BANK OF AMERICA

CHIEF INVESTMENT OFFICE

Gender Lens in Defined Contribution (DC) Plans

GENDER LENS PLAN PARTICIPANT STUDY SERIES

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INTRODUCTION

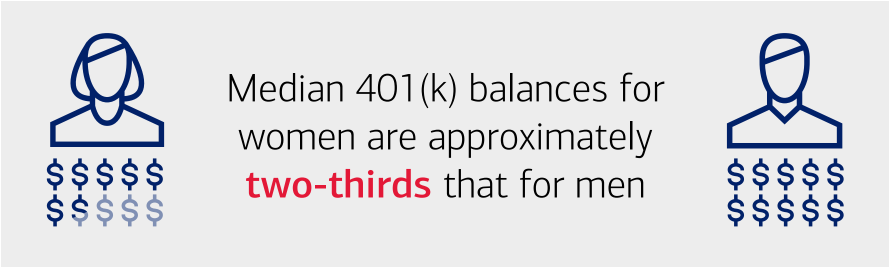
We have embarked on a series of studies to understand potential gender differences in financial behavior of plan participants. These include topics such as retirement, stock ownership, health and education.

Our first study in this series focuses on the financial behavior of 401(k) participants. The plan participant data reviewed in the study is from 4.6 million participants in Bank of America's record-keeping systems. We examine participation rates, contribution rates, investment allocations, loan behavior and hardship claims and balances. We also provide retirement guidance for plan participants with a special focus on considerations for women.

Women who are planning for retirement encounter the same worries and fears as do men - outliving assets, not saving enough, needing long-term care, or losing a spouse. Although women are covered by the same employee benefits as men are, women have longer life spans, are more likely to be caregivers and are often likely to spend their last years of life alone. With all of that in mind, these diverging life paths heighten the importance of examining the decisions women make as they save for retirement.

GENDER AND THE FINANCIAL BEHAVIOR OF PARTICIPANTS

In this section, we examine the financial behavior of participants and examine whether there are gender differences in participation rates, contributions rates, investment allocations, loan balances and hardship claims and 401(k) balances.



Source: Bank of America, December, 2019. Based on the records of 3.1 million 401(k) participants

KEY INSIGHTS

Participation rates: Women's participation rates are slightly lower than men's
Takeaway: Start Saving early

Contribution rates: Women and men save at comparable rates
Takeaway: Maximize your contributions

Asset Allocation decisions: Women tend to allocate less to equity
Takeaway: Carefully consider investment choices

Loan activity and hardship claims: Women are claiming hardship at greater rates and have higher loan-to-balance ratios
Takeaway: Avoid tapping into your savings

Balances: Women have signficantly lower 401(k) balances than men
Takeaway: Pay attention to savings

Please see back page for important disclosure information

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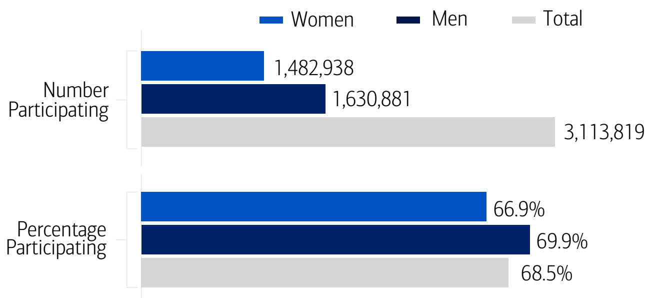
1. STUDY PARTICIPATION RATES: WOMEN'S PARTICIPATION RATES ARE SLIGHTLY LOWER THAN MEN'S

There are 1.48 million women participating in plans versus 1.63 million men as shown in Figure 1. Participation rates of women are 3.0% lower than those of men. Total participation rates are in line with industry studies. According to analysis completed by the Federal Reserve, 35% of U.S households do not participate in any retirement savings plan.[1]

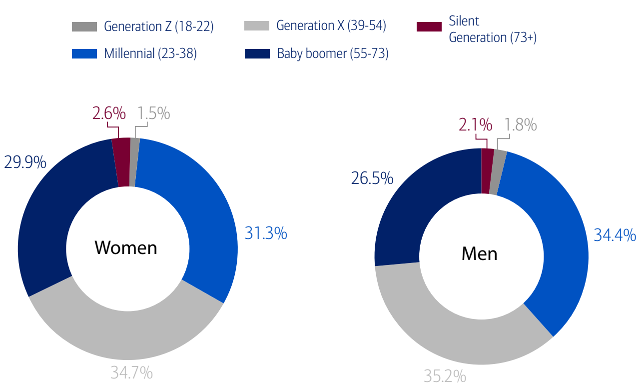
Figure 1: Number of participants and participation rates by gender



Source: Bank of America, December, 2019. Based on the records of 4.6 million 401(k) participants .The number of participants with a non-zero balance is 3.1 million. Note: 401(k) plan balance amount contains the sum of fund-market-values for all funds within participant's account. Percentage participating is the percentage of the 4.6 million participants with non-zero balances.

The majority of the 3.1 million participants are either Millennials, Generation Xers or Baby Boomers. Men slightly outnumber women across all generations with the exception of older generations, Baby Boomer and Silent Generation, in which women outnumber men as shown in Figure 2a.

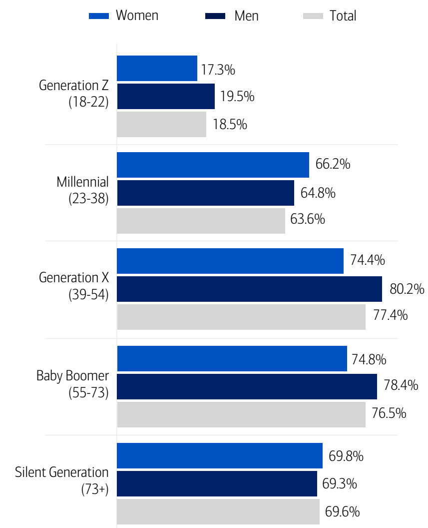
Figure 2a: Distribution of participants by gender and generation



Source: Bank of America, December, 2019. Based on the records of 3.1 million 401(k) participants
Note: 401(k) plan balance amount contains the sum of fund-market-values for all funds within participant's account

Participation rates of women are lower than those of men across generations with the exception of the Millennial and Silent generation as shown in Figure 2b. Generation Z has the lowest participation rates.

Figure 2b: Participation rates by gender and generation



Source: Bank of America, December, 2019. Based on the records of 4.6 million 401(k) participants

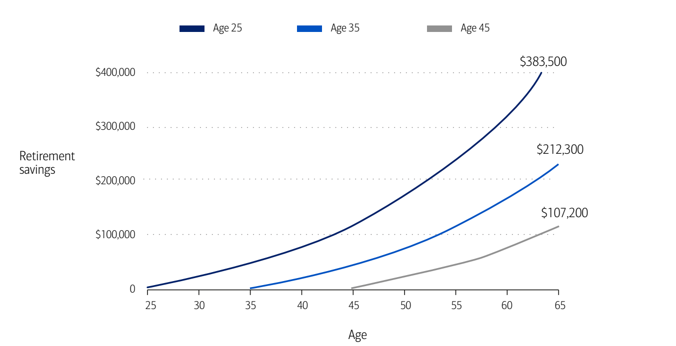
1 Federal Reserve Bank of St Louis "Many Americans Still Lack Retirement Savings." March, 2018

2 See Vrdoljak and Rappaport (2018) "Women and Retirement Security" Investments & Wealth Monitor, for additional examples of how starting to save for retirement early can make a significant difference overtime.

TAKEAWAY: START SAVING EARLY

Both women and men should participate in a 401(k) to accumulate wealth in order to meet their needs in retirement. Saving early can increase a woman's chances of having enough money to last through her retirement years. Consider the case of someone starting to save $250 per month into a retirement account at age, 25, 35 and 45 until they retire at age 65 (Figure 3). Accumulated savings vary dramatically depending on when each started saving for retirement. Starting at age 25 you will have $383,500 in retirement savings, starting at age 35 you will have about half that amount, and at age 45 you will have about one quarter.[2]

Figure 3: Starting retirement savings at age 25 vs. 35 vs. 45



Note: Assumes a hypothetical annual rate of return of 5%. The analysis is on a pre-tax basis. Figures rounded to the nearest $100.
Source: Calculations by the Chief Investment Office. This is a hypothetical example meant for illustrative purposes only. It does not reflect an actual investment, nor does it account for the effects of taxes, any investment expenses or withdrawals.
Returns are not guaranteed and results will vary. Investment returns cannot be predicted and will fluctuate. Investor results may be more or less. It is not intended to serve as investment advice since the availability and effectiveness of any strategy is dependent upon your individual facts and circumstances.

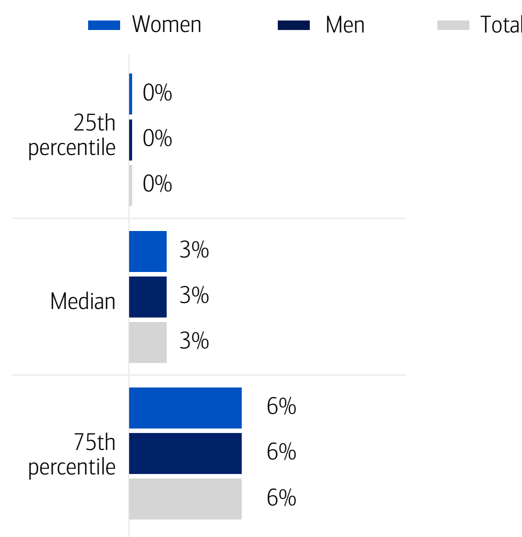
2. STUDY CONTRIBUTION RATES: WOMEN AND MEN SAVE AT COMPARABLE RATES

As women and men save for retirement, the rate at which they save can have a significant impact on their ability to achieve their goals and ensure they do not run out of money in retirement.

The contribution rates in Figure 4 represent the rate at which the participant elects to contribute and does not include employer matches. Contribution rates for women and men are the same at the 25th percentile, median and 75th percentile. The median contributions rates are modest for both women and men at 3%. The average contribution rate is 4% for both women and men. At the 75th percentile the contribution rates of women and men are 6%.

Contribution rates for women and men are the same at the 25th percentile, median and 75th percentile.

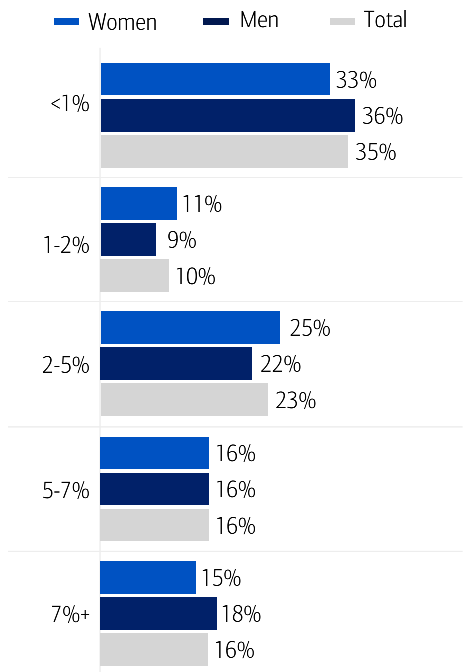
Figure 4: 401(k) contribution rates by gender



Source: Bank of America, December, 2019. Based on the records of 3.1 million 401(k) participants.

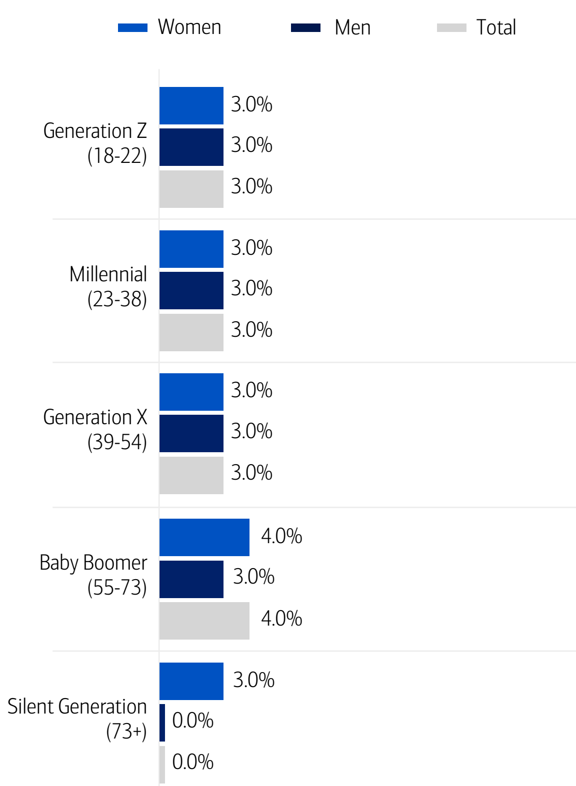
Figure 5 shows the distribution of contribution rates for women and men for different levels of contribution. The percentage of women participants is greater than men with contribution rates of 1-2% and 2-5%. In contrast, the percentages of women are lower in the <1% and 7%+ contribution rate groups. Contribution rates of women are comparable to that of men for all generation groups with the exception of older generations (see Figure 6). The median contribution rate for women and men is 3% for Generation Z, Millennials and Generation X. Women contribute at higher rates than men do among Baby Boomers, at 4% for women versus 3% for men.

Figure 5: 401(k) contribution groupings by gender



Source: Bank of America, December, 2019. Based on the records of 3.1 million 401(k) participants

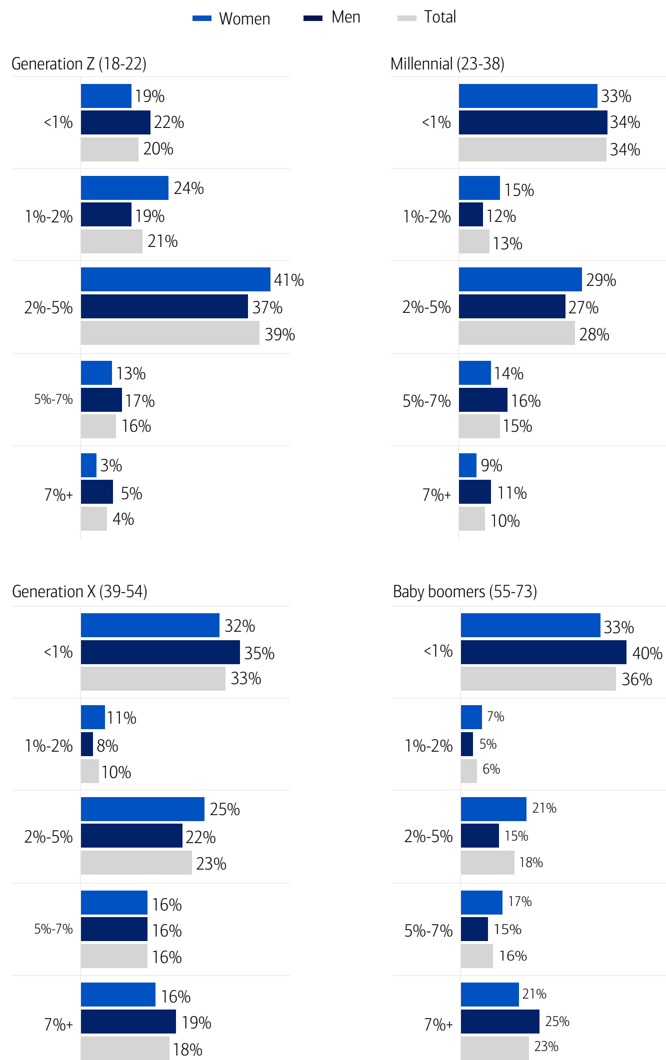
Figure 6: 401(k) contribution rates by gender and generation



Source: Bank of America, December, 2019. Based on the records of 3.1 million 401(k) participants. Based on median values.

Across generational groupings, a higher percentage of women than men are in the 1-5% contribution group. At lower (<1%) and higher (>5%) contribution rates there are more men than women (see Figure 7).

Figure 7: 401(k) contribution groupings by gender and generation



Source: Bank of America, December, 2019. Based on the records of 3.1 million 401(k) participants

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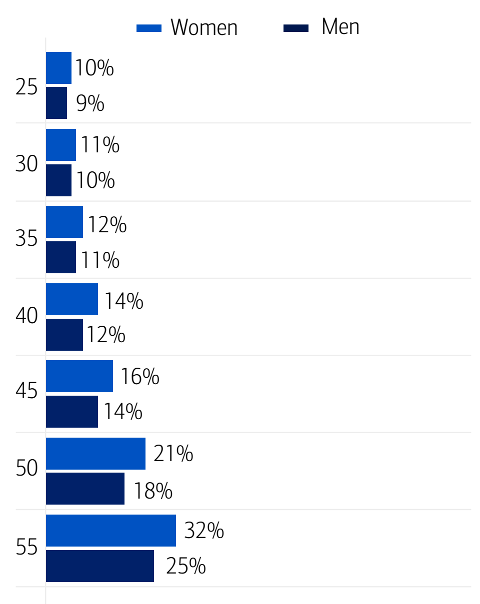
TAKEAWAY: MAXIMIZE YOUR CONTRIBUTIONS

Make sure you fully understand your 401(k) choices, then start to decide how much to contribute and how to invest it. Employer matching contributions are free dollars that you shouldn't leave on the table. Make it a priority to contribute up to the full level of your employer's matching percentage. Figure 8 shows how much of their income women and men should be saving at various ages. The analysis assumes women have a longer life expectancy and are expected to retire earlier. At age 65, women can expect to live an average of 21.5 more years and men an average of 19 more years.[3] Women on average retire at age 63 versus men at age 65.[4] As a results of these differences, for example, a 45-year-old woman should be saving more than a man of the same age, 16% vs.14%.

Figure 8: Contribution rates at various ages



Note: See Appendix for details on the assumptions. Based on Chief Investment Office assumptions, and performance is not guaranteed.
Source: Calculations by the Chief Investment Office.

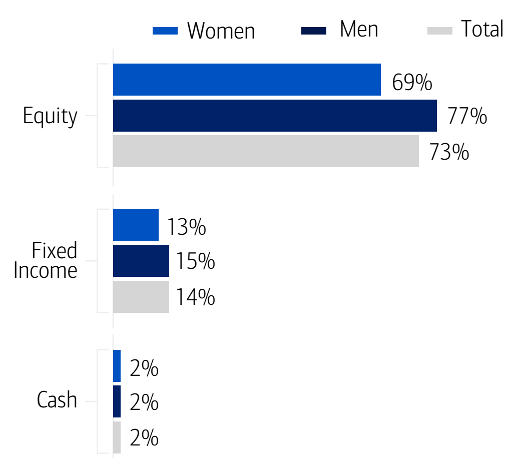
3. STUDY ASSET ALLOCATION DECISIONS: WOMEN TEND TO ALLOCATE LESS TO EQUITY

The allocation to equity among women is lower than that among men. Figure 9 shows that the average equity allocation is 69% for women versus 76% for men. This is consistent with research which shows that women tend to take on less investment risk than men.[5] When choosing investments for a retirement plan, one needs to understand the implications of being invested more conservatively over a long period of time. Women in particular should focus on understanding these investment choices because they need their money to last longer. Figure 11 shows, the 90%, 75%, 50%, 25% and 5% likelihood of potential wealth at retirement for different asset allocations, illustrating the risks associated with being invested too conservatively-or too aggressively.

Average equity allocation is 69% for women versus 77% for men

Research by Age Wave and Merrill showed that women report that their biggest financial regret is not investing more. Fifty-nine percent of women report that they are not doing a good job using investing as a way to pursue their financial goals. Women say that not having the knowledge to invest is their number one barrier (60%) followed by not having the confidence (34%).[6]

Figure 9: Asset allocation by gender



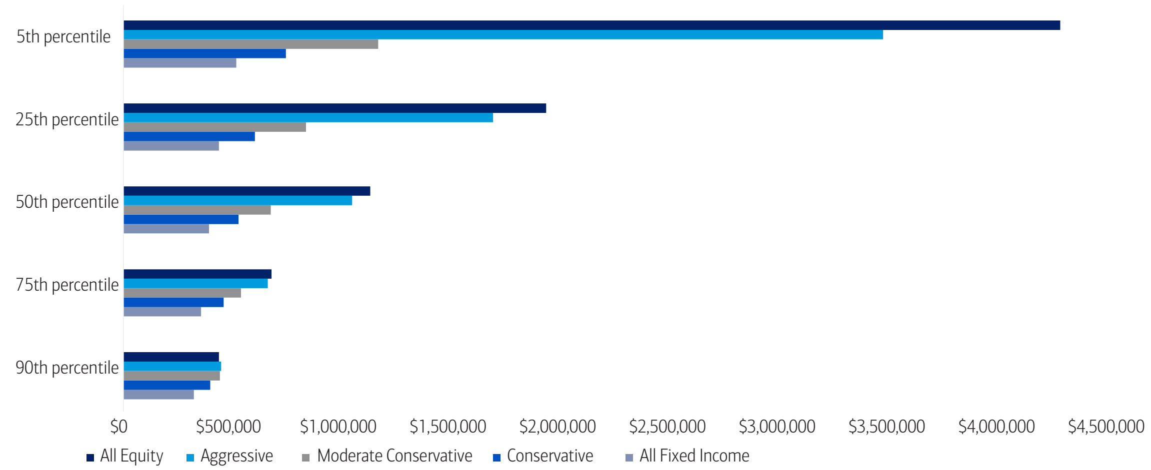
Source: Bank of America, December, 2019. Based on the records of 3.1 million 401(k) participants

[3] U.S. Department of Labor, https://www.bls.gov/cps/cpsaat39.htm, accessed January, 2020
[4] Center for Retirement Research at Boston College http://crr.bc.edu/wp-content/uploads/2015/10/Avg_ret_age_men.pdf.
[5] Arano, K.C. Parker and R. Terry. "Gender-Based Risk Aversion and Retirement Asset Allocation," Economic Inquiry 48, no.1 (January 2010) pp 147-155
[6] Age Wave and Merrill "Women & Financial Wellness: Beyond the Bottom Line" 2018

TAKEAWAY: CAREFULLY CONSIDER INVESTMENT CHOICES

When choosing investments for a retirement plan, one needs to understand the implications of being invested conservatively over a long period of time. Women in particular should focus on understanding these investment choices because they need their money to last longer. Figure 11 shows the 90%, 75%, 50%., 25% and 5% likelihood of potential wealth at retirement for different asset allocations, illustrating the risks associated with being invested too conservatively-or too aggressively.

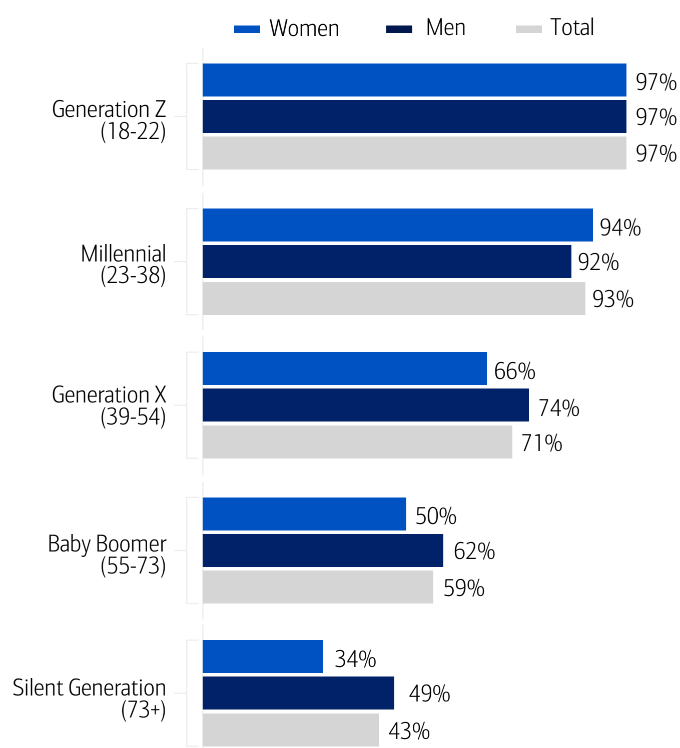
Figure 11: Potential wealth at retirement



Note: It is assumed the individuals current age is 22 and retirement age is 63. The initial annual income is $27,000. Income grows in line with inflation 2.2%. Annual contributions are 9%. The outcomes shown are hypothetical, are not guaranteed and your actual results could differ significantly for many reasons. The data merely reflects long-term estimates or projections. Such projections are based on numerous assumptions and estimates. Those assumptions and estimates may not be realized for a variety of reasons, ranging from general economic conditions to investment-specific considerations. As a consequence, the projected performance is merely illustrative of Merrill's view of potential returns, and actual realized performance may be materially lower than such projections and/or not realized in the period hypothesized. Source: Chief Investment Office.

Figure 10 below shows that the equity allocations of women are slightly higher than those of men for the millennial generation group. Equity allocations of women are lower than those of men for the Generation X, Baby Boomers, and Silent Generation age groups. For Generation X and Baby Boomers, women allocate 8% and 12% less to equity, respectively. The most notable difference is among Baby Boomers In which women's equity allocation is 50% versus 62% for men. Equity allocation of women and men are the same for Generation Z.[7]

Figure 10: Equity allocation by gender and generation



Source: Bank of America, December, 2019. Based on the records of 3.1 million 401(k) participants

[7] Suri, Vrdoljak, Yong and Zhang (2020) "Target Date Asset Allocation: A Goals-Based Approach." Merrill Wealth Management provides a discussion of appropriate asset allocations for different life stages.

4. STUDY LOAN ACTIVITY AND HARDSHIP CLAIMS

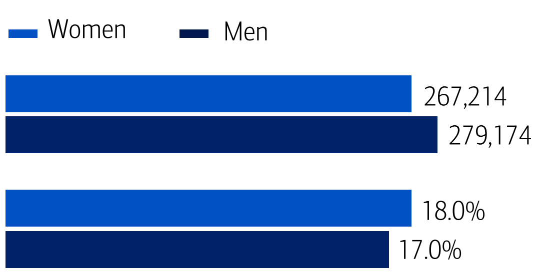
Loan activity: As a percentage women are more likely to have 401(k) loans

401(k) participants can borrow from their 401(k). The maximum amount that the plan can permit as a loan is the greater of $10,000 or 50% of the vested account balance, or $50,000 total, whichever is the lesser of the two totals. Participants could face taxes and penalties, as well as the loss of compounded growth of their retirement savings. However, in certain cases it may make sense to use a 401(k) loan as the rates on a 401(k) loan are significantly less than other credit solutions, like a credit card or payday loan.

As shown in Figure 12, in total number more men than women have 401(k) loans. However, a slightly higher percentage of women than men have 401(k) loans due to the nature that less women contribute to begin with. Approximately 18% of participating women have 401(k) loans. This is in line with rates shown in the Employee Benefit Research Institute (EBRI) study, which showed that 19% of all 401(k) participants who were eligible for loans from their plan had one.[8]

In total more men than women have 401(k) loans

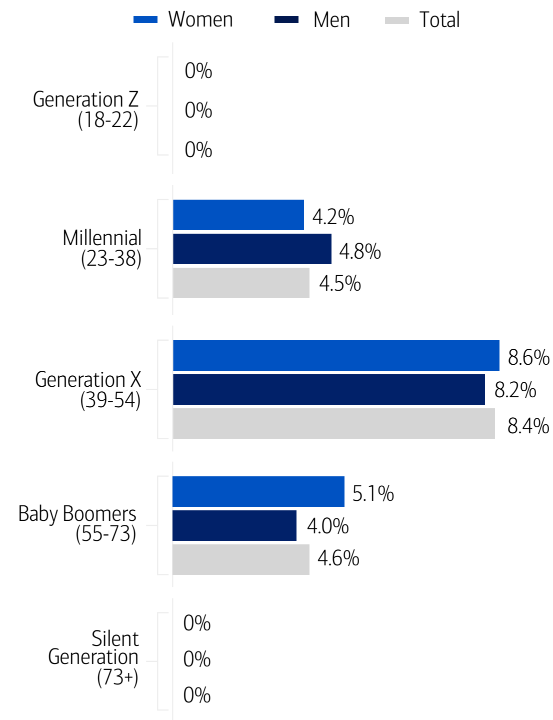
Figure 12: Number and percentage of participants with 401(k) loans



Source: Bank of America, December, 2019. Based on the records of 3.1 million 401(k) participants
Note: The total balance amount of all loans against the account, including any loan interest in arrears.

Unlike other generational groups, for Millennials the proportion of women with 401(k) loans is lower than the proportion of men. (see Figure 13).

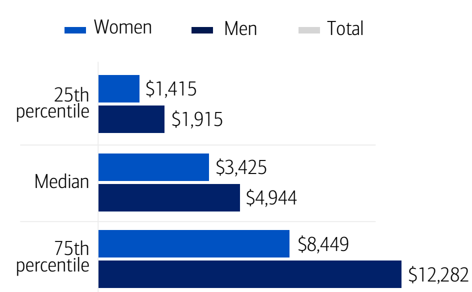
Figure 13: Percentage of participants with 401(k) loans by generation



Source: Bank of America, December, 2019. Based on the records of 3.1 million 401(k) participants
Note: The total balance amount of all loans against the account, including any loan interest in arrears.

Loan balance amounts of men are higher than those of women. The differences are most notable at the 75th percentile (see Figure 14). The median loan balance is $3,425 for women and $4,944 for men. The average loan balances are $6,691 for women versus $8,888 for men.

Figure 14: Balances of participants with 401(k) loans



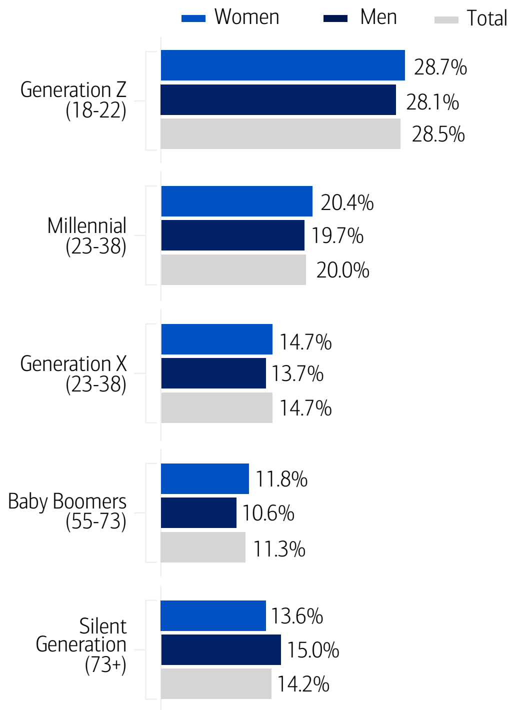
Source: Bank of America, December, 2019. Based on the records of 527,168 401(k) participants with 401(k) loans Note: The total balance amount of all loans against the account, including any loan interest in arrears. The maximum amount that the plan can permit as a loan is (1) the greater of $10,000 or 50% of your vested account balance, or (2) $50,000, whichever is less.

[8] Employee Benefit Research Institute "401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2016" September 10, 2018

Loan-to-Balance Ratios: Women have higher loan-to-balance ratios

Loan-to-balance ratios of women are higher than that of men at all groups except the Silent Generation. Loan-to-balance ratios of younger age groups are higher than those of older age groups.

Figure 15: 401(k) loan-to-balance ratios by generation



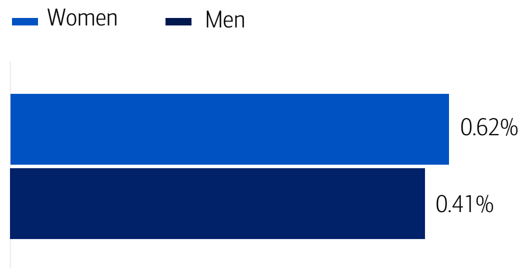
Source: Bank of America, December, 2019. Based on the records of 527,168 401(k) participants with 401(k) loans
Note: The loan-to-balance ratios represents the ratio of total balance amount of all loans against the account, including any loan interest in arrears divided by the total amount of 401(k) plan balance amount. The maximum amount that the plan can permit as a loan is (1) the greater of $10,000 or 50% of the vested account balance, or (2) $50,000, whichever is less.
Based on median values

Hardship activity: Women are claiming hardship at greater rates

Participants in 401(k) plans can claim hardship for a number of reasons. They include certain medical expenses, the purchase of a principal residence, educational expenses, payments necessary to prevent eviction or foreclosure on, a principal residence, burial or funeral expenses; and certain expenses for the repair of damage to a principal residence.

The number of participants that have claimed hardship is relatively low (less than 1%) yet more women than men claim hardship. The low rate of hardship withdrawals is consistent with industry studies of about 1% of participants.[9]

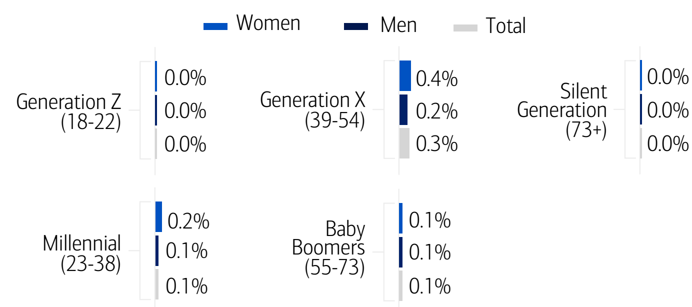
Figure 16: Percentage of participants claiming hardship



Source: Bank of America, December, 2019. Based on the records of 3.1 million 401(k) participants
Note: A hardship withdrawal is a distribution from a 401(k) plan to be "made on account of an immediate and heavy financial need of the employee, and the amount must be necessary to satisfy the financial need," according to the IRS. Certain expenses are deemed to be immediate and heavy, including: (1) certain medical expenses; (2) costs relating to the purchase of a principal residence; (3) tuition and related educational fees and expenses; (4) payments necessary to prevent eviction from, or foreclosure on, a principal residence; (5) burial or funeral expenses; and (6) certain expenses for the repair of damage to the employee's principal residence.

The percentage of women claiming a hardship is greatest for Generation X.

Figure 17: Percentage of participants claiming hardship by generation

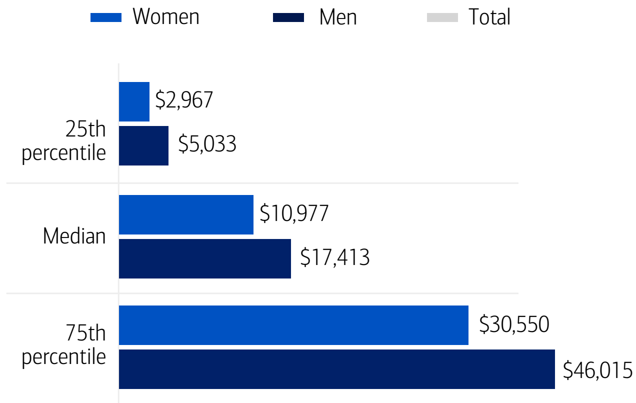


Source: Bank of America, December, 2019. Based on the records of 3.1 million 401(k) participants
Note: A hardship withdrawal is a distribution from a 401(k) plan to be "made on account of an immediate and heavy financial need of the employee, and the amount must be necessary to satisfy the financial need," according to the IRS. Certain expenses are deemed to be immediate and heavy, including: (1) certain medical expenses; (2) costs relating to the purchase of a principal residence; (3) tuition and related educational fees and expenses; (4) payments necessary to prevent eviction from, or foreclosure on, a principal residence; (5) burial or funeral expenses; and (6) certain expenses for the repair of damage to the employee's principal residence.

[9] Argento, Roberto, Victoria L. Bryant, and John Sabelhaus. 2013. "Early Withdrawals from Retirement Accounts." Finance and Economics Discussion Series Paper 2013-22. Washington, DC: U.S. Board of Governors of the Federal Reserve System.

Of participants that have claimed hardship, the 401(k) account balances are greater for men than those for women. The median 401(k) account balance is $10,977 for women and $17,413 for men (see Figure 18). Of participants claiming hardship the average 401(k) plan balances are $26,103 for women versus $41,782 for men.

Figure 18: Balances of participants claiming hardship



Source: Bank of America, December, 2019. Based on the records of 3.1 million 401(k) participants

Note: A hardship withdrawal is a distribution from a 401(k) plan to be "made on account of an immediate and heavy financial need of the employee, and the amount must be necessary to satisfy the financial need," according to the IRS. Certain expenses are deemed to be immediate and heavy, including: (1) certain medical expenses; (2) costs relating to the purchase of a principal residence; (3) tuition and related educational fees and expenses; (4) payments necessary to prevent eviction from, or foreclosure on, a principal residence; (5) burial or funeral expenses; and (6) certain expenses for the repair of damage to the employee's principal residence.

TAKEAWAY: AVOID TAPPING INTO YOUR SAVINGS

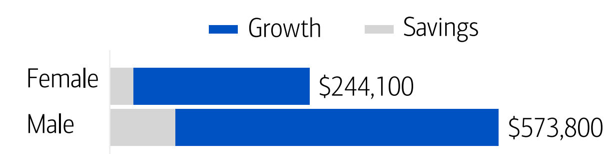
The example below shows the consequences of tapping into retirement savings. The figures show the annual retirement contributions for a female and a male from age 25 to when they both retire at 65. The male consistently saves and progressively increases his annual contributions. The female initially contributes $3,000 but then takes time off to care for her children and elderly parents from age, 31 to 45 (see Figure 22). Due in part to compound interest, his total accumulated savings at retirement is $573,800. In contrast, her savings at retirement is $244,100. The difference between the two is significant — a total of $329,700.[10]

Figure 19: Retirement contributions

Age	25-35	31-35	36-44	45-50	51-65
Female	$3,000	$0	$2,500	$0	$2,000
Male	$3,000	$4,000	$4,500	$5,000	$6,000

Source: Chief Investment Office

Figure 20: Retirement savings at retirement



Note: Assumes a hypothetical annual rate of return of 5%. Figures rounded to the nearest $1000. This is a hypothetical example meant for illustrative purposes only. It does not reflect an actual investment, nor does it account for the effects of taxes, any investment expenses or withdrawals. Returns are not guaranteed and results will vary. Investment returns cannot be predicted and will fluctuate. Investor results may be more or less. It is not intended to serve as investment advice since the availability and effectiveness of any strategy is dependent upon your individual facts and circumstances.

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Source: Calculations by the Chief Investment Office.

[10] See Rappaport and Vrdoljak (2020) "Financial Security for the Caregiver" Merrill Wealth Management for additional examples how work reduction impacts women's financial security.

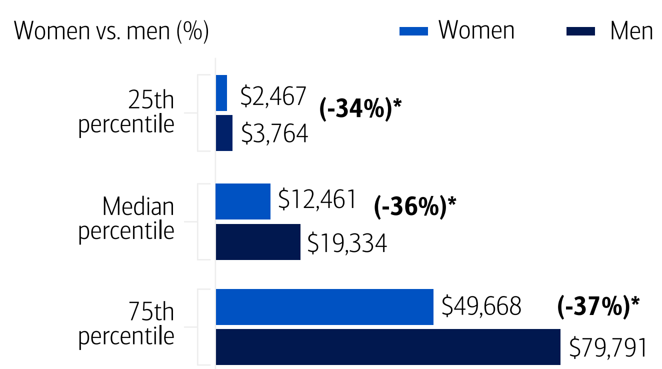
5. STUDY BALANCES: WOMEN HAVE SIGNIFICANTLY LOWER 401(K) BALANCES THEN MEN

The median 401(k) plan balances are $12,461 for women versus $19,334 for men. The average 401(k) plan balances are $58,772 for women versus $94,349. for men. Total 401(k) balances for women are approximately two-thirds that for men at the 25th percentile, median and 75th percentile (see Figure 21). The ratio of women's balances to men's is slightly lower than in that other industry studies, ranging from 40 to 50% in differences.[11]

The lower balances of women relative to that of men can be attributed to lower income and tenure in plans. Women continue to earn less than men in the workplace. U.S Department of Labor data shows that women make 81 cents for every $1 that a man earns.[12]

Women are more likely to take the off-ramp to assist with caregiving needs resulting in fewer working years. An estimated 66% of caregivers are female, and their average age is 49.[13] Taking time off to provide care for a loved one can disrupt a woman's sustained accumulation of retirement funds. In a study completed by the Center for Work-Life Policy, on average women who left paid work even temporarily lost 11 percent of their earning power. Women who stayed out of paid work three years or longer saw their earning power reduced by almost 37 percent.[14]

Figure 21: 401(k) balances by gender

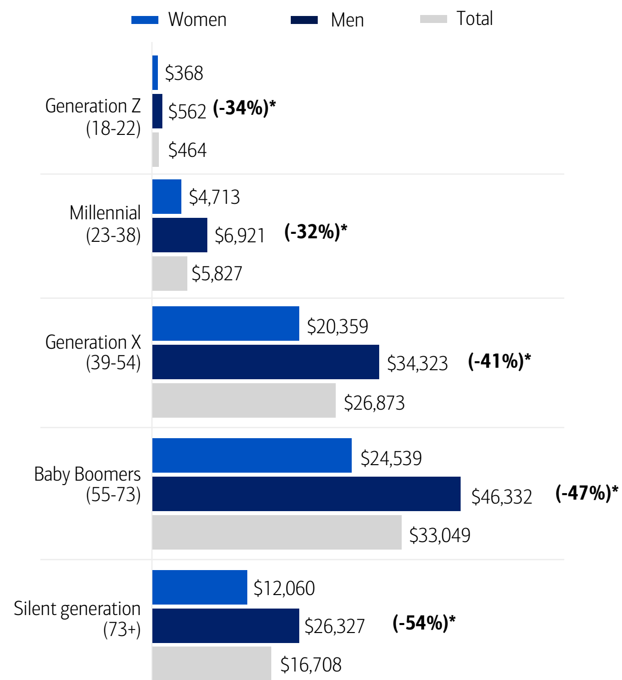


Source: Bank of America, December, 2019. Based on the records of 3.1 million 401(k) participants. Note: 401(k) plan balance amount contains the sum of fund-market-values for all funds within participant's account.
*The numbers in parenthesis represent the percentage difference between men and women balances.

The 401(k) balances of women are lower than those of men across all generation groups as shown in Figure 22. Relative differences between women and men are greatest at older age groups. For the Baby Boomer generation the median balance for women is $24,539, about half of that for men at $46,332. In contrast, for Millennials, women have about two-thirds as much as men.

The progressive increase in the differences in balances between women and men as they age can also be attributed to the pay gap. U.S. Bureau of Labor Statistics data shows in 2016, women ages 25-34 were earning 89% of what men in that age group were earning but by ages 45-54 women were earning only 75% of what men were earning.[15]

Figure 22: 401(k) balances by gender and generation



Source: Bank of America, December, 2019. Based on the records of 3.1 million 401(k) participants. Note: 401(k) plan balance amount contains the sum of fund-market-values for all funds within participant's account. Based on median values.
* The numbers in parenthesis represent the percentage difference between men and women balances.

[11] RAND Center for the Study of Aging "Household Retirement Savings: The Location of Savings between Spouses." September, 2016

[12] U.S. Department of Labor, https://www.bls.gov/cps/cpsaat39.htm. Accessed, January 2020.

[13] AARP Public Policy Institute and National Alliance for Caregiving. "Caregiving in the U.S.," June 2015, www.aarp.org/content/dam/aarp/ppi/2015/caregiving-in-the-united-states- 2015-report-revised.pdf

[14] Off-Ramps and On-Ramps Revisited, Center for Work-Life Policy (CWLP), (2010)

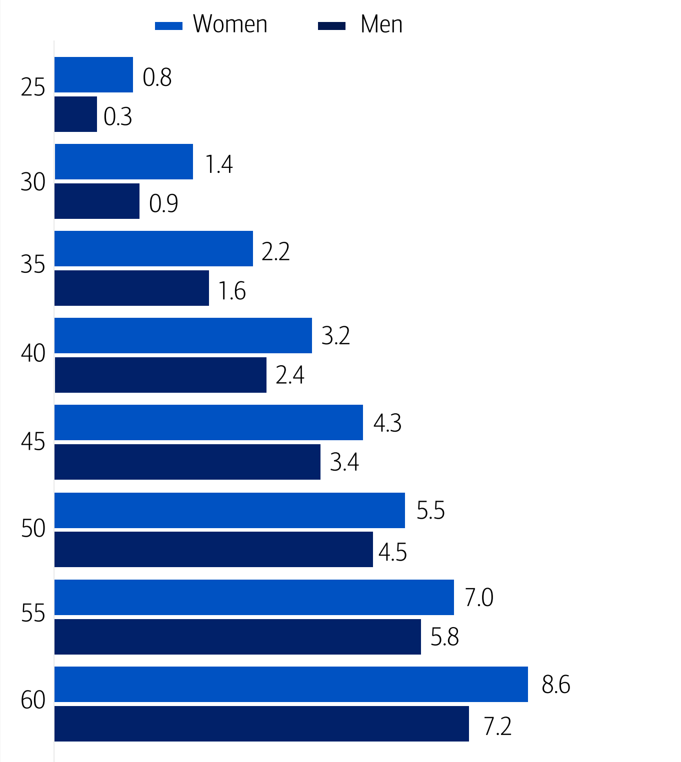
[15] https://www.bls.gov/opub/ted/2017/womens-and-mens-earnings-by-age-in-2016.htm

TAKEAWAY: PAY ATTENTION TO SAVINGS

Below are suggested retirement savings multiples for women and men for various ages. We have assumed a greater life expectancy and earlier retirement for women.

The retirement saving multiples are calculated with an assumption of 90 percent certainty of replacing income in retirement (see Appendix for additional assumptions). For example, if a 35-year-old woman, with gross income of $100,000 a year wants to be on track to fund her retirement goals, she would have saved multiple of 2.2 of her gross salary. Thus, she would need to have saved $220,000. In contrast, a man of the same age and same income level would need to save less than $160,000.

Figure 23: Retirement saving multiples: Women vs. Men



Note: Based on Chief Investment Office assumptions, and performance is not guaranteed.
See Appendix for details on the assumptions.
Source: Calculations by the Chief Investment Office.

KEY FINDINGS

Our analysis shows that for women and men participating in Bank of America 401(k) plans:

- Participation rates of women are slightly lower than those of men
- Contribution rates for women and men are comparable at the 25th, median and 75th percentile. For the middle range contribution rate groups, women's rates are higher than those for men.
- Equity allocations of women are 12% lower than those of men for older participants
- Median balances of women are 36% lower than those of men. Differences between women's and men's balances are greatest for older participants.
- Women claim hardship and take 401(k) loans more often than men do
- 401(k) loan balances are higher for men than for women
- 401(k) loan-to-balance ratios of women are higher than those of men

KEY TAKEAWAYS

1. Start saving early for your retirement

- Enroll in your employer's 401(k) plan
- Set up automatic payroll deductions for your contributions and gradually increase your contributions over time
- Try to contribute enough to get the full employer's 401(k) matching contribution

2. Maximize your contributions

- Aim to increase your contributions when you get a raise or tax refund or pay off a large expense
- Consider making catch-up contributions if you're age 50 or older and eligible to do so
- If you've maxed out your contributions on retirement vehicles, consider if other types of accounts may be appropriate (such as a traditional or Roth IRA)
- Consider trying to contribute the percentage of your income, including any contributions from your employer, shown in Figure 8

3. Carefully consider investment choices

- Review your plan's investment choices and select investments that works for you, and match your desired level of risk, goals, time horizon, and are diversified.
- Review your accounts periodically (ideally, at least annually) and adjust your investments if needed

4. Avoid tapping into savings

- Think carefully before you tap long-term retirement savings to pay off short-term debt
- Revisit your budget to identify areas where you can reduce spending

5. Pay attention to savings

- To be financially prepared for retirement, we suggest consider saving multiples of your current household income given your age as shown in Figure 23

APPENDIX:

Assumptions: Retirement savings and contributions analysis

Parameter	Values	Source
Current age	25, 30, 35, 40, 45, 50, 55, 60	**CIO**
Retirement age	Female: 63 Male: 65	**Center for Retirement Research at Boston College:** crr.bc.edu/wp-content/uploads/2015/10/Avg_ret_age_men.pdf
Life expectancy	Female: 92 Male: 90	**Social Security Administration Life Expectancy Tables:** ssa.gov/OACT/HistEst/Death/2019/DeathProbabilities2019.htm
CIO Confidence level	90%	**CIO –** applied to the portion of income replaced by retirement savings above Social Security
Income replacement from retirement savings (pre-tax)	38%	**Total retirement income replacement: 71%** *Munnell, A, Webb, A and Hou W (2014) "How Much Should People Save? **Income replacement from Social Security:33%** Social Security Administration: ssa.gov/oact/NOTES/ran9/an2019
Total contribution rate (pre-tax)	9%	**Personal saving rates (pre-tax): 6%** federalreserve.gov/econresdata/2016-economic-well-being-of-us-households-in-2015-income-and-savings.htm **Employer's Match: 3%** Most common formula, according to Vanguard's 2019 How America Saves report , is 50% of every dollar an employee contributes, up to 6% of salary.
Funding status	75%	**CIO –** funding ratio levels applied to the portion of income replaced by retirement savings above Social Security
Strategic Asset Allocation and Capital Market Assumptions	Moderate asset allocation*	**CIO**

* Moderate asset allocation: For investors who are willing to take a moderate level of risk. Primary emphasis is to strike a balance between portfolio stability and portfolio appreciation. Investors using this model should be willing to assume a moderate level of volatility and risk of principal loss. A typical portfolio will primarily include a balance of fixed income and equities

Summer	2020	Gender Lens in Defined Contribution (DC) plans	Vrdoljak/Feng
Winter	2020	Women and Life-Defining Financial Decisions	Vrdoljak
Winter	2020	The Family and Financial Security	Vrdoljak
Winter	2020	Financial Security for the Caregiver	Vrdoljak
Winter	2020	Managing Your Career	Vrdoljak
Winter	2020	Debt and Homeownership	Vrdoljak
Winter	2020	Financial Decisions Near Retirement	Vrdoljak

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