

In Search of Funded Status Stability

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Improving funded status stability within the EROA framework

Executive Summary

Public pension plans have long relied on a stable, long term assumed expected return on assets (EROA) to value liabilities. This convention is deeply embedded in public plan governance and accounting and is widely expected to remain the foundation of liability measurement for the foreseeable future.

Accepting this reality, the central question for plan sponsors and fiduciaries is not whether the EROA framework should be replaced, but whether it can be applied more effectively to help plan sponsors manage risk as portfolios evolve – particularly as allocations to fixed income increase.

This paper proposes an asset allocation centric framework that operates within the existing EROA construct, while seeking to better control surplus and funded status volatility by making the fixed income component of portfolio return assumptions more responsive to changes in market yields. Because prevailing fixed income yields are closely linked to future returns over horizons consistent with bond maturities, allowing expected returns on fixed income assets to evolve with yields can improve alignment between asset behavior and liability valuation – without advocating for a mark to market liability methodology.

When implemented thoughtfully, this approach can potentially lower risk for the same, or better long term return outcomes.

We show that:

- Public pension liabilities exhibit significant sensitivity to changes in EROA, regardless of the source of those changes.
- As fixed income allocations grow, maintaining a less dynamic EROA can unintentionally increase funded status volatility.
- Allowing the fixed income component of EROA to be more responsive to yield movements can create better alignment between fluctuations in valuations of assets and liabilities.
- Long duration fixed income, particularly long credit, is better aligned with this sensitivity and can materially reduce surplus risk relative to traditional core bond allocations – all within the prevailing EROA framework.

What this paper is – and is not

This paper is not an argument for changing the public pension discount rate framework or adopting a mark to market liability construct. We explicitly assume that the long term expected return on assets (EROA) will remain the governing standard for public plans.

Instead, this paper focuses on how EROA is applied within asset allocation decisions. As fixed income becomes a larger component of public pension portfolios, [and to be clear, we believe it should in light of attractive starting yields coupled with significant funded status improvements since the global financial crisis] using a less dynamic expected return assumption across all asset classes can unintentionally increase funded status volatility.

The framework discussed here operates entirely within the existing EROA construct and seeks to:

- improve alignment between asset behavior and liability valuation,
- reduce surplus volatility for a given return objective, and
- enhance risk management through more responsive fixed income assumptions and duration alignment.

The goal is not to change how liabilities are measured, but to optimize portfolio construction and assumption application so that public plan assets are better positioned to manage the risks that matter most.

The Traditional Public Pension Liability Framework

Stable discount rates, stable optics

Unlike corporate defined benefit plans, which discount liabilities using market based yield curves, public pension plans typically value benefit obligations using a long term EROA. Once set, this assumption often remains relatively stable for extended periods, adjusted only periodically following asset allocation shifts or comprehensive capital market assumption reviews.

This convention provides not only administrative simplicity and stability in reported results but also provides a direct link between how a plan is invested and how that translates into its ability to cover future benefit payments – attributes that are highly valued by public plan stakeholders.

However, while this methodology stabilizes the measurement of liabilities, it does not eliminate the economic sensitivity of promised benefit cash flows to changes in expected returns. From a financial perspective, pension obligations remain long dated cash flows whose present value is inherently sensitive to the discount rate used, even if that rate is less dynamic in practice.

The consequence is that funded status volatility is typically attributed almost entirely to asset performance, with limited recognition of how changes in expected returns – explicit or implicit – affect the economic value of liabilities.

Hidden Sensitivity to EROA Assumptions

EROA sensitivity before duration

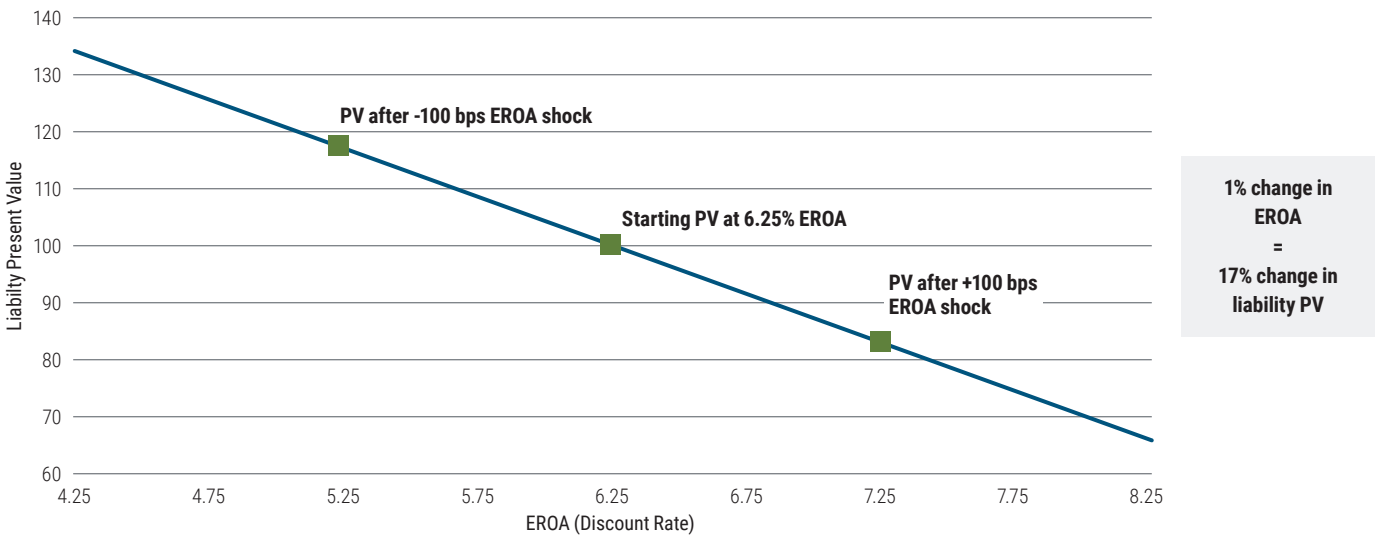
Public pension benefit payments extend far into the future, particularly for open plans. As a result, the present value of liabilities is highly sensitive to any change in the assumed EROA, irrespective of whether that change is driven by interest rates, capital market expectations, or policy decisions.

The magnitude of this sensitivity varies by plan demographics, benefit design, and plan population maturity. Nevertheless, the direction is unambiguous: small changes in EROA can produce large changes in liability values.

To demonstrate, we construct an illustrative liability cash flow profile and discount it at an EROA of 6.25%. In this example, a 100 basis point (bps) change in the assumed EROA results in an approximately 17% change in present value, all else equal. This sensitivity reflects the long dated nature of benefit obligations rather than any specific accounting choice.

Under the traditional framework, this sensitivity exists economically, but it is largely dormant because the EROA itself is intentionally slow moving. As portfolios change, however, this creates a growing disconnect between how assets behave and how liabilities are measured.

Figure 1: Public pension liabilities exhibit substantial sensitivity to changes in EROA



Source: PIMCO. As of 31 December 2025. Hypothetical example for illustrative purposes only. There is no assurance that the stated results will be achieved.

Why Fixed Income Changes the Equation

Yields and future returns

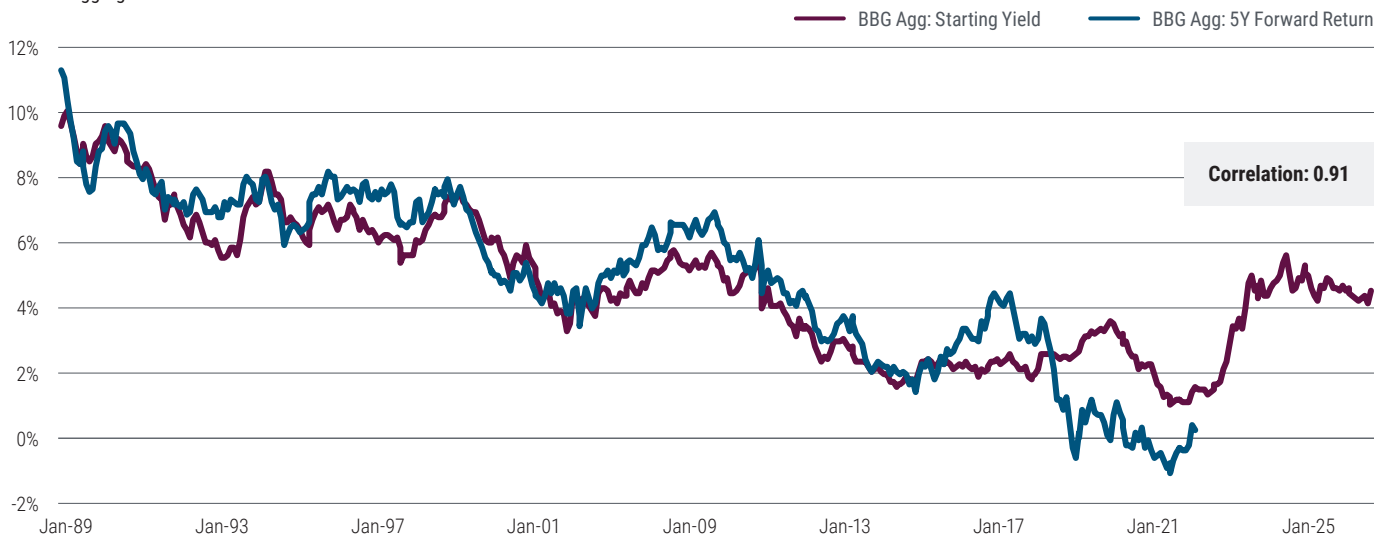
A defining characteristic of fixed income investing is the strong empirical relationship between starting yields and subsequent realized returns over horizons consistent with bond maturities. When yields rise, expected returns rise; when yields fall, expected returns decline. Below, we show the historical correlation between the starting yield of the Bloomberg US Aggregate Index and the 5 year forward annualized return. Over the prior 35+ year period, the correlation stood at 0.9. This relationship also holds for longer duration fixed income: over

the same period, the correlation between the starting yield of the Bloomberg US Long Credit Index and the 11-year forward annualized return – aligned with the average duration over the period – was above 0.8.

This relationship contrasts with return seeking assets such as equities, where expected returns are less directly observable and evolve more gradually.

Figure 2: Correlation of prevailing yields with forward returns

BBG US Aggregate



Source: Bloomberg, PIMCO. As of 31 March 2026.

Implications for applying EROA

For public plans with meaningful allocations to fixed income, the logic of applying a less dynamic EROA across the entire portfolio becomes less compelling. If a meaningful portion of plan assets consists of bonds whose expected returns move with yields, then the plan’s overall expected return – and the assumptions applied to those assets – can reasonably evolve as well.

Under the framework considered here:

- overall EROA methodology remains intact,
- only the portion of expected return attributable to fixed income is allowed to respond to observable yield changes,

- total plan EROA becomes a weighted average of relatively stable return seeking assumptions and yield responsive fixed income expectations.

This does not constitute a shift to mark to market liability discounting. Rather, it represents a more economically coherent application of EROA that reflects how assets and their associated expected returns are actually expected to behave.

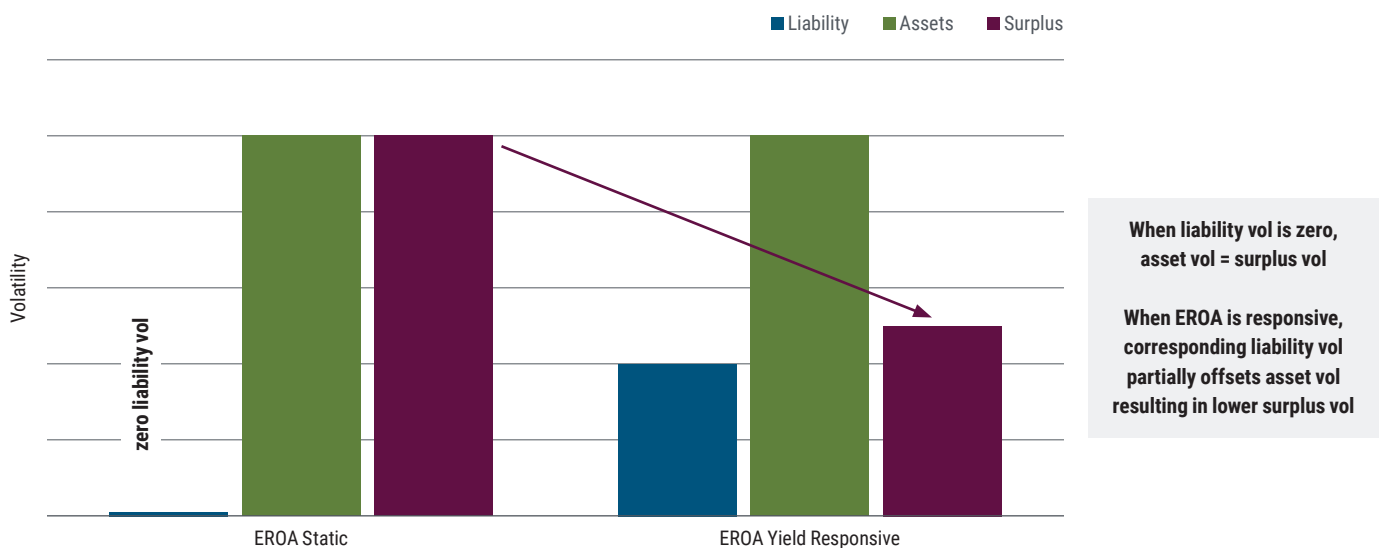
Introducing Yield Responsiveness Within the EROA Framework

From static assumptions to better alignment

When the fixed income component of EROA is allowed to adjust with market yields, liability present values become more responsive to changes in expected returns – although importantly, this responsiveness mirrors the behavior of fixed income assets themselves.

As yields fall, fixed income expected returns decline, EROA adjusts modestly lower, and liability values increase. At the same time, bond prices rise to offset the associated increase in liabilities. When yields rise, the opposite occurs. The result is not higher risk, but the potential for offsetting movements between assets and liabilities and therefore a potentially more stable funded status (all else equal).

Figure 3: Yield responsive application of EROA can improve balance sheet coherence



Source: PIMCO. For illustrative purposes only. Conceptual relationships shown; outcomes are not guaranteed and will vary with market conditions and implementation.

Fixed income as a hedge to EROA sensitivity

Within this framework, fixed income plays a dual role: providing income and acting as a hedge to the funded status impact of changes in expected returns. Properly aligned, fixed income assets can help absorb the balance sheet effects of EROA adjustments rather than amplify them.

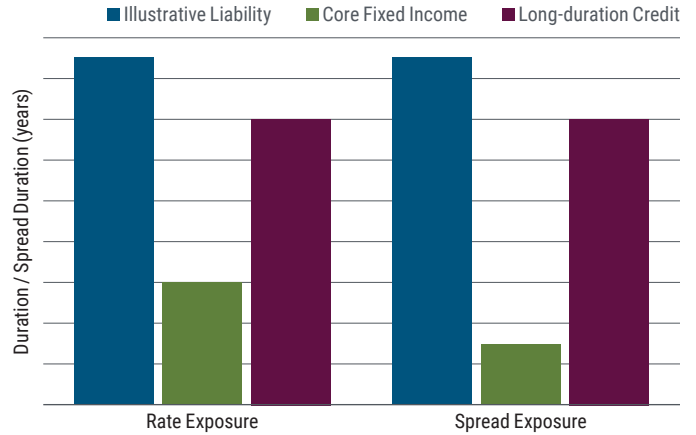
The Importance of Duration Alignment

Translating EROA sensitivity into duration

While liability sensitivity originates from changes in EROA, the dominant transmission mechanism for the fixed income component is interest rate duration. This makes duration alignment critical once yield responsiveness is introduced.

Core bond portfolios, typically benchmarked to broad aggregate indices, often have durations well below the effective sensitivity of public pension liabilities. When liabilities exhibit the equivalent of 17 years of sensitivity to EROA changes, a bond portfolio with 6–7 years of duration provides only a partial offset (roughly 1/3).

Figure 4: Duration and spread alignment matters under a yield responsive EROA application



Source: PIMCO. As of 31 December 2025. For illustrative purposes only. Hypothetical example; results are based on assumptions and models and are not a projection or prediction of actual results. There is no assurance that the stated results will be achieved.

Long duration fixed income as a better fit

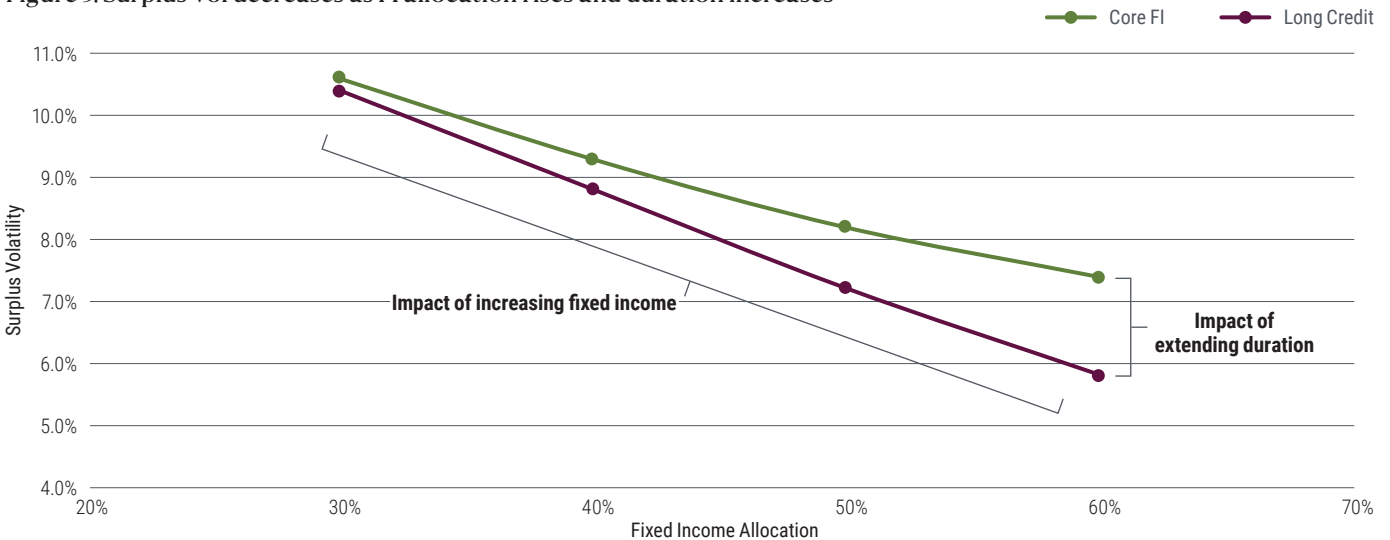
Long duration fixed income, particularly long credit, offers duration and spread sensitivity that more closely matches the EROA sensitivity embedded in public pension liabilities. By extending duration and incorporating credit exposure, these portfolios can:

- more closely track liability value fluctuations resulting from changes in EROA,
- reduce surplus volatility more meaningfully than core fixed income, and

- support return objectives through higher yields and credit spreads.

Illustrative portfolio analysis shows that reallocating fixed income exposure from core bonds to long credit can materially reduce surplus risk while maintaining long term return objectives within the EROA framework. This is especially evident with larger fixed income allocations.

Figure 5: Surplus vol decreases as FI allocation rises and duration increases



Source: PIMCO. As of 31 December 2025. For illustrative purposes only. Hypothetical example; results are based on assumptions and models and are not a projection or prediction of actual results. There is no assurance that the stated results will be achieved.

Asset Allocation Implications for Public Plans

Optimizing within existing constraints

This framework reframes asset allocation decisions without challenging prevailing discount methodologies:

- fixed income is evaluated not only on standalone risk and return, but on its contribution to funded status stability,
- EROA remains the governing discount assumption, while its application becomes more economically consistent with asset behavior, and
- funded status volatility becomes an explicit design consideration rather than a residual outcome.

Governance considerations

Implementing a yield responsive application of EROA requires clear governance:

- transparent communication around why modest EROA adjustments may occur,
- well defined rules governing how fixed income expected returns respond to yields, and
- coordination between investment policy, actuarial assumptions, and risk objectives.

Crucially, this approach does not require abandoning long term return seeking assets or altering statutory discount frameworks. It simply recognizes that as fixed income plays a larger role, its characteristics should be reflected more fully across the balance sheet.

Why the Current Environment Matters

Higher starting yields increase the attractiveness of fixed income as both a return generator and a stabilizing force. For many public plans, this environment offers an opportunity to:

- improve funded status resilience,
- reduce surplus volatility and
- enhance alignment between asset behavior and liability assumptions.

Conclusion

Public pension plans face the challenge of managing long dated obligations within frameworks that prize stability and governance continuity. Accepting the EROA methodology as foundational, the question becomes how to apply this framework in a way that reflects evolving portfolios and market conditions.

By allowing the fixed income component of expected returns to respond to yield movements and aligning asset duration with liability sensitivity, public pension plans may materially reduce surplus volatility while maintaining – or even improving – long term return outcomes. This is not about changing how liabilities are measured, but about optimizing how assets are structured and assumptions are applied.

In our view, improving EROA application is less about introducing volatility and more about managing risk more effectively.

Supplemental case study: A companion case study (available on request) provides a more detailed, assumption based illustration of the framework described in this paper, including the sensitivity of liability values to changes in EROA and the role of fixed income duration and spread alignment in shaping surplus risk across alternative implementations. Hypothetical examples are for illustrative purposes only; results will vary by plan characteristics, governance choices, and market conditions.

Past performance is not a guarantee or a reliable indicator of future results.

All investments contain risk and may lose value.

HYPOTHETICAL ILLUSTRATIONS

Hypothetical illustrations have many inherent limitations, some of which are described below. No representation is being made that any account will or is likely to achieve results similar to those shown. In fact there are frequently sharp differences between hypothetical results and actual results subsequently achieved by any particular trading program.

One of the limitations of hypothetical results is that they are generally prepared with the benefit of hindsight. In addition, hypothetical scenarios do not involve financial risk, and no hypothetical illustration can completely account for the impact of financial risk in actual trading. For example, the ability to withstand losses or to adhere to a particular trading program in spite of trading losses are material points which can also adversely affect actual trading results. There are numerous other factors related to the markets in general or to the implementation of any specific trading program which cannot be fully accounted for in the preparation of a hypothetical illustration and all of which can adversely affect actual results.

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