

A PUBLIC POLICY PRACTICE NOTE

Fixed Rate Pension Funding

February 2023

Developed by the Public Plans Committee



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Introduction and Background

This practice note was prepared by and reflects the views of the Public Plans Committee of the American Academy of Actuaries. The purpose of this practice note is to provide information to actuaries on current and emerging ideas for working with public defined benefit pension plans that use fixed rate funding. The intended users of this practice note are the members of the actuarial organizations governed by the ASOPs promulgated by the Actuarial Standards Board.

Actuarial funding, as discussed in this paper, refers to a funding policy for a defined benefit pension plan in which contributions to the plan are based on the results of an actuarial valuation. The actuarial valuation employs actuarial assumptions, an actuarial cost method, an asset valuation method, and an amortization method—all of which meet the requirements of actuarial standards of practice (ASOPs). The contributions to the plan may be defined as a dollar amount or as a percentage of pay. The specific basis for actuarial funding is generally referred to as an “Actuarially Determined Contribution” or ADC. The Governmental Accounting Standards Board uses this term in its statements 67 and 68. The Actuarial Standards Board uses it in ASOP No. 4. In contrast to actuarial funding, fixed rate funding refers to a situation in which contributions to a defined benefit plan are defined as a certain fixed percentage of pay, often without regard to the results of a current actuarial valuation, and in a way that is not subject to change by the plan’s governing body. For example, the contribution rate might be defined in a statute or ordinance. In that case, a change in the rate requires some type of direct action by a separate governing authority.

In a fixed rate plan, the retirement system usually invests the assets and administers the benefits but has no direct control over either the contributions or the benefit levels. Because contributions (C) plus investment returns (I) have to equal the benefits (B) and expenses (E) paid (i.e., $C+I=B+E$) over time, when investment returns vary, either contributions or benefits need to adjust to keep this fundamental equation in balance. The role of the retirement board, then, is to indicate when the equation is out of balance and by how much. The board needs to have policies and metrics to do this, and this practice note is intended to serve as a guide to actuaries who advise retirement boards.

This practice note begins by addressing the straightforward case—a plan with a fixed contribution rate defined in statute, only one tier of benefits, no automatic adjustments to the rate or to benefits, and not yet fully funded.

Fixed Rate Funding Policy

While in simple terms, a “funding policy” in the context of a fixed rate plan could simply be a statement of the fixed contribution rate, in the context of this practice note, we are using the term “funding policy” to encompass the broad policy framework that would govern when the fixed contribution rate (or benefit level) needs to be changed.

Objectives

Full funding is a very important objective for any plan, although one that fixed rate plans may not specifically enunciate or even consider important. This practice note advises that the funding policy for a fixed rate plan should have a clearly stated objective to achieve full funding and to maintain full funding once it is achieved. Such an objective may help to dampen contribution decreases or benefit increases prior to the time full funding is achieved.

Other objectives would usually include minimizing the frequency and magnitude of changes in contribution rates and benefit levels.

An approach to meeting these objectives

The funding policy should require periodic tests of the adequacy of the fixed rate given the existing benefit levels. Actuarial Benchmark Contribution (ABC) is an effective tool to test the adequacy of the fixed rate plan. The ABC is developed using the same policy components that comprise an ADC:¹

- Actuarial Cost Method: The Entry Age Actuarial Cost Method with level % of pay normal cost is particularly well suited to fixed rate plans.
- Asset Valuation Method: Market values or actuarial methods that meet actuarial standards and provide a reasonable degree of smoothing of assets can both be appropriate for developing an Actuarial Benchmark Contribution. While smoothing assets is most important under actuarial funding, a smoothed ABC can also be used to indicate when contributions and/or benefits should be changed.
- Amortization Method: Level % of pay amortization is most compatible with the fixed rate design. Although layered, fixed period amortization is a common method for developing Actuarially Determined Contribution rates for plans using actuarial funding, such methods may not work well in fixed rate plans because of their complexity. Simpler methods, including rolling amortization periods, may comport better with the objectives of fixed rate plans. Closed amortization of an initial unfunded liability to a fixed end date with perhaps a rolling amortization of future gains and losses may also be reasonable. For rolling amortization methods, particular attention should be given to the degree of negative amortization (where the contribution rate in a given year is less than the rate of interest), if any, because consistent negative amortization is inconsistent with the goal of attaining full funding.

A generally well-constructed funding policy for a fixed rate plan should include periodic, ideally annual, comparisons of the ABC with the fixed rate. The annual comparison would be viewed as a leading indicator of the potential need for a rebalancing of benefits with contributions. Actual recommendations for change would arise in conjunction with a periodic in-depth review that could involve forward-looking models and projections. The rebalancing could involve changes to benefits,

¹ For a discussion of these components, please see [Actuarial Funding Policies and Practices for Public Pension Plans](#); Conference of Consulting Actuaries Public Plans Community; October 2014.

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contributions, or both. Such funding policy would specify the conditions under which the retirement board would recommend to the appropriate governing body that a rebalancing of contributions and/or benefits is required. For example, the funding policy might call for rebalancing if:

- The fixed rate falls below the ABC by more than a certain percentage for a certain number of years and/or is expected to fall below the ABC for a number of years.
- The funded ratio falls below a certain threshold and remains below it for a certain number of years and/or is expected to fall below a certain threshold for a number of years.
- Benefit payments exceed contributions by more than a certain percentage of the assets.
- The expected full funding date under an open group projection is nonexistent or exceeds a specified number of years.

In summary, rebalancing would not necessarily result from a single year's measurement. That could be inconsistent with the contribution stability that fixed rate plans are designed to achieve. However, the annual assessment is designed to provide ample warning for when rebalancing may be required.

The objectives of achieving and maintaining full funding, and the objectives of maintaining stable contributions and benefits, suggest the following when changes are deemed warranted:

- Employer and/or employee contribution increases could be phased in over a reasonable period of years.
- Benefit decreases could be shared among as wide of a participant group as possible and possibly phased in over a period of time.

Given the lack of contribution flexibility to which most fixed rate plans are subject, this practice note views the following funding and benefit policy provisions as helpful:

- Strong governance that incorporates a well-defined funding policy which can effect changes in the fixed rate or benefit levels. The design of the funding policy may reflect the relative difficulty or ease of making changes.
- Permanent maintenance of a margin for adverse deviation in the funding ratio. For example, perhaps the funding policy would not call for changes in benefits or contributions that would bring the funded ratio below 120% or perhaps 100% plus a margin reflective of actual portfolio risk such as a 2-standard-deviation investment return event.
- Benefit increases, if any, would be provided in a manner that does not define a permanent obligation to provide higher benefits. Examples would include a series of contributions to a separate DC Plan, one-time increases for retirees, etc.

Specifics on the Actuarial Benchmark Contribution

While the funding policy should have an objective of achieving and maintaining 100% funding, there are various choices for how to structure and specify the ABC. The examples below were selected for their relative simplicity. Other choices involving, for example, layered amortization, may also be reasonable,

but may be more complicated to maintain. All these choices are specific to the development of an ABC in this context and do not necessarily meet the requirements for an ADC.

- I. Entry Age Normal Cost plus open amortization of unfunded liability, where the amortization period and rate produces an annual reduction in unfunded liability.²
- II. Entry Age Normal Cost plus nominal interest on the unfunded liability
- III. Entry Age Normal Cost plus open amortization of unfunded liability, where the period selected might entail a small amount of negative amortization.

The choice of an ABC is necessarily intertwined with the conditions under which a rebalancing of benefits and contributions would be indicated. The fixed rate could be below the Choice I for an extended period without necessarily being indicative of a need for change. A fixed rate below the Choice III for more than a few years would strongly suggest a need for change. Open-period negative amortization is inconsistent with the goal of attaining full funding. If the Choice III approach is taken, other measures are typically incorporated to make progress toward full funding.

Multiple benchmarks could also be selected with different conditions that trigger rebalancing. The placement of the fixed rate relative to the benchmarks could be noted as part of the actuarial valuation process. Doing so could lead to discussions regarding the potential need for future rebalancing.

If the fixed rate falls below the chosen ABC, it would be appropriate for the actuary's annual valuation report to disclose the amount of the shortfall. In the case of multiple benchmarks, it could disclose the placement of the fixed rate relative to the each of the multiple benchmarks. It would also be valuable to maintain a historical schedule comparing the adequacy measure or measures with the statutory rate.

One common practice for fixed rate plans is to use the current unfunded liability to determine the amortization period implicit in the fixed contribution rate, and then to compare that to some benchmark (maximum) amortization period. That approach can be mathematically equivalent to choices I or III above. However, structuring the choices for an ABC as presented, rather than in terms of an implicit amortization period, allows the actuary to quantify the amount by which the fixed contribution rate falls short of or exceeds the amortization benchmark expressed in terms of a contribution rate.

Actuarial Benchmark Contribution for Tiered Fixed Rate Plans

For this discussion, a tiered plan is a plan wherein benefits applicable to people hired on or after a certain date are lower than benefits for people hired before that date. Some plans can have several different benefit tiers. In many cases, the newer tiers have been designed to reduce future benefits to a level that hopefully can be supported by expected future contributions. (There are examples where a

² For plans using under level percent of payroll amortization, negative amortization can occur if the amortization is relatively long. Under economic assumptions prevalent in 2022, negative amortization will generally occur with amortization periods longer than about 20 years.

new tier has higher benefits than a previous tier, but this discussion does not consider those cases.) Multiple benefit tiers are common in fixed rate plans.

As discussed previously, Level % of Pay Entry Age Normal is particularly well suited to serve as the basis for the ABC in fixed rate plans. In particular, it sets an appropriate funding target by allocating individual costs as a level percentage of pay to past and future service based on the benefits applicable to that individual. However, this traditional Entry Age method does not recognize the emerging transition of normal costs to the rates applicable to newer plan tiers (although disclosure by tiers could be useful information). Consequently, use of the traditional Entry Age method in the ABC could cause benefits and contributions to appear to be out of balance, when in the longer term they may not be. In plans with tiers, the Ultimate Entry Age Normal Cost method—that is, the method that bases the normal cost on the benefits of the newest open tier—may be an appropriate choice for the ABC. Actuaries who develop the ABC based upon the ultimate method should remind clients that while the method is suitable for purposes of the ABC, it is not considered a reasonable cost method under ASOP 4 for valuations that actually develop an ADC, and that it cannot be used to develop liabilities for accounting measurements in public plans.

Some actuaries will assess the adequacy of the fixed rate based on an open group projection of contributions and benefits. In many, but not all, cases, this can produce a result that is similar to a result that would be obtained with the Ultimate Entry Age Normal Cost method.

Whether an open group projection or the Ultimate Entry Age method is used for tiered plans, it is important for the actuary and client to recognize that the actuarial demographic assumptions underlying the ABC are based upon limited experience with participant behavior under the new benefit structures, and thus may be subject to larger future changes as experience unfolds than is typically the case.

Fixed Rate Plan Design

It will prove difficult to maintain a defined benefit (DB) plan with fixed contributions and fixed benefit levels indefinitely, particularly because plan assets are generally invested in a volatile portfolio. There are, however, a few plan designs that can reduce contribution volatility. Examples include, but are not limited to:

- A combination DB/DC plan where the fixed rate applies to the total contribution. The portion allocated to the defined contribution (DC) plan varies depending on the funding needs of the DB plan.
- A DB plan where there is significant risk sharing with plan participants, including plans with variable benefit designs.

Fully Funded Fixed Rate Plans

A fully funded plan is one in which assets equal or exceed the actuarial accrued liability, based on a specific set of actuarial assumptions. Such plans continue to require contributions for normal costs and expenses. The funding policy should specify the action to be taken for such plans. While pressure for

reduced contributions and increased benefits is to be expected, an analysis of risks should first be undertaken that would determine the probability that the plan will remain fully funded.

- This might include a review of the allocation of risk between the plan sponsor and plan participants.
- This might also include a review of and possible adjustments to the asset allocation with the intention to maximize the probability that the plan remain fully funded within the constraints of the current fixed contribution rate.

Other considerations for fully funded plans include:

- A plan that is fully funded or over-funded on a certain set of actuarial assumptions is only in that position if actual future experience meets those assumptions. It is important that stakeholders understand the risks the plan faces to its future funded status and the potential actions that can be taken to manage those risks.
- Plans that have had a history of contribution increases or benefit reductions will be under pressure to have these reversed.

Conclusions and Recommendations

Actuarial funding provides for greater benefit security, than does fixed rate funding. Adjustments to the fixed rate or benefits in a fixed rate plan can be difficult to make in a timely manner. However, fixed rate funding can be manageable, provided the fixed rate is high enough to ensure adequate long-term funding and there is an established mechanism for adjusting the rate periodically as needed. In addition to comparing the fixed rate contribution to an ABC, long-term funding adequacy can be demonstrated through a projection of funding progress along with stress testing (e.g., impact of adverse experience in the short term as well as the long term).

Consideration should be given to the following when consulting on fixed rate plans:

1. Advise the client on the funding policy and the importance of achieving and maintaining full funding. Work with the client to establish a formal written funding policy if one does not already exist.
2. Select actuarial assumptions and methods with due consideration to the potential need for a margin for adverse deviation. A margin for adverse deviation is arguably more important in fixed rate plans than in other plans because of the difficulty in increasing the contribution rate and the reluctance to decrease benefits.
3. Develop an actuarial benchmark contribution/adequacy measure which in some cases could be the statutory measure.
4. Maintain a history of the adequacy measure reflecting both market value and actuarial value of assets.
5. Consider the use of projections, scenario testing, and stress testing to provide a leading indicator of the potential need for change.

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6. Work to establish procedures to evaluate and update the fixed rate and possibly benefits in a timely, systematic manner.
7. Ensure that stakeholders are aware of the significant risks associated with pension funding—most notably investment risk—and that a combination of fixed benefits and contributions cannot persist indefinitely.