

## Asset Allocation and the Investment Return Assumption

JULY 2020

### Key Points

- The expected investment return for a pension plan's assets is used as the discount rate for public and multiemployer pension plan valuations and is sometimes referred to as the "actuarial" rate of return.
- The investment return assumption used to measure pension liabilities is sometimes treated as a return target for determining the asset allocation for a pension fund. This practice can lead to increased investment risk.
- Investment risk should generally be reduced as a plan matures.

### Don't Put the Cart Before the Horse

The expected investment return for a pension plan's assets is used as the discount rate<sup>1</sup> for public and multiemployer pension plan valuations<sup>2</sup> and is sometimes referred to as the "actuarial" rate of return. This assumption often has a greater impact on the pension liability than any other assumption and is the subject of much analysis and commentary. However, the investment return assumption is sometimes used as a return target for determining the plan's asset allocation. This issue brief discusses why the investment return assumption should be determined based on the asset allocation, not the other way around.

### Which Comes First?

Asset allocation is determined in the context of an investment policy that lays out the objectives, duties, policies, and procedures related to the plan investments. The level of investment risk should be consistent with the objectives of plan fiduciaries and the plan sponsors. Market valuations for the various asset classes and other factors are typically part of the analysis used to determine the asset allocation. After the asset allocation is set, then the assumption for the expected return can be determined. If the risk and return objectives or the assessment of market conditions change, then the strategic asset allocation can be revisited. The expected return is then reevaluated based on the plan's new asset allocation and a set of capital market assumptions.



AMERICAN ACADEMY of ACTUARIES

*Objective. Independent. Effective.™*

1850 M Street NW, Suite 300  
Washington, DC 20036

202-223-8196 | [www.actuary.org](http://www.actuary.org)

Craig Hanna, Director of Public Policy  
Linda K. Stone, Senior Pension Fellow

© 2020 American Academy of Actuaries. All rights reserved.

<sup>1</sup> A discount rate is used to calculate present values of expected future payments. For example, if \$100 is owed in one year and the discount rate is 5%, then the present value of the \$100 promise is  $\$100 / (1 + 5\%) = \$95.24$ . Note that if the discount rate were 4%, then the present value would be  $\$100 / (1 + 4\%) = \$96.15$ . When the discount rate is lowered, the present value increases.

<sup>2</sup> Public and multiemployer pension plans use the expected return on assets as a discount rate to determine plan liabilities and normal cost as discussed in this issue brief. This issue brief is less relevant for corporate pensions, which generally use discount rates based on current fixed income yields.

Because “investment return assumption” is used interchangeably with “actuarial rate of return” and “expected rate of return” there could be confusion about its purpose. It has come to be viewed as a target that plan asset returns should meet or exceed. This can lead to changes in the asset allocation with the specific objective of justifying the current investment return assumption. Often, the goal of this approach is to justify an assumption that keeps pension contributions within current budget constraints. However, using this assumption as the basis for asset allocation decisions may lead to increased investment risk. The investment policy considerations and risk perspective should be the basis for asset allocation decisions, with the return assumption then determined from the asset allocation.

Changes to assumptions, made based on new information, often impact expected or required contribution levels. Fiduciaries are naturally interested in the impact of changing the investment return assumption on expected contributions. However, compensating for the new information that led to that assumption change by adjusting the asset allocation often means increasing the risk profile. An adjustment to the asset allocation changes the level of investment risk and can ultimately result in greater volatility in future contribution requirements.

## Current Conditions

Return expectations for most asset classes have decreased in recent years as interest rates have dropped and prices for equity, real estate, and other assets have increased. This has created pressure to maintain future return assumptions by adjusting asset allocation, which often means increasing risk. However, increasing investment risk (which increases return volatility) to support a return assumption that achieves a certain level of contribution can create problems in the future. Contribution requirements can end up being shifted to future generations, requiring future budgets to make up for past underfunding.

The Pension Practice Council, which authored this issue brief, consists of Timothy Geddes, MAAA, FSA, FCA, EA—*Chairperson*; Sherry Chan, MAAA, FSA, FCA, EA—*Vice Chairperson*; Jason Russell, MAAA, FSA, EA—*Vice Chairperson*; Christian Benjaminson, MAAA, FSA, EA; Elena Black, MAAA, FSA, FCA, EA; Bruce Cadenhead, MAAA, FSA, FCA, EA; David Driscoll, MAA, FSA, FCA, EA; Ronald Gebhardtsbauer, MAAA, FSA; Eric Keener, MAAA, FSA, FCA, EA; Tonya Manning, MAAA, FSA, FCA, EA; Kathleen Riley, MAAA, FSA, FCA, EA; John Schubert, MAAA, ASA, FCA; Mark Shemtob, MAAA, FSA, FCA, EA; and Aaron Weindling, MAAA, FSA, FCA, EA.

As a pension plan's population ages, the liability and pool of assets grow, increasing the volatility of contributions for a given level of investment risk. The time horizon over which benefit payments will be made shortens and so does the time horizon for investment returns. Finally, mature plans tend to have negative cash flow (contributions less than benefits and expenses paid), which increases the need for liquidity and makes it harder to recover from market downturns. The increasing risk related to these developments can be offset by reducing risk in the investment portfolio. This means that investment risk should generally be reduced as the plan matures.

## Evaluating Risk

Asset allocation should be based on investment policy considerations such as the risk/return trade-off, and not on the expected rate of return assumption. Factors such as the ones listed below are appropriate considerations when evaluating the asset allocation:

- size of the plan liability and asset pool, relative to plan sponsor resources;
- expected net cash flow;
- investment time horizon defined by expected benefit payments for current members;
- financial strength of the plan sponsor(s); and
- inflation sensitivity in the benefit promise.

Pension systems strive to ensure that payments to members will be made as promised, while maintaining consistent and manageable contribution levels over time. As part of these goals and as a matter of general financial prudence, risk analysis can be performed, which will help define the appropriate level of risk for a plan. Some sample risk criteria include:

- The likelihood of the funded status dropping below x% during the next N years
- The likelihood of the contribution as a percent of payroll increasing above y% during the next N years.
- The likelihood of the contribution as a percent of payroll increasing by z% in a single year during the next N years.

Fiduciaries and plan sponsors will be involved in the risk analysis provided in compliance with Actuarial Standard of Practice (ASOP) No. 51, *Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions*. This ASOP requires actuaries to identify, assess, and disclose risks relevant to the funding of the plan, including investment risk (i.e., the potential that investment returns will be different than expected). This analysis can help educate plan trustees and sponsors on the level of risks inherent in the plan.

## Summary

Pension plan populations have aged and asset levels have grown, leading to negative cash flow and more risk from contribution volatility. At the same time, future return expectations have declined due to lower interest rates and higher prices on assets like equities and real estate. This has created a challenging environment where pension plan trustees might take more investment risk to maintain their return assumption to mitigate pressure on current budgets. However, asset allocation and the acceptable level of investment risk should not be determined in order to justify a current investment return assumption. Analysis focused on the potential for unexpected changes in contribution requirements and the implications for benefit security provide the basis for sound asset allocation decisions. The investment return assumption can then be determined based on an asset allocation that results in an appropriate amount of risk.

The American Academy of Actuaries is a 19,500-member professional association whose mission is to serve the public and the U.S. actuarial profession. For more than 50 years, the Academy has assisted public policymakers on all levels by providing leadership, objective expertise, and actuarial advice on risk and financial security issues. The Academy also sets qualification, practice, and professionalism standards for actuaries in the United States.