WOMEN, AUTOMATION, and the Future of Work

From driverless cars to factories operated by robots and stores with self-checkout systems, automation and technology are changing the way we perceive and do work. But how do all these technological changes affect men and women differently?

Briefing | June 11, 2019 | 2- 3:30 pm | Cannon HOB 121

JPMorgan Chase & Co.

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Likely impact in fields where women mainly work- quantity and quality of jobs

Threats and opportunities for different groups of women, and for women compared to men

Impact on work-family issues: paid & unpaid work

WHAT WE HEAR ABOUT AUTOMATION AND THE FUTURE OF WORK

"Robots will destroy our jobs – and we're not ready for it"

"Automation Could Wipe Out Almost Half of All Jobs in 20 Years"

"Women should fear artificial intelligence more than men"

"Automation will affect women twice as much as men."

Job automation will hurt women first but will ultimately hurt men more

Are we on the brink of a jobless future?

Women must act now, or male-designed robots will take over our lives

Employees Optimistic About Working With AI

"AI and robots will destroy fewer jobs than previously feared, says new OECD report"

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Key Take-Aways:

Women outnumber men in the occupations with the highest likelihood of automation.

Automation threatens more well-paid jobs for women than men.

Technology offers new solutions for caregiving.

The future is uncertain: policy matters.
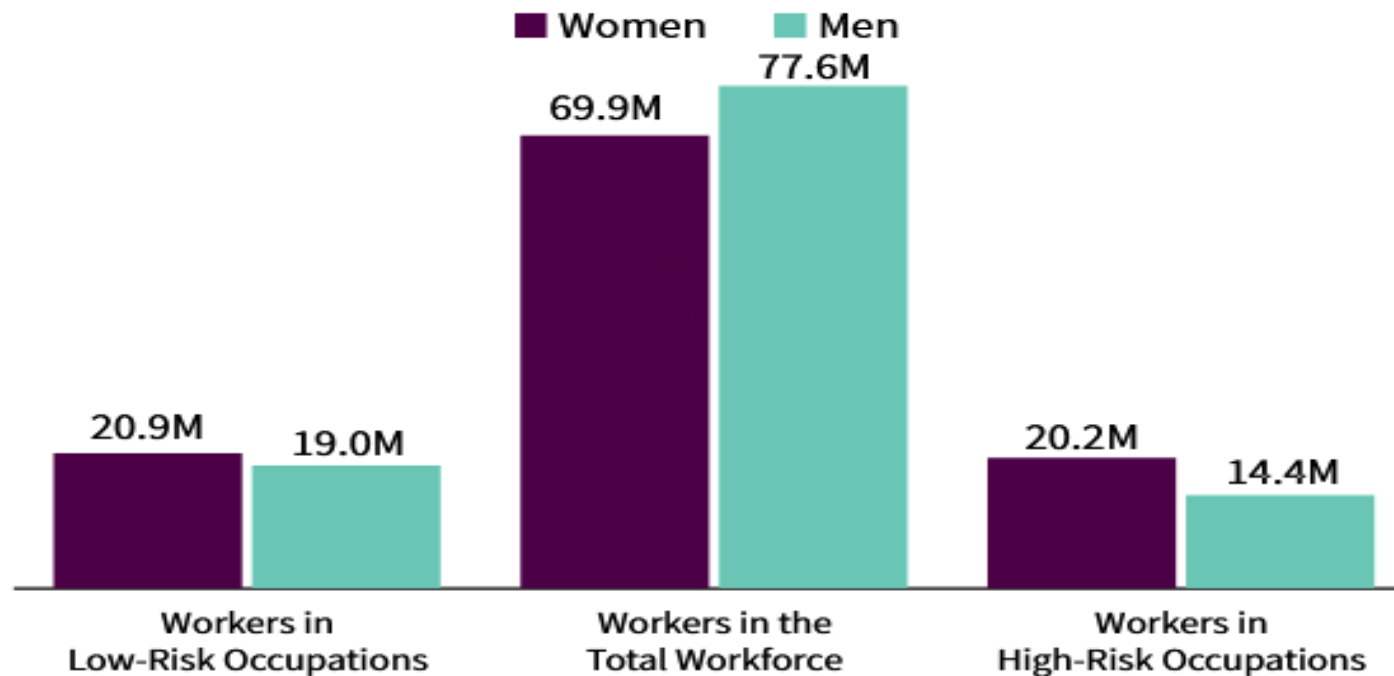
WOMEN, AUTOMATION, and the Future of Work

Presentation of Findings

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FIGURE 1

Women Outnumber Men in Occupations with the Highest and Lowest Risk of Automation

The Number of Women and Men in Occupations with Low and High Risk of Automation, and in the Total Workforce, 2014-16

■ Women   ■ Men

69.9M   77.6M

20.9M   19.0M

20.2M   14.4M

Workers in Low-Risk Occupations

Workers in the Total Workforce

Workers in High-Risk Occupations

Notes: A high-risk occupation has a probability of automation score of 90 percent or more while a low-risk occupation has a probability of automation score of 10 percent or less.

Source: IWPR Future of Work Database; for methodology and sources see Methodological Appendix.

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THE RISKS OF AUTOMATION ARE HIGHER FOR WOMEN WORKERS

Women make up **47%** of the workforce, but are **58%** of those in jobs with a high risk of automation.

High-risk occupations include:

low-wage jobs (cashiers, cooks, retail sales workers) as well as **better-paying jobs** that provide a path to the middle-class without a college degree (secretary & admin, office clerks, tellers).

Low risk occupations (teachers, nurses, child care workers, hair dressers, software developers, and CEOs) tend to be higher paid and require a college degree but are not necessarily good jobs.

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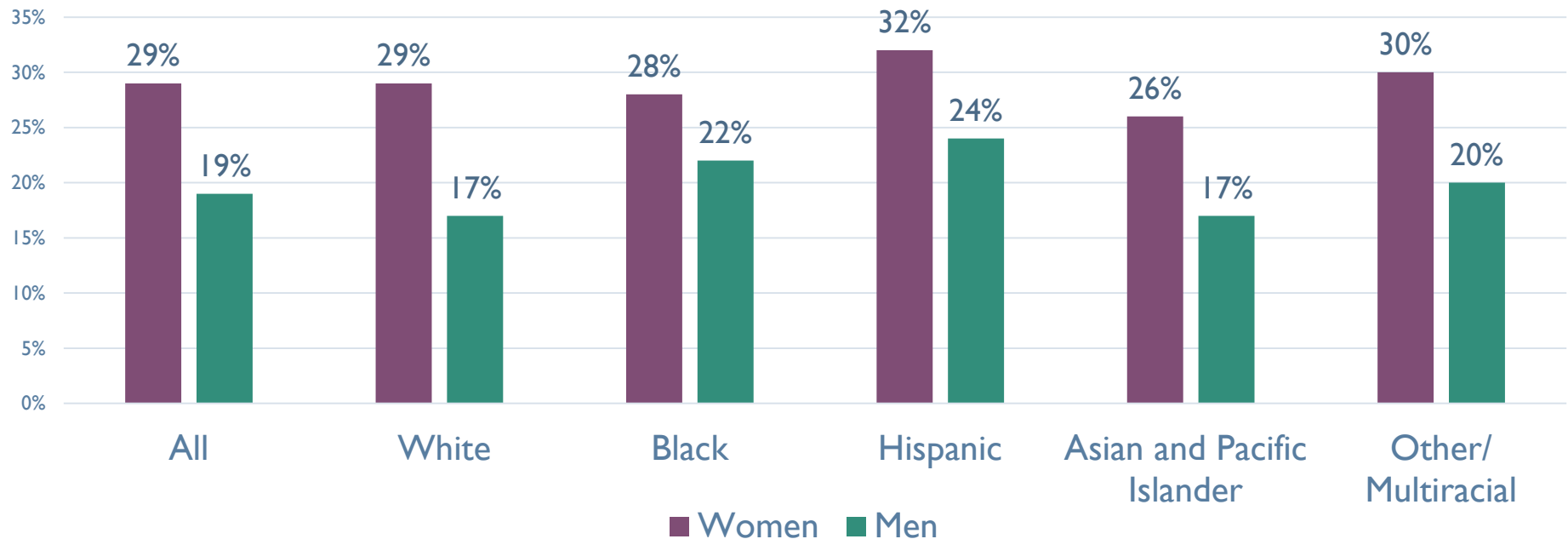# AUTOMATION THREATENS MORE WELL-PAID JOBS FOR WOMEN THAN MEN

Both women and men face a higher risk of automation in lower-wage jobs, but women's risk in middle- and high-paid jobs is higher.

A one percentage point increase in the probability of automation for men was associated with a **$631 decline in men's** median annual earnings, compared with **a $316 decline in women's**.

Automation may be easier to implement in women's large occupations than men's (software v. robots & machines).

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HISPANIC WOMEN ARE THE MOST LIKELY TO WORK IN HIGH-RISK OCCUPATIONS

The proportion of workers in high-risk occupations in the largest racial and ethnic groups

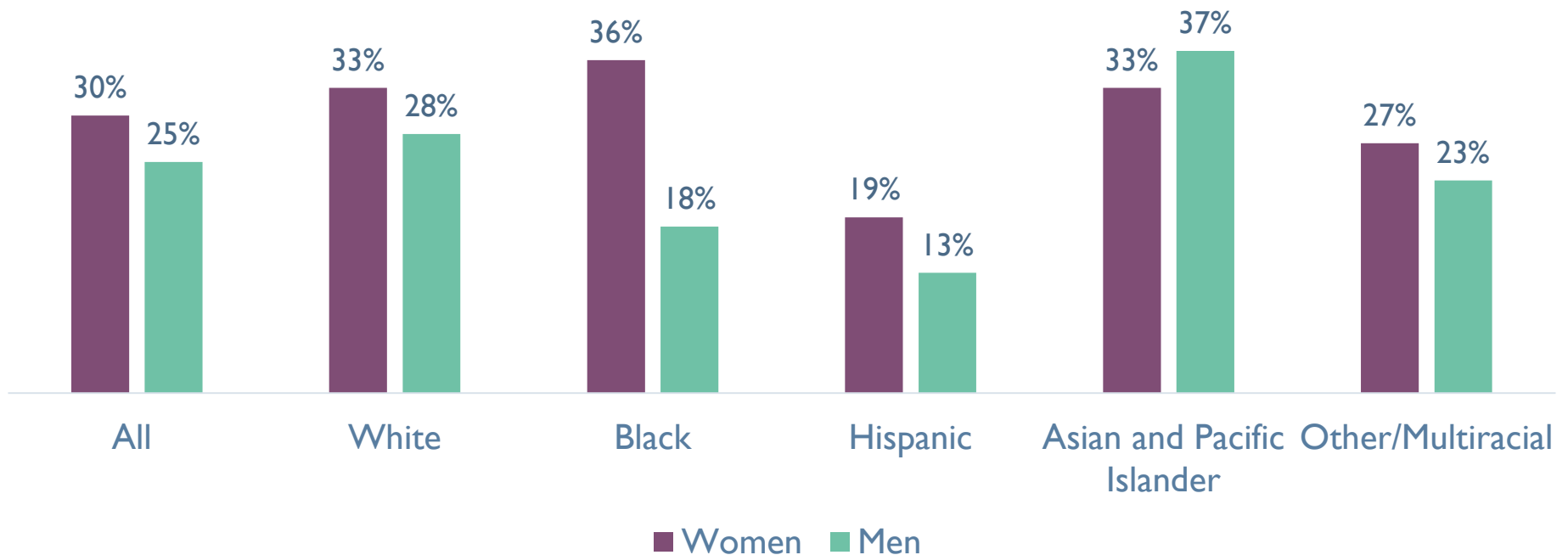|	All	White	Black	Hispanic	Asian and Pacific Islander	Other/ Multiracial
Women	29%	29%	28%	32%	26%	30%
Men	19%	17%	22%	24%	17%	20%

■ Women ■ Men

Notes: A high-risk occupation has a probability of automation score of 90 percent or more while a low-risk occupation has a probability of automation score of 10 percent or less.
Source: IWPR Future of Work Database.

HISPANIC WOMEN ARE LEAST LIKELY OF ALL WOMEN TO WORK IN LOW-RISK OCCUPATIONS

The proportion of workers in low-risk occupations in the largest racial and ethnic groups

	All	White	Black	Hispanic	Asian and Pacific Islander	Other/Multiracial
Women	30%	33%	36%	19%	33%	27%
Men	25%	28%	18%	13%	37%	23%

■ Women ■ Men

Notes: A high-risk occupation has a probability of automation score of 90 percent or more while a low-risk occupation has a probability of automation score of 10 percent or less.
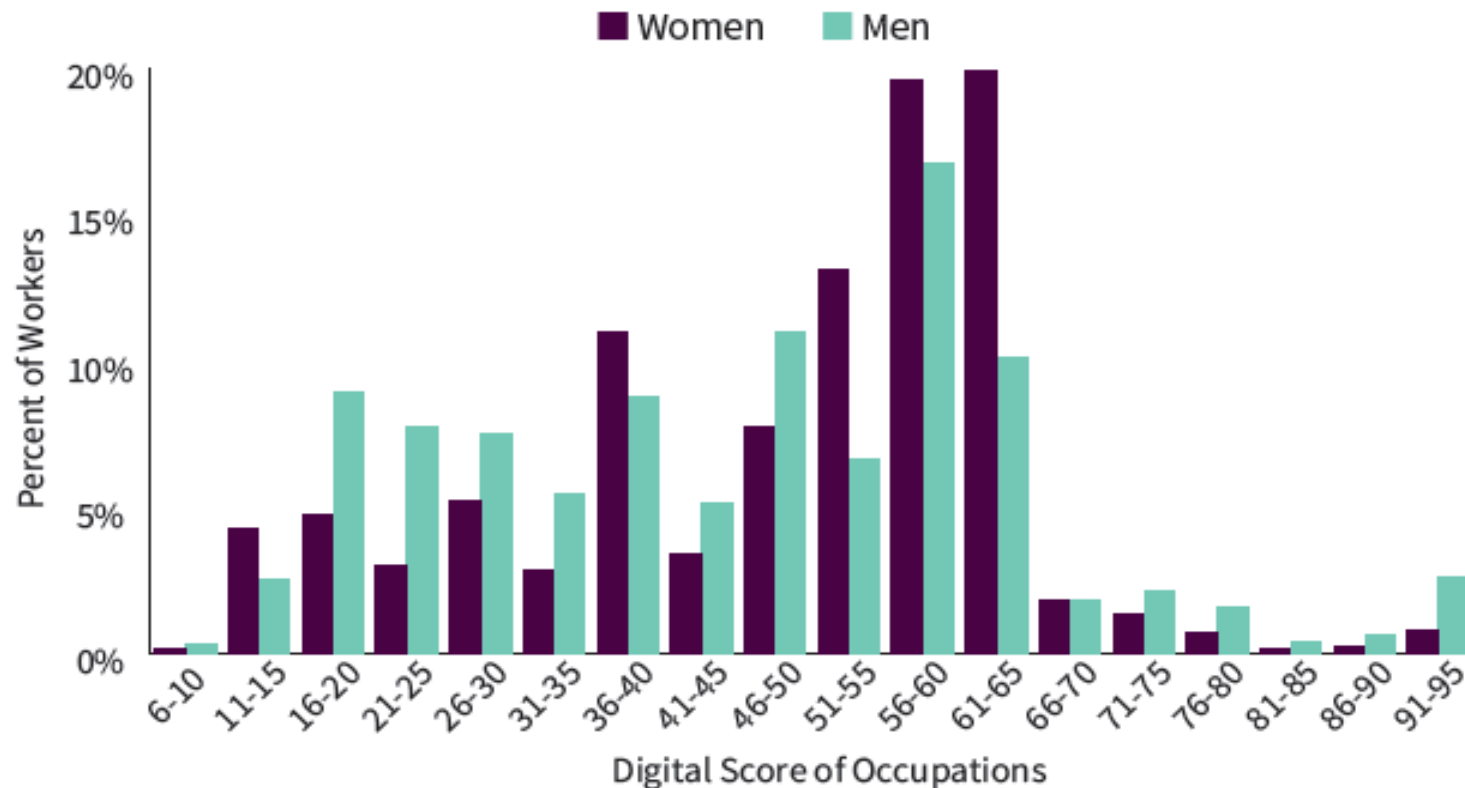Source: IWPR Future of Work Database.

JOBS ARE BECOMING MORE DIGITALIZED

- The need for knowledge of and use of computers is increasing rapidly but varies across occupations.

- Women on average are more likely than men to work with digital technology.

- Digital skills increase earnings for both women and men – but much more for men than women.

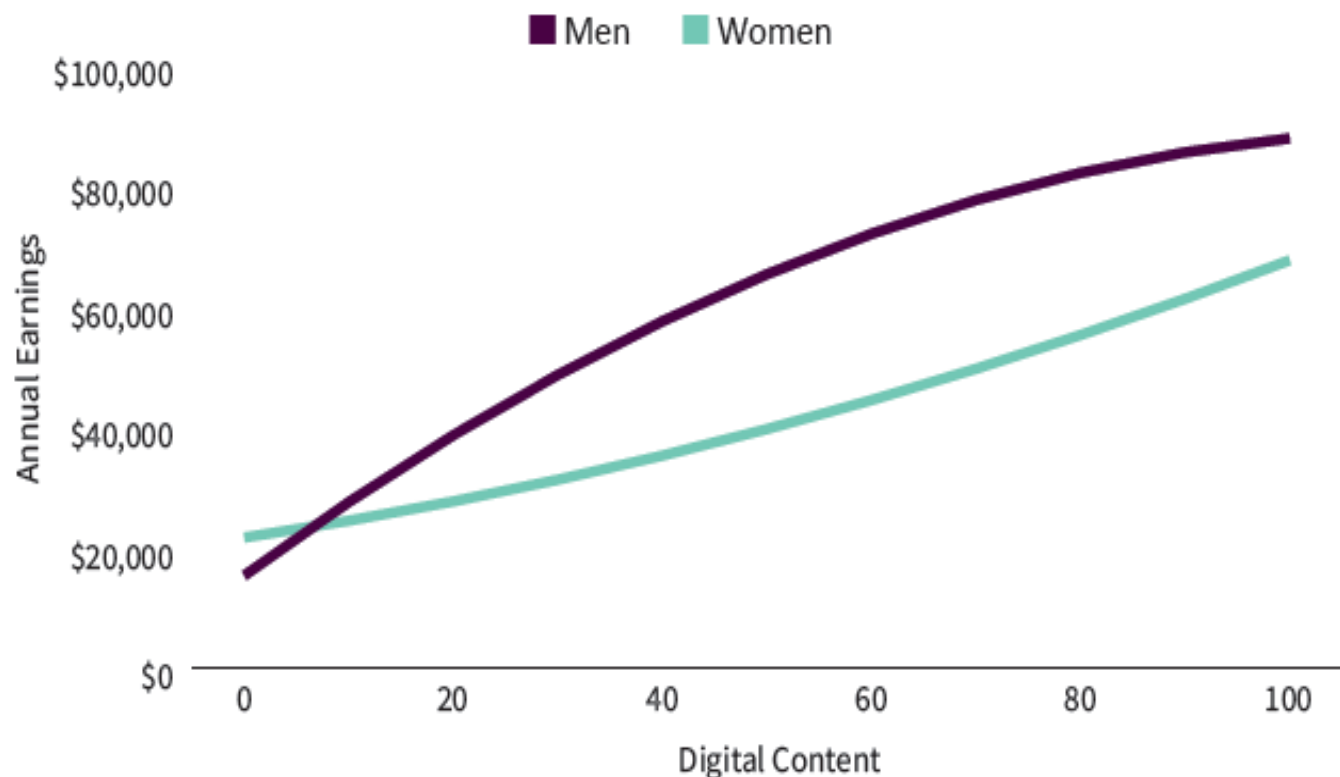- Women's underrepresentation in IT jobs is increasing.

WOMEN ARE MORE LIKELY THAN MEN TO WORK WITH COMPUTERS AND DIGITAL CONTENT

The Distribution of Workers across Occupations by Digital Content, by Gender, 2014-16

Source: IWPR Future of Work Database, based on
Muro et al (2017), using O*Net Occupational characteristics 'knowledge of computers' and 'importance of computers'.

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The Relationship between Digital Content of a Worker's Occupation and Median Annual Earnings, by Gender, 2014-2016
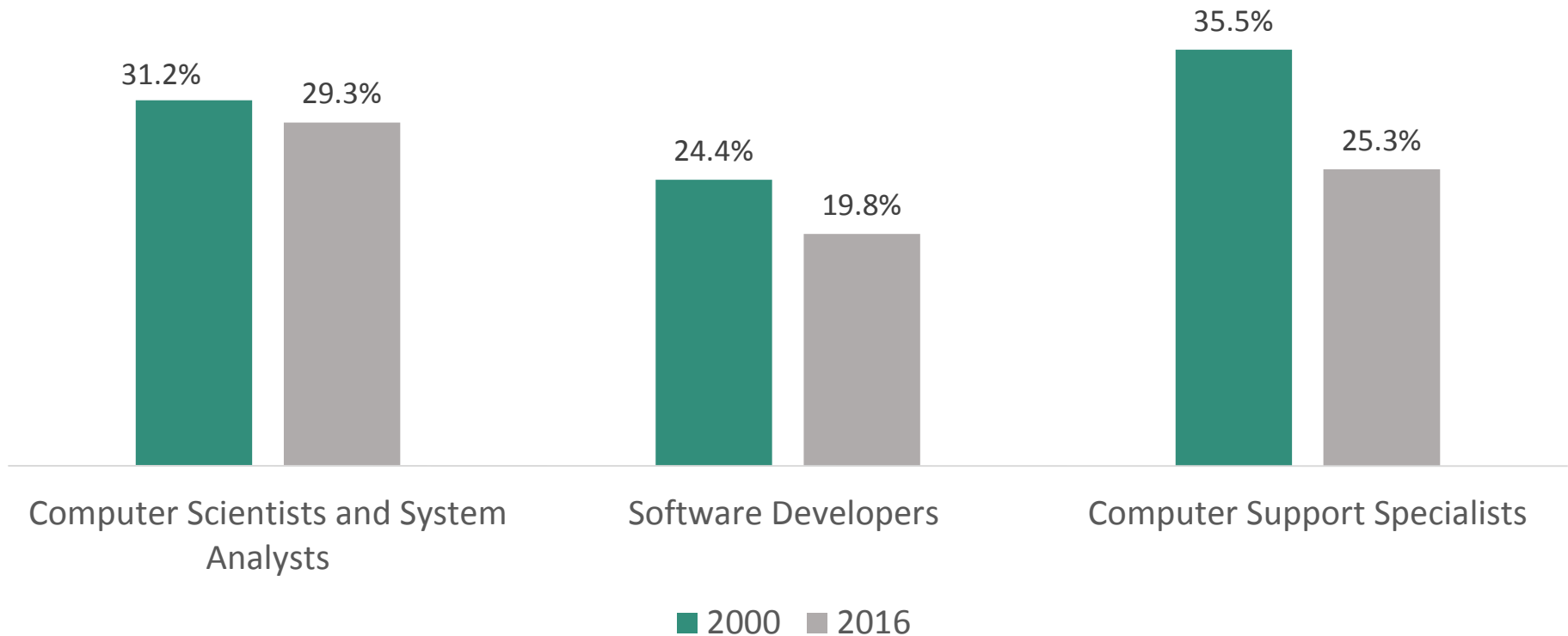
■ Men ■ Women

Notes: All occupations. Earnings are for full-time, year-round workers. The index of digitalization has values from 0 (no use or knowledge of computers) to 100 (very high use and knowledge of computers). The relationship shown is from a regression analysis, in which level of education is taken into account.

Source: Authors' regression analysis of 2016 (1-year) data from the American Community Survey from the Integrated Public Use Microdata Series (IPUMS) and digital content scores from Muro et al. (2017). For coefficients see Appendix Table 1.

Having digital skills pays, but much more for men: 41% digitalization wage gap

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THE FUTURE OF WORK: AGING

- Family caregivers: Can technology improve work-family reconciliation?

- Care recipients: Can technology to improve aging in place?

- Care workforce: Can technology improve earnings and job quality?

THE FUTURE IS UNCERTAIN: POLICY MATTERS

Women are more likely than men to work in occupations at high risk of automation, particularly Hispanic women.

The risks are particularly high in good middle skill jobs for women.

Women, particularly women of color, have less time and resource for life-long learning and reskilling.

Technology is unlikely to replace the need for care work- but with the right policies it can improve the quality of care.

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Panel Discussion

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Josephine Kalipeni
Care Across Generations

Eric Morath
The Wall Street Journal
(moderator)

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