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ENROLLED ACTUARIES REPORT

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Arithmetic Averages Don't Exist

By Craig Voelker

THE DIFFERENCE between arithmetic and geometric averages when it comes to quoting return assumptions has been much discussed, and confusion abounds. I fear that the actuarial community may have contributed to this confusion.

Consider an actuary answering the following question when making a 7 percent assumption:

Are you assuming a level 7 percent return for all years?

Most actuaries are quick to respond "yes." After all, all of our deterministic software and work papers do just that. However, I contend the more proper response is:

"Not really. We are assuming that assets over time return 7 percent compounded annually on average. Our deterministic software and work papers don't attempt to model the volatility that will emerge over time and, instead, utilize a level assumption for all years that approximates the average compounded annual return."

While most audiences do not appreciate the accuracy of this response, said this way, volatility doesn't matter. Our assumption is already net of all volatility. The only thing that matters is that assets over time experience 7 percent, on average, compounded annually.

Another contributing—and confusing—factor is that actuaries often show arithmetic averages in their written correspondence when reviewing asset experience. Additionally, we may cite recent arithmetic averages of

broad asset classes when justifying assumptions. This is a no-no and done out of convenience only.

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Academy Liaises With Federal Agencies on MPRA Applications

THE MULTIEMPLOYER PLANS Subcommittee met in February with members of the U.S. Department of Treasury, the Pension Benefit Guaranty Corporation and the Department of Labor. The discussion focused on applications by multiemployer pension plans in critical and declining status to suspend benefits or partition liabilities, as permitted under the Multiemployer Pension Reform Act of 2014 (MPRA).

The subcommittee **released notes from the meeting**, highlighting discussions about actuarial assumptions, plan sponsor considerations, review process, and the possibility of informal consultation prior to a MPRA application for suspension of benefits or partition.

The discussion in this exchange was intended to provide plan sponsors and actuaries with insights about the MPRA application review process with a goal to help plan sponsors make decisions about applying and to increase the acceptance rate for those who do apply.

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Pension Groups Send Comments to IRS, PBGC

TWO ACADEMY work groups sent comment letters to federal agencies in late February. The Pension Committee submitted a **comment letter** to the IRS on proposed regulations on the minimum present value requirements for defined benefit plan distributions. The comments focus on potential compliance issues for plans that currently ignore preretirement mortality when valuing employer-provided accrued benefits, and the potential implications for distributions after a normal retirement date.

The committee proposes several clarifications and recommendations regarding plans that currently ignore preretirement mortality in minimum present value calculations, including revisions to Treasury Department regulations.

The Multiemployer Plans Subcommittee sent a **comment letter** to the Pension Benefit Guaranty Corporation (PBGC) on alternative two-pool withdrawal liability methods.

The new methods have the potential to provide significant benefits to multiemployer plans, but they also pose certain risks and raise many complex questions, the letter states.

The risks attendant to a two-pool withdrawal liability arrangement fall primarily into two categories: risks to plan participants and the PBGC, and risks to employers. The primary risk to participants is that the two-pool arrangement may result in plans being less well-funded over time than they would have been if some other course of action had been followed within a typical arrangement, the letter states.

Issue Brief Explores Pension Cost Determination

THE ACADEMY'S Pension Cost Work Group released an **issue brief**, *Alternatives for Pension Cost Recognition—Implementation Approaches Using Bond Models.* The issue brief is a follow-up to the August 2015 release of an associated issue brief, *Alternatives for Pension Cost Recognition—Issues and Implications.*

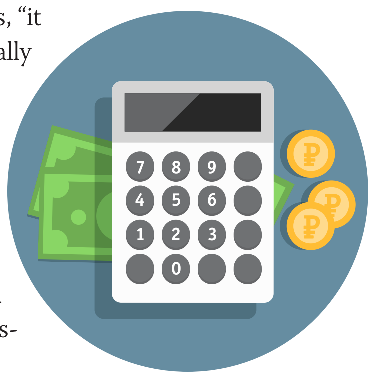
The new issue brief explores five potential approaches for determining pension costs by developing a yield curve and associated spot rates from a bond model, rather than via a single aggregated discount rate. The five potential approaches are:

1. A theoretically derived yield curve;
2. A yield curve derived from selected portfolio bonds;
3. Different single yields for each bond;
4. Different term structures for each bond; and
5. Calculation of implied bond portfolio return (for the successive year).

Further, the issue brief examines how these five approaches align with three key technical considerations:

- The extent to which the methodology relies on external bond market information for estimating levels of fixed-income yields by maturity/duration;
- The extent to which the actual market pricing of the individual bonds in the portfolio is reproduced; and
- The means for aligning the present value of benefits determined by applying the derived spot rates with the bond model-provided measure of PBO (i.e., the overall price of the matching portfolio.

"Given widespread acceptance of the spot rate method for plans utilizing a yield curve and the nearly universal acceptance of the existence of a term-related structure to interest rates," the issue brief notes, "it seems both actuarially sound and rational to facilitate the application of granular expensing approaches in situations where a bond model is used to determine the discount rate."



10 Retirement Policy and Strategy Issues to Keep an Eye On in 2017

By Ted Goldman

Senior Pension Fellow, American Academy of Actuaries

WITH THE NEW ADMINISTRATION still in its early days, it is more than a little challenging to forecast the retirement issues that will be addressed in the coming months. Looking through my senior pension fellow binoculars, here are 10 looming issues that could impact the retirement space in the days, months—and even years—ahead. Some of these are policy-related, while others are strategic issues facing plan sponsors and individuals.

1. **Tax Reform—**Retirement programs are responsible for a healthy proportion of the tax deductions available to employers and individuals. Questions will likely be asked about the effectiveness of tax breaks as incentives to save for retirement.
2. **Social Security Reform—**It has been well publicized that with the changing demographics and aging of our workforce, Social Security is projected to run short of funds sometime around 2034. The question isn't if this problem will be addressed, but when.
3. **Multiemployer Plan Stability—**The Multiemployer Pension Reform Act of 2014 (MPRA) set the stage to help struggling multiemployer plans stay solvent by scaling back benefit levels. But four of the first five applications were not approved by the Treasury Department, raising the question of where these plans are headed, and how the Pension Benefit Guaranty Corporation's multiemployer program will survive.
4. **Fiduciary Rule—**Congress has delayed the April 2017 effective date of the fiduciary rule that was intended to protect individual retirement savers and assure advisers act in their best interests. This will be an interesting situation to monitor.
5. **State-Based Private Sector Retirement Programs—**Another recent initiative that may be slowed by Congress is the ability of states to make available retirement-savings programs for private employers, with a goal of increasing access to coverage for many individuals who currently have limited or no options. Resolutions were introduced by the Senate in March to block these programs. Several states (California, Washington, Connecticut, and Maryland) are far along and may be tough to slow down.
6. **Lifetime Income—**The migration from defined benefit (DB) to defined contribution (DC) plans has created a growing spotlight on the need to help individuals implement successful income strategies during retirement. Changes in policy such as support for safe harbors would help trigger innovation and action in this area.
7. **Emergence of Innovative Hybrid Designs—**As a corollary to the challenges facing multiemployer plans, a hybrid DB/DC design has been introduced on Capitol Hill and labeled "composite plans." This type of approach is gaining popularity in other countries, but will it evolve into a viable approach in the United States?
8. **Pension Risk Transfers—**Private-sector employers have shown continued interest in reducing pension risk through lump-sum cashouts and annuity purchases through insurance companies. This trend is likely to continue and may accelerate as interest rates rise. Yet another type of pension risk transfer is the termination of frozen DB plans. Many plan sponsors have been chipping away at funding deficiencies and following glide paths to the ultimate goal of plan termination.
9. **Public Pension Plans—**It is hard to pick up a newspaper without seeing a story on the funding shortfalls and rising costs of a state or local government pension plan. When pension plans start competing for resources with patching potholes or funding schools and public services, it will be sure to raise an eyebrow or two.
10. **Evolving DC Plan Designs—**I have adopted this as my pet issue, as I believe behavior-based plan designs in the DC world will be a key part of any solution to help people save more appropriately for retirement. I see this moving into the overall financial wellness realm as well. Mark my words: Technology plus behavioral science plus actuarial science can generate powerful solutions.

Retirement topics remain vitally important to Americans, despite other issues that often appear more prominently in the news. Some retirement issues will be driven by the economy and will be moved forward by employers, individuals, and the marketplace. As actuaries, we have a unique vantage point and bring professional skills to the table for this discussion. It's important that we have an active voice and role with policymakers in addressing these critical issues.

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The practice of using arithmetic averages avoids these questions:

1. *How come when I average the returns, I don't get what the actuary gets?* and
2. *What exactly is a geometric mean?*

The practice of using arithmetic averages also avoids lengthy computations (or responses, such as the above) to get a geometric mean during an otherwise quick and casual conversation.

While perhaps cumbersome and somewhat technical, I recommend that professionals everywhere show only geometric means when showing comparative data, and to only respond to the initial question about assumptions with what they believe the compounded average return will be. After all, this is the only way to be consistent with all models, theory, and conventional thinking.

However, actuaries are not the only professionals making assumptions. Many investment professionals also make capital market assumptions. And, I dare say, when asked what their outlook is for the next 10 or 20 years, they are answering the question with what they think the average return compounded annually will be. To quote a long-range investment return expectation that does not compound would be wrong—inconsistent with theory and models, misleading, and downright strange.

Lastly, I think that stochastic modeling has contributed to the misunderstanding on return assumptions. No one is questioning that these models—to some audiences—offer an instructive view of a world that is filled with uncertainty and volatility. The models take, as input, not just an expected return assumption, but the variance (or standard deviation) too. But as stated earlier, I believe that investment professionals making capital market assumptions are quoting returns that compound annually. And, if not, they should be! Only an expected return assumption that compounds is appropriate for these models.

A recent actuarial survey of investment professionals' capital market assumptions indicated that some professionals did not provide an assumption that compounds (i.e., geometric) and that a formula[1] was used to convert those assumptions from arithmetic to geometric returns. This was surprising for me to read. It would be more consistent with my commentary above to assume the returns are already geometric and any conversion should be to arithmetic.

But no one wants an arithmetic quote. If both professions take the pledge to never use or quote an arithmetic return assumption, the world and all of its forecast models will be better off. ▲

Editor's note: The Academy's Pension Committee is developing a practice note on this subject.

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[1] **Horizon Survey of Capital Market Assumptions**, *2016 Edition, p. 10*

Goldman Presents at Chamber of Commerce Forum

SENIOR PENSION FELLOW Ted Goldman presented on "**Longevity and Retirement Security**" at the U.S. Chamber of Commerce's "The Shifting Paradigm of Retirement" forum in Washington on Feb. 3.

Goldman reviewed longevity risk trends and challenges, and showed how the **Actuaries Longevity Illustrator**—sponsored jointly by the Academy and the Society of Actuaries—is a useful tool for illustrating the risk for retirement planning purposes.

His presentation also outlined longevity concerns for both employees and employers, and highlighted key issues surrounding defined benefit and defined contribution retirement plans. The chamber indicated it would like to invite Goldman to attend its board meeting later this year to continue the discussion. ▲

Pension Committee Asks Treasury Department for Guidance on Variable Annuity Plans

THE PENSION COMMITTEE SUBMITTED a **comment letter** to the U.S. Treasury Department requesting guidance from the IRS and Treasury to resolve uncertainties that exist as to how variable annuity plans should be valued for minimum funding and Internal Revenue Code (IRC) §417(e) purposes.

The requested guidance is important because of the growing interest in variable benefit programs, including variable annuity plans, market-rate cash balance plans, and the proposed multiemployer composite plans, the letter states. Variable annuity plans adjust plan benefits periodically to reflect returns on plan assets (or another specified return index) that exceed or fall short of a specified hurdle rate, and provide lifetime income to participants like traditional fixed defined benefit plans, but transfer some or all of the investment risk and reward to participants like defined contribution plans.

Guidance from Treasury would remove uncertainties and provide an alternative to defined contribution plans for sponsors who are concerned about their financial risk but would like to provide employees with the security of a lifetime income stream, the committee wrote.

"We are aware that there are currently different views among actuaries on the appropriate way to value these plans in light of existing regulatory guidance. Further, certain variable plan designs incorporate features that limit the variability of benefits (such as caps or floors on benefit adjustments, or the normal operation of IRC §415 limits), which adds further uncertainty," it said.

The Pension Protection Act of 2006 and its implementing regulations introduced uncertainty and the need for interpretation in the valuation of variable annuity benefit obligations where benefits vary based on returns on plan assets, the committee notes. The traditional method of valuation raised few issues in the pre-ERISA and immediate post-ERISA environment, when obligations were generally valued using the actuary's best estimate of returns to be generated on the plan's asset portfolio.

The committee wrote it believes that "appropriate present value of the benefit obligation for a variable annuity benefit is the amount of assets needed to back that obligation. … this is the same as valuing fixed benefits at the plan's hurdle rate if benefits are indexed based on the return on plan assets."

Despite the general consensus belief as to what the appropriate value should be, opinion varies as to whether current law and regulations permit this treatment. While some actuaries believe that current law not only permits, but even supports, this result, others are concerned that current rules actually require something very different, the letter states, while citing two differing interpretations of the Internal Revenue Code and accompanying regulations.

EA Meeting Set for Early April

THE **Enrolled Actuaries Meeting** will be held April 2–5 in Washington, D.C. Sponsored jointly by the Academy and the Conference of Consulting Actuaries, the 42nd annual EA Meeting will offer panels, workshops, and speakers covering a variety of topics and issues relevant to enrolled actuaries and other pension professionals.

Academy President Bob Beuerlein will kick off the event with an opening address. Academy Senior Pension Fellow Ted Goldman will speak on two panels—one on lifetime income options, which will explore new ideas and approaches to lifetime income and highlight the Academy's efforts in this area; and one on financial wellness, which will look at the close relationship between financial wellness and retirement readiness. Pension Committee Vice Chairperson Bruce Cadenhead will be a panelist in a session on alternative pension expense recognition that will look at the Academy's 2015 and 2016 issue briefs on the subject, which were covered in a webinar and were in the previous ***Enrolled Actuaries Report.***

The meeting's **full agenda** is available online; **register today**.