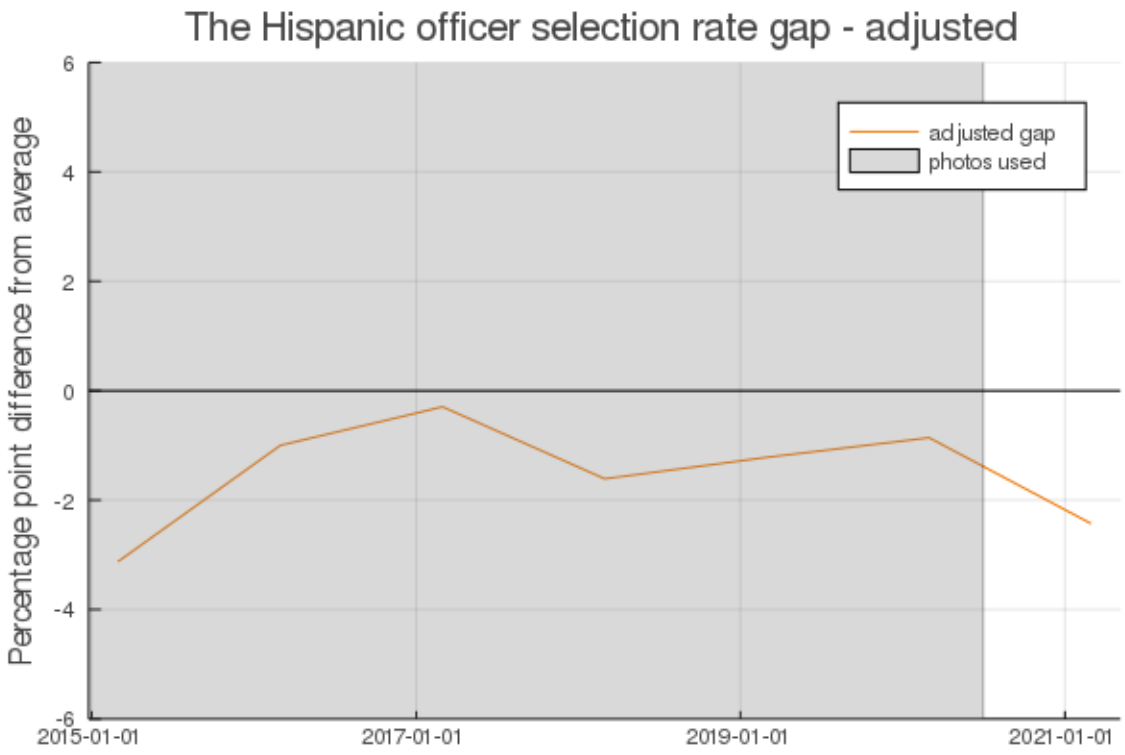
2019-01-01
2021-01-01
aggregate gap
photos used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Percentage point difference from average
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2019-01-01
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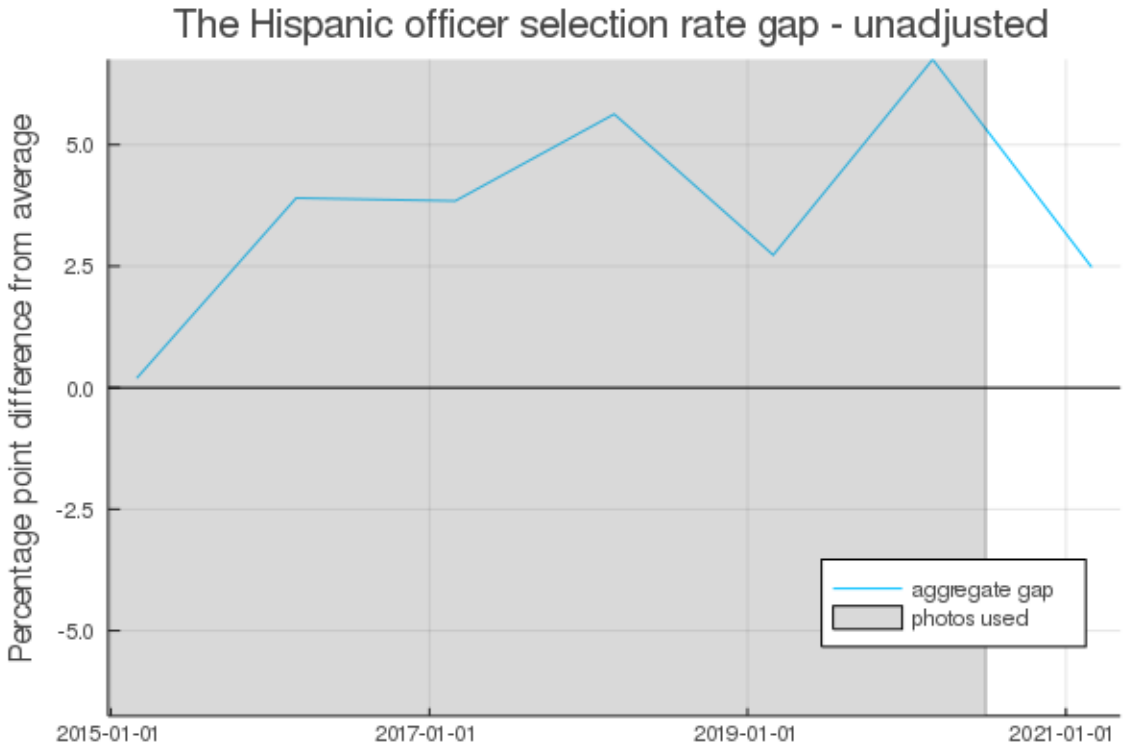
adjusted gap
photos used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Percentage point difference from average
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aggregate gap
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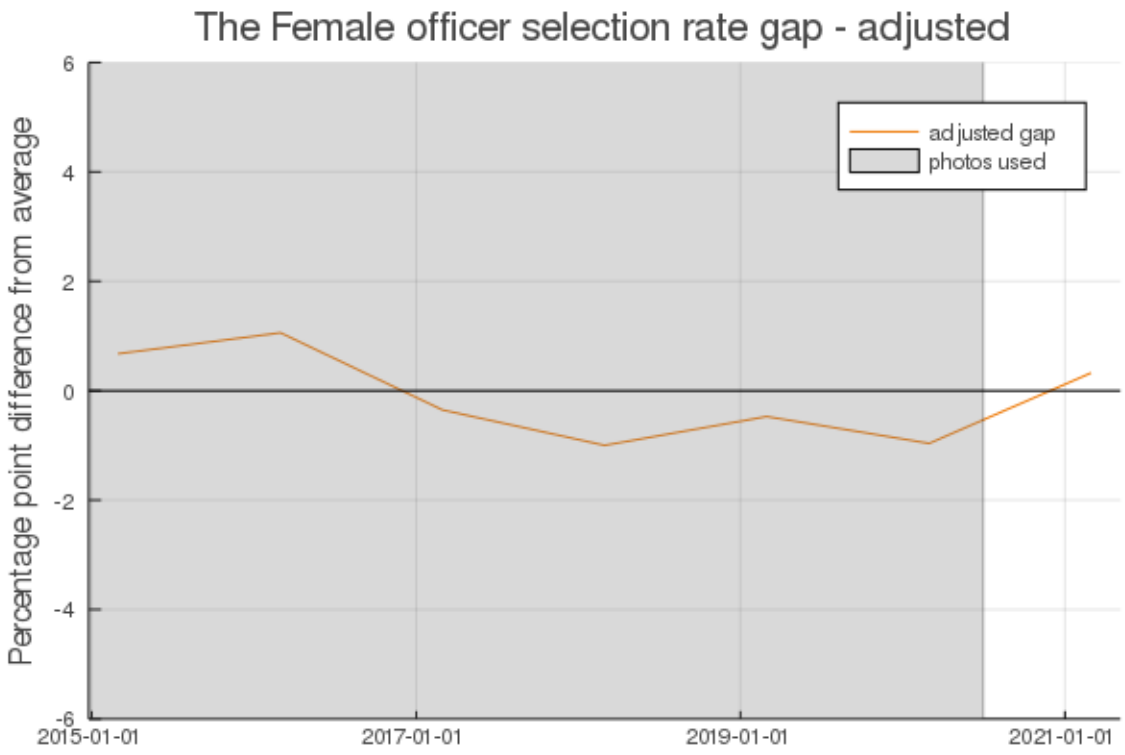
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Percentage point difference from average
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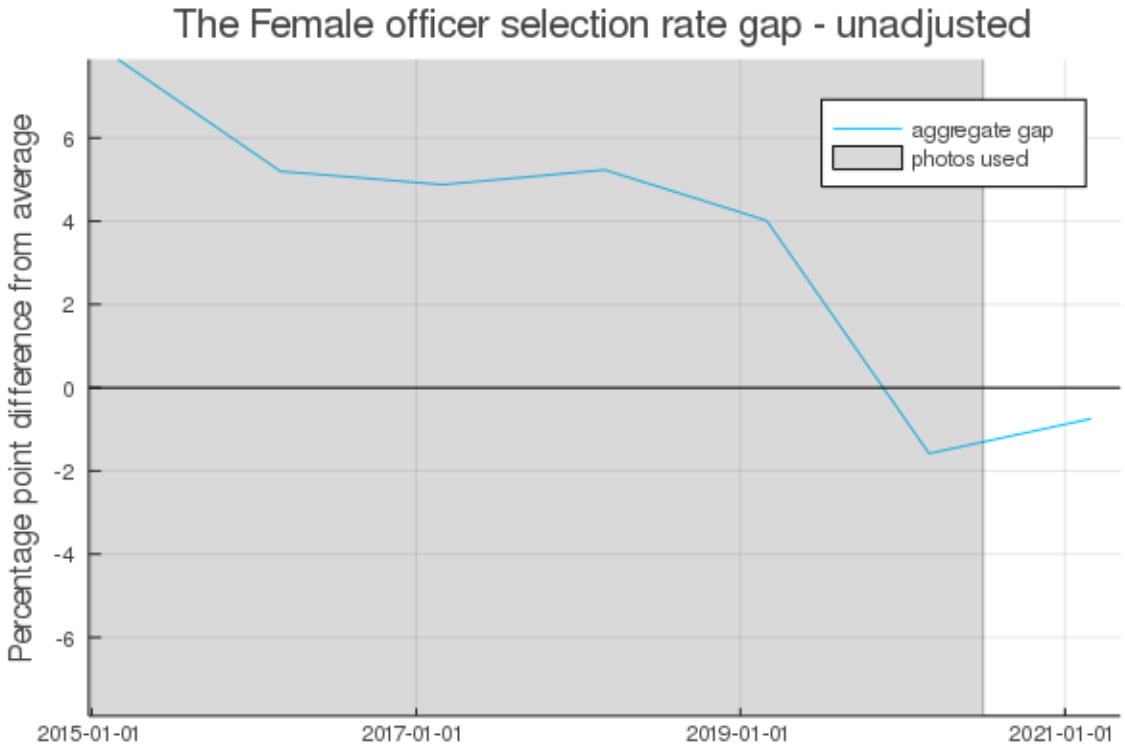
2021-01-01
adjusted gap
photos used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Percentage point difference from average
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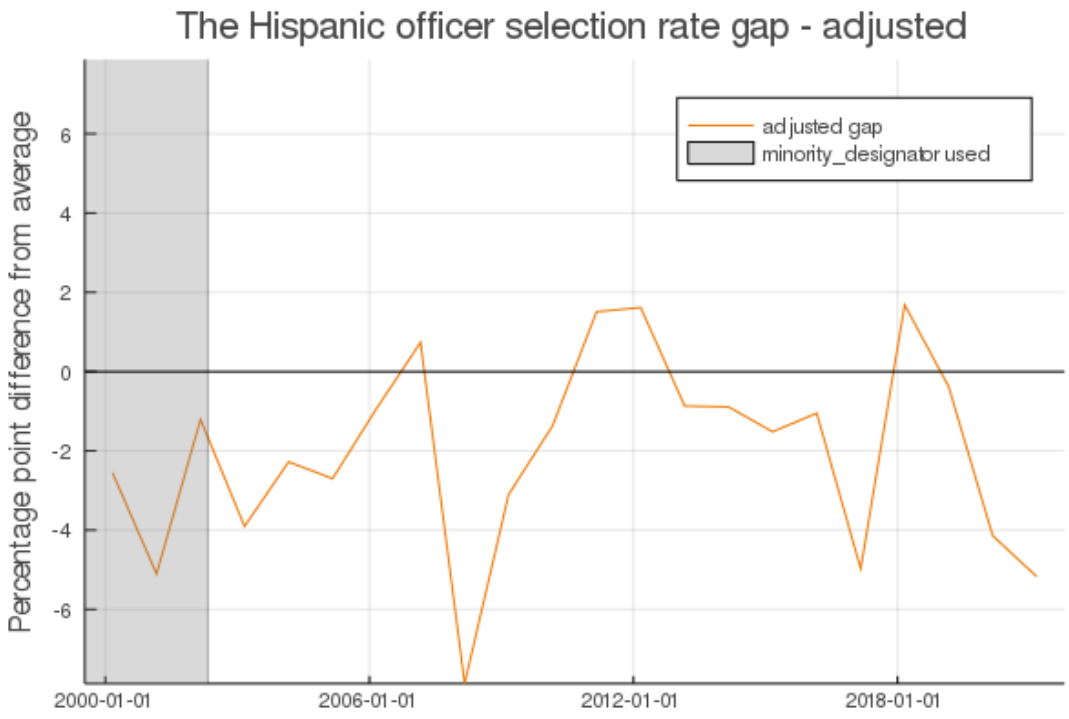
-4
-6
2015-01-01
2017-01-01
2019-01-01
2021-01-01
aggregate gap
photos used

Air Force


The Hispanic officer selection rate gap - adjusted
Percentage point difference from average
6
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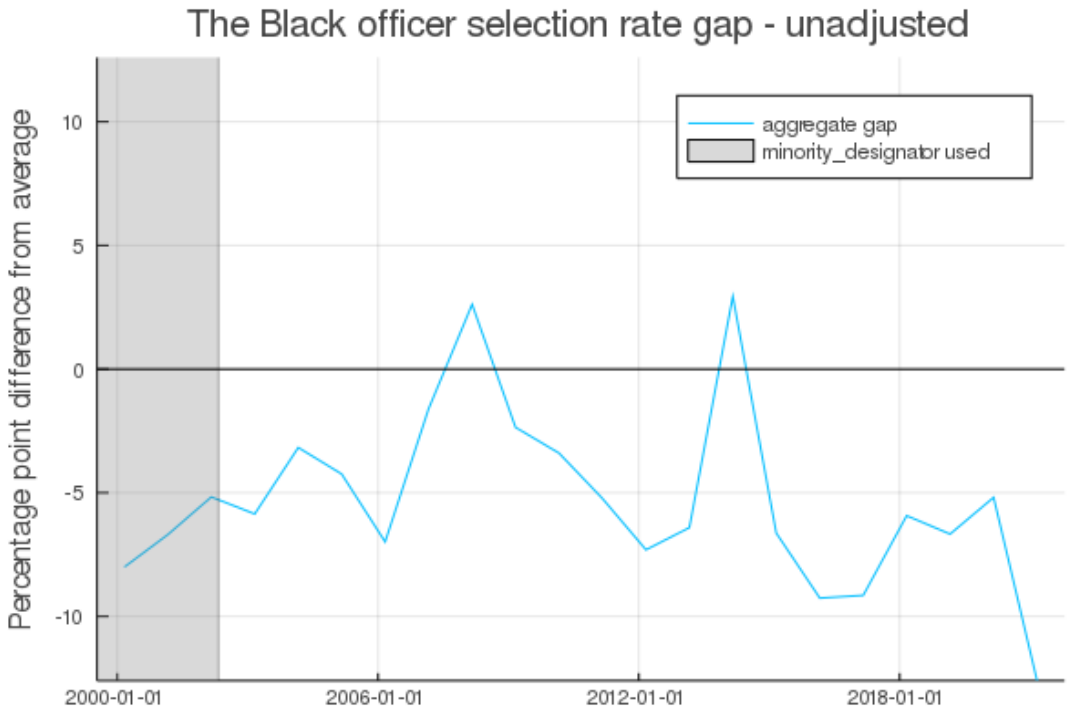
2
0
-2
-4
-6
2000-01-01
2006-01-01
2012-01-01
2018-01-01
adjusted gap
minority_designator used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Percentage point difference from average
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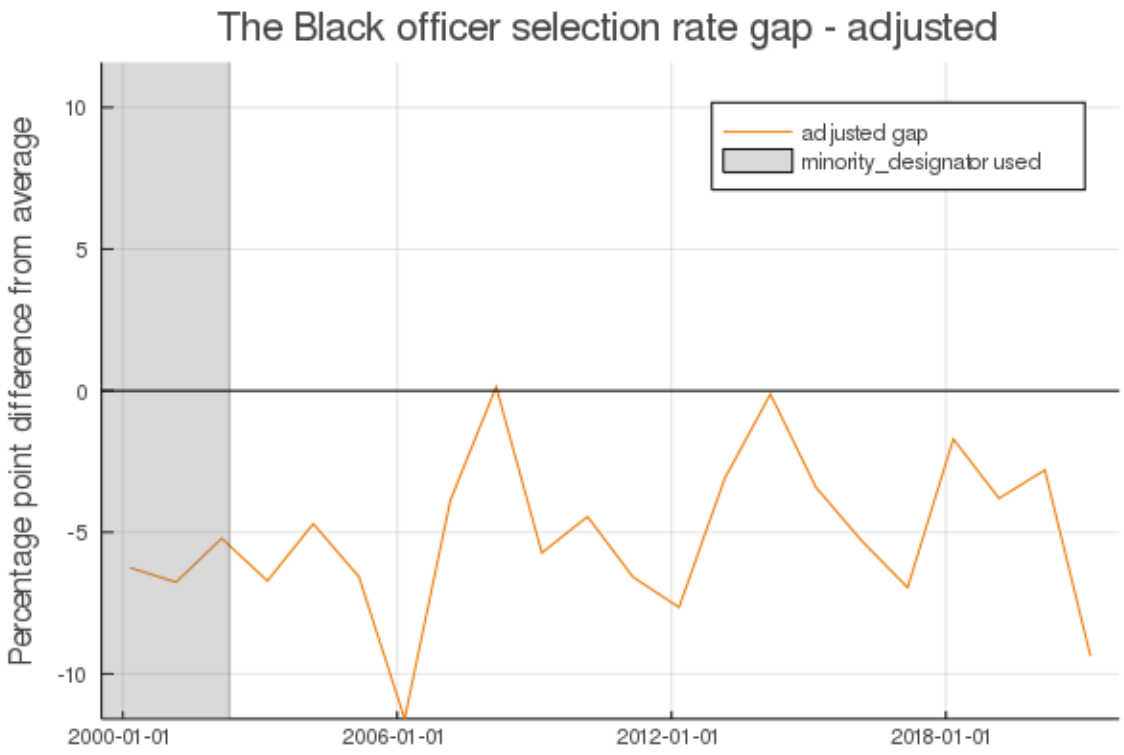
2006-01-01
2012-01-01
2018-01-01
aggregate gap
minority_designator used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Percentage point difference from average
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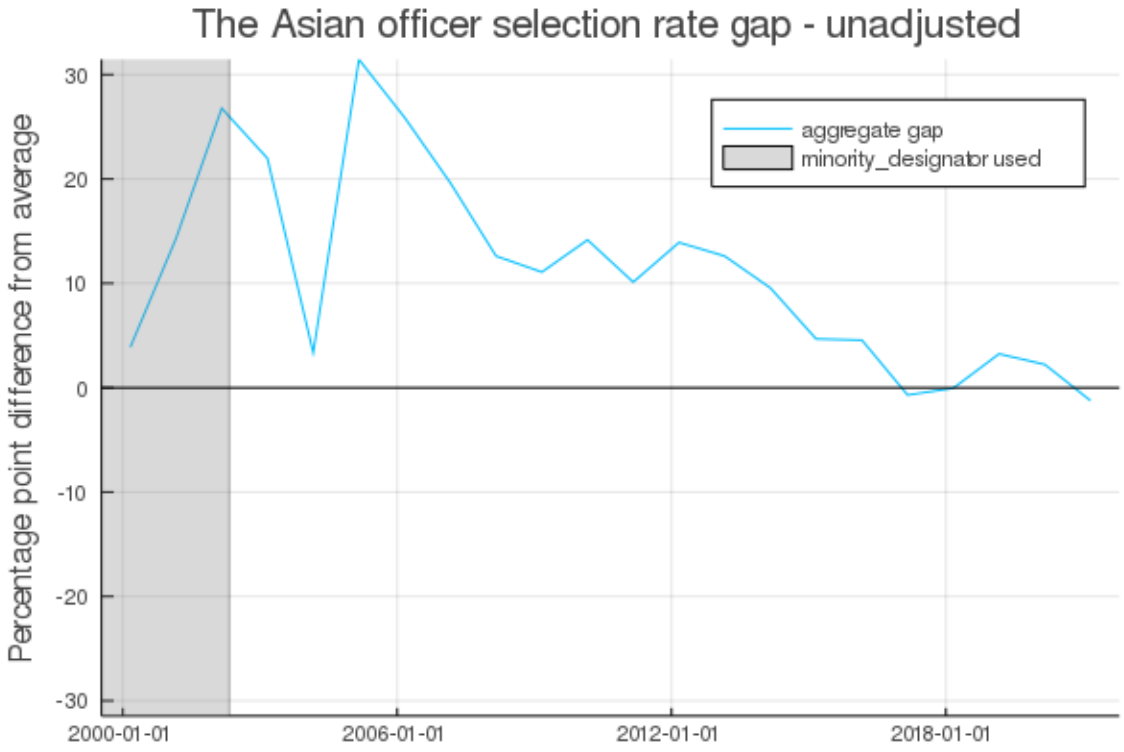
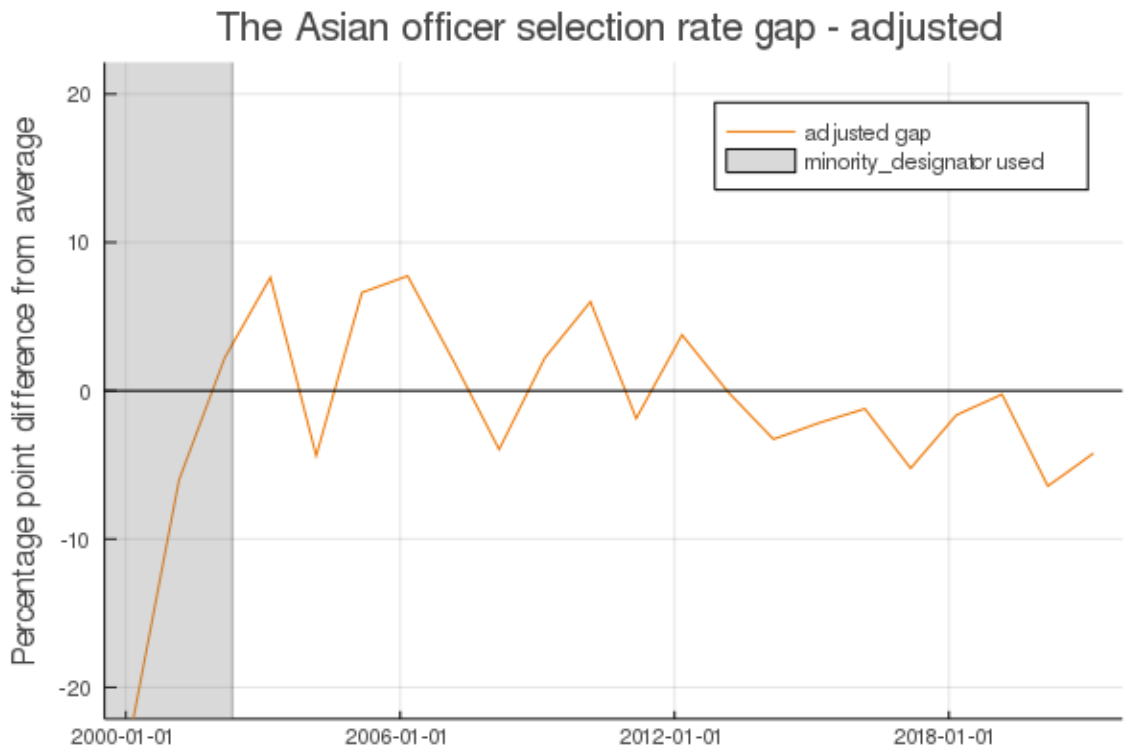
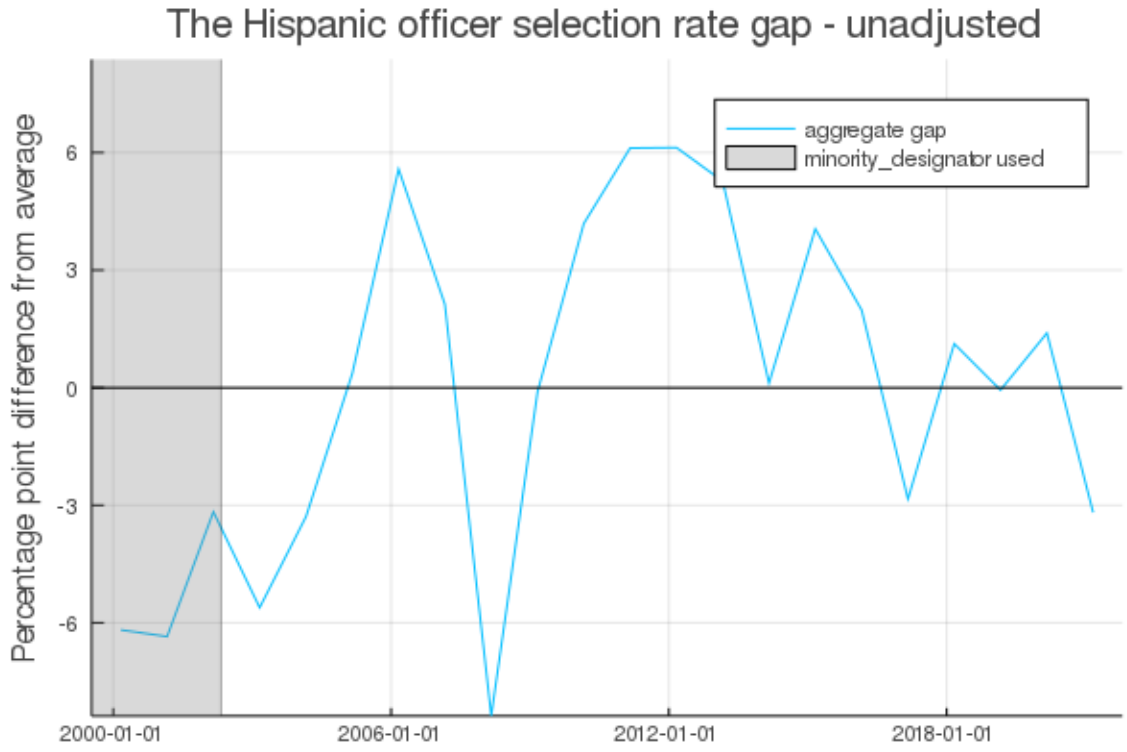
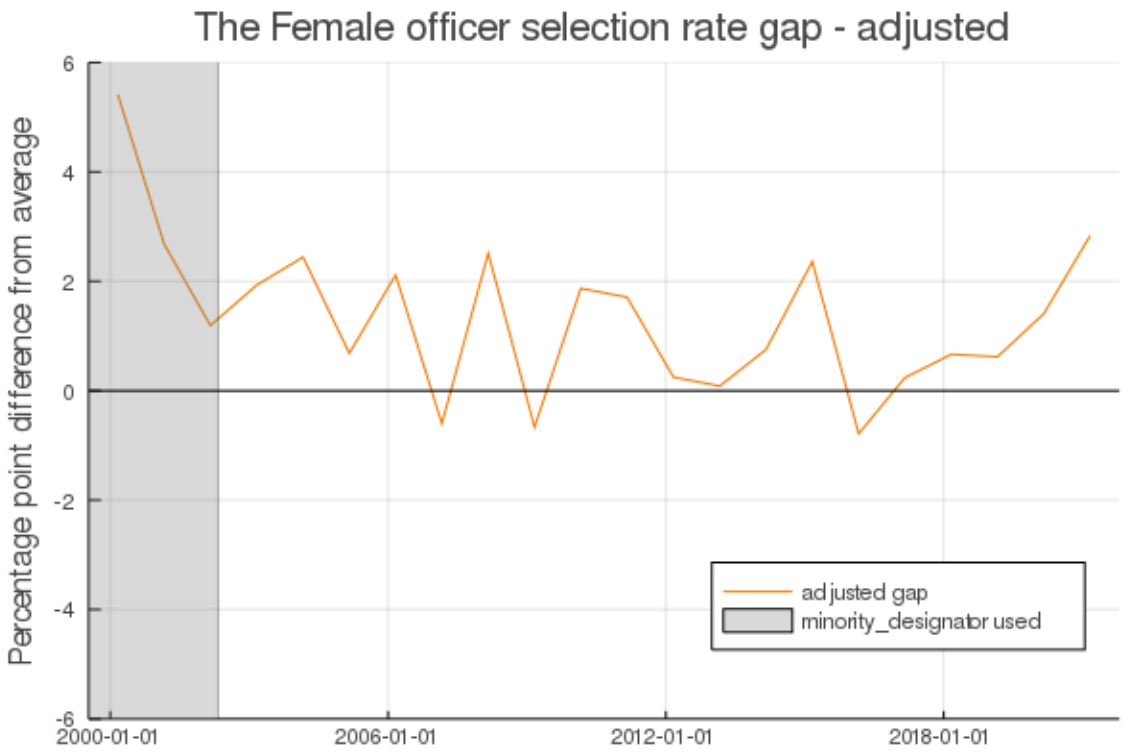
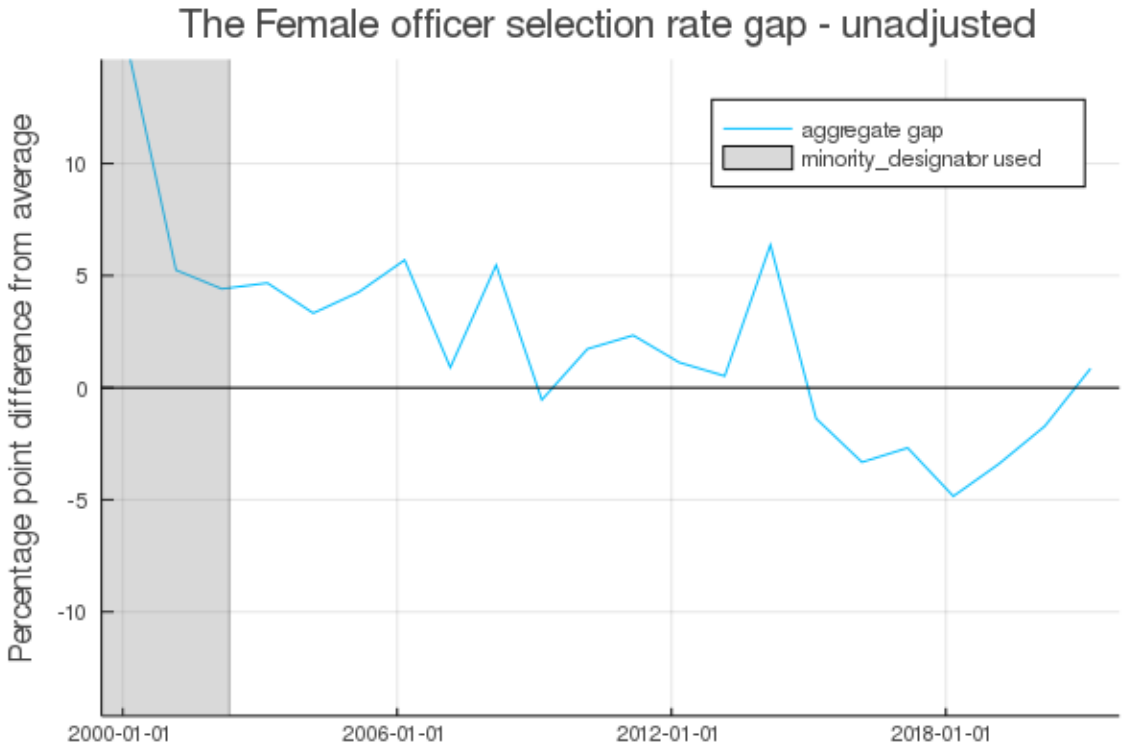
2000-01-01
2006-01-01
2012-01-01
2018-01-01
adjusted gap
minority_designator used


The Asian officer selection rate gap - unadjusted
Percentage point difference from average
30
20
10
0
-10
-20
-30
2000-01-01
2006-01-01
2012-01-01
2018-01-01
aggregate gap
minority_designator used


The Asian officer selection rate gap - adjusted
Percentage point difference from average
20
10
0
-10
-20
2000-01-01
2006-01-01
2012-01-01
2018-01-01
adjusted gap
minority_designator used


The Hispanic officer selection rate gap - unadjusted
Percentage point difference from average
6
3
0
-3
-6
2000-01-01
2006-01-01
2012-01-01
2018-01-01
aggregate gap
minority_designator used


The Female officer selection rate gap - adjusted
Percentage point difference from average
6
4
2
0
-2
-4
-6
2000-01-01
2006-01-01
2012-01-01
2018-01-01
adjusted gap
minority_designator used


The Female officer selection rate gap - unadjusted
Percentage point difference from average
10
5
0
-5
-10
2000-01-01
2006-01-01
2012-01-01
2018-01-01
aggregate gap
minority_designator used

Appendix D. Illustrations

Figures

Tables

Appendix E. References

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Appendix F. Abbreviations

CAP	Command Assessment Program
D&I	Diversity and Inclusion
DMDC	Defense Manpower Data Center
DOD	Department of Defense
DODI	Department of Defense Issuance
FY21	Fiscal Year 2021
HBCU	Historically Black College or University
HOR	Home-of-Record
IDA	Institute for Defense Analyses
M&RA	Manpower and Reserve Affairs
MOI	Memorandum of Instruction
MPP	Military Personnel Policy
NDAA	National Defense Authorization Act
NIH	National Institutes of Health
OCR	Optical Character Recognition
OEMA	Office of Economic and Manpower Analysis
OLEA	Office of Labor and Economic Analysis
OSD	Office of the Secretary of Defense
P&R	Personnel and Readiness
PME	Professional Military Education
SES	Socio-economic Status
USC	United States Code
USD	Office of the Under Secretary of Defense
ZCTA	Zip Code Tabulation Area

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14. ABSTRACT

This research by the Institute for Defense Analyses (IDA) assesses the potential impact of removing data that directly or indirectly identify race, ethnicity, and gender in Department of Defense (DOD) promotion/selection procedures and develops an implementation plan specifying recommended changes. IDA did not find evidence to suggest that removing indicators of race/ethnicity and gender (i.e., removing names and pronouns) would improve diversity outcomes. Given the lack of evidence on the efficacy of removing demographic indicators, and the labor-intensive process for doing so, IDA does not recommend DOD remove names and pronouns from promotion/selection board records at this time. Rather, IDA recommends that DOD consider strategies to strengthen board procedures and address key inputs to the boards (e.g., evaluations and developmental experiences).

15. SUBJECT TERMS

Promotion boards; Statutory selection processes; Non-statutory selection processes; Diversity; Bias; Fair processes

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