

Selecting and documenting the long-term expected rate of return (LTERR)/discount rate

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APRIL 20, 2023

LTERR/Discount Rate

“State and local governments use unrealistic assumptions in determining how much they had to put in the pension funds to meet the obligations. The pension fund assumptions of most municipalities, in my view, are nuts. But there is no incentive to change them. Its much easier to get a friendly actuary than to face an unhappy public.” Warren Buffet

What should the discount rate be

- ▶ **Financial Theory teaches that liabilities do not depend upon how assets are invested.**
- ▶ **Because pension benefits are bond-like liabilities consisting of fairly predictable and highly secure annual payments, they should be valued using bond-like rates.**
- ▶ **Private pension plans in the U.S. value their liabilities using corporate bond rates (5.24% - Milliman February 2023 index for 100 largest U.S. corporate pension plans).**
- ▶ **GASB attempted to follow private plan practices for public plans, but politics won out.**

Politics of keeping discount rates high

Lowering earning assumptions/discount rate would require larger annual contributions and larger unfunded liabilities.

- **Politicians are against higher contributions as it raises taxes/cut services.**
- **Public unions are against higher contributions as it cut services (employee layoffs) and increases public opposition to public pension benefits.**

The consequence has been to increase asset allocation in risky assets to achieve high returns.

LTERR/Discount Rate – The most important decision the Retirement Board makes

The higher the assumption, the lower the annual required employer contribution, and the greater the risk that actual returns will fall short of assumed returns, requiring higher employer contributions in the future.

The higher the discount rate, the lower the value of pension liabilities.

The use of unrealistic rates mask the true costs of pension benefits and encourages underfunding, under contributing, and excessive risk taking, threatening the ability of plans to pay basic retiree benefits.

LTERR/Discount Rate – Fiduciary responsibility

You have a fiduciary responsibility under the prudence standard to ensure the LTERR/Discount rate selected is realistic, well documented and supported.

- ▶ **Requires asking questions and understanding the rationale for the rate decision.**
- ▶ **Requires evaluating, analyzing and documenting the Board's recommendation for the LTERR/Discount Rate.**
- ▶ **It is the Board's responsibility, not the actuary, in setting and documenting the rate.**

LTERR/Discount Rate

Over the last 23 years, the plan's actual returns were significantly lower than the rates used by the retirement board. This was the main cause for the significant unfunded pension liability.

Period	Actual Geometric Return	Geometric rate used
2000- 2022	5.195% (1)	7.682% (1)

LTERR/Discount Rate – Actuarial standard requirements

Data to consider for investment return:

- Yields on government securities and corporate bonds
- Inflation and GDP growth
- Returns on each asset class
- Historical plan performance

Plan specific data to consider for investment return:

- Investment policy
- Reinvestment risk
- Investment volatility
- Investment Manager performance
- Cash flow timing and benefit volatility

Multiple return rates may be used in lieu of a single investment return rate.

LTERR/Discount Rate – Accounting rules

“The long-term expected rate of return component is forward-looking and is usually based on future expected returns that are weighted based on the plan’s target asset allocation. The long term expected rate of return is often supported through modeling and the use of published forward rates, which are evaluated based on the probability of achievement of those rates. It ordinarily is not sufficient to rely solely on past investment experience.” AICPA Audit Guide

“The long-term expected rate of return should be based on the nature and mix of current and expected pension plan investments..... Long-term expected rate of return should be determined net of pension plan investment expense”. GASB Statement 67

LTERR/Discount Rate – Methods used to determine rate

Specific models for construction of LTERR/Discount Rate assumptions are not prescribed by ASOP and accounting rules. 3 approaches typically used in predicting LTERR/Discount Rate assumptions:

- ▶ **Building block method**
- ▶ **Consensus forecast**
- ▶ **Monte Carlo simulation**

LTERR/Discount Rate – Building Block Method (BBM)

- Determine and combine best estimate of long-term, expected future investment returns for various asset classes based on current or future asset allocation. Make appropriate provision for expenses.
- ▶ Factors considered in determining best estimate include: Inflation forecasts, real earnings growth, dividend yields, government bond yields, etc.
- ▶ NEPC annually prepares for PRIM, capital market assumptions using BBM. NEPC investment outlook for 2023 for 10 year and 30 year future returns are approx. 6.5% and 7.2%, respectively, net of management fees (2).

Risks/challenges

- ▶ Requires forecasting expertise.
- ▶ This approach provides no randomness in the future outcome. Assumes a long-term return for each year with no variability over time.
- ▶ “Creates the illusion of certainty and objectivity about future market performance” (4) when in reality it is often based on opinion, not fact. History of predicting accurately has been erratic.
- ▶ Susceptible to market shocks that are not anticipated.

LTERR/Discount Rate – Consensus Forecast

Develop a consensus long-term capital market forecast, based on your asset allocation, from multiple, reputable organizations in the financial services industry.

- ▶ **Horizon Actuarial Services, annually compiles and averages returns and risk forecast of 40 major investment consulting firms.**
- ▶ **Horizon's 2022 report (2023 report not available until August 2023) for the mean (50%) for conservative advisors for 10 years and 20 years, net of fees (3), was 4.11% and 4.68%, respectively. Survey average for 10 and 20 years, net of fees (3), was 5.43% and 6.09%, respectively.**

LTERR/Discount Rate – Monte Carlo Simulation

A computer simulation estimating the chance of earning the plan's actuarial return assumption given the plan's asset allocation.

- ▶ Dahab, in October 2022, provided a Monte Carlo simulation (using projection scenario data) against Andover's asset allocation. The results showed we have a 74% chance to beat 7.0% (net of fees).
- ▶ The 2021 Dahab study showed we 51.9% chance to beat 5.75%. 2021 analysis used arithmetic returns from the Horizon survey which are always lower than geometric returns which were used in 2022. Geometric returns are the industry standard for use within portfolio simulation.

Recommendation

The use of unrealistic returns and keeping the town's contributions low doesn't fulfill our fiduciary duty to ensure the town fully fund the benefits that are owed.

BBM and Monte Carlo simulation shows support for raising the discount rate. However, as a fiduciary, it's our duty to act in the best interests of pension participants and use conservative assumptions. One year improvement in capital market assumptions isn't sufficient to support raising the rate. The LTERR/Discount Rate of 5.75% should continue to be used.

LTERR/Discount Rate

Notes

- (1) Calculations available upon request.
- (2) Management fees of 50 basis points were used
- (3) Passive management fee of 20 basis points used.