THE COLLABORATIVE FOR EQUITABLE RETIREMENT SAVINGS

How Effective Might the Saver's Match Be in Mitigating Race/Gender Disparities in 401(k) Plans

Evidence From the Collaborative for Equitable Retirement Savings Project

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Author
Jack VanDerhei
Director of Retirement Studies

The Morningstar Center for Retirement & Policy Studies
Morningstar Investment Management LLC

Executive Summary

The Collaborative for Equitable Retirement Savings, or CFERS, initiated in 2022 by the Defined Contribution Institutional Investment Association, or DCIIA, Aspen Institute Financial Security Program, and Morningstar Retirement, aims to examine the dynamics of defined-contribution retirement savings and identify disparities in outcomes based on race and gender by analyzing anonymized defined-contribution transactional plan data. Over time, this data, coupled with qualitative research to understand the people-centered context behind retirement plan usage, will provide the platform and tools for employers, recordkeepers, researchers, and policymakers to continue to shape the defined-contribution system and related employer benefits to work effectively for all workers who take advantage of the programs. This report presents an analysis of the likely impact of the new Saver's Match program on the race/gender disparities in 401(k) balances analyzed in the previous CFERS publication (VanDerhei, 2024). The new program will begin in 2027 when the Saver's Match offers a 50% match on the first $2,000 of retirement savings contributions for a participant. However, there are income thresholds for eligibility based on modified adjusted gross income, or MAGI.

The improvement in outcomes (measured as account balance/salary ratios at age 65) is simulated for each of eight race/gender categories by age, eligibility status, and behavioral assumptions. When results are combined for all ages from 25-64, we find that for those individuals eligible for the new program when it begins in 2027, the increase in the account balance/salary ratios at age 65 can be as high as 21.4% to 33.7%, depending on assumed filing status and eligibility as well as behavioral assumptions. In general, the results are even more positive for the youngest participants who will have more time to benefit from the program. We also see that Black females typically have the largest improvement in retirement outcomes. This will at least partially mitigate the disparities shown in the previous CFERS publication.

Key Findings

1) Assuming no employee contribution changes as a result of the Saver's Match and a married filing status with no spousal income, the Saver's Match program is projected to increase the account balance/salary ratio at age 65 by 3.1% to 10.5% for eligible CFERS participants, with the biggest benefit for Black females aged 25-34.

2) Assuming no employee contribution changes as a result of the Saver's Match and a married filing status with no spousal income, when averaged across all CFERS participants regardless of eligibility to benefit from the Saver's Match in 2027, the average increase in their account balance/salary ratio at age 65 is projected to be modest, with the largest benefit for Black females aged 25-34.

3) Assuming employee contributions are increased to maximize the Saver's Match changes and a married filing status with no spousal income, CFERS participants eligible to benefit from the program have an average increase in their account balance/salary ratio at age 65 that varies from 4.3% to 27.4%, with Black females aged 25-34 again experiencing the greatest benefit.

4) Assuming employee contributions are increased to maximize the Saver's Match changes and a married filing status with no spousal income, the increase in the account balance/salary ratio at age 65 when averaged across all CFERS participants regardless of eligibility to benefit from the program is modest.

5) If participants changed their contributions due to Saver's Match, it would have a profound impact on the average increase in their account balance/salary ratio at age 65, with every group seeing gains. In fact, the increase under the assumption that contributions are increased for anyone contributing less than $2,000 to maximize the Saver's Match is more than double the increase assuming no contribution changes for six of the eight race/gender categories. Black females would experience the largest improvement going from an increase of 9.0% to 21.5%.

Introduction

Since 2002, tax credits (commonly referred to as the Saver's Credit) have been available to eligible individuals in an amount equal to the applicable percentage of qualified retirement savings contributions for the taxable year up to $2,000.[1] The maximum credit amount is $1,000 per person (up to $2,000 per married couple filing jointly).

Several studies[2] have demonstrated that the initial public policy objectives of this program were in large part never realized. As part of the Secure 2.0 Act of 2022, the Saver's Match program was created to address several shortcomings of the existing Saver's Credit. The new program will begin in 2027, when the Saver's Match will offer a 50% match on the first $2,000 of retirement savings contributions for a participant. However, there are income thresholds for eligibility based on the MAGI. For joint returns, the applicable dollar amount is $41,000, and the phaseout range is $30,000. Lower thresholds are applied to single filers and those filing as a head of household (described later in the paper).

There are at least two reasons to believe that the Saver's Match program will be a significant improvement over the Saver's Credit program. First, the Saver's Credit may have a limited impact on low-income earners who owe little or no federal taxes. The Saver's Match addresses this by directly depositing matched funds into retirement accounts, ensuring a tangible benefit for all participants. Second, claiming the Saver's Credit can involve complex calculations and tax-filing procedures. The Saver's Match streamlines the process by automatically depositing the matched amount into retirement accounts, improving the user experience for participants.

In theory, the Saver's Match should be a more effective policy tool designed to address the retirement savings gap for low- and middle-income earners by directly encouraging and rewarding contributions. This will likely have a key role in mitigating existing race/gender disparities in 401(k) plans as shown in the first CFERS publication.[3]

The purpose of this paper to simulate the likely impact of the Saver's Match on the CFERS participants to gain insight into the ability of the new program to enhance retirement outcomes under several different assumptions. Also, in line with the previous CFERS publication, we are interested in the distribution of these enhancements among the eight race/gender categories analyzed.

[1] 26 U.S. Code § 25B

[2] See the next section on previous research for more detail.

[3] See VanDerhei (2024).

Previous Research

Several studies have found that low-income workers with limited tax liability may not be able to take full advantage of the Saver's Credit because it is nonrefundable.[4] Researchers have also found that presenting the Saver's Credit as a match, rather than a credit, improves the take-up rate.[5]

GAO (2011) found that several modifications to the Saver's Credit could provide a sizable increase in retirement income for some low-wage workers. For example, under the most generous scenario, Saver's Credit recipients who fell in the lowest earnings quartile experienced a 14% increase in annual retirement income from DC savings, on average.

A recent survey by Transamerica Institute[6] reported that 67% of plan sponsors are both aware of the Saver's Credit and actively promote it to their employees. Seventeen percent are aware of it but do not actively promote, and 16% are unaware of it. However, only 7% of employers that do not offer any retirement benefits are aware of it and promote it.

Earlier this year, Copeland (2024) estimated the potential market for the Saver's Match based on IRS data from 2018. He concluded that approximately 83.9 million Americans had incomes that fall within the Saver's Match income limits, with 69.0 million of those receiving W-2 income. Furthermore, 21.9 million contributed to either an employment-based retirement plan or an IRA.

Based on a survey of 3,061 respondents who would qualify for the Saver's Match based on income and filing status, Cormier, Ingalls and Hawkins (2024) report that 89.9% of eligible retirement savers are very likely or somewhat likely to contribute more to their employer-sponsored retirement plans to receive a larger matching contribution.[7] Moreover, they found that 73.5% of respondents who are not saving for retirement indicated that they would be very likely or somewhat likely to begin saving to receive a program-matching contribution. Their study also found that 93.6% of Black savers and 92.3% of Hispanic savers would contribute more to their retirement plans if they could receive a federal matching contribution, as compared with 89.1% of white savers. These results suggest that Black and Hispanic savers would stand to gain significantly from the new Saver's Match program; however, a quantification of the benefits of this program in isolation by race/ethnicity has not been performed yet.

Some evidence on this quantification is available based on VanDerhei's earlier analysis[8] using EBRI's Retirement Security Projection Model,® or RSPM,[9] to simulate the impact of an Enhanced Saver's Credit

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[4] See for example Koenig and Harvey (2005) and Gale, Iwry and Orszag (2005).
[5] Duflo, Gale, Liebman, Orszag, and Saez (2006)
[6] Collinson and Choi (2004)
[7] Bifurcation of the results by whether the respondent was currently contributing more than the $2,000 threshold were not available.
[8] VanDerhei (2022).
[9] It is important to note that RSPM simulates the impact of the legislative proposals for all US households, not just those currently participating in a defined-contribution plan.

as part of a broader legislative proposal that included a mandate to offer some type of retirement plan for all but the smallest employers.

The two major components of his simulation included:[10]

- Automatic Contribution Plan/Arrangement, or ACPA. This proposal would generally require employers with more than five employees to maintain an automatic contribution plan/arrangement; however, sponsors with certain previous plans would be grandfathered. The baseline version of the model used in the report assumes that auto-IRAs are used for all new sponsors. Each new plan is assumed to have a 6% default with automatic-contribution escalation up to 10% of pay. A 30% opt-out rate is assumed for new eligibles (although this assumption is relaxed later in the report).

- Enhanced Saver's Credit. This proposal would replace the current Saver's Credit with a simple, 50% government match on contributions of up to $1,000 per year made to 401(k)-type plans and IRAs by individuals with incomes up to $25,000, couples with incomes up to $50,000, and heads of household with incomes up to $37,500. The amount of the match would phase out over the next $10,000 of income for individuals and $20,000 for couples/heads of household. The baseline assumption used in this analysis is that everyone eligible will take the full amount given its refundable nature.

The impact of these two programs combined, as measured by the Retirement Savings Net Outcomes,[11] varied markedly by age and race/ethnicity. For households ages 35-39, Black households had an increase of 74.6%, followed by 61.2% for Hispanic households and 48.7% for white households.[12] As expected, the increase was significantly smaller for older households given their shorter time to benefit from the legislative modifications: for households ages 60-64, Black households had an increase of 7.7%, 8.1% for Hispanic households and 5.7% for white households.

[10] Separate analysis was also conducted for student loan debt match, "Skinny 401(k)" plans, and auto portability.

[11] The Retirement Savings Net Outcomes give the net outcome for all households combined. It is defined as the present value of the simulated surpluses in retirement at retirement age (in today's dollars) for those households simulated to experience a surplus in retirement minus the present value of the simulated retirement deficits at retirement age (in today's dollars) for those households simulated to experience a shortfall in retirement.

[12] There was not sufficient data to break out Asian households separately in this model, but for all "other" households the increase was 45.4%.

Dataset and Methodology

The dataset used for this analysis consists of 2022 data from nine 401(k) plan sponsors. In each case, the typical 401(k) plan administrative data from the recordkeeper was merged with human resources data from the plan sponsor to provide information on race and gender. This resulted in a dataset of 180,684 active plan participants with a positive account balance under the age of 65 (referred to hereafter as the "CFERS participants").[13] It should be noted that by definition this dataset excludes employees who are not eligible as well as eligible nonparticipants. We hope to analyze the impact of race and gender differentials for participation and their impact on overall retirement-income adequacy once the year-end 2023 data is available.

For each of the CFERS participants, we simulated 1,000 alternative ratios of account balances divided by salary at age 65 under a baseline scenario assuming no Saver's Match as well as two different behavioral scenarios. Under Scenario 1 ("No contribution changes") we model the impact of the Saver's Match assuming there are no changes in contribution behavior by the participants. In contrast, Scenario 2 ("Increased contributions to maximize Saver's Match") modeled the impact of the Saver's Match on existing contributions and assumed anyone eligible for the Saver's Match who was contributing something under $2,000 immediately increased their contribution to $2,000. It is important to note that neither of these scenarios incorporates any behavioral modifications among eligible nonparticipants. We plan to expand the current analysis to include this population once we have additional plans in the CFERS dataset that utilize voluntary enrollment.

The model used for this analysis incorporates the participant's information for year-end 2022 as well race/gender-specific information on contributions, loans, and preretirement withdrawal to project the account balances. Cross-sectional information was used to derive age/wage curves for each of the eight race/gender combinations. Rates of return were generated based on Morningstar capital market assumptions.

The simulation begins in 2027 when the Saver's Match offers a 50% match on the first $2,000 of retirement savings contributions for a participant. However, there are income thresholds for eligibility based on MAGI:[14]

- For joint returns, the applicable dollar amount is $41,000, and the phaseout range is $30,000.
- In the case of a head of a household, the applicable dollar amount and the phaseout range is three quarters of the amounts applicable for joint returns.
- In the case of single filers, the applicable dollar amount and the phaseout range is half of the amounts applicable for joint returns.

The results in the main body of this paper will assume the CFERS participants are filing jointly but have no spousal income. We present results from two alternative assumptions in the appendixes. In Appendix

[13] See VanDerhei (2024) for additional detail on distribution by race and gender, age, tenure, and salary.
[14] 26 U.S. Code § 6433. These income limits are for 2027 and will be adjusted for inflation in subsequent years. We used salary as a proxy for modified AGI to determine eligibility and phaseout in this analysis.

A, we provide the results assuming the CFERS participants file as a head of household. Appendix B provides the results assuming the CFERS participants are single filers. Since the eligibility definitions for these two additional filing statuses are more restrictive than those used in the main body of the paper, the results will be different, especially when averaging over all CFERS participants.

The simulated results are displayed separately for (a) the CFERS participants eligible for the Saver's Match in 2027 as well as (b) all CFERS participants regardless of eligibility. The impact of the Saver's Match will obviously be greater for the former group, but depending on one's objectives, it may be interesting to view the overall impact as well.

Finding 1: Assuming no employee contribution changes, the Saver's Match program is projected to increase the account balance/salary ratio at age 65 by 3.1% to 10.5% for eligible CFERS participants, with the biggest benefit for Black females aged 25-34.

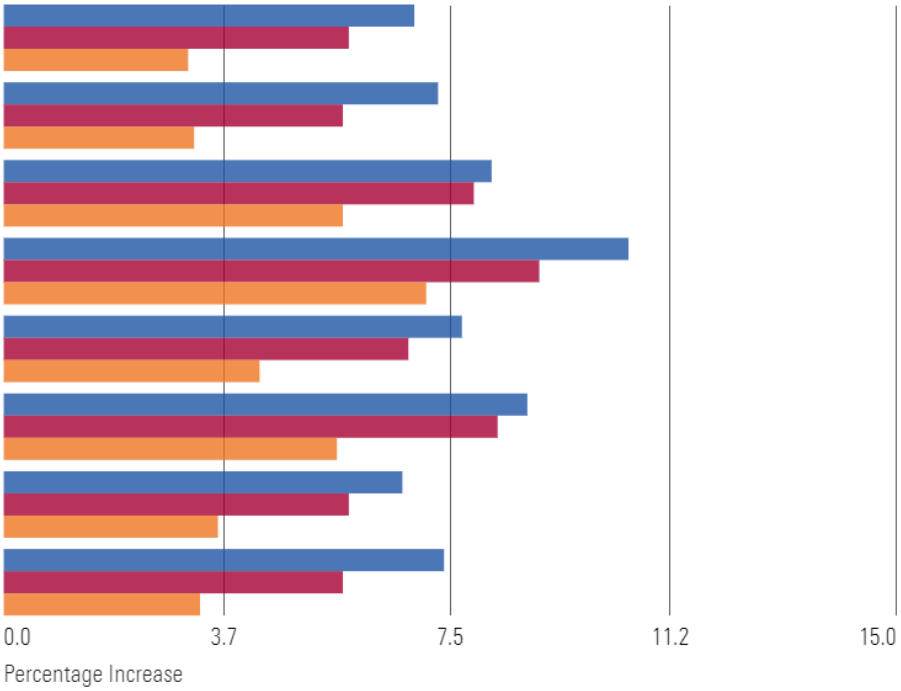
Exhibit 1 shows that among the CFERS participants eligible to benefit from the Saver's Match in 2027, the average increase in their account balance/salary ratio at age 65 under Scenario 1 (no contribution changes) assuming a married filing status with no spousal income ranges from:

- 5.7% to 9.0% when averaged across those current ages 25-64
- 6.7% to 10.5% for those current ages 25-34
- 3.1% to 7.1% for those current ages 55-64

Black females are simulated to have the largest benefit with an overall increase of 9.0% and an increase of 10.5% for those 25-34.

Exhibit 1 Average Increase in Account Balance/Salary Ratio at Age 65 as a Result of the Saver's Match by Age Cohort for Participants Currently Eligible Under Scenario 1: Assumes Married Filing Status With No Spousal Income

Race/Gender	25-34	All ages	55-64
White Male	6.9	5.8	3.1
White Female	7.3	5.7	3.2
Black Male	8.2	7.9	5.7
Black Female	10.5	9.0	7.1
Hispanic Male	7.7	6.8	4.3
Hispanic Female	8.8	8.3	5.6
Asian Male	6.7	5.8	3.6
Asian Female	7.4	5.7	3.3



Source: Collaborative for Equitable Retirement Savings. 2022 Data.

Finding 2: Among the CFERS participants eligible to benefit from the Saver's Match in 2027, the average increase in their account balance/salary ratio at age 65 varies from 4.3% to 27.4% under Scenario 2 (increased contributions to maximize Saver's Match), with Black females aged 25-34 again experiencing the greatest benefit.

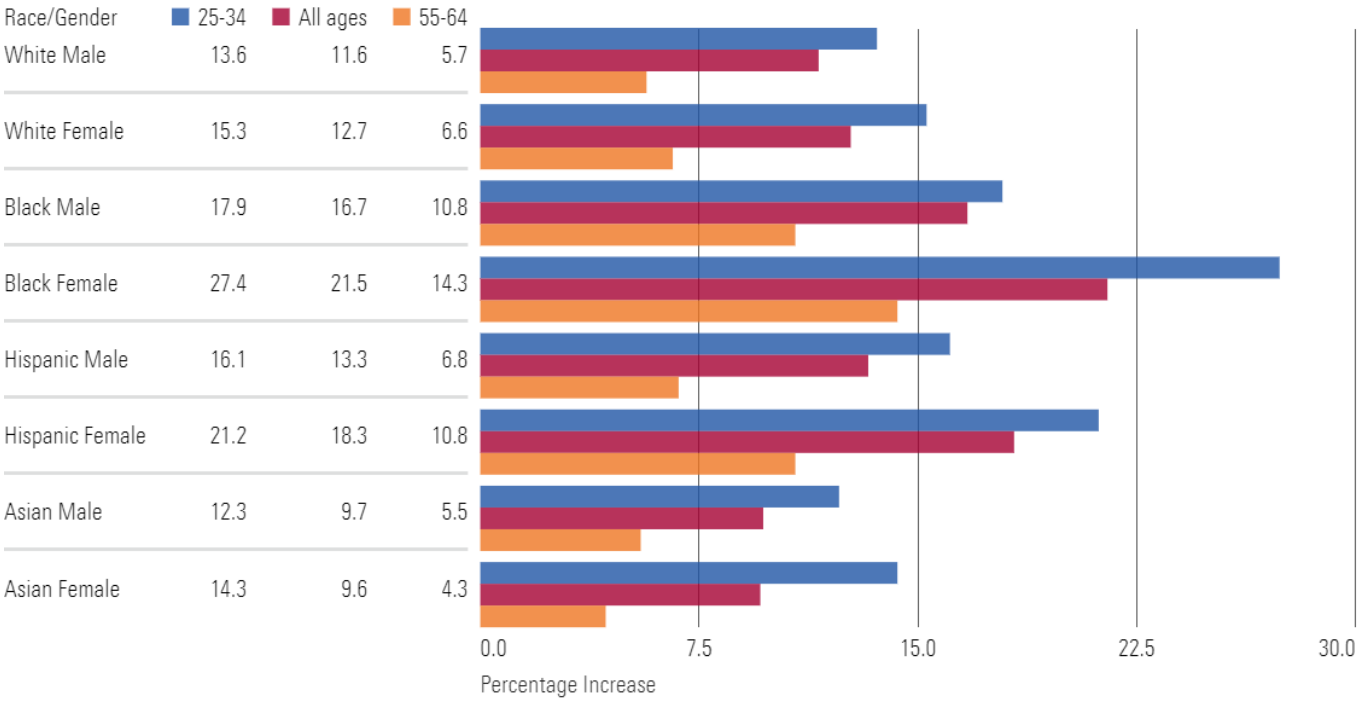
Exhibit 2 shows that among the CFERS participants eligible to benefit from the Saver's Match in 2027, the average increase in their account balance/salary ratio at age 65 under Scenario 2 (increased contributions to maximize Saver's Match) assuming a married filing status with no spousal income ranges from:

- 9.6% to 21.5% when averaged across those current ages 25-64
- 12.3% to 27.4% for those current ages 25-34
- 4.3% to 14.3% for those current ages 55-64

Black females are simulated to have the largest benefit with an overall increase of 21.5% and an increase of 27.4% for those 25-34.

Exhibit 2 Average Increase in Account Balance/Salary Ratio at Age 65 as a Result of the Saver's Match by Age Cohort for Participants Currently Eligible Under Scenario 2: Assumes Married Filing Status With No Spousal Income

Race/Gender	25-34	All ages	55-64
White Male	13.6	11.6	5.7
White Female	15.3	12.7	6.6
Black Male	17.9	16.7	10.8
Black Female	27.4	21.5	14.3
Hispanic Male	16.1	13.3	6.8
Hispanic Female	21.2	18.3	10.8
Asian Male	12.3	9.7	5.5
Asian Female	14.3	9.6	4.3



Source: Collaborative for Equitable Retirement Savings. 2022 Data.

Finding 3: Because many participants in our database are not eligible for the Saver's Match, the average increases in account balance/salary ratio at age 65 are modest, regardless of behavioral assumptions.

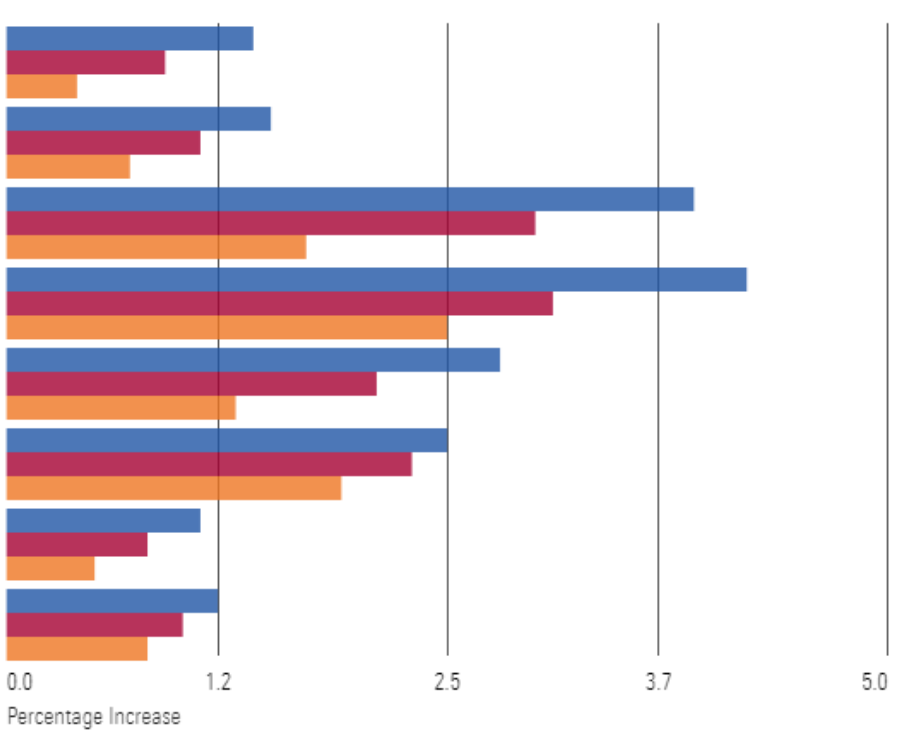
Exhibit 3 shows that among all the CFERS participants, the average increase in their account balance/salary ratio at age 65 under Scenario 1 (no contribution changes) assuming a married filing status with no spousal income ranges from:

- 0.8% to 3.1% when averaged across those current ages 25-64
- 1.1% to 4.2% for those current ages 25-34
- 0.4% to 2.5% for those current ages 55-64

Black females are simulated to have the largest benefit with an overall increase of 3.1% and an increase of 4.2% for those 25-34.

Exhibit 3 Average Increase in Account Balance/Salary Ratio at Age 65 as a Result of the Saver's Match by Age Cohort for All Participants Regardless of Current Eligibility Under Scenario 1: Assumes Married Filing Status With No Spousal Income

Race/Gender	25-34	All ages	55-64
White Male	1.4	0.9	0.4
White Female	1.5	1.1	0.7
Black Male	3.9	3.0	1.7
Black Female	4.2	3.1	2.5
Hispanic Male	2.8	2.1	1.3
Hispanic Female	2.5	2.3	1.9
Asian Male	1.1	0.8	0.5
Asian Female	1.2	1.0	0.8



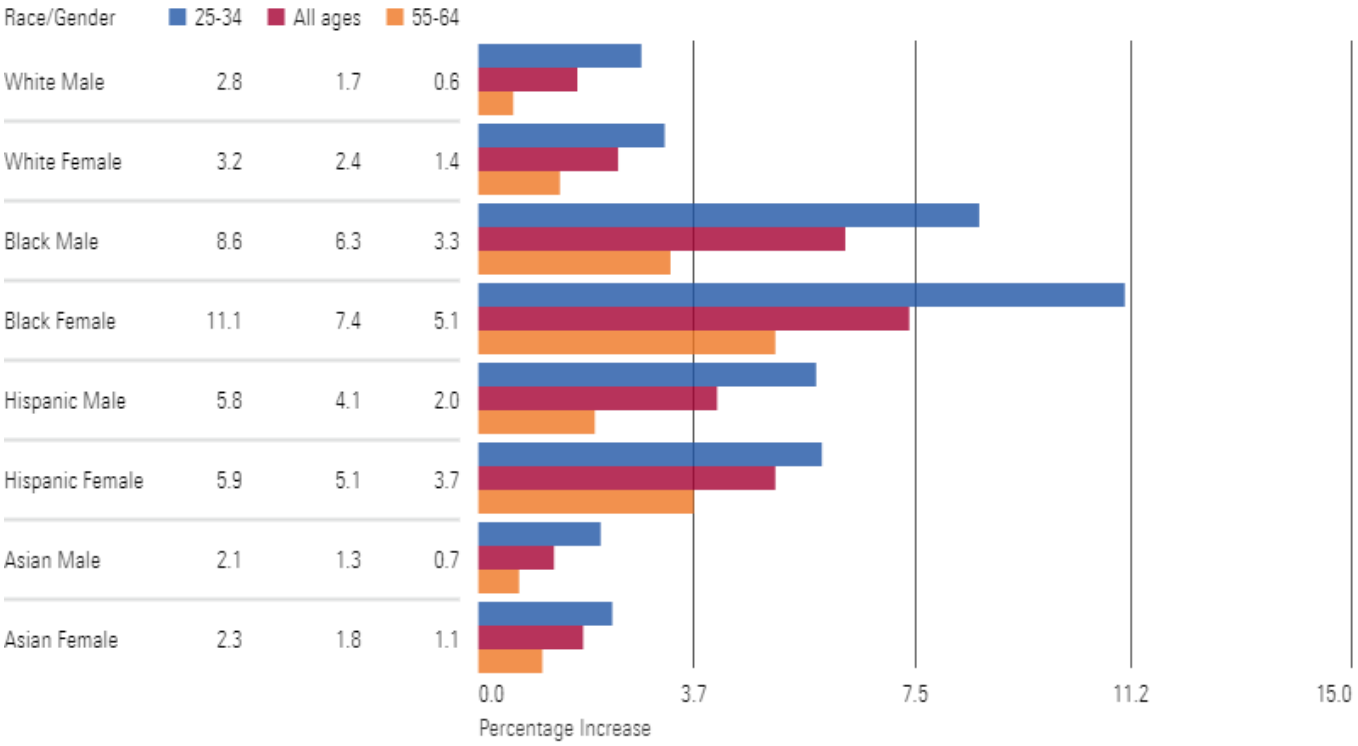
Source: Collaborative for Equitable Retirement Savings. 2022 Data.

Exhibit 4 shows that among all the CFERS participants, the average increase in their account balance /salary ratio at age 65 under Scenario 2 (increased contributions to maximize Saver's Match) assuming a married filing status with no spousal income ranges from:

- 1.7% to 7.4% when averaged across those current ages 25-64
- 2.1% to 11.1% for those current ages 25-34
- 0.6% to 5.1% for those current ages 55-64

Black females are simulated to have the largest benefit with an overall increase of 7.4% and an increase of 11.1% for those 25-34.

Exhibit 4 Average Increase in Account Balance/Salary Ratio at Age 65 as a Result of the Saver's Match by Age Cohort for All Participants Regardless of Current Eligibility Under Scenario 2: Assumes Married Filing Status With No Spousal Income

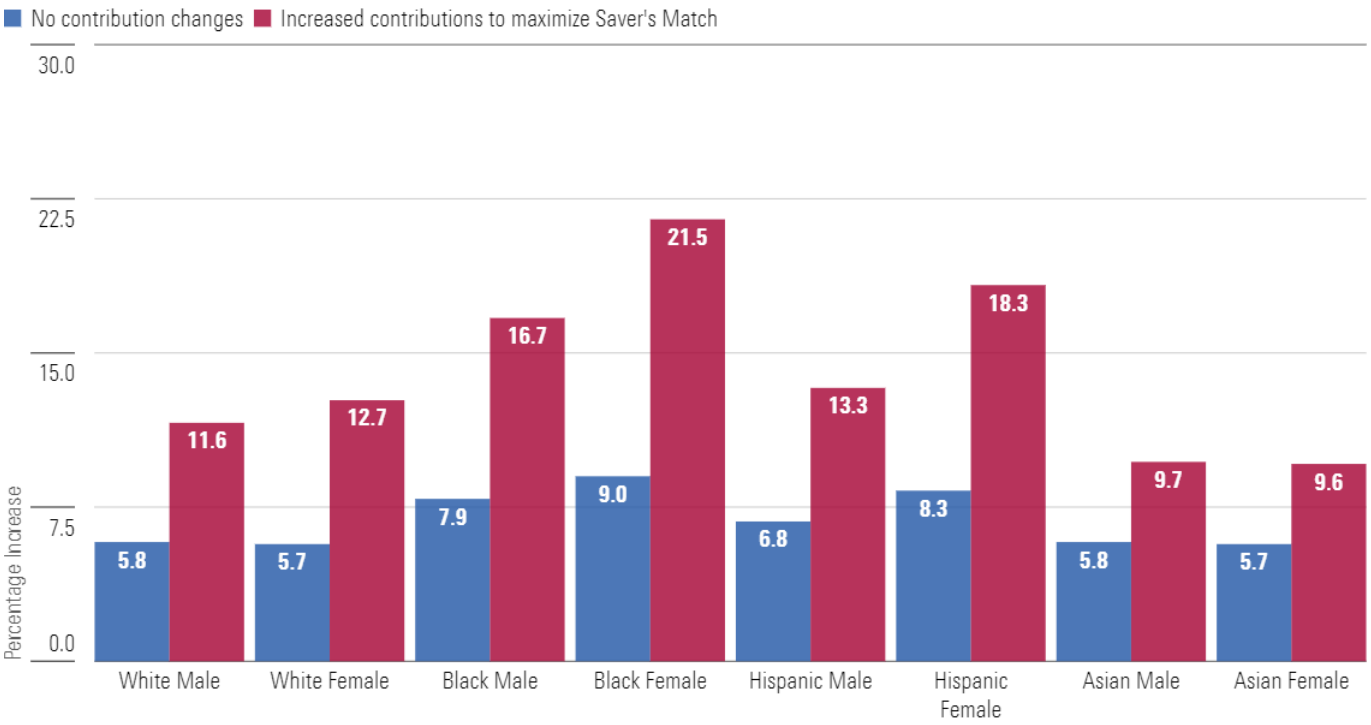


Source: Collaborative for Equitable Retirement Savings. 2022 Data.

Finding 4: Modifying the participant's behavioral assumptions with respect to the participant reaction to the Saver's Match has a profound impact on the average increase in their account balance/salary ratio at age 65.

Exhibit 5 shows the average increase in account balance/salary ratio at age 65 as a result of the Saver's Match by behavioral scenario for participants currently eligible assuming married filing status and no spousal income for all ages combined. The increase under the assumption that contributions are increased for anyone contributing less than $2,000 to maximize the Saver's Match is more than double the increase assuming no contribution changes for six of the eight race/gender categories. Black females experience the largest improvement going from an increase of 9.0% to 21.5%.

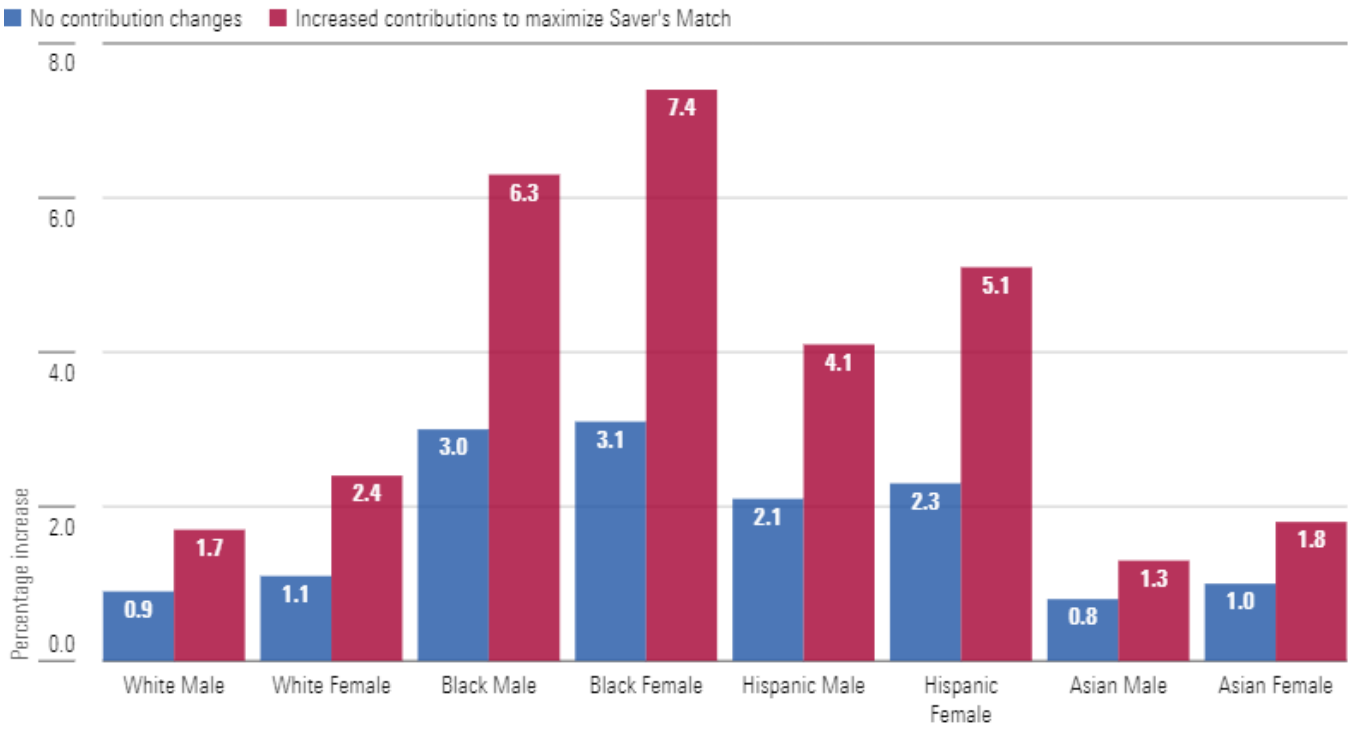
Exhibit 5 Average Increase in Account Balance/Salary Ratio at Age 65 as a Result of the Saver's Match by Behavioral Scenario for Participants Currently Eligible Assuming Married Filing Status and No Spousal Income: All Ages Combined



Source: Collaborative for Equitable Retirement Savings. 2022 Data.

Exhibit 6 shows the average increase in account balance/salary ratio at age 65 as a result of the Saver's Match by behavioral scenario for all participants regardless of eligibility assuming married filing status and no spousal income for all ages combined. The pattern is similar, but more muted, than that in Exhibit 5. Again, Black females experience the largest improvement, this time going from an increase of 3.1% to 7.4%.

Exhibit 6 Average Increase in Account Balance/Salary Ratio at Age 65 as a Result of the Saver's Match by Behavioral Scenario for All Participants Regardless of Eligibility Assuming Married Filing Status and No Spousal Income: All Ages Combined



Source: Collaborative for Equitable Retirement Savings. 2022 Data.

Implications

- The Saver's Credit would help close the racial wealth gap in 401(k) plans, particularly for Black females, while providing benefits to workers across all races.
- If workers respond to the new "government match" and increase their contributions to fully collect the match, it could have a significant impact on their savings relative to their final salaries.
- We do not expect either stylized scenario—one in which workers make no changes to their contributions nor one in which they increase their contributions to take the full match—to be representative of real-world experience in 2027 for all participants. However, the simulations show the importance of nudging workers to increase their savings to take full advantage of the new Saver's Match—a task that will largely fall to plan sponsors.
- The average benefits of the Saver's Match are modest, given that many workers will not be eligible, and personal finance columnists and advisors who typically serve higher-income, higher-net-worth individuals may not be as interested in publicizing the benefits of the match. Again, it is critical that sponsors communicate the benefits to their workers, and critical that the Department of Treasury facilitate an easy way for plan providers to collect the Saver's Match on behalf of participants.

Next Steps

While the results in this analysis show that the new Saver's Match program has tremendous potential to increase the projected ratio of account balances/salary at age 65 for those who meet the eligibility requirements, it has not answered the question of the extent to which this new program will mitigate existing race/gender disparities in retirement outcomes. This analysis will be provided later this year once the Phase 3 results for the CFERS project are published (see Appendix C for more detail of the various phases).

In Phase 3 of the project, we will simulate 1,000 replacement rates for each active participant for a range of retirement ages and compare the results across race/gender categories while controlling for midcareer hires. This will be done on a plan-specific basis using actual age/wage curves if the plan sponsor is large enough. Additional detail will be included whenever possible (such as education, marital status, salary vs. hourly, and so on).

The replacement rates will be generated by:

- Adding in projected accruals at retirement age for those with defined-benefit plans
- Adding in simulated Social Security benefits[15]
- Converting 401(k) account balances at retirement age to retirement income and computing replacement rates
- Simulating the baseline percentage of participants above various replacement rate thresholds as specified by the plan sponsor

[15] The baseline simulations will assume the status quo for Social Security benefits; however, plan sponsors have the option of also receiving results that show the expected reduction in Social Security benefits when the trust fund is expected to be depleted.

- Computing the pairwise comparisons for each of the scenarios mentioned previously to determine the impact on "at-risk" populations (as defined by the plan sponsor) by race/gender categories

The results will also be aggregated for the entire CFERS universe and published. However, it is our hope that providing the plan-specific results to employers contributing data to the project will help convince them of the benefits of educating their employees on the specifics of the Saver's Match program. Of course, recordkeepers can also play a useful role in the education process by embedding information about it on websites and on participant statements.

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Appendix A: Results Assuming Head-of-Household Filing Status

Averages across eligible participants with no employee-contribution changes

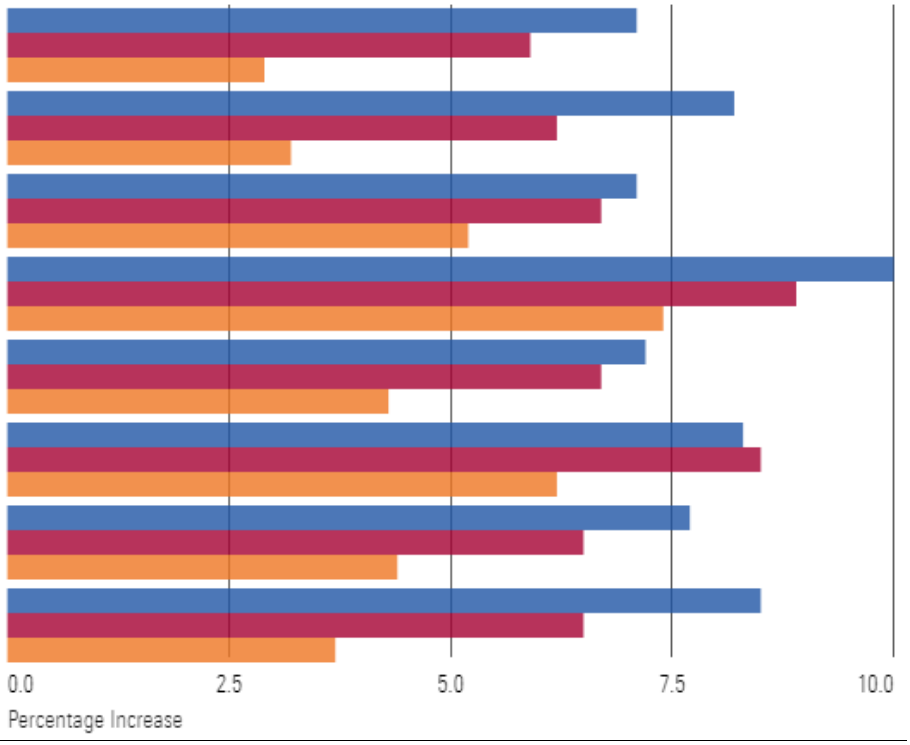
Exhibit 7 shows that among the CFERS participants eligible to benefit from the Saver's Match in 2027, the average increase in their account balance/salary ratio at age 65 under Scenario 1 (no contribution changes) assuming a head-of-household filing status ranges from:

- 5.9% to 8.9% when averaged across those current ages 25-64
- 7.1% to 10.0% for those current ages 25-34
- 2.9% to 7.4% for those current ages 55-64

Black females are simulated to have the largest benefit with an overall increase of 8.9% and an increase of 10.0% for those 25-34.

Exhibit 7 Average Increase in Account Balance/Salary Ratio at Age 65 as a Result of the Saver's Match by Age Cohort for Participants Currently Eligible Under Scenario 1: Assumes Head-of-Household Filing Status

Race/Gender	25-34	All ages	55-64
White Male	7.1	5.9	2.9
White Female	8.2	6.2	3.2
Black Male	7.1	6.7	5.2
Black Female	10.0	8.9	7.4
Hispanic Male	7.2	6.7	4.3
Hispanic Female	8.3	8.5	6.2
Asian Male	7.7	6.5	4.4
Asian Female	8.5	6.5	3.7



Source: Collaborative for Equitable Retirement Savings. 2022 Data.

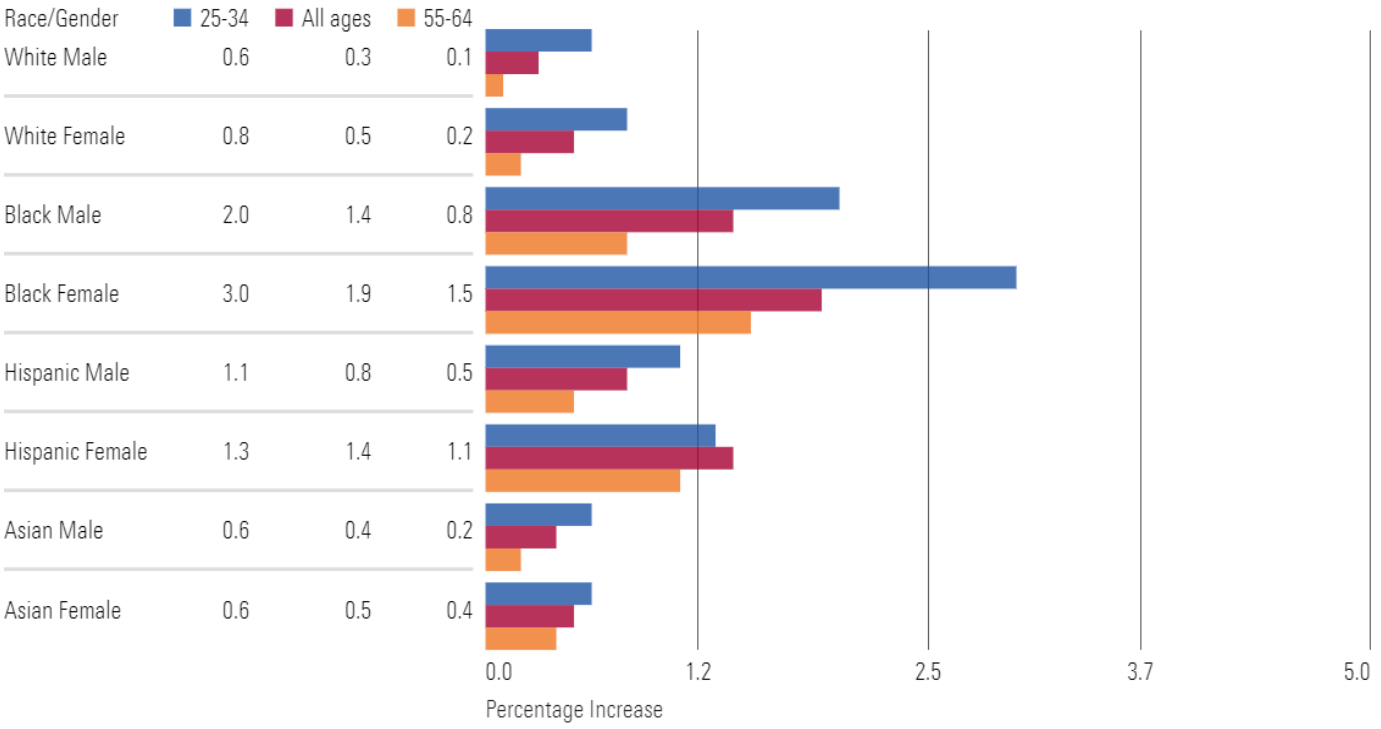
Averages across all participants with no employee-contribution changes

Exhibit 8 shows that among all the CFERS participants, the average increase in their account balance/salary ratio at age 65 under Scenario 1 (no contribution changes) assuming a head-of-household filing status ranges from:

- 0.3% to 1.9% when averaged across those current ages 25-64
- 0.6% to 3.0% for those current ages 25-34
- 0.1% to 1.5% for those current ages 55-64

Black females are simulated to have the largest benefit with an overall increase of 1.9% and an increase of 3.0% for those 25-34.

Exhibit 8 Average Increase in Account Balance/Salary Ratio at Age 65 as a Result of the Saver's Match by Age Cohort for All Participants Regardless of Eligibility Under Scenario 1: Assumes Head-of-Household Filing Status



Source: Collaborative for Equitable Retirement Savings. 2022 Data.

Averages across eligible participants with employee contributions increased to maximize the Saver's Match

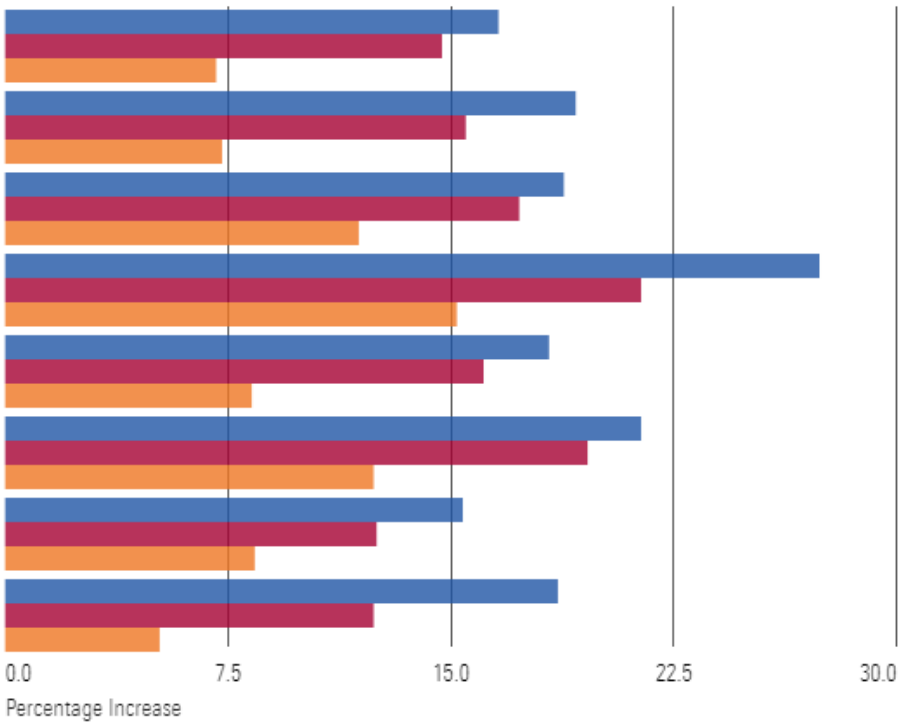
Exhibit 9 shows that among the CFERS participants eligible to benefit from the Saver's Match in 2027, the average increase in their account balance/salary ratio at age 65 under Scenario 2 (increased contributions to maximize Saver's Match) ranges from:

- 12.4% to 21.4% when averaged across those current ages 25-64
- 15.4% to 27.4% for those current ages 25-34
- 5.2% to 15.2% for those current ages 55-64

Black females are simulated to have the largest benefit with an overall increase of 21.4 percent and an increase of 27.4 percent for those 25-34.

Exhibit 9 Average Increase in Account Balance/Salary Ratio at Age 65 as a Result of the Saver's Match by Age Cohort for Participants Currently Eligible Under Scenario 2: Assumes Head-of-Household Filing Status

Race/Gender	25-34	All ages	55-64
White Male	16.6	14.7	7.1
White Female	19.2	15.5	7.3
Black Male	18.8	17.3	11.9
Black Female	27.4	21.4	15.2
Hispanic Male	18.3	16.1	8.3
Hispanic Female	21.4	19.6	12.4
Asian Male	15.4	12.5	8.4
Asian Female	18.6	12.4	5.2



Source: Collaborative for Equitable Retirement Savings. 2022 Data.

Averages across all participants with employee contributions increased to maximize the Saver's Match

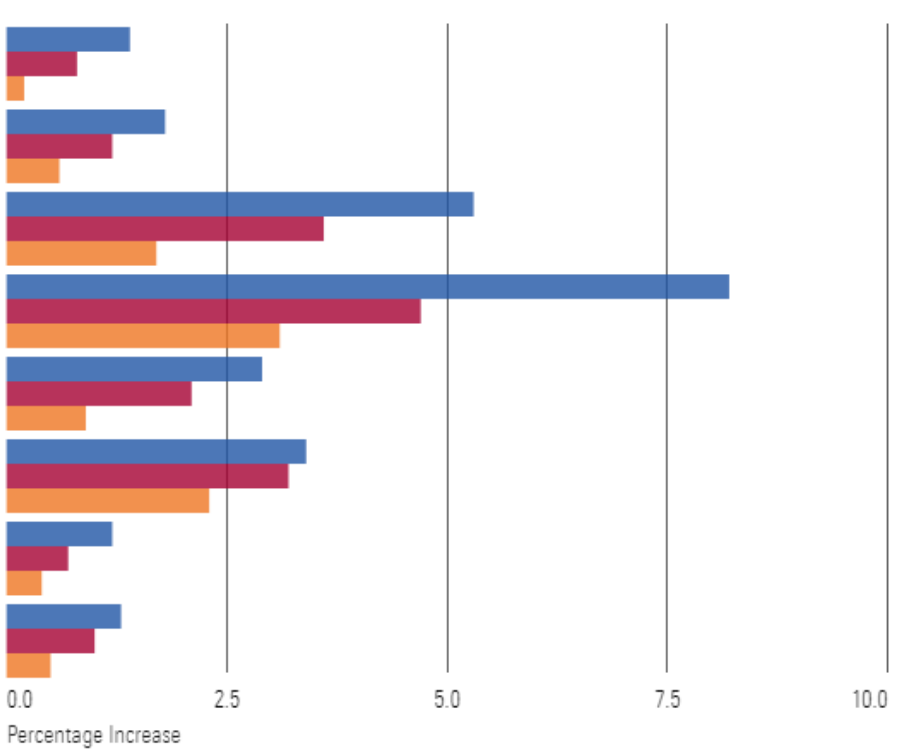
Exhibit 10 shows that among all the CFERS participants, the average increase in their account balance to/salary ratio at age 65 under Scenario 2 (increased contributions to maximize Saver's Match) assuming a head-of-household filing status ranges from:

- 0.7% to 4.7% when averaged across those current ages 25-64
- 1.2% to 8.2% for those current ages 25-34
- 0.2% to 3.1% for those current ages 55-64

Black females are simulated to have the largest benefit with an overall increase of 4.7% and an increase of 8.2% for those 25-34.

Exhibit 10 Average Increase in Account Balance/Salary Ratio at Age 65 as a Result of the Saver's Match by Age Cohort for All Participants Regardless of Eligibility Under Scenario 2: Assumes Head-of-Household Filing Status

Race/Gender	25-34	All ages	55-64
White Male	1.4	0.8	0.2
White Female	1.8	1.2	0.6
Black Male	5.3	3.6	1.7
Black Female	8.2	4.7	3.1
Hispanic Male	2.9	2.1	0.9
Hispanic Female	3.4	3.2	2.3
Asian Male	1.2	0.7	0.4
Asian Female	1.3	1.0	0.5



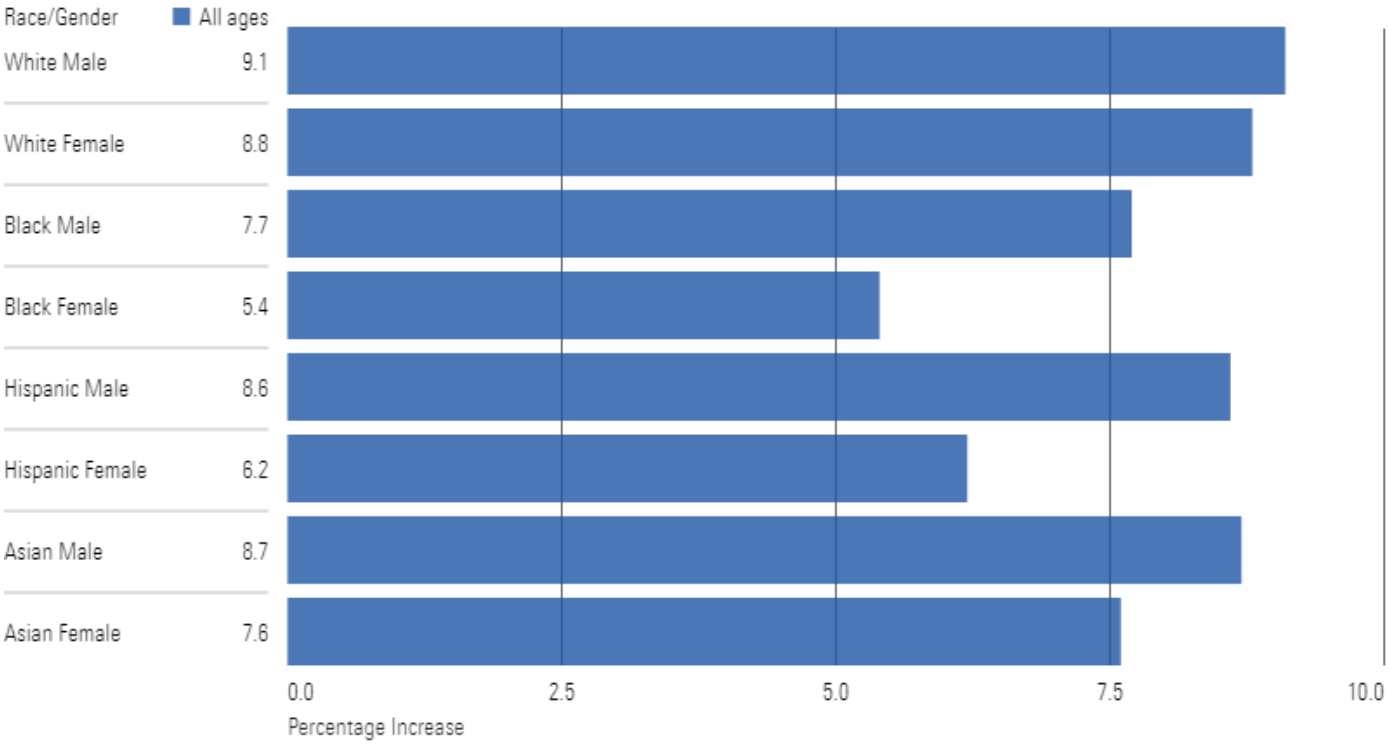
Source: Collaborative for Equitable Retirement Savings. 2022 Data.

Appendix B: Results Assuming Single Filing Status

Averages across eligible participants with no employee-contribution changes

Exhibit 11 shows that among the CFERS participants eligible to benefit from the Saver's Match in 2027, the average increase in their account balance/salary ratio at age 65 under Scenario 1 (no contribution changes) assuming a single filing status[16] ranges from 5.4% to 9.1% when averaged across those current ages 25-64.

Exhibit 11 Average Increase in Account Balance/Salary Ratio at Age 65 as a Result of the Saver's Match by Age Cohort for Participants Currently Eligible Under Scenario 1: Assumes Single Filing Status



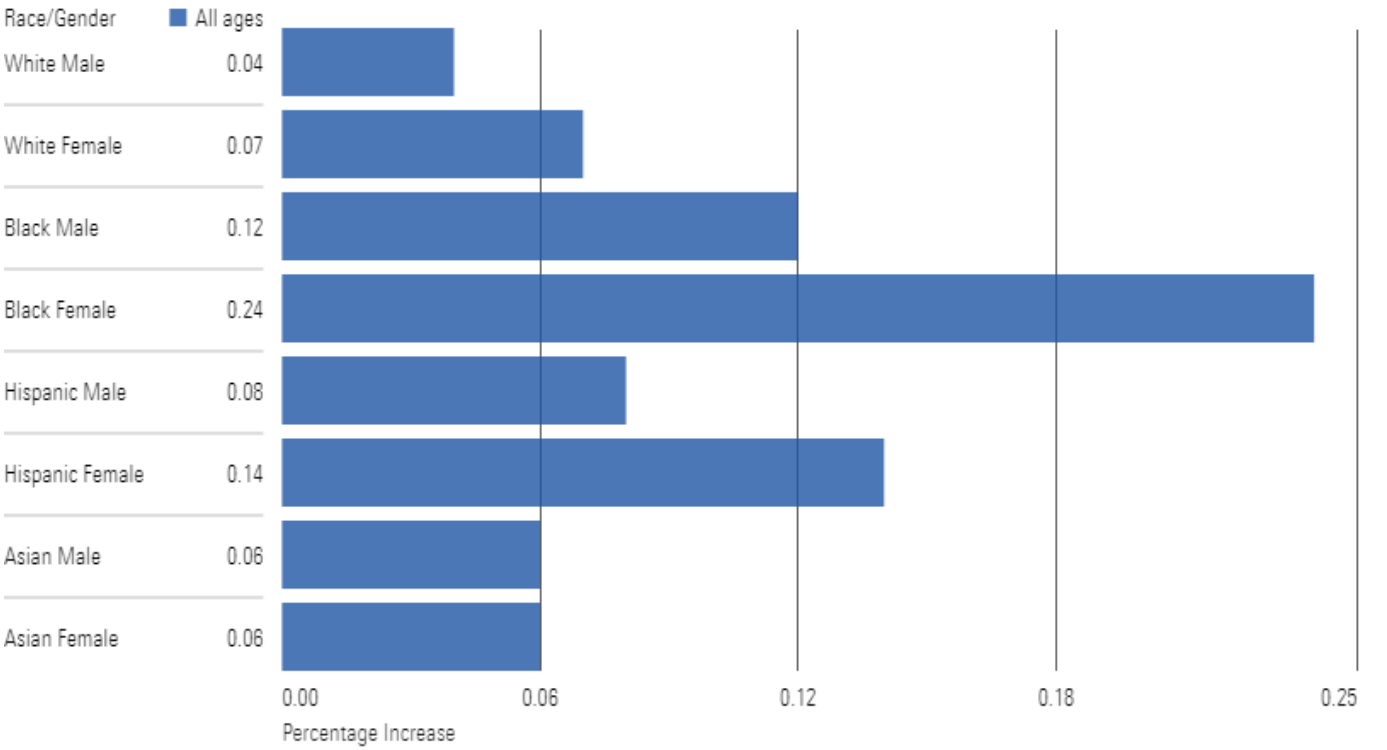
Source: Collaborative for Equitable Retirement Savings. 2022 Data.

[16] The sample size for this filing status was too small to include breakouts for the youngest and oldest age cohorts.

Averages across all participants with no employee-contribution changes

Exhibit 12 shows that among all the CFERS participants, the average increase in their account balance/salary ratio at age 65 under Scenario 1 (no contribution changes) assuming a single filing status ranges from 0.04% to 0.24% when averaged across those current ages 25-64.

Exhibit 12 Average Increase in Account Balance/Salary Ratio at Age 65 as a Result of the Saver's Match by Age Cohort for All Participants Regardless of Current Eligibility Under Scenario 1: Assumes Single Filing Status

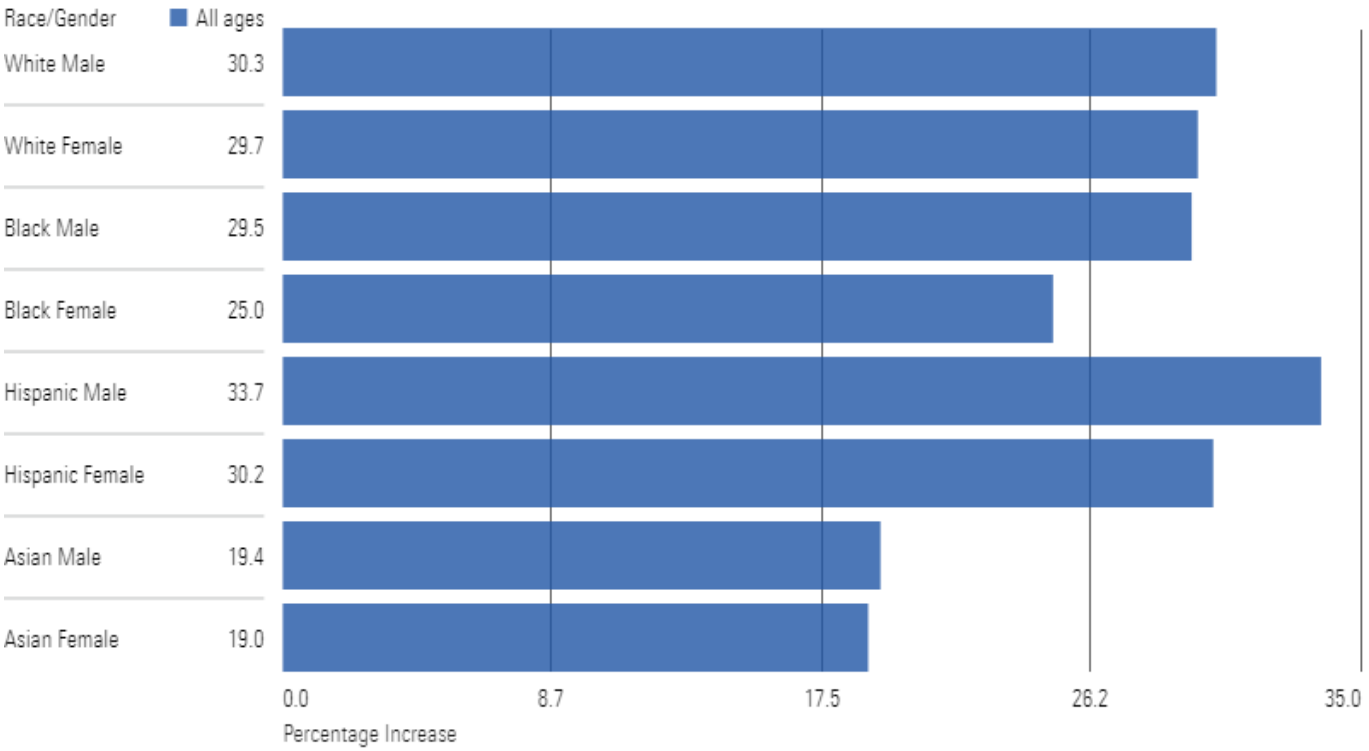


Source: Collaborative for Equitable Retirement Savings. 2022 Data.

Averages across eligible participants with employee contributions increased to maximize the Saver's Match

Exhibit 13 shows that among the CFERS participants eligible to benefit from the Saver's Match in 2027, the average increase in their account balance/salary ratio at age 65 under Scenario 2 (increased contributions to maximize Saver's Match) assuming a single filing status ranges from 19.0% to 33.7% when averaged across those current ages 25-64.

Exhibit 13 Average Increase in Account Balance/Salary Ratio at Age 65 as a Result of the Saver's Match by Age Cohort for Participants Currently Eligible Under Scenario 2: Assumes Single Filing Status

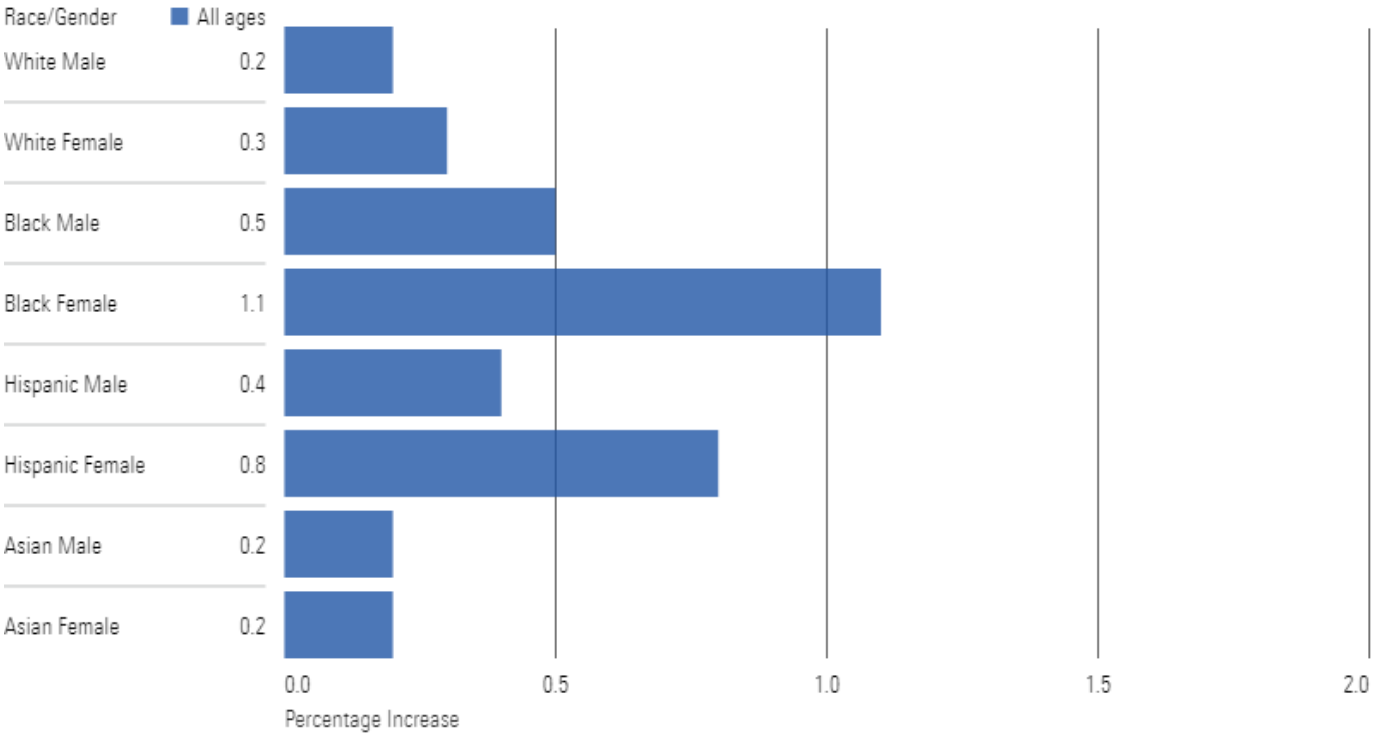


Source: Collaborative for Equitable Retirement Savings. 2022 Data.

Averages across all participants with employee contributions increased to maximize the Saver's Match

Exhibit 14 shows that among all the CFERS participants, the average increase in their account balance/salary ratio at age 65 under Scenario 2 (increased contributions to maximize Saver's Match) assuming a single filing status ranges from 0.2% to 1.1% when averaged across those current ages 25-64.

Exhibit 14 Average Increase in Account Balance/Salary Ratio at Age 65 as a Result of the Saver's Match by Age Cohort for All Participants Regardless of Current Eligibility Under Scenario 2: Assumes Single Filing Status



Source: Collaborative for Equitable Retirement Savings. 2022 Data.

Appendix C: Five Phases of the CFERS Project

Employers receive free, state-of-the-art plan analysis for contributing their data to the CFERS project. This will include the following five phases:

- PHASE ONE: Analyze the ratio of account balances/salary for the gender/race & ethnicity categories controlling for tenure.

- PHASE TWO: Provide a similar analysis looking at each of the following (controlling for age, salary, and tenure):
    - Participation
    - Contribution
    - Asset allocation
    - Loans
    - Preretirement withdrawals

- PHASE THREE: Simulate 1,000 replacement rates for each active participant for a range of retirement ages and compare the results across gender/race & ethnicity categories while controlling for midcareer hires.

- PHASE FOUR: Show how legislative and regulatory proposals as well as plan-design modifications can be used to mitigate some of the gender/race differentials.

- PHASE FIVE: Use the Morningstar Model of US Retirement Outcomes to provide a stochastic simulation analysis during the decumulation period. This will allow for the analysis of various risk management techniques for longevity risks, postretirement investment risks, and potential catastrophic long-term-care expenses.

About The Collaborative for Equitable Retirement Savings

The Collaborative for Equitable Retirement Savings is a multi-stakeholder initiative in the U.S. that aims to make retirement savings more inclusive by addressing and mitigating race and gender disparities in 401(k) plans. The coalition analyzes challenges and opportunities for equitable retirement savings through data-driven research and analysis; champions policy changes and best practices for employers and recordkeepers to promote diverse participation and savings in 401(k) plans; provides resources and tools to raise awareness about retirement savings disparities and empower individuals to make informed decisions; and brings together key stakeholders from across the retirement industry to work towards solutions. For more information, visit https://www.cfers.org.

About Morningstar Retirement

Morningstar Retirement empowers investor success by providing research- and technology-driven products and services that help individuals reach their retirement goals. With advisory services provided by Morningstar Investment Management LLC, Morningstar Retirement supports and collaborates with workplace retirement plans and other industry players to differentiate their services, stay competitive, and reach new markets, all in service of building a better retirement system.

Morningstar Retirement not only helps people save for the retirement they want but helps them make their money last once they get there. For more information, visit https://www.morningstar.com/business/brands/retirement.

About The Morningstar Center for Retirement & Policy Studies

The Morningstar Center for Retirement & Policy Studies has the mission to help improve the U.S. retirement system by arming decision- and policymakers with unbiased and actionable data and analysis. The Center draws on the capabilities of Morningstar Retirement to fuel its commitment to helping people achieve better retirement outcomes. For more information, visit https://www.morningstar.com/products/retirement-research-center.

About Defined Contribution Institutional Investment Association (DCIIA)

Founded in 2010, DCIIA is a non-profit association dedicated to enhancing the retirement security of America's workers. DCIIA's 300+ member organizations include investment managers, consultants and advisors, law firms, recordkeepers, insurance companies, data providers, plan sponsors (through the Plan Sponsor Institute) and others who are collectively committed to the best interests of plan participants. DCIIA also conducts proprietary research and participates in industry collaboration on retirement topics via the DCIIA Retirement Research Center. DCIIA is the association partner of the Journal of Retirement. For more information, visit www.dciia.org.

About The Aspen Institute Financial Security Program (FSP)

Aspen FSP's mission is to illuminate and solve the most critical financial challenges facing American households and to make financial security for all a top national priority. We aim for nothing less than a more inclusive economy with reduced wealth inequality and shared prosperity. We believe that transformational change requires innovation, trust, leadership, and entrepreneurial thinking. Aspen FSP galvanizes a diverse set of leaders across the public, private, and nonprofit sectors to solve the most critical financial challenges. We do this through deep, deliberate private and public dialogues and by elevating evidence-based research and solutions that will strengthen the financial health and security of financially vulnerable Americans. For more information, visit https://www.aspeninstitute.org/programs/financial-security-program/.

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