

# How guaranteed investment strategies can help create a next-generation target-date fund

**An approach to strengthen target-date arrangements, expand downside protection and help capture higher returns.**

---

Today's plan default market is increasingly competitive. Managers of target-date funds and other asset allocation arrangements, such as managed accounts, must develop and evolve vehicles with the portfolio strength, investment diversity, and performance that will continue to attract and retain investors, and maintain the relevance of their structure. Innovation is critical and provides a competitive edge as investment consultants, plan sponsors, and retirement investors seek new solutions.

## **Next-generation target-date fund:**

A target-date fund focused on retirement income beyond traditional accumulation.

This is happening in an environment where defined contribution plans feel the pressure to deliver more than they'd been built to provide. At the same time, an entire generation is transitioning into, or already is in, retirement, a demographic where financial safety, stability and predictable lasting income are chief concerns. This confluence of factors creates opportunity for managers of target-date funds and other asset allocation arrangements.

This paper considers a new strategic approach that demonstrates how to strengthen portfolios by adding a guaranteed investment component, such as a funding agreement or fixed annuity, to target-date arrangements. This strategy is specifically designed to provide:

- Certainty of guaranteed returns
- Dependability of a minimum floor return
- Diversification and greater stability

## How guaranteed investment strategies can help create a next-generation target-date fund

### A strategy to help strengthen target-date portfolios

Rigorous modeling proves that adding a guaranteed investment component to target-date arrangements can improve the overall portfolio. A guaranteed investment component helps manage the downside risk of fixed-income markets, while not giving up potential returns. In fact, the modeling illustrates improvement in fund returns and a noticeable reduction in standard deviation of returns, particularly during fixed-income bear markets. For a fund manager seeking a competitive advantage, the modeling demonstrates how this arrangement can provide investors with the assurance of principal safety and guaranteed interest even in the most volatile markets.

### The potential for performance enhancements and other benefits

The comparative modeling begins by simulating the one-year return of a hypothetical retirement income target-date arrangement, considering a variety of equity and fixed-income return scenarios. The one-year return is shown in the row/column intersections in the Strategy A table below.

#### Strategy A

Hypothetical portfolio returns given varying equity and fixed-income returns within a set asset mix without a guaranteed investment component

| Equity                            |   | Fixed income |         | Guaranteed |        | Portion of original fixed-income assets replaced with guaranteed contract |        |        |        |        | Guaranteed contract assumed rate of return |        |        |        |        |
|-----------------------------------|---|--------------|---------|------------|--------|---|--------|--------|--------|--------|--|--------|--------|--------|--------|
| 29.80%                            |   | 70.20%       |         | 0.00%      |        | 0.00%   |        |        |        |        | 0.00%                                      |        |        |        |        |
| Hypothetical fixed-income returns | Strategy A: Hypothetical equity returns |              |         |            |        |   |        |        |        |        |  |        |        |        |        |
|                                   |   | -15.00%      | -12.50% | -10.00%    | -7.50% | -5.00%  | -2.50% | 0.00%  | 2.50%  | 5.00%  | 7.50%                                      | 10.00% | 12.50% | 15.00% | Avg.   |
|                                   | -4.00%                                  | -7.28%       | -6.53%  | -5.79%     | -5.04% | -4.30%  | -3.55% | -2.81% | -2.06% | -1.32% | -0.57%                                     | 0.17%  | 0.92%  | 1.66%  | -2.81% |
|                                   | -3.50%                                  | -6.93%       | -6.18%  | -5.44%     | -4.69% | -3.95%  | -3.20% | -2.46% | -1.71% | -0.97% | -0.22%                                     | 0.52%  | 1.27%  | 2.01%  | -2.46% |
|                                   | -3.00%                                  | -6.58%       | -5.83%  | -5.09%     | -4.34% | -3.60%  | -2.85% | -2.11% | -1.36% | -0.62% | 0.13%                                      | 0.87%  | 1.62%  | 2.36%  | -2.11% |
|                                   | -2.50%                                  | -6.23%       | -5.48%  | -4.74%     | -3.99% | -3.25%  | -2.50% | -1.76% | -1.01% | -0.27% | 0.48%                                      | 1.23%  | 1.97%  | 2.72%  | -1.76% |
|                                   | -2.00%                                  | -5.87%       | -5.13%  | -4.38%     | -3.64% | -2.89%  | -2.15% | -1.40% | -0.66% | 0.09%  | 0.83%                                      | 1.58%  | 2.32%  | 3.07%  | -1.40% |
|                                   | -1.50%                                  | -5.52%       | -4.78%  | -4.03%     | -3.29% | -2.54%  | -1.80% | -1.05% | -0.31% | 0.44%  | 1.18%                                      | 1.93%  | 2.67%  | 3.42%  | -1.05% |
|                                   | -1.00%                                  | -5.17%       | -4.43%  | -3.68%     | -2.94% | -2.19%  | -1.45% | -0.70% | 0.04%  | 0.79%  | 1.53%                                      | 2.28%  | 3.02%  | 3.77%  | -0.70% |
|                                   | -0.50%                                  | -4.82%       | -4.08%  | -3.33%     | -2.59% | -1.84%  | -1.10% | -0.35% | 0.39%  | 1.14%  | 1.88%                                      | 2.63%  | 3.37%  | 4.12%  | -0.35% |
|                                   | 0.00%                                   | -4.47%       | -3.73%  | -2.98%     | -2.24% | -1.49%  | -0.75% | 0.00%  | 0.75%  | 1.49%  | 2.24%                                      | 2.98%  | 3.73%  | 4.47%  | 0.00%  |
|                                   | 0.50%                                   | -4.12%       | -3.37%  | -2.63%     | -1.88% | -1.14%  | -0.39% | 0.35%  | 1.10%  | 1.84%  | 2.59%                                      | 3.33%  | 4.08%  | 4.82%  | 0.35%  |
|                                   | 1.00%                                   | -3.77%       | -3.02%  | -2.28%     | -1.53% | -0.79%  | -0.04% | 0.70%  | 1.45%  | 2.19%  | 2.94%                                      | 3.68%  | 4.43%  | 5.17%  | 0.70%  |
|                                   | 1.50%                                   | -3.42%       | -2.67%  | -1.93%     | -1.18% | -0.44%  | 0.31%  | 1.05%  | 1.80%  | 2.54%  | 3.29%                                      | 4.03%  | 4.78%  | 5.52%  | 1.05%  |
|                                   | 2.00%                                   | -3.07%       | -2.32%  | -1.58%     | -0.83% | -0.09%  | 0.66%  | 1.40%  | 2.15%  | 2.89%  | 3.64%                                      | 4.38%  | 5.13%  | 5.87%  | 1.40%  |
|                                   | 2.50%                                   | -2.72%       | -1.97%  | -1.23%     | -0.48% | 0.27%   | 1.01%  | 1.76%  | 2.50%  | 3.25%  | 3.99%                                      | 4.74%  | 5.48%  | 6.23%  | 1.76%  |
|                                   | 3.00%                                   | -2.36%       | -1.62%  | -0.87%     | -0.13% | 0.62%   | 1.36%  | 2.11%  | 2.85%  | 3.60%  | 4.34%                                      | 5.09%  | 5.83%  | 6.58%  | 2.11%  |
|                                   | 3.50%                                   | -2.01%       | -1.27%  | -0.52%     | 0.22%  | 0.97%   | 1.71%  | 2.46%  | 3.20%  | 3.95%  | 4.69%                                      | 5.44%  | 6.18%  | 6.93%  | 2.46%  |
|                                   | 4.00%                                   | -1.66%       | -0.92%  | -0.17%     | 0.57%  | 1.32%   | 2.06%  | 2.81%  | 3.55%  | 4.30%  | 5.04%                                      | 5.79%  | 6.53%  | 7.28%  | 2.81%  |
| Avg.                              |   | -4.47%       | -3.73%  | -2.98%     | -2.24% | -1.49%  | -0.75% | 0.00%  | 0.75%  | 1.49%  | 2.24%                                      | 2.98%  | 3.73%  | 4.47%  | 0.00%  |

## How guaranteed investment strategies can help create a next-generation target-date fund

Strategy B introduces a guaranteed investment component. As demonstrated in the table below, the model substitutes 75% of the fixed-income sleeve with a guaranteed component paying 3% interest. This model immediately demonstrates the potential for an increase in overall returns of the target-date fund/account in markets where the fixed-income sleeve returns less than the guaranteed investment, such as might occur in a rising interest rate environment.

### Strategy B

Hypothetical portfolio returns given varying equity and fixed-income returns within a set asset mix with a guaranteed investment component

| Equity                            |   | Fixed income |         | Guaranteed |        | Portion of original fixed-income assets replaced with guaranteed contract |        |       |       |       |       | Guaranteed contract assumed rate of return |        |        |       |
|-----------------------------------|---|--------------|---------|------------|--------|---|--------|-------|-------|-------|-------|--|--------|--------|-------|
| 29.80%                            |   | 17.55%       |         | 52.65%     |        | 75.00%  |        |       |       |       |       | 3.00%                                      |        |        |       |
| Hypothetical fixed-income returns | Strategy B: Hypothetical equity returns |              |         |            |        |   |        |       |       |       |       |  |        |        |       |
|                                   |   | -15.00%      | -12.50% | -10.00%    | -7.50% | -5.00%  | -2.50% | 0.00% | 2.50% | 5.00% | 7.50% | 10.00%                                     | 12.50% | 15.00% | Avg.  |
|                                   | -4.00%                                  | -3.59%       | -2.85%  | -2.10%     | -1.36% | -0.61%  | 0.13%  | 0.88% | 1.62% | 2.37% | 3.11% | 3.86%                                      | 4.60%  | 5.35%  | 0.88% |
|                                   | -3.50%                                  | -3.50%       | -2.76%  | -2.01%     | -1.27% | -0.52%  | 0.22%  | 0.97% | 1.71% | 2.46% | 3.20% | 3.95%                                      | 4.69%  | 5.44%  | 0.97% |
|                                   | -3.00%                                  | -3.42%       | -2.67%  | -1.93%     | -1.18% | -0.44%  | 0.31%  | 1.05% | 1.80% | 2.54% | 3.29% | 4.03%                                      | 4.78%  | 5.52%  | 1.05% |
|                                   | -2.50%                                  | -3.33%       | -2.58%  | -1.84%     | -1.09% | -0.35%  | 0.40%  | 1.14% | 1.89% | 2.63% | 3.38% | 4.12%                                      | 4.87%  | 5.61%  | 1.14% |
|                                   | -2.00%                                  | -3.24%       | -2.50%  | -1.75%     | -1.01% | -0.26%  | 0.48%  | 1.23% | 1.97% | 2.72% | 3.46% | 4.21%                                      | 4.95%  | 5.70%  | 1.23% |
|                                   | -1.50%                                  | -3.15%       | -2.41%  | -1.66%     | -0.92% | -0.17%  | 0.57%  | 1.32% | 2.06% | 2.81% | 3.55% | 4.30%                                      | 5.04%  | 5.79%  | 1.32% |
|                                   | -1.00%                                  | -3.07%       | -2.32%  | -1.58%     | -0.83% | -0.09%  | 0.66%  | 1.40% | 2.15% | 2.89% | 3.64% | 4.38%                                      | 5.13%  | 5.87%  | 1.40% |
|                                   | -0.50%                                  | -2.98%       | -2.23%  | -1.49%     | -0.74% | 0.00%   | 0.75%  | 1.49% | 2.24% | 2.98% | 3.73% | 4.47%                                      | 5.22%  | 5.96%  | 1.49% |
|                                   | 0.00%                                   | -2.89%       | -2.15%  | -1.40%     | -0.66% | 0.09%   | 0.83%  | 1.58% | 2.32% | 3.07% | 3.81% | 4.56%                                      | 5.30%  | 6.05%  | 1.58% |
|                                   | 0.50%                                   | -2.80%       | -2.06%  | -1.31%     | -0.57% | 0.18%   | 0.92%  | 1.67% | 2.41% | 3.16% | 3.90% | 4.65%                                      | 5.39%  | 6.14%  | 1.67% |
|                                   | 1.00%                                   | -2.72%       | -1.97%  | -1.23%     | -0.48% | 0.27%   | 1.01%  | 1.76% | 2.50% | 3.25% | 3.99% | 4.74%                                      | 5.48%  | 6.23%  | 1.76% |
|                                   | 1.50%                                   | -2.63%       | -1.88%  | -1.14%     | -0.39% | 0.35%   | 1.10%  | 1.84% | 2.59% | 3.33% | 4.08% | 4.82%                                      | 5.57%  | 6.31%  | 1.84% |
|                                   | 2.00%                                   | -2.54%       | -1.79%  | -1.05%     | -0.30% | 0.44%   | 1.19%  | 1.93% | 2.68% | 3.42% | 4.17% | 4.91%                                      | 5.66%  | 6.40%  | 1.93% |
|                                   | 2.50%                                   | -2.45%       | -1.71%  | -0.96%     | -0.22% | 0.53%   | 1.27%  | 2.02% | 2.76% | 3.51% | 4.25% | 5.00%                                      | 5.74%  | 6.49%  | 2.02% |
|                                   | 3.00%                                   | -2.36%       | -1.62%  | -0.87%     | -0.13% | 0.62%   | 1.36%  | 2.11% | 2.85% | 3.60% | 4.34% | 5.09%                                      | 5.83%  | 6.58%  | 2.11% |
|                                   | 3.50%                                   | -2.28%       | -1.53%  | -0.79%     | -0.04% | 0.70%   | 1.45%  | 2.19% | 2.94% | 3.68% | 4.43% | 5.17%                                      | 5.92%  | 6.66%  | 2.19% |
|                                   | 4.00%                                   | -2.19%       | -1.44%  | -0.70%     | 0.05%  | 0.79%   | 1.54%  | 2.28% | 3.03% | 3.77% | 4.52% | 5.26%                                      | 6.01%  | 6.75%  | 2.28% |
| Avg.                              | -2.89%                                  | -2.15%       | -1.40%  | -0.66%     | 0.09%  | 0.83%   | 1.58%  | 2.32% | 3.07% | 3.81% | 4.56% | 5.30%                                      | 6.05%  | 1.58%  |       |

Starting from these base strategies, we can examine different hypothetical scenarios to model how returns and other measures are affected.

## How guaranteed investment strategies can help create a next-generation target-date fund

### Scenario 1: How a guaranteed component affects one-year returns

This scenario demonstrates how Strategy B's guaranteed investment component offers downside protection and can stabilize overall fund returns. The scenario shows a 1.58% average return improvement across a range of fixed-income returns (-4% to 4%).

The improvement in one-year returns with the guaranteed investment component (assumed to be paying 3% guaranteed interest) is most pronounced when the traditional fixed-income sleeve experiences poor performance (e.g., during a rising interest rate environment).

When traditional fixed-income returns are 3%—i.e., equal to the guaranteed investment component returns—overall returns remain unchanged between the two strategies.

### Scenario 1: Change in one-year return from employing Strategy B vs. Strategy A

Hypothetical target-date arrangement

| Strategy | Equity | Fixed income | Guaranteed | Portion of original fixed-income assets replaced with guaranteed contract | Guaranteed contract assumed rate of return |
|----------|--------|--------------|------------|---|--|
| A        | 29.80% | 70.20%       | 0.00%      | 0.00%   | 0.00%                                      |
| B        | 29.80% | 17.55%       | 52.65%     | 75.00%  | 3.00%                                      |

Improved scenarios: **82.00%**

| Change in return from employing Strategy B vs. Strategy A |              |              |              |              |              |              |              |              |              |              |              |              |              |              |
|---|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|   | -12.50%      | -10.00%      | -7.50%       | -5.00%       | -2.50%       | 0.00%        | 2.50%        | 5.00%        | 7.50%        | 10.00%       | 12.50%       | 15.00%       | Avg.         |              |
| -4.00%  | 3.69%        | 3.69%        | 3.69%        | 3.69%        | 3.69%        | 3.69%        | 3.69%        | 3.69%        | 3.69%        | 3.69%        | 3.69%        | 3.69%        | 3.69%        | 3.69%        |
| -3.50%  | 3.42%        | 3.42%        | 3.42%        | 3.42%        | 3.42%        | 3.42%        | 3.42%        | 3.42%        | 3.42%        | 3.42%        | 3.42%        | 3.42%        | 3.42%        | 3.42%        |
| -3.00%  | 3.16%        | 3.16%        | 3.16%        | 3.16%        | 3.16%        | 3.16%        | 3.16%        | 3.16%        | 3.16%        | 3.16%        | 3.16%        | 3.16%        | 3.16%        | 3.16%        |
| -2.50%  | 2.90%        | 2.90%        | 2.90%        | 2.90%        | 2.90%        | 2.90%        | 2.90%        | 2.90%        | 2.90%        | 2.90%        | 2.90%        | 2.90%        | 2.90%        | 2.90%        |
| -2.00%  | 2.63%        | 2.63%        | 2.63%        | 2.63%        | 2.63%        | 2.63%        | 2.63%        | 2.63%        | 2.63%        | 2.63%        | 2.63%        | 2.63%        | 2.63%        | 2.63%        |
| -1.50%  | 2.37%        | 2.37%        | 2.37%        | 2.37%        | 2.37%        | 2.37%        | 2.37%        | 2.37%        | 2.37%        | 2.37%        | 2.37%        | 2.37%        | 2.37%        | 2.37%        |
| -1.00%  | 2.11%        | 2.11%        | 2.11%        | 2.11%        | 2.11%        | 2.11%        | 2.11%        | 2.11%        | 2.11%        | 2.11%        | 2.11%        | 2.11%        | 2.11%        | 2.11%        |
| -0.50%  | 1.84%        | 1.84%        | 1.84%        | 1.84%        | 1.84%        | 1.84%        | 1.84%        | 1.84%        | 1.84%        | 1.84%        | 1.84%        | 1.84%        | 1.84%        | 1.84%        |
| 0.00%   | 1.58%        | 1.58%        | 1.58%        | 1.58%        | 1.58%        | 1.58%        | 1.58%        | 1.58%        | 1.58%        | 1.58%        | 1.58%        | 1.58%        | 1.58%        | 1.58%        |
| 0.50%   | 1.32%        | 1.32%        | 1.32%        | 1.32%        | 1.32%        | 1.32%        | 1.32%        | 1.32%        | 1.32%        | 1.32%        | 1.32%        | 1.32%        | 1.32%        | 1.32%        |
| 1.00%   | 1.05%        | 1.05%        | 1.05%        | 1.05%        | 1.05%        | 1.05%        | 1.05%        | 1.05%        | 1.05%        | 1.05%        | 1.05%        | 1.05%        | 1.05%        | 1.05%        |
| 1.50%   | 0.79%        | 0.79%        | 0.79%        | 0.79%        | 0.79%        | 0.79%        | 0.79%        | 0.79%        | 0.79%        | 0.79%        | 0.79%        | 0.79%        | 0.79%        | 0.79%        |
| 2.00%   | 0.53%        | 0.53%        | 0.53%        | 0.53%        | 0.53%        | 0.53%        | 0.53%        | 0.53%        | 0.53%        | 0.53%        | 0.53%        | 0.53%        | 0.53%        | 0.53%        |
| 2.50%   | 0.26%        | 0.26%        | 0.26%        | 0.26%        | 0.26%        | 0.26%        | 0.26%        | 0.26%        | 0.26%        | 0.26%        | 0.26%        | 0.26%        | 0.26%        | 0.26%        |
| 3.00%   | 0.00%        | 0.00%        | 0.00%        | 0.00%        | 0.00%        | 0.00%        | 0.00%        | 0.00%        | 0.00%        | 0.00%        | 0.00%        | 0.00%        | 0.00%        | 0.00%        |
| 3.50%   | -0.26%       | -0.26%       | -0.26%       | -0.26%       | -0.26%       | -0.26%       | -0.26%       | -0.26%       | -0.26%       | -0.26%       | -0.26%       | -0.26%       | -0.26%       | -0.26%       |
| 4.00%   | -0.53%       | -0.53%       | -0.53%       | -0.53%       | -0.53%       | -0.53%       | -0.53%       | -0.53%       | -0.53%       | -0.53%       | -0.53%       | -0.53%       | -0.53%       | -0.53%       |
| <b>Avg.</b>   | <b>1.58%</b> | <b>1.58%</b> | <b>1.58%</b> | <b>1.58%</b> | <b>1.58%</b> | <b>1.58%</b> | <b>1.58%</b> | <b>1.58%</b> | <b>1.58%</b> | <b>1.58%</b> | <b>1.58%</b> | <b>1.58%</b> | <b>1.58%</b> | <b>1.58%</b> |

Highlight box indicates range of positive returns.

## How guaranteed investment strategies can help create a next-generation target-date fund

---

We can see that Strategy B returns are lower than Strategy A when traditional fixed-income returns exceed 3%. However, while lower, the drop is not as severe as when Strategy B returns exceed 3%. This is illustrated here, for instance, in the 3.69% advantage vs. only a -0.53% disadvantage.

In this scenario, equity market return assumptions (-15% to 15%) do not affect the difference in returns between Strategies A and B.

## How guaranteed investment strategies can help create a next-generation target-date fund

### Scenario 2: The effect on one-year returns across multiple target dates

The assumptions here are similar to Scenario 1, with 75% of fixed income replaced with a guaranteed investment component paying 3% interest. Since scenario 1 showed that the range of equity market returns does not impact the comparison of Strategy A's vs. Strategy B's returns, we can replace the equity market returns columns with different target-date vintages. Again, the modeling here shows that the guaranteed investment component injects downside protection, and it also provides a guaranteed floor.

Ultimately, this scenario demonstrates a 0.61% average return improvement across the range of simulated fixed-income returns (-4% to 4%).

### Scenario 2: Change in one-year return by replacing a portion of traditional fixed-income assets with a guaranteed contract (Strategy B minus Strategy A)

Hypothetical target-date arrangement

Percent of fixed-income assets replaced with guaranteed contract

**75.00%**

Guaranteed contract assumed rate of return

**3.00%**

Improved scenarios: **82.35%**

| Change in return by replacing a portion of traditional fixed-income assets with a guaranteed contract |               |                        |        |        |        |        |        |        |        |        |        |        |        |
|---|---------------|------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|   |               | Retirement income      | 2015   | 2020   | 2025   | 2030   | 2035   | 2040   | 2045   | 2050   | 2055   | 2060   | 2065   |
|   |               | Original fixed income: | 70.20% | 57.80% | 45.50% | 36.70% | 29.20% | 21.70% | 14.20% | 10.00% | 10.00% | 10.00% | 10.00% |
| Revised allocations   | Equities:     |                        | 29.80% | 42.20% | 54.50% | 63.30% | 70.80% | 78.30% | 85.80% | 90.00% | 90.00% | 90.00% | 90.00% |
|   | Fixed income: |                        | 17.55% | 14.45% | 11.38% | 9.18%  | 7.30%  | 5.43%  | 3.55%  | 2.50%  | 2.50%  | 2.50%  | 2.50%  |
|   | Guaranteed:   |                        | 52.65% | 43.35% | 34.13% | 27.53% | 21.90% | 16.28% | 10.65% | 7.50%  | 7.50%  | 7.50%  | 7.50%  |
| Hypothetical fixed-income returns   |               |                        |        |        |        |        |        |        |        |        |        |        | Avg.   |
|   | -4.00%        | 3.69%                  | 3.03%  | 2.39%  | 1.93%  | 1.53%  | 1.14%  | 0.75%  | 0.53%  | 0.53%  | 0.53%  | 0.53%  | 1.42%  |
|   | -3.50%        | 3.42%                  | 2.82%  | 2.22%  | 1.79%  | 1.42%  | 1.06%  | 0.69%  | 0.49%  | 0.49%  | 0.49%  | 0.49%  | 1.32%  |
|   | -3.00%        | 3.16%                  | 2.60%  | 2.05%  | 1.65%  | 1.31%  | 0.98%  | 0.64%  | 0.45%  | 0.45%  | 0.45%  | 0.45%  | 1.22%  |
|   | -2.50%        | 2.90%                  | 2.38%  | 1.88%  | 1.51%  | 1.20%  | 0.90%  | 0.59%  | 0.41%  | 0.41%  | 0.41%  | 0.41%  | 1.12%  |
|   | -2.00%        | 2.63%                  | 2.17%  | 1.71%  | 1.38%  | 1.10%  | 0.81%  | 0.53%  | 0.38%  | 0.38%  | 0.38%  | 0.38%  | 1.02%  |
|   | -1.50%        | 2.37%                  | 1.95%  | 1.54%  | 1.24%  | 0.99%  | 0.73%  | 0.48%  | 0.34%  | 0.34%  | 0.34%  | 0.34%  | 0.91%  |
|   | -1.00%        | 2.11%                  | 1.73%  | 1.37%  | 1.10%  | 0.88%  | 0.65%  | 0.43%  | 0.30%  | 0.30%  | 0.30%  | 0.30%  | 0.81%  |
|   | -0.50%        | 1.84%                  | 1.52%  | 1.19%  | 0.96%  | 0.77%  | 0.57%  | 0.37%  | 0.26%  | 0.26%  | 0.26%  | 0.26%  | 0.71%  |
|   | 0.00%         | 1.58%                  | 1.30%  | 1.02%  | 0.83%  | 0.66%  | 0.49%  | 0.32%  | 0.23%  | 0.23%  | 0.23%  | 0.23%  | 0.61%  |
|   | 0.50%         | 1.32%                  | 1.08%  | 0.85%  | 0.69%  | 0.55%  | 0.41%  | 0.27%  | 0.19%  | 0.19%  | 0.19%  | 0.19%  | 0.51%  |
|   | 1.00%         | 1.05%                  | 0.87%  | 0.68%  | 0.55%  | 0.44%  | 0.33%  | 0.21%  | 0.15%  | 0.15%  | 0.15%  | 0.15%  | 0.41%  |
|   | 1.50%         | 0.79%                  | 0.65%  | 0.51%  | 0.41%  | 0.33%  | 0.24%  | 0.16%  | 0.11%  | 0.11%  | 0.11%  | 0.11%  | 0.30%  |
|   | 2.00%         | 0.53%                  | 0.43%  | 0.34%  | 0.28%  | 0.22%  | 0.16%  | 0.11%  | 0.08%  | 0.08%  | 0.08%  | 0.08%  | 0.20%  |
|   | 2.50%         | 0.26%                  | 0.22%  | 0.17%  | 0.14%  | 0.11%  | 0.08%  | 0.05%  | 0.04%  | 0.04%  | 0.04%  | 0.04%  | 0.10%  |
|   | 3.00%         | 0.00%                  | 0.00%  | 0.00%  | 0.00%  | 0.00%  | 0.00%  | 0.00%  | 0.00%  | 0.00%  | 0.00%  | 0.00%  | 0.00%  |
|   | 3.50%         | -0.26%                 | -0.22% | -0.17% | -0.14% | -0.11% | -0.08% | -0.05% | -0.04% | -0.04% | -0.04% | -0.04% | -0.10% |
|   | 4.00%         | -0.53%                 | -0.43% | -0.34% | -0.28% | -0.22% | -0.16% | -0.11% | -0.08% | -0.08% | -0.08% | -0.08% | -0.20% |
|   | Avg.          | 1.58%                  | 1.30%  | 1.02%  | 0.83%  | 0.66%  | 0.49%  | 0.32%  | 0.23%  | 0.23%  | 0.23%  | 0.23%  | 0.61%  |

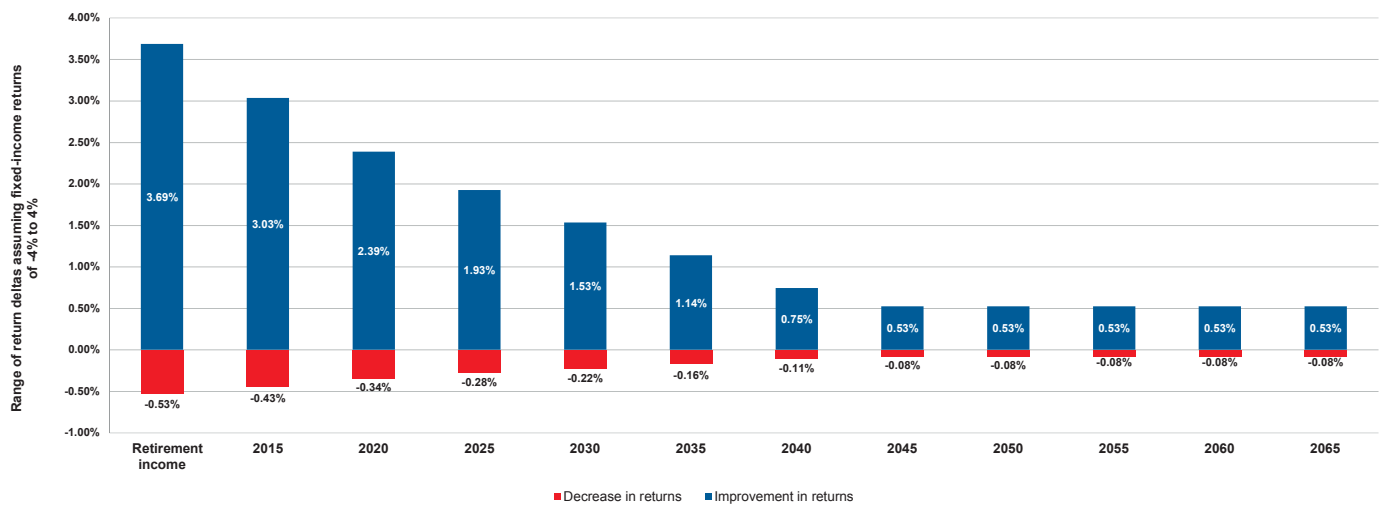
Highlight box indicates range of positive returns.

# How guaranteed investment strategies can help create a next-generation target-date fund

In this model, Strategy B gains by a higher margin than it loses for an assumed range of fixed-income return (-4% to 4%) because of the volatility protection floor that the guaranteed investment component provides.

## Scenario 2: Alternative view of difference in one-year returns (Strategy B minus Strategy A)

Assuming fixed-income returns within range of -4.00% to 4.00%



## How guaranteed investment strategies can help create a next-generation target-date fund

### Scenario 3: The effect on one-year returns across multiple scenarios as fixed income is replaced

Here we can see that the addition of a guaranteed investment component increases both the magnitude and frequency of improvements. As the model demonstrates, the magnitude of improvement of Strategy B's returns grows larger as the guaranteed investment component replaces a greater portion of fixed income.

### Scenario 3: Change in one-year return by replacing a portion of traditional fixed-income assets with a guaranteed contract (Strategy B minus Strategy A)

Hypothetical target-date arrangement

Guaranteed contract assumed rate of return

**3.00%**

Improved scenarios: **77.21%**

|                                   |               | Percentage of traditional fixed-income assets replaced with guaranteed contract |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
|-----------------------------------|---------------|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                                   |               | 0.00%   | 5.00%  | 10.00% | 15.00% | 20.00% | 25.00% | 30.00% | 35.00% | 40.00% | 45.00% | 50.00% | 55.00% | 60.00% | 65.00% | 70.00% | 75.00% |
| Revised allocations               | Equities:     | 29.80%  | 29.80% | 29.80% | 29.80% | 29.80% | 29.80% | 29.80% | 29.80% | 29.80% | 29.80% | 29.80% | 29.80% | 29.80% | 29.80% | 29.80% | 29.80% |
|                                   | Fixed income: | 70.20%  | 66.69% | 63.18% | 59.67% | 56.16% | 52.65% | 49.14% | 45.63% | 42.12% | 38.61% | 35.10% | 31.59% | 28.08% | 24.57% | 21.06% | 17.55% |
|                                   | Guaranteed:   | 0.00%   | 3.51%  | 7.02%  | 10.53% | 14.04% | 17.55% | 21.06% | 24.57% | 28.08% | 31.59% | 35.10% | 38.61% | 42.12% | 45.63% | 49.14% | 52.65% |
| Hypothetical fixed-income returns | -4.00%        | 0.00%   | 0.25%  | 0.49%  | 0.74%  | 0.98%  | 1.23%  | 1.47%  | 1.72%  | 1.97%  | 2.21%  | 2.46%  | 2.70%  | 2.95%  | 3.19%  | 3.44%  | 3.69%  |
|                                   | -3.50%        | 0.00%   | 0.23%  | 0.46%  | 0.68%  | 0.91%  | 1.14%  | 1.37%  | 1.60%  | 1.83%  | 2.05%  | 2.28%  | 2.51%  | 2.74%  | 2.97%  | 3.19%  | 3.42%  |
|                                   | -3.00%        | 0.00%   | 0.21%  | 0.42%  | 0.63%  | 0.84%  | 1.05%  | 1.26%  | 1.47%  | 1.68%  | 1.90%  | 2.11%  | 2.32%  | 2.53%  | 2.74%  | 2.95%  | 3.16%  |
|                                   | -2.50%        | 0.00%   | 0.19%  | 0.39%  | 0.58%  | 0.77%  | 0.97%  | 1.16%  | 1.35%  | 1.54%  | 1.74%  | 1.93%  | 2.12%  | 2.32%  | 2.51%  | 2.70%  | 2.90%  |
|                                   | -2.00%        | 0.00%   | 0.18%  | 0.35%  | 0.53%  | 0.70%  | 0.88%  | 1.05%  | 1.23%  | 1.40%  | 1.58%  | 1.76%  | 1.93%  | 2.11%  | 2.28%  | 2.46%  | 2.63%  |
|                                   | -1.50%        | 0.00%   | 0.16%  | 0.32%  | 0.47%  | 0.63%  | 0.79%  | 0.95%  | 1.11%  | 1.26%  | 1.42%  | 1.58%  | 1.74%  | 1.90%  | 2.05%  | 2.21%  | 2.37%  |
|                                   | -1.00%        | 0.00%   | 0.14%  | 0.28%  | 0.42%  | 0.56%  | 0.70%  | 0.84%  | 0.98%  | 1.12%  | 1.26%  | 1.40%  | 1.54%  | 1.68%  | 1.83%  | 1.97%  | 2.11%  |
|                                   | -0.50%        | 0.00%   | 0.12%  | 0.25%  | 0.37%  | 0.49%  | 0.61%  | 0.74%  | 0.86%  | 0.98%  | 1.11%  | 1.23%  | 1.35%  | 1.47%  | 1.60%  | 1.72%  | 1.84%  |
|                                   | 0.00%         | 0.00%   | 0.11%  | 0.21%  | 0.32%  | 0.42%  | 0.53%  | 0.63%  | 0.74%  | 0.84%  | 0.95%  | 1.05%  | 1.16%  | 1.26%  | 1.37%  | 1.47%  | 1.58%  |
|                                   | 0.50%         | 0.00%   | 0.09%  | 0.18%  | 0.26%  | 0.35%  | 0.44%  | 0.53%  | 0.61%  | 0.70%  | 0.79%  | 0.88%  | 0.97%  | 1.05%  | 1.14%  | 1.23%  | 1.32%  |
|                                   | 1.00%         | 0.00%   | 0.07%  | 0.14%  | 0.21%  | 0.28%  | 0.35%  | 0.42%  | 0.49%  | 0.56%  | 0.63%  | 0.70%  | 0.77%  | 0.84%  | 0.91%  | 0.98%  | 1.05%  |
|                                   | 1.50%         | 0.00%   | 0.05%  | 0.11%  | 0.16%  | 0.21%  | 0.26%  | 0.32%  | 0.37%  | 0.42%  | 0.47%  | 0.53%  | 0.58%  | 0.63%  | 0.68%  | 0.74%  | 0.79%  |
|                                   | 2.00%         | 0.00%   | 0.04%  | 0.07%  | 0.11%  | 0.14%  | 0.18%  | 0.21%  | 0.25%  | 0.28%  | 0.32%  | 0.35%  | 0.39%  | 0.42%  | 0.46%  | 0.49%  | 0.53%  |
|                                   | 2.50%         | 0.00%   | 0.02%  | 0.04%  | 0.05%  | 0.07%  | 0.09%  | 0.11%  | 0.12%  | 0.14%  | 0.16%  | 0.18%  | 0.19%  | 0.21%  | 0.23%  | 0.25%  | 0.26%  |
|                                   | 3.00%         | 0.00%   | 0.00%  | 0.00%  | 0.00%  | 0.00%  | 0.00%  | 0.00%  | 0.00%  | 0.00%  | 0.00%  | 0.00%  | 0.00%  | 0.00%  | 0.00%  | 0.00%  | 0.00%  |
|                                   | 3.50%         | 0.00%   | -0.02% | -0.04% | -0.05% | -0.07% | -0.09% | -0.11% | -0.12% | -0.14% | -0.16% | -0.18% | -0.19% | -0.21% | -0.23% | -0.25% | -0.26% |
|                                   | 4.00%         | 0.00%   | -0.04% | -0.07% | -0.11% | -0.14% | -0.18% | -0.21% | -0.25% | -0.28% | -0.32% | -0.35% | -0.39% | -0.42% | -0.46% | -0.49% | -0.53% |
|                                   | Avg.          | 0.00%   | 0.11%  | 0.21%  | 0.32%  | 0.42%  | 0.53%  | 0.63%  | 0.74%  | 0.84%  | 0.95%  | 1.05%  | 1.16%  | 1.26%  | 1.37%  | 1.47%  | 1.58%  |

Highlight box indicates range of positive returns.

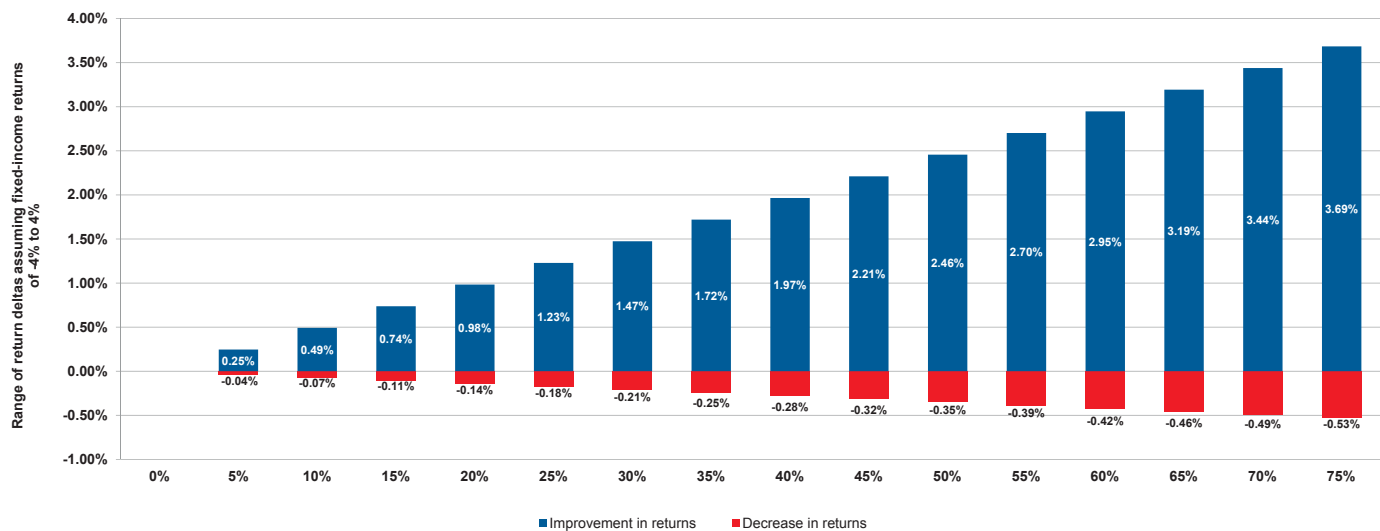


# How guaranteed investment strategies can help create a next-generation target-date fund

As illustrated in the table on the previous page, Scenario 3 assumes a target-date arrangement in which a guaranteed investment component (columns) paying 3% interest replaces between 5% and 75% of fixed-income assets.

## Scenario 3: Alternative view of difference in one-year returns (Strategy B minus Strategy A)

Assuming fixed-income returns within range of -4.00% to 4.00%



## How guaranteed investment strategies can help create a next-generation target-date fund

### Scenario 4: An improvement in five-year returns and standard deviation

This model assumes five years of fixed-income returns in a bear market. In this scenario, the addition of a guaranteed investment component to target-date arrangements, particularly during fixed-income bear markets, can help improve fund returns and provide a noticeable reduction in standard deviation of returns.

Scenario 4 assumes a target-date arrangement with the equities portion returning 6% and different scenarios in which a guaranteed investment component (columns) paying 3% interest replaces up to 75% of fixed income. It further assumes sequential five-year fixed-income returns of 1.0%, 0.0%, -1.0%, -2.5%, and -3.5%.

### Scenario 4: Change in one-year return and standard deviation by replacing a portion of traditional fixed-income assets with a guaranteed contract (Strategy B minus Strategy A)

Hypothetical target-date arrangement

|                                 |              |  |              |
|---------------------------------|--------------|--|--------------|
| Equities assumed rate of return | <b>6.00%</b> | Guaranteed contract assumed rate of return | <b>3.00%</b> |
|---------------------------------|--------------|--|--------------|

Improved scenarios: **94.00%**

|                             |                                  | Percentage of traditional fixed-income assets replaced with guaranteed contract   |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
|-----------------------------|----------------------------------|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                             |                                  | 0.00%   | 5.00%  | 10.00% | 15.00% | 20.00% | 25.00% | 30.00% | 35.00% | 40.00% | 45.00% | 50.00% | 55.00% | 60.00% | 65.00% | 70.00% | 75.00% |
| Revised allocations         | Equities:                        | 29.80%  | 29.80% | 29.80% | 29.80% | 29.80% | 29.80% | 29.80% | 29.80% | 29.80% | 29.80% | 29.80% | 29.80% | 29.80% | 29.80% | 29.80% | 29.80% |
|                             | Fixed income:                    | 70.20%  | 70.20% | 66.69% | 63.18% | 59.67% | 56.16% | 52.65% | 49.14% | 45.63% | 42.12% | 38.61% | 35.10% | 31.59% | 28.08% | 24.57% | 21.06% |
|                             | Guaranteed:                      | 0.00%   | 0.00%  | 3.51%  | 7.02%  | 10.53% | 14.04% | 17.55% | 21.06% | 24.57% | 28.08% | 31.59% | 35.10% | 38.61% | 42.12% | 45.63% | 49.14% |
| Return in year              | Sequence of fixed-income returns | Improvement (contraction) in returns by year based on assumed sequence of fixed-income returns (Strategy B returns less Strategy A returns) |        |        |        |        |        |        |        |        |        |        |        |        |        |        |        |
| 1.00                        | 1.00%                            | 0.00%   | 0.07%  | 0.14%  | 0.21%  | 0.28%  | 0.35%  | 0.42%  | 0.49%  | 0.56%  | 0.63%  | 0.70%  | 0.77%  | 0.84%  | 0.91%  | 0.98%  | 1.05%  |
| 2.00                        | 0.00%                            | 0.00%   | 0.11%  | 0.21%  | 0.32%  | 0.42%  | 0.53%  | 0.63%  | 0.74%  | 0.84%  | 0.95%  | 1.05%  | 1.16%  | 1.26%  | 1.37%  | 1.47%  | 1.58%  |
| 3.00                        | -1.00%                           | 0.00%   | 0.14%  | 0.28%  | 0.42%  | 0.56%  | 0.70%  | 0.84%  | 0.98%  | 1.12%  | 1.26%  | 1.40%  | 1.54%  | 1.68%  | 1.83%  | 1.97%  | 2.11%  |
| 4.00                        | -2.50%                           | 0.00%   | 0.19%  | 0.39%  | 0.58%  | 0.77%  | 0.97%  | 1.16%  | 1.35%  | 1.54%  | 1.74%  | 1.93%  | 2.12%  | 2.32%  | 2.51%  | 2.70%  | 2.90%  |
| 5.00                        | -3.50%                           | 0.00%   | 0.23%  | 0.46%  | 0.68%  | 0.91%  | 1.14%  | 1.37%  | 1.60%  | 1.83%  | 2.05%  | 2.28%  | 2.51%  | 2.74%  | 2.97%  | 3.19%  | 3.42%  |
| Avg. annualized improvement |                                  | 0.00%   | 0.15%  | 0.29%  | 0.44%  | 0.59%  | 0.74%  | 0.88%  | 1.03%  | 1.18%  | 1.33%  | 1.47%  | 1.62%  | 1.77%  | 1.91%  | 2.06%  | 2.21%  |
| Reduction in std. deviation |                                  | 0.00%   | -0.06% | -0.11% | -0.17% | -0.23% | -0.29% | -0.34% | -0.40% | -0.46% | -0.52% | -0.57% | -0.63% | -0.69% | -0.74% | -0.80% | -0.86% |

## How guaranteed investment strategies can help create a next-generation target-date fund

---

This hypothetical fixed-income bear market scenario demonstrates that as the allocation to the guaranteed investment component increases:

- The improvement in overall fund returns increases
- The reduction in standard deviation becomes greater (at 75% replacement, standard deviation reduces by 0.86%)

These illustrative outcomes take on a particular degree of importance for participants who are approaching or already are in retirement, where sequence of returns risk can materially impact their lifestyle.

**Insight: Incorporating a guaranteed investment strategy into target-date funds and other asset allocation arrangements, such as managed accounts, can enhance and protect overall portfolio returns.**

Modeling illustrates how including a guaranteed investment component in a target-date arrangement can help provide a level of certainty, protection and stability that previously hasn't been broadly available to fund managers. We see the demonstrable evidence of how fund managers can pursue opportunities for:

- **Portfolio optimization.** A guaranteed investment component, such as a funding agreement or a fixed annuity issued by an insurance company, protects principal and can complement—even replace—fixed-income sleeves in target-date arrangements, and potentially help improve overall performance while minimizing volatility. Alternatively, the return anchoring effect of the guaranteed investment component can allow managers to seek higher returns through increased equity allocation while maintaining the fund's return standard deviation profile.
- **Predictable growth.** Balances allocated to the guaranteed investment component will grow every day at interest crediting rates, known in advance, that will always be greater than or equal to a guaranteed minimum rate, which can be between 1% and 3% (depending on the contract).
- **Flexibility.** Fund managers can typically decide how much or how little to allocate to the guaranteed investment component. The manager may also have some ability to customize the contract's liquidity provisions.

Using a guaranteed investment strategy that can help improve stability of fund returns and reduce the level of downside performance may furnish your target-date arrangement with the attributes that are especially appealing to plan sponsors, consultants, and the individuals who use these funds. This can help distinguish your target-date arrangements from the competition, while helping plan participants minimize market risk and sequence of returns risk while they prepare for, and live in, retirement. If the guaranteed investment also provides the option for lifetime income, the approach can also help participants generate income in retirement that they can never outlive.

---

*This paper was prepared by TIAA, the largest manager of qualified plan stable value assets<sup>1</sup> with more than 100 years of experience managing guaranteed products, to illustrate how a fund manager could use a guaranteed investment component in a target-date arrangement to complement traditional fixed-income options. For more information on this topic:*

- Visit **[TIAA.org/portfolio-evaluator](https://www.tiaa.org/portfolio-evaluator)**, where you can use a calculator to model different scenarios.
- Contact the 401(k) TIAA Income Solutions Team at **[TIAA\\_DCIO\\_Support@TIAA.org](mailto:TIAA_DCIO_Support@TIAA.org)**.



<sup>1</sup> LIMRA 3Q4Q 2020 Stable Value and Funding Agreement Product Survey. Based on a survey of 18 insurance companies and 2 banks reporting \$760.4 billion in stable value amounts associated with qualified stable value assets. TIAA ranked first in total values.

This material is for informational or educational purposes only and does not constitute investment advice under ERISA. This material does not take into account any specific objectives or circumstances of any particular investor, or suggest any specific course of action. Investment decisions should be made based on the investor's own objectives and circumstances.

**The hypothetical examples provided in this document have been developed by TIAA solely to illustrate the potential effect on asset mixes with varying equity and fixed income returns. They are not intended to predict or project the performance of any product and they do not reflect any withdrawals during the periods displayed. They also do not reflect fees, expenses, or taxes, which would reduce performance. Actual returns will vary. Please keep in mind that the information derived from the examples are for educational and illustrative purposes only and are not intended to constitute legal, financial, tax, or other advice.**

**You should consider the investment objectives, risks, charges and expenses carefully before investing. Please call 877-518-9161 or go to [TIAA.org/prospectuses](https://www.tiaa.org/prospectuses) for current product and fund prospectuses that contain this and other information. Please read the prospectuses carefully before investing.**

This document is not marketing material and does not represent an offer to purchase any TIAA products.

**Diversification is a technique to help reduce risk. However, there is no guarantee that diversification will protect against a loss of income.**

No strategy can eliminate or anticipate all market risks, and losses can occur.

Certain products may not be available to all entities or persons.

TIAA-CREF Individual & Institutional Services, LLC, Member FINRA, distributes securities products. Fixed annuity contracts and certificates are issued by Teachers Insurance and Annuity Association of America (TIAA), New York, NY. Each is solely responsible for its own financial condition and contractual obligations.

©2021 Teachers Insurance and Annuity Association of America-College Retirement Equities Fund, 730 Third Avenue, New York, NY 10017

**BUILT TO PERFORM.**

**CREATED TO SERVE.**