



Report to the Chairwoman,  
Committee on Oversight and Reform,  
House of Representatives

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March 2022

# WOMEN IN MANAGEMENT

Women Remain  
Underrepresented  
in Management  
Positions and  
Continue to Earn Less  
Than Male Managers

# GAO Highlights

Highlights of [GAO-22-105796](#), a report to the Chairwoman, Committee on Oversight and Reform, House of Representatives

## Why GAO Did This Study

Women make up nearly half of the U.S. workforce, yet they face disparities in pay and challenges in advancing their careers. GAO's 2010 report on this topic, which used data from 2007, found that women were underrepresented in management positions and that female managers earned 71 cents for every dollar earned by male managers. GAO was asked to update its 2010 report.

This report (1) examines the representation of women in management positions and the difference in pay between women and men in these positions, and (2) describes what recent GAO reports have found about women's representation in management positions and pay differences between women and men in certain sectors.

GAO analyzed the Census Bureau's ACS data from 2019 (the most recent year reliable data were available at the time of GAO's review). GAO's analysis is descriptive in nature, and neither confirms nor refutes the presence of discriminatory practices. GAO did not control for any variables in its analysis, including variables that would be expected to affect pay and representation, such as hours worked beyond full time. Because the ACS is a sample survey, all results presented in this report are estimates. All differences in this report are statistically significant at the 95 percent confidence level, unless otherwise noted. GAO also reviewed its recent reports on women's representation and pay in various sectors of the workforce.

View [GAO-22-105796](#). For more information, contact Thomas Costa at (202) 512-4769 or [costat@gao.gov](mailto:costat@gao.gov).

March 2022

## WOMEN IN MANAGEMENT

### Women Remain Underrepresented in Management Positions and Continue to Earn Less Than Male Managers

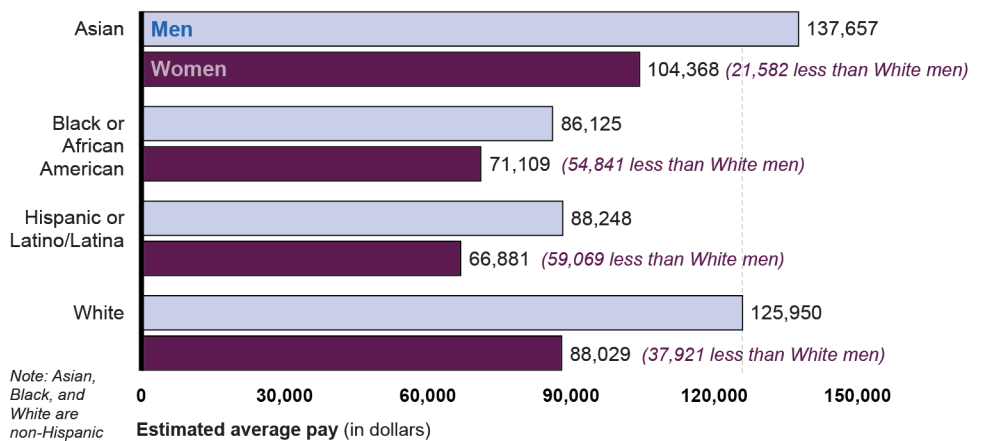
#### What GAO Found

In 2019, women remained underrepresented in management positions in the U.S. workforce and continued to earn less than male managers, according to GAO's analysis of the U.S. Census Bureau's American Community Survey (ACS) data. Since GAO last reported on this topic in 2010, using data from 2007, the percentage of managers who are women has increased by about 2 percentage points, and the pay gap between female and male managers has not changed.

**Women's representation in management.** GAO estimated that in 2019, about 42 percent of managers were women, which was less than the percentage of women in non-management positions (about 48 percent). Female managers were more likely to be younger, more educated, and unmarried, and less likely to be White (non-Hispanic) than male managers.

**Women's earnings.** GAO estimated that in 2019, across all industries, full-time female managers earned 71 cents for every dollar earned by full-time male managers, on average. This pay gap for full-time female managers was greater than the pay gap for all women working full time (82 cents for every dollar earned by men, on average). Compared to the average salary for White (non-Hispanic) men, the pay gap was greater for Black (non-Hispanic) and Hispanic/Latina women than for White and Asian (non-Hispanic) women (see figure). The pay gap was also greater for managers age 40 and older than for younger managers.

**Estimated Average Pay for Male and Female Full-time Managers by Race and Ethnicity, 2019**



Source: GAO analysis of the U.S. Census Bureau's American Community Survey data. | GAO-22-105796

GAO's recent work has found considerable differences between women and men in certain sectors of the workforce, both in management positions and in pay, with potential long-term implications for women's financial security. For example, GAO found that in the financial services industry in 2018, 31 percent of managers were women, while 69 percent were men. Additionally, in a 2020 report, GAO found that the gender pay gap for federal workers has narrowed, but remains. In another 2020 report, GAO found that the gender pay gap affected women's total earnings and may also affect retirement savings for older women.

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## Abbreviations

ACS	American Community Survey
Census Bureau	U.S. Census Bureau
PUMS	Public Use Microdata Sample

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March 7, 2022

The Honorable Carolyn B. Maloney  
Chairwoman  
Committee on Oversight and Reform  
House of Representatives

Dear Madam Chairwoman:

Women make up nearly half of the U.S. workforce, yet they face disparities in pay and challenges in advancing their careers. According to the U.S. Census Bureau (Census Bureau), among full-time workers, women earned 82 cents for every dollar earned by men in 2019.<sup>1</sup> We have previously reported on representation and pay for women in management positions. Specifically, we found that in 2007, women comprised a smaller percentage of managers (an estimated 40 percent) than non-managers (an estimated 49 percent), on average, across nearly all industries.<sup>2</sup> We also found that female managers earned 71 cents for every dollar earned by male managers, on average across these industries.<sup>3</sup>

You asked us to update our prior work to identify the current status of women in management positions in the U.S. workforce. This report (1) examines the representation of women in management positions and the difference in pay between women and men in these positions, and (2)

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<sup>1</sup>U.S. Census Bureau, *Unequally Essential: Women and Gender Pay Gap During COVID-19*, accessed on February 17, 2022,

<https://www.census.gov/library/stories/2021/03/unequally-essential-women-and-gender-pay-gap-during-covid-19.html>.

The Census Bureau has also reported that women are overrepresented in lower paying jobs and that the gender pay gap increases with age. See U.S. Census Bureau, *Gender Pay Gap Widens as Women Age*, accessed on February 17, 2022,

<https://www.census.gov/library/stories/2022/01/gender-pay-gap-widens-as-women-age.html>.

<sup>2</sup>See GAO, *Women in Management: Analysis of Female Managers' Representation, Characteristics, and Pay*, GAO-10-892R (Washington, D.C.: Sept. 20, 2010). We analyzed data from the U.S. Census Bureau's American Community Survey (ACS), for all of the industry categories used in the ACS except agriculture and mining.

<sup>3</sup>Our 2001 report on women's representation in management positions and pay had similar findings. See GAO, *Women in Management: Analysis of Selected Data from the Current Population Survey*, GAO-02-156 (Washington, D.C.: Oct. 23, 2001).

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describes what recent GAO reports have found about women's representation in management positions and pay differences between women and men in certain sectors. We plan to conduct a broader review of women in management and expect to issue a report on the results of that work next year.

To address our first objective, we analyzed 2019 data from the Census Bureau's American Community Survey (ACS). At the time of our review, 2019 data were the most recent reliable data available.<sup>4</sup> We included data on managers across all of the broad industry categories used in the ACS, representing the entire civilian workforce, and defined "managers" as all individuals classified under the "manager occupation" category in the ACS.<sup>5</sup> To analyze the difference in pay between female and male managers, we used wages or salary income over the prior 12 months for full-time managers.<sup>6</sup> We also analyzed ACS data to describe the key characteristics of men and women in management positions, such as race, ethnicity, and age. We compared our analysis results for the 2019 ACS data to our previous analysis results for the 2007 ACS data, which we reported in 2010.<sup>7</sup>

Our analysis is descriptive in nature, and neither confirms nor refutes the presence of discriminatory practices. We did not control for any variables in our analysis of pay differences or representation within management, including variables that would be expected to affect pay or representation, such as hours worked beyond full time.<sup>8</sup> Because the ACS is a sample

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<sup>4</sup>Due to the COVID-19 pandemic, the Census Bureau had to change its data collection strategies for the 2020 ACS. Despite its efforts to mitigate the data collection disruptions and modify the weighting adjustments focused on known sources of bias, the Census Bureau determined that the estimates produced in the 2020 ACS did not meet statistical quality standards. As a result, these data did not meet our data reliability standards for the purposes of this report, so we used the 2019 data.

<sup>5</sup>This includes a range of occupations across industries, such as chief executives, food service managers and construction managers.

<sup>6</sup>Throughout this report, we refer to wages or salary income over the prior 12 months as "salary."

<sup>7</sup>See [GAO-10-892R](#).

<sup>8</sup>By not controlling for factors that could or are expected to affect pay or representation, we were not able to isolate potential causes of differences in pay and managerial representation by gender. Since we did not control for factors such as hours worked, the differences between women and men in pay and managerial representation likely also partly reflect these differences.

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survey, all of the ACS analysis results presented in this report are estimates. All of the differences that we discuss in this report are significant at the 95 percent confidence level, unless otherwise noted. We assessed the reliability of the ACS data by reviewing documentation on the general design and methods of the ACS and on the specific elements of the data that we used in our analysis, and by completing our own electronic data testing to assess the accuracy and completeness of the data. Based on these efforts, we determined that the 2019 data were sufficiently reliable for our purposes.

To address our second objective, we reviewed GAO reports issued from 2017 through 2021 on women's representation in management positions and pay differences between women and men in certain sectors.<sup>9</sup> These reports used a variety of data sources and methodologies to examine disparities in a wide range of settings. See appendix I for a detailed description of our methodology.

We conducted this performance audit from February to March 2022 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

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## Background

In 2019, according to ACS data, there were an estimated 159 million workers in the U.S. workforce. An estimated 48 percent of these workers were women and 52 percent were men. In addition, an estimated 11 percent of these workers, or about 17 million workers, were in management positions.

Because we analyzed 2019 data, our analysis predates the COVID-19 pandemic. During the pandemic, researchers have found that there were larger employment declines among women than men.<sup>10</sup> In addition, they found that the employment decline was especially pronounced among

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<sup>9</sup>For a detailed list of related GAO reports, see the Related Products section at the end of this report.

<sup>10</sup>For example, see Alon, Titan, Sena Coskun, Matthias Doepke, David Koll, Michèle Tertilt, "From Mancession to Shecession: Women's Employment in Regular and Pandemic Recessions," *National Bureau of Economic Research Macroeconomics Annual 2021*, vol. 36 (2021).

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women with children. Moreover, researchers found that women working from home during the pandemic spent more work time performing childcare duties and experienced greater reductions in work productivity than men. However, the long-term impact of the COVID-19 pandemic on women's representation in management remains unclear and is an area of ongoing research.<sup>11</sup>

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## Women Remain Underrepresented in Management Positions and Continue to Earn Less on Average Than Male Managers

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### Women Remain Underrepresented in Management Positions and Their Representation Varied by Industry

In 2019, across all industries combined, women were underrepresented in management positions, according to our analysis of data from the Census Bureau's ACS.<sup>12</sup> Specifically, we estimated that in 2019, about 42 percent of managers were women, which was less than both the percentage of women in the overall workforce and the percentage of women in non-management positions (both about 48 percent). Notably, the percentage of managers who were women was about 2 percentage points greater in 2019 than in 2007.<sup>13</sup>

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<sup>11</sup>According to a report by the Brookings Institution, women have returned to the workforce at rates similar to men. However, work patterns have changed. Specifically, both women and men are switching jobs and changing industries at higher rates than before the pandemic. Additionally, some working parents, including mothers, have made decisions such as reducing their hours or declining promotions during the pandemic. These changes can have implications for women's careers and future earnings. See The Hamilton Project, *Women, Work, and Families: Recovering from the Pandemic-Induced Recession* (Washington, D.C.: The Brookings Institution, September 2021).

<sup>12</sup>Because the ACS is a sample survey, all of the ACS analysis results presented in this report are estimates. All of the differences that we discuss in this report are significant at the 95 percent confidence level, unless otherwise noted.

<sup>13</sup>Our 2010 report found that in 2007, women were underrepresented in management positions, comprising an estimated 40 percent of managers on average across nearly all industries. See [GAO-10-892R](#).



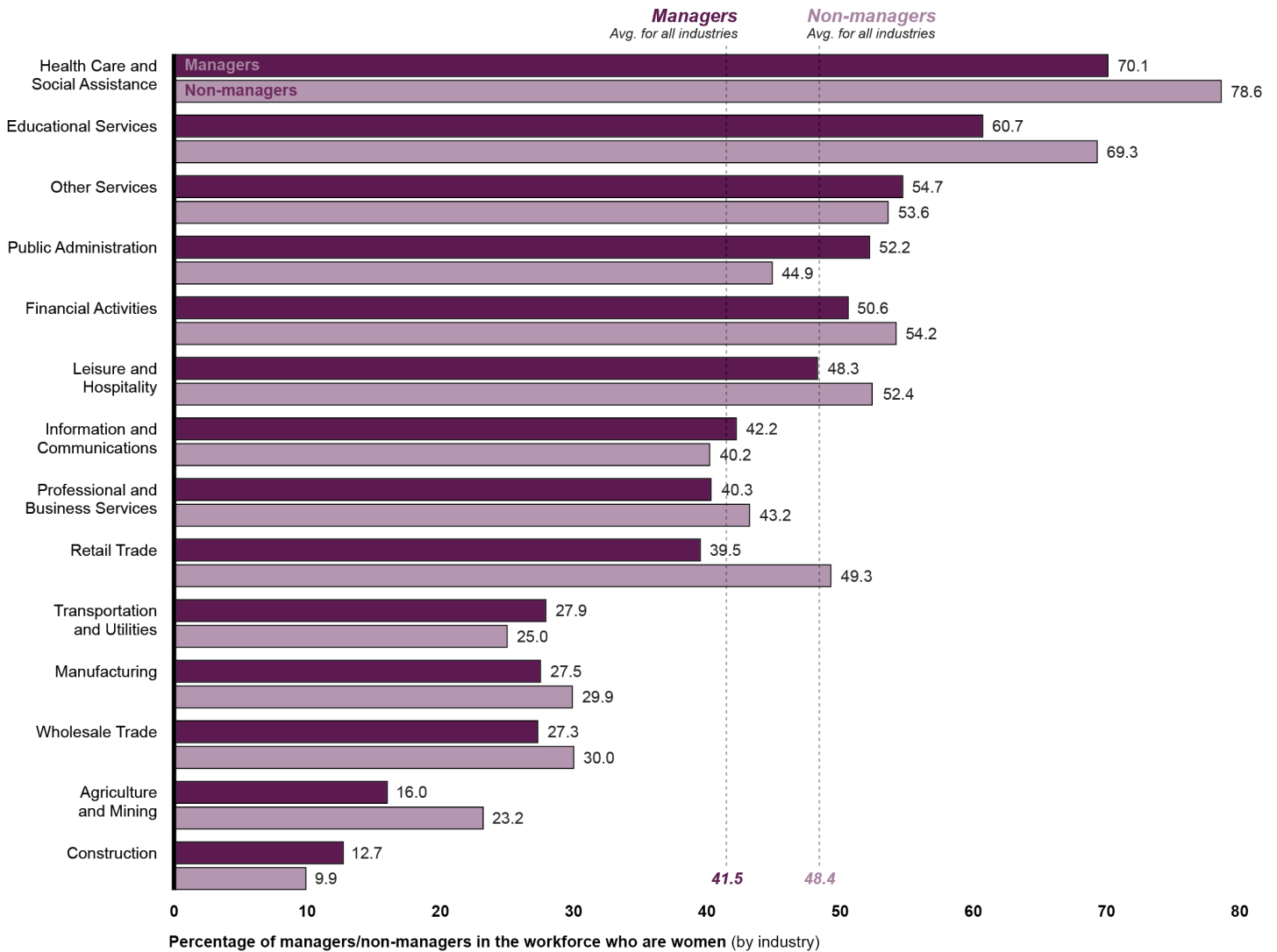
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Our analysis of ACS data shows that women’s representation in management positions varied by industry. Specifically, we estimated that in 2019, women were underrepresented in management positions in 9 of 14 industries, compared to their representation in non-management positions (see fig. 1).<sup>14</sup> In two of these industries, more than two-thirds of all workers were women, but women were still underrepresented in management compared to non-management positions. For example, in the Health Care and Social Assistance industry, women comprised about 70 percent of managers and 79 percent of non-managers. Similarly, in the Educational Services industry, women comprised about 61 percent of managers and 69 percent of non-managers. Among the industries in which women were overrepresented in management positions, the percentage of female managers was greatest in Public Administration (about 52 percent, as compared to 45 percent of non-managers).

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<sup>14</sup>We examined whether the differences in female representation between managers and non-managers were statistically significant at the 95 percent confidence level. We found that women were underrepresented in management positions in nine industries, women were overrepresented in four industries, and the difference was not statistically significant in one industry (Other Services).

**Figure 1: Women’s Estimated Representation in Management and Non-management Positions by Industry, 2019**



Source: GAO analysis of the U.S. Census Bureau’s American Community Survey data. | GAO-22-105796

Note: Differences in women’s representation between managers and non-managers were statistically significant at the 95 percent confidence level for all industries except Other Services. Other Services includes a wide variety of services and organizations, such as automotive repair and maintenance, barber shops and beauty salons, dry cleaning and laundry services, funeral homes, religious organizations, civic organizations, and labor unions.

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Compared to Male Managers, Female Managers Were More Likely to Be Younger and Have at Least a Bachelor's Degree, among Other Differences

Based on our analysis of ACS data, we estimated that across all industries in 2019, most managers were at least 40 years old (about 65 percent), had a bachelor's degree or higher (about 56 percent), were White (about 72 percent), and were married (about 66 percent).<sup>15</sup> However, there were some differences between female and male managers with respect to these characteristics.

As shown in figure 2, our analysis of ACS data shows that across all industries in 2019:

- **Female managers were more likely to be younger than male managers.** The average age for female managers was 44, and for male managers it was 47. In addition, female managers were more likely than male managers to be under 40 years old (about 38 percent and 32 percent, respectively).<sup>16</sup>
- **Female managers were more likely than male managers to have a bachelor's degree or higher.** About 59 percent of female managers and about 54 percent of male managers had a bachelor's degree or higher.<sup>17</sup> Similarly, in a 2020 report on federal workers, we found that women were slightly more likely than men to have a bachelor's degree or higher.<sup>18</sup>
- **Female managers were less likely to be White (non-Hispanic) than male managers.**<sup>19</sup> About 69 percent of female managers were

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<sup>15</sup>Our analysis of managers' characteristics included both full-time and part-time managers.

<sup>16</sup>We similarly found that female managers were more likely to be under the age of 40 than male managers in 2007 (an estimated 38 percent and 33 percent, respectively). See [GAO-10-892R](#).

<sup>17</sup>This has changed since our 2010 report. In that report, we found that female managers were less likely than male managers to have a bachelor's degree or higher in 2007 (an estimated 51 percent and 56 percent, respectively). See [GAO-10-892R](#).

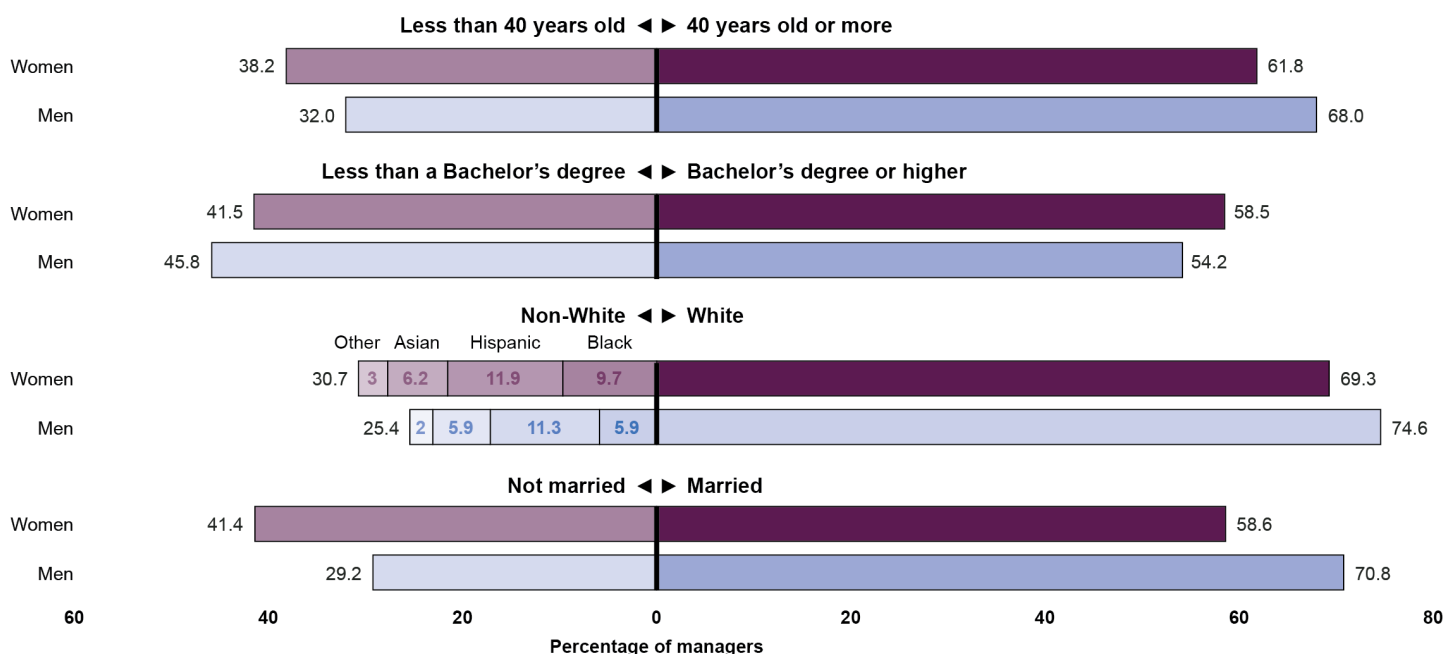
<sup>18</sup>Specifically, we found that among federal workers in 2017, about 53 percent of women had a bachelor's degree or higher, compared to about 51 percent of men. See *Gender Pay Differences: The Pay Gap for Federal Workers Has Continued to Narrow, but Better Quality Data on Promotions Are Needed*, [GAO-21-67](#) (Washington, D.C.: Dec. 3, 2020).

<sup>19</sup>In the ACS survey, individuals are first asked about their ethnicity and then asked about their race. We combined the race and ethnicity categories into a single variable with the following categories: (1) American Indian or Alaska Native (non-Hispanic), (2) Asian (non-Hispanic), (3) Black or African American (non-Hispanic), (4) Hispanic/Latino, (5) Native Hawaiian or Other Pacific Islander (non-Hispanic), (6) White (non-Hispanic), and (7) Other or Multiracial (non-Hispanic).

White (non-Hispanic), compared to about 75 percent of male managers. In addition, about 10 percent of female managers were Black (non-Hispanic), compared to about 6 percent of male managers.<sup>20</sup> The differences between the percentages of female and male managers in other racial and ethnic groups were smaller. For example, about 12 percent of female managers were Hispanic, compared to about 11 percent of male managers.

- **Female managers were less likely to be married than male managers.** About 59 percent of female managers were married, compared to about 71 percent of male managers.<sup>21</sup>

**Figure 2: Estimated Percentage of Women and Men in Management, by Key Characteristics, 2019**



Source: GAO analysis of the U.S. Census Bureau's American Community Survey data. | GAO-22-105796

Note: In the figure above, the Asian, Black, Other, and White categories are non-Hispanic. All differences in key characteristics between women and men in management positions were statistically significant at the 95 percent confidence level.

<sup>20</sup>We similarly found that female managers were more likely to be Black than male managers in certain industries in 2007. See [GAO-10-892R](#).

<sup>21</sup>We similarly found that female managers were less likely to be married than male managers in 2007 (an estimated 59 percent and 74 percent, respectively). See [GAO-10-892R](#).

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## Full-Time Female Managers Continued to Earn Less on Average Than Male Managers, and the Gap Was Greater for Certain Groups

Our analysis of ACS data shows that among managers who worked full-time, female managers earned less than male managers, on average, across all industries in 2019. That year, the average salary earned across all full-time managers was an estimated \$105,031.<sup>22</sup> However, female managers earned an estimated \$34,977 less than male managers (an estimated \$84,583 for female managers compared to an estimated \$119,560 for male managers).<sup>23</sup> In percentage terms, this implies that female managers earned 71 cents for every dollar earned by male managers in 2019. This gender pay gap for full-time managers was greater than the pay gap for all women working full time, who earned 82 cents for every dollar earned by men in 2019, according to the Census Bureau.<sup>24</sup> Furthermore, the gender pay gap among managers has not changed since 2007.<sup>25</sup>

According to our analysis of ACS data, the gender pay gap for full-time managers was greater for Hispanic/Latina women and Black (non-Hispanic) women than for White (non-Hispanic) women, across all industries in 2019. Specifically, compared to the estimated average salary for White men, the average salary was \$59,069 less for Hispanic/Latina women, \$54,841 less for Black (non-Hispanic) women, and \$37,921 less for White (non-Hispanic) women (see fig. 3). However, the estimated average salary for Asian (non-Hispanic) women was \$21,582 less than for White men, making the pay gap for Asian (non-Hispanic) women smaller than for White women. Similarly, in our 2020 report on federal

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<sup>22</sup>The median salary across all full-time managers was an estimated \$79,041. The likely explanation for this difference between the average and median salary is that the average salary is more affected by extremely high and low salary amounts than the median salary.

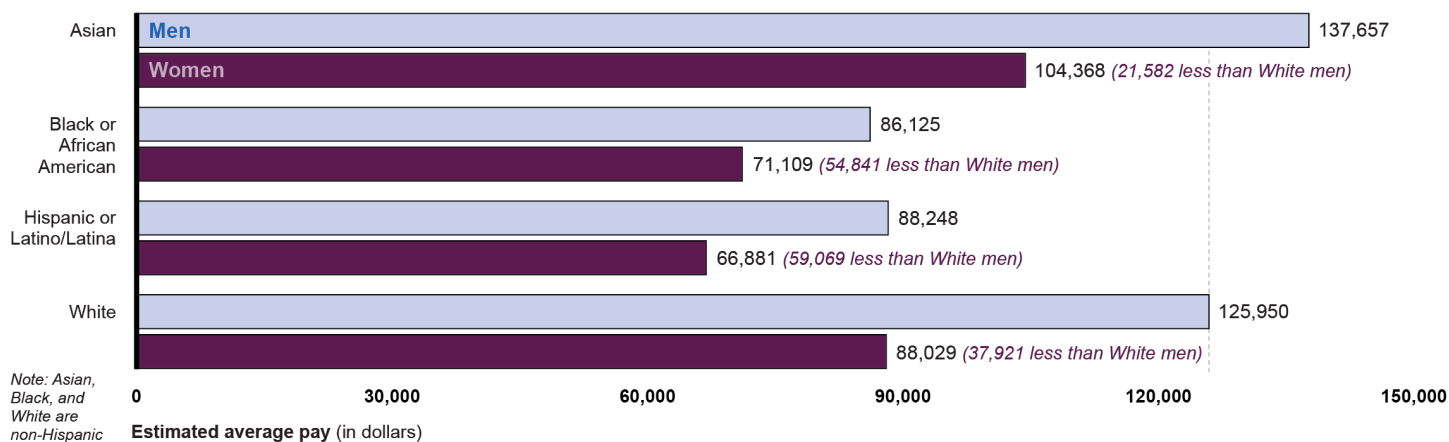
<sup>23</sup>For the purposes of this report, we present the overall pay gap. We did not conduct statistical modeling analysis to control for various factors that affect pay. With respect to median salary, full-time female managers earned an estimated \$23,438 less than full-time male managers (an estimated \$65,767 for female managers compared to an estimated \$89,205 for male managers).

<sup>24</sup>For the purposes of this report, we define the gender pay gap as the difference between the average wages or salary income of full-time male and female managers over the prior 12 months.

<sup>25</sup>See [GAO-10-892R](#).

workers, compared to the gender pay gap for White women, we found that the pay gap was greater for Hispanic/Latina and Black women.<sup>26</sup>

**Figure 3: Estimated Average Pay for Male and Female Full-time Managers by Race and Ethnicity, 2019**



Source: GAO analysis of the U.S. Census Bureau's American Community Survey data. | GAO-22-105796

Note: All differences in average pay between women and men in management positions were statistically significant at the 95 percent confidence level. The salary data in the figure above are estimates based on a sample of survey respondents. This figure does not include average salary data for full-time managers who were American Indian/Alaska Native (non-Hispanic), Native Hawaiian/Pacific Islander (non-Hispanic), or Other or Multiracial (non-Hispanic), because the estimates for those groups had higher margins of error due to smaller sample sizes. The existence of a pay gap, taken alone, does not establish the causes of the disparity, including whether unlawful discrimination has occurred.

In addition, our analysis of ACS data shows that the gender pay gap for full-time managers was greater for older workers than for younger workers, across all industries in 2019. For full-time managers who were age 40 and older, the average salary for female managers was an estimated \$39,403 less than the average salary for male managers (an estimated \$95,475 for female managers compared to an estimated \$134,878 for male managers).<sup>27</sup> For full-time managers who were under age 40, the average salary for female managers was an estimated

<sup>26</sup>We found that annual average pay for Asian, Native Hawaiian, or Pacific Islander women was higher than annual average pay for White men, before controlling for factors that affect pay. For the purposes of that report, we analyzed a different dataset and used slightly different race and ethnicity categories. See [GAO-21-67](#).

<sup>27</sup>In a 2022 report on federal workers age 40 and older, which used fiscal year 2017 data, the Equal Employment Opportunity Commission similarly found a pay gap between women and men in that age group in the federal workforce. See U.S. Equal Employment Opportunity Commission, *Special Topics Annual Report: The State of Federal Sector Age Discrimination*, February 14, 2022.

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\$20,896 less than the average salary for male managers (an estimated \$66,840 and \$87,736, respectively). In percentage terms, this implies that full-time female managers who were age 40 and older earned 71 cents for every dollar earned by male managers in that age group, while full-time female managers under age 40 earned 76 cents for every dollar earned by male managers in that age group.

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## Prior GAO Reports Found Considerable Differences between Women and Men in Certain Sectors, in Both Management Positions and Pay

Our recent work has found considerable differences between women and men in the percentage of management positions they hold in certain sectors, as well as in their pay within the federal workforce. In addition, our prior work has examined some longer-term implications of the gender pay gap in estimating the potential effects of such pay differences on women's and men's retirement savings.

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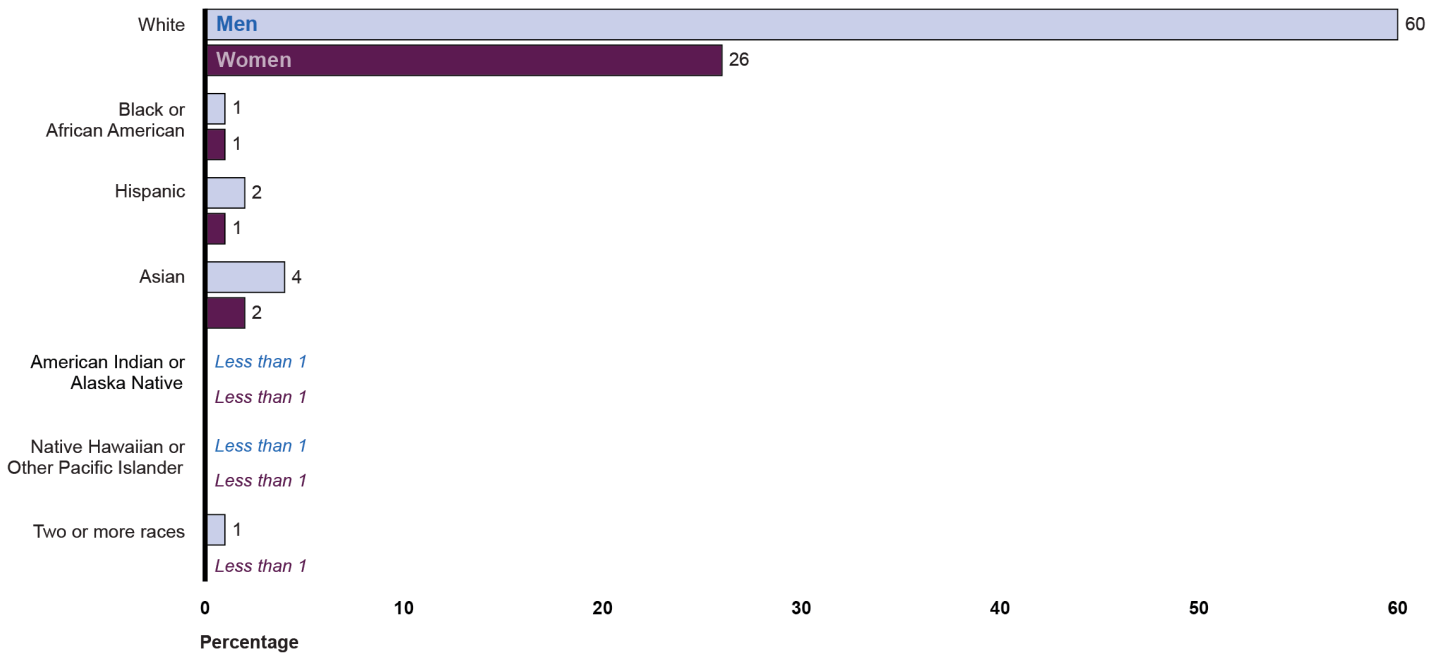
## Far Fewer Women Than Men Were in Management Positions in the Financial Services and the Technology Sectors

In 2021, we reported on the gap between women and men in their representation in executive and senior management in the financial services industry, using data from 2018.<sup>28</sup> Specifically, we found that women's representation at the executive and senior management level was 31 percent, compared to 69 percent for men. We also found low representation of people of certain racial and ethnic groups, with fewer minority women than men in executive and senior management positions (see fig. 4).

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<sup>28</sup>At the time of our review, 2018 data were the most recent data available. We analyzed 2018 data that financial services firms provided in their Employer Information Report to the Equal Employment Opportunity Commission. See GAO, *Financial Services Industry: Using Data to Promote Greater Diversity and Inclusion*, [GAO-21-448T](#) (Washington, D.C.: Mar. 18, 2021).

**Figure 4: Race and Ethnicity and Gender Representation of Executive/Senior-Level Management in the Financial Services Industry, 2018**



Source: Adapted from GAO-21-448T, which analyzed data from the Equal Employment Opportunity Commission. | GAO-22-105796

Similarly, in our 2017 report on diversity in the technology sector, we found that women were less represented across the full range of management and non-management positions at companies within the technology sector, including at leading technology companies, compared to their representation in companies outside the technology sector.<sup>29</sup> For example, women held about 19 percent of senior-level management positions at companies in the technology sector compared to nearly 31 percent of such positions at companies outside the technology sector in 2015.<sup>30</sup> Women were also less represented in all of the remaining job categories (mid-level managers, professionals, technicians, and all other jobs) in the technology sector (see fig. 5). As the figure shows, outside

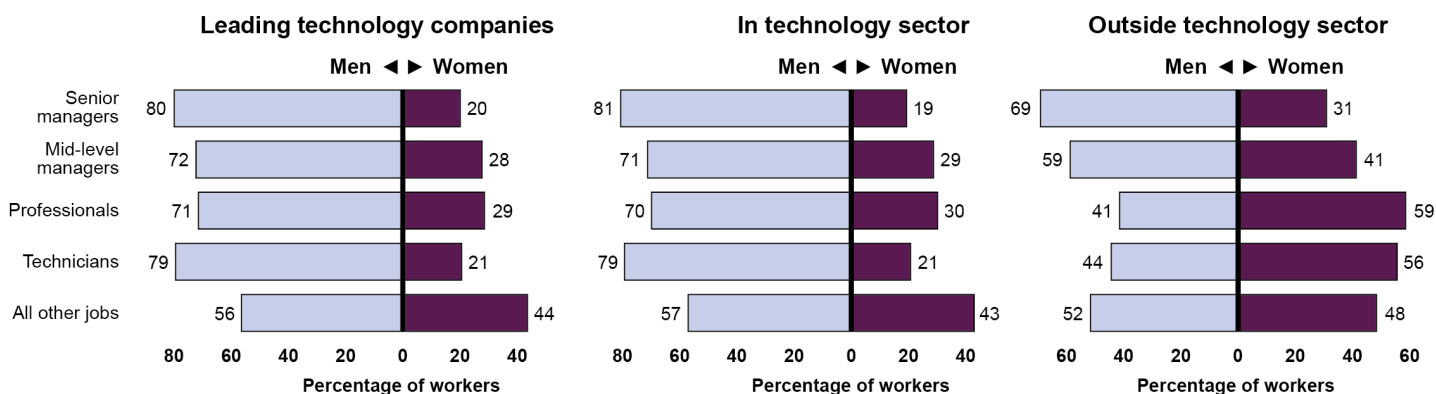
<sup>29</sup>GAO, *Diversity in the Technology Sector: Federal Agencies Could Improve Oversight of Equal Employment Opportunity Requirements*, GAO-18-69 (Washington, D.C.: Nov. 16, 2018). We selected leading information technology companies using Standard & Poor's 500 Information Technology Index list, which identifies the largest public information technology companies at a given time. In October 2016, at the time our work was conducted, the list consisted of 67 companies.

<sup>30</sup>At the time of our review, 2015 data were the most recent data available.



the technology sector, the percentage of women in senior-level and mid-level management positions was smaller than the percentage of men in those positions.

**Figure 5: Percentage of Workers by Gender in Different Job Categories in Companies within and outside the Technology Sector, 2015**



Source: Adapted from GAO-18-69, which analyzed data from the Equal Employment Opportunity Commission. | GAO-22-105796

Note: We selected leading information technology companies using Standard & Poor's 500 Information Technology Index list, which identifies the largest public information technology companies at a given time. In October 2016, at the time our analysis was conducted, the list consisted of 67 companies.

In addition, comparing Equal Employment Opportunity Commission data at three points in time for 2007, 2011, and 2015, we found that women's representation in management positions, as well as among professionals and technicians within the technology sector, remained at about the same level.

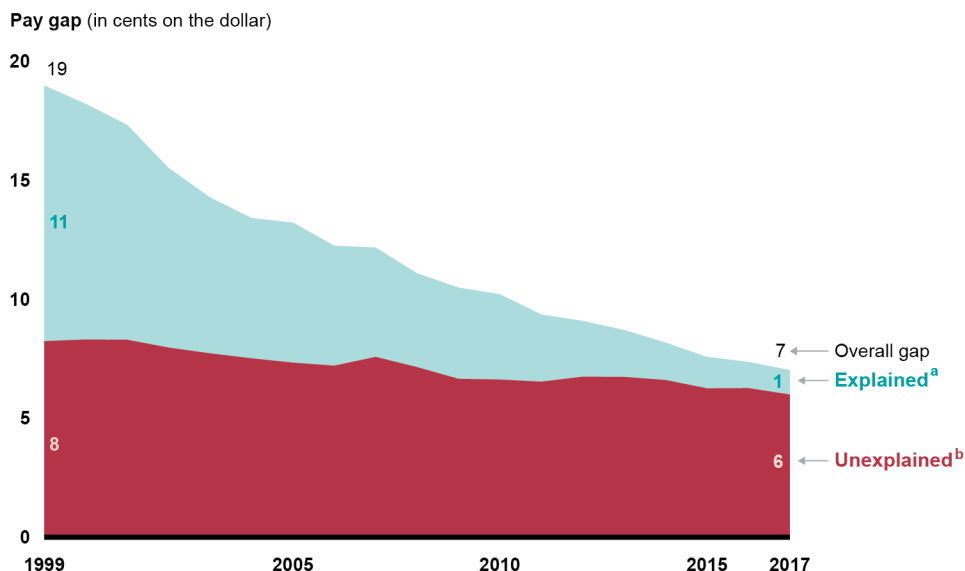
## The Gender Pay Gap in the Federal Workforce Remains but Has Narrowed

Our recent work has also highlighted certain facets of the gender pay gap. In a 2020 report on pay differences in the federal government, we found that there remained a gender pay gap in the federal workforce, but that it had narrowed considerably over time from 19 cents on the dollar in 1999 to 7 cents in 2017 (see fig. 6).<sup>31</sup> This means that in 2017, women in the federal workforce earned 93 cents for every dollar earned by men.

<sup>31</sup>For the purposes of that report, which used data from the Office of Personnel Management, we defined the gender pay gap as the difference in average annual salaries between women and men. See [GAO-21-67](#).

The overall pay gap is made up of two parts—the explained pay gap and the unexplained pay gap. The explained pay gap is the portion of the overall pay gap that is explained by differences between women and men in measurable factors that affect pay, such as occupation, education, experience, race and ethnicity, and veteran status.<sup>32</sup> The unexplained pay gap is the remaining portion of the overall pay gap that is not explained by differences between women and men in measurable factors that affect pay. From 1999 to 2017, the explained pay gap decreased considerably, and the unexplained pay gap decreased to a lesser extent. Our analysis could not determine the reasons for the unexplained pay gap, which may be due to factors that we did not or could not measure. The existence of a pay gap, taken alone, does not establish the causes of the disparity, including whether unlawful discrimination has occurred.

**Figure 6: Pay Gap between Women and Men in the Federal Workforce, 1999 through 2017**



Source: Adapted from GAO-21-67, which analyzed data from the Office of Personnel Management. | GAO-22-105796

Note: The overall pay gap reflects the gap in the annual average rate of pay between women and men. We obtained similar results using the annual median rate of pay. The existence of a pay gap, taken alone, does not establish the causes of the disparity, including whether unlawful discrimination has occurred.

<sup>32</sup>Our 2020 report did not determine whether pay differences based on race and ethnicity, veteran status, and other measurable factors reflected discrimination. By including race and ethnicity and veteran status in our analysis, we were not implying that pay differences based on these factors were justified or unaffected by discrimination.

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<sup>a</sup>The explained pay gap is the portion of the overall pay gap that is explained by differences between women and men in measurable factors, such as type of occupation, level of education, years of federal work experience, race and ethnicity, and veteran status. Our 2020 report did not determine whether pay differences based on race and ethnicity, veteran status, and other measurable factors reflected discrimination. By including race and ethnicity and veteran status in our analysis, we were not implying that pay differences based on these factors were justified or unaffected by discrimination.

<sup>b</sup>The unexplained pay gap is the remaining portion of the overall pay gap that is not explained by differences between women and men in measurable factors. Our analysis could not determine the reasons for the unexplained pay gap, which may be due to factors that we did not or could not measure.

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## Differences in Women's and Men's Pay Affect Total Earnings and May Affect Retirement Savings

In our 2020 report on older women's retirement security, we found that the gender pay gap has potential implications over the course of women's working lives, which could affect retirement savings.<sup>33</sup> For that work, we conducted 14 focus groups with older women, almost all of whom were 70 or older. In more than half of our focus groups, women said that they experienced pay inequality during their careers, and discussed how being paid less than their male counterparts caused them to have lower raises, which were based on a percentage of their base salary; lower retirement savings; and lower Social Security benefits.

To illustrate the potential effect of an earnings gap between women and men working full time for an entire career, we simulated hypothetical 44-year careers for a woman and a man, each earning the median for full-time workers for their age and gender between ages 21 and 65, using March 2019 Current Population Survey data. While estimated median earnings varied by age, the median across all those ages was \$55,000 for the man and \$45,000 (18 percent lower) for the woman. In our simulation, the man's total earnings over those 44 years were about \$2.5 million, and the woman's were about \$2 million.

This finding suggests that the woman earning the median at age 65 (\$50,000) would have to work an additional 10 years at that level of pay to match the man's median career earnings. Our simulation also showed that if a man and a woman each contributed the same constant 6 percent of earnings towards retirement savings, accrued an annual 5 percent investment return on their savings, and worked full time for 44 years, the man would have accumulated an estimated \$476,000 in savings by age 65, compared to the woman's \$395,000. Based on median earnings for

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<sup>33</sup>See GAO, *Retirement Security: Older Women Report Facing a Financially Uncertain Future*, [GAO-20-435](#) (Washington, D.C.: July 14, 2020) and *Retirement Security: Older Women Report Facing a Financially Uncertain Future*, [GAO-20-718T](#) (Washington, D.C.: Sept. 24, 2020).

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all men and women, not just those working full time, we estimated his retirement account at age 65 to be \$343,000, and hers at \$216,000.

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## Agency Comments

We provided a draft of sections of this report to the Department of Commerce, which includes the Census Bureau, for review and technical comment. The Census Bureau provided technical comments, which we incorporated as appropriate.

As agreed with your office, unless you publicly announce the contents of this report earlier, we plan no further distribution until 30 days from the report date. At that time, we will send copies of this report to the appropriate congressional committees. In addition, the report is available at no charge on the GAO website at <https://www.gao.gov>.

If you or your staff have any questions about this report, please contact me at (202) 512-4769 or [costat@gao.gov](mailto:costat@gao.gov). Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix II.

Sincerely yours,

A handwritten signature in black ink that reads "Thomas Costa". The signature is written in a cursive, flowing style.

Thomas M. Costa, Director  
Education, Workforce, and Income Security

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# Appendix I: Objectives, Scope, and Methodology

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The objectives of this review were to (1) examine the representation of women in management positions and the difference in pay between women and men in these positions, and (2) describe what recent GAO reports have found about women’s representation in management positions and pay differences between women and men in certain sectors.

To address our first objective, we analyzed data from the U.S. Census Bureau’s (Census Bureau) American Community Survey (ACS) 2019 1-Year Public Use Microdata Sample (PUMS) data files, which are a set of records from individual people or housing units, with disclosure protection enabled so that individuals or housing units cannot be identified.<sup>1</sup> The ACS is an ongoing survey based on a probability sample of about 3.5 million housing unit addresses, which is selected from all counties and county-equivalents in the United States. The data we analyzed are based on interviews conducted from January 1, 2019 through December 31, 2019. That year, the overall response rate was 86 percent. Because the ACS is a sample survey, all of the ACS analysis results presented in this report are estimates. All of the differences that we discuss in this report are significant at the 95 percent confidence level, unless otherwise noted. At the time of our review, 2019 data were the most recent reliable data available and we determined that the data were sufficiently reliable for our purposes.<sup>2</sup> In this appendix, we describe the data we included in our analysis, how we assessed the reliability of the data, and the limitations of our analysis.

To address our second objective, we reviewed GAO reports issued from 2017 through 2021 on women’s representation in management positions and pay differences between women and men in certain sectors. These reports used a variety of data sources and methodologies to examine disparities in a wide range of settings. Detailed information on the scope and methodology of our prior work can be found in each of those reports. For a detailed list of related GAO reports since 2001, see the Related Products section.

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<sup>1</sup>For information about the ACS PUMS files, see <https://www.census.gov/programs-surveys/acs/microdata.html>.

<sup>2</sup>See discussion of 2020 ACS data below.

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Analysis of the Census Bureau's American Community Survey Data

We analyzed the 2019 PUMS data on managers across all of the broad industry categories used in the ACS, representing the entire civilian workforce. In our analysis of the differences in pay between female and male managers working full time and year round by industry, we used wages or salary income over the prior 12 months to estimate the mean and median of annual earnings of female and male managers. We excluded certain observations from our analysis, such as managers who did not report any earnings in the prior year.

Definition of Managers

We defined "managers" as all individuals classified under the "manager occupation" category in the ACS. This includes the following classifications: Chief Executives and Legislators; General and Operations Managers; Advertising and Promotions Managers; Marketing Managers; Sales Managers; Public Relations and Fundraising Managers; Administrative Services Managers; Facilities Managers; Computer and Information Systems Managers; Financial Managers; Compensation and Benefits Managers; Human Resources Managers; Training and Development Managers; Industrial Production Managers; Purchasing Managers; Transportation, Storage, and Distribution Managers; Farmers, Ranchers, and Other Agricultural Managers; Construction Managers; Education and Childcare Administrators; Architectural and Engineering Managers; Food Service Managers; Entertainment and Recreation Managers; Lodging Managers; Medical and Health Services Managers; Natural Sciences Managers; Property, Real Estate, and Community Association Managers; Social and Community Service Managers; Emergency Management Directors; and Other Managers.

Data Used for Analysis

We used the following variables from the ACS in our analysis:

- Age: We established groups for those under and over 40.
- Education: We established groups for those with and without a Bachelor's degree or higher.
- Full-time status: We defined full-time status as working 50 or more weeks over the prior 12 months, and usually working 35 hours or more weekly.
- Industry: We grouped workers into the following industries: "Agriculture, Forestry, Fishing, Hunting, and Mining"; "Construction"; "Manufacturing"; "Wholesale Trade"; "Retail Trade"; "Transportation, Warehousing, and Utilities"; "Information"; "Finance, Insurance, Real Estate, Rental and Leasing"; "Professional, Scientific, Management, Administrative, and Waste Management Services"; "Educational Services"; "Health Care and Social Assistance"; "Arts, Entertainment,

Recreation, Accommodation, and Food Services”; “Other Services, Except Public Administration”; “Public Administration.” We shortened the names of some of these industries for the purposes of this report.

- Marital status: We established groups for those who were or were not married.
- Race and ethnicity: In the ACS survey, individuals are first asked about their ethnicity and then asked about their race. We combined the race and ethnicity categories into a single variable with the following categories: (1) American Indian or Alaska Native (non-Hispanic), (2) Asian (non-Hispanic), (3) Black or African American (non-Hispanic), (4) Hispanic/Latino, (5) Native Hawaiian or Other Pacific Islander (non-Hispanic), (6) White (non-Hispanic), and (7) Other or Multiracial (non-Hispanic).
- Wages or salary income over the past 12 months.

## Methods

To analyze the representation of women in management positions, we used the ACS to estimate the percentage of management positions held by women compared to the percentage of non-management positions held by women. We also used the ACS to generate descriptive statistics on female and male managers’ age, education level, industry, marital status, and race and ethnicity. To examine the differences in pay between female and male full-time managers, we compared average and median annual earnings for the two groups. In all of our analyses of the ACS data, we accounted for the sample representation and design by using the identified person weight present in the ACS data. We used the successive difference replication method to estimate the 95 percent confidence interval for any population estimate. For all of the estimates that appear in this report, the range of confidence is more precise than plus or minus 6 percent of the estimate itself. All of the differences that we discuss in the report are significant at the 95 percent confidence level, unless otherwise noted. We also compared our analysis results for the 2019 ACS data to our previous analysis results for the 2007 ACS data, which we reported in 2010.<sup>3</sup>

## Data Reliability

We assessed the reliability of these data by reviewing documentation and testing the data for inaccuracies. We determined that the data were sufficiently reliable for our purposes. Specifically, we:

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<sup>3</sup>See [GAO-10-892R](#).

- reviewed technical documentation on the data elements included in the ACS that were critical to our analyses, as well as general design and methods of the ACS;
- consulted prior GAO teams that had used these data for similar analyses; and
- conducted our own electronic data testing to assess the accuracy and completeness of the data used in our analyses.

### Limitations of the Analysis

The ACS, like any other sample survey, is subject to sampling and non-sampling error (e.g., coverage error and nonresponse error). The Census Bureau takes several steps to mitigate non-sampling errors, such as following up for nonresponse and adjusting the weights to account for nonresponding housing units.

Our analysis is descriptive in nature, and neither confirms nor refutes the presence of discriminatory practices. We did not control for any variables in our analysis of pay differences or representation within management, including variables that would be expected to affect pay or representation, such as hours worked beyond full time. By not controlling for factors that could or are expected to affect pay or managerial representation, we were not able to isolate potential causes of differences in pay and managerial representation by gender. Since we did not control for factors such as hours worked, the differences between women and men in pay and managerial representation likely also partly reflect these differences.

### 2020 Data

The 2020 ACS was conducted throughout the year, and the Census Bureau had to change its data collection strategies due to the COVID-19 pandemic. Despite its efforts to mitigate the data collection disruptions and modify the weighting adjustments focused on known sources of bias, the Census Bureau determined that the estimates produced in the 2020 ACS did not meet statistical quality standards. As a result, these data did not meet our data reliability standards for the purposes of this report, so we used the 2019 data.

We conducted this performance audit from February to March 2022 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.



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# Appendix II: GAO Contact and Staff Acknowledgments

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## GAO Contact

Thomas M. Costa, (202) 512-4769, [costat@gao.gov](mailto:costat@gao.gov)

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## Staff Acknowledgments

In addition to the contact named above, Rebecca Woiwode (Assistant Director), Caitlin Croake (Analyst in Charge), Benjamin Bolitzer, and Shilpa Grover made key contributions to this report. Also contributing to this report were James Bennett, Alissa Czyz, Cliff Douglas, Holly Dye, Michael Kendix, Kay Kuhlman, Meredith Moore, Jasmine Porter, James Rebbe, Monica Savoy, Sonya Vartivarian, and Adam Wendel.

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# Related GAO Products

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*Financial Services Industry: Using Data to Promote Greater Diversity and Inclusion.* [GAO-21-448T](#). Washington, D.C.: March 8, 2021.

*Gender Pay Differences: The Pay Gap for Federal Workers Has Continued to Narrow, but Better Quality Data on Promotions Are Needed.* [GAO-21-67](#). Washington, D.C.: December 3, 2020.

*Retirement Security: Older Women Report Facing a Financially Uncertain Future.* [GAO-20-718T](#). Washington, D.C.: September 24, 2020.

*Retirement Security: Older Women Report Facing a Financially Uncertain Future.* [GAO-20-435](#). Washington, D.C.: July 14, 2020.

*Financial Services Industry: Representation of Minorities and Women in Management and Practices to Promote Diversity, 2007-2015.* [GAO-19-398T](#). Washington, D.C.: February 27, 2019.

*Diversity in the Technology Sector: Federal Agencies Could Improve Oversight of Equal Employment Opportunity Requirements.* [GAO-18-69](#). Washington, D.C.: November 16, 2017.

*Corporate Boards: Strategies to Address Representation of Women Include Federal Disclosure Requirements.* [GAO-16-30](#). Washington, D.C.: December 3, 2015.

*Gender Pay Differences: Progress Made, but Women Remain Overrepresented among Low-Wage Workers.* [GAO-12-10](#). Washington, D.C.: October 12, 2011.

*Women in Management: Analysis of Female Managers' Representation, Characteristics, and Pay.* [GAO-10-892R](#). Washington, D.C.: September 20, 2010.

*Women's Pay: Converging Characteristics of Men and Women in the Federal Workforce Help Explain the Narrowing Pay Gap.* [GAO-09-621T](#). April 28, 2009.

*Women's Pay: Gender Pay Gap in the Federal Workforce Narrows as Differences in Occupation, Education, and Experience Diminish.* [GAO-09-279](#). Washington, D.C.: March 17, 2009.

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Related GAO Products

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*Women's Earnings: Federal Agencies Should Better Monitor Their Performance in Enforcing Anti-Discrimination Laws.* [GAO-08-799](#). Washington, D.C.: August 11, 2008.

*Women and Low-Skilled Workers: Efforts in Other Countries to Help These Workers Enter and Remain in the Workforce.* [GAO-07-989T](#). Washington, D.C.: June 14, 2007.

*Women and Low-Skilled Workers: Other Countries' Policies and Practices That May Help These Workers Enter and Remain in the Labor Force.* [GAO-07-817](#). Washington, D.C.: June 14, 2007.

*Women's Earnings: Work Patterns Partially Explain Difference between Men's and Women's Earnings.* [GAO-04-35](#). Washington, D.C.: October 31, 2003.

*Women in Management: Analysis of Selected Data from the Current Population Survey.* [GAO-02-156](#). Washington, D.C.: October 23, 2001.

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