

Segal Testifies on Benefit Restrictions

At a Jan. 28 Internal Revenue Service (IRS) hearing, Academy Pension Committee member Donald Segal reiterated the committee's support for allowing actuaries a good-faith compliance standard in implementing benefit restrictions for underfunded pension plans under the Pension Protection Act (PPA). Segal's testimony was based on a [letter](#) the Academy's Pension Committee sent to the IRS on Nov. 29, 2007.

Segal, the last of six speakers to testify at the hearing, endorsed many of the comments made by earlier speakers, including Lawrence Sher, principal and director of retirement policy for Buck Consultants Inc. and a member of the Academy's Pension Committee, and Kent Mason, a partner at Davis & Harman who was speaking on behalf of the American Benefits Council.

Since final regulations have not yet been issued by the IRS, Mason said that plans must currently treat the proposed regulations issued on Aug. 31, 2007, as temporary regulations and begin to administer the rules in the proposed reg-

ulations—which could cause problems that actuaries would need good-faith flexibility to fix. According to the proposed regulation, the restrictions on benefits will apply to plan years beginning after Dec. 31, 2007, and can be relied on for qualification purposes as long as the actuary does so “on a consistent and reasonable basis, pending the final rule.”

In his testimony, Segal, a former Academy vice president for pension issues, echoed Mason's comments and requested that the IRS give actuaries additional guidance in determining what is reasonable good-faith compliance.

In particular, Segal said that actuaries should be permitted to roll forward the prior-year valuation calculations to make the range certifications. He drew on precedent from the Pension Benefit Guaranty Corp., which allowed rolling forward of valuation results when it instituted the variable rate premium program.

“It's not an unusual concept,” Segal said. “We're subject to all of the actuarial standards of practice. We won't

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Public Plan Stakeholders Meet in Manhattan



From left to right, Academy Pension Practice Council member Don Segal; Academy Public Plans Subcommittee member and New York City Chief Actuary Robert North; Academy Public Plans Committee Chairperson Paul Angelo; and Pension Practice Council member Jeremy Gold greet one another at the Feb. 6 public pension plan roundtable organized by the Academy and the Society of Actuaries. For coverage of the roundtable, held at New York University, check out the *March Actuarial Update* at www.actuary.org/update/.

Interest Rate Hedging Instruments

The following is a summary of the presentation Ron Donatiello made on liability-driven investments at the 2007 Enrolled Actuaries Meeting.

THE FUNDING PROVISIONS of the Pension Protection Act and recent accounting standards of the Financial Accounting Standards Board have created an interest in managing the volatility of defined benefit pension plan funding status. Much of this volatility is due to interest rate risk, and the primary method of hedging this risk is duration-matching the plan assets to its liabilities. Several financial instruments can be used to hedge this risk.

Long-Duration Bonds and STRIPS

Since long-duration bonds have durations approaching those of pension liabilities, a long-duration bond allocation is a straightforward approach to hedging interest rate risk. However, these bonds are in limited supply relative to the size of the U.S. pension market. The long-duration bond market is limited to Treasury, agency, and high-grade corporate issues, and these instruments offer little opportunity for the higher returns historically available in other fixed-income investments such as high-yield, emerging-market, and mortgage-backed securities. Corporate bonds produce higher yields than Treasuries, but they also carry credit risk. Upon downgrade or default, the reduced market value of corporate bonds could cause the portfolio to underperform the liability.

Separate trading of registered interest and principal securities (STRIPS) are individual maturities of bond coupons and principal repayments packaged together. While their single maturity point makes them a more convenient hedging instrument, they generally have the same disadvantages as the bonds from which they were created.

Treasury Bond Futures Contracts

A futures contract is an exchange-traded agreement to buy or sell the underlying asset at a contracted price on a specified future date. It is standardized in that contracts exist only for certain assets and delivery dates. A Treasury bond futures contract is an agreement to buy or sell "qualifying" government bonds with more than

15 years to maturity or call. The holder of the long contract position agrees to buy the underlying bonds from the short position holder at the contracted price upon contract maturity. The pension plan would assume the long position. A yield decrease would increase the market value of the underlying bonds, increasing the value of the long position's right to buy those bonds at the contracted price, making this an effective liability hedge. Similarly, a yield increase would decrease the value of the long position.

The initial margin requirement for a \$100,000 bond face-amount contract is a few thousand dollars, allowing the long position to control a large amount of interest rate exposure with relatively little cash investment. This leverage can be useful for underfunded plans.

Futures prices are marked to market daily. A yield decrease would cause the long side of the contract's value to increase, and the exchange would post this increase to the plan's margin account. This would increase the plan's market value, hedging the associated liability increase. Similarly, an interest rate increase would decrease the value of the long side of the contract, and the plan would be required to pay this amount into its margin account. The exchange would then transfer this amount to the short position's margin account.

Both to maintain leverage and to avoid receiving the "cheapest to deliver" underlying bonds, which may be undesirable for hedging purposes, futures contracts used for interest rate hedging are generally sold prior to maturity. A new long position would then be established.



Futures have the advantages of leverage plus the assurance of the exchange that the contract terms will be met. They are also relatively easy to buy and sell. Their disadvantages are limited duration, limited excess return opportunity, margin requirements, basis risk between futures price behavior and liability movement, and the administrative effort of establishing, shorting, and re-establishing the contracts.

Cash Flow Swaps

A swap is an agreement between two counterparties to exchange cash flows in the future. The terms of a particular swap are contained in its International Swaps and Derivative Association (ISDA) agreement. The ISDA has compiled standardized language, which has generally accepted legal interpretation, from which its agreements are drafted. Unlike futures, which are standardized contracts, swaps can be customized to meet the needs of the counterparties.

There are many types of swaps. The type generally used in pension interest rate hedging is the fixed-for-floating interest rate swap. Under this type of swap, one counterparty (the pension plan) receives payments equal to the swap's notional (principal) amount times the swap fixed rate. In exchange, this counterparty makes payments equal to the notional amount times the prevailing floating interest rate to the other

counterparty. These payments continue for the tenor (term) of the swap. The fixed interest rate is established at swap inception and remains constant throughout the term of the swap. The floating interest rate is generally based on the London Interbank Offered Rate, which is a widely used reference rate for short-term floating interest.

At inception, the fixed rate is set such that the market value of a swap is near zero, creating leverage and allowing the plan to control a great deal of interest rate risk with little cash investment. A swap's market value will change with yield curve movement, and its duration would be similar to that of a bond with the same term to maturity. While the value of the floating rate side is the notional amount plus any accrued floating interest, the value of the fixed-rate side is the discounted present value of the future fixed-rate cash flows and of the notional amount calculated using prevailing yield curve rates. Decreasing yields would increase the net value of the swap, hedging the plan's liability movement. Similarly, increasing yields would decrease the swap's net value. While the plan would benefit from the hedging effect of the receive-fixed side of the swap, it would be at risk of an increase in the floating rate. This risk could be hedged by allocating a portion of the portfolio assets to floating rate instruments.

Traditional swaps are not exchange-

traded, and without clearinghouse protection each counterparty bears the risk that the other might default on payments. To address this risk, ISDAs generally require that collateral be posted in amounts designed to keep the counterparties whole in that event. Upon default, ownership of the collateral would transfer from the defaulting counterparty to the other. Acceptable types of collateral, thresholds for posting, and minimum transfer amounts are defined in the Credit Support Annex to the ISDA agreement.

The market for long-duration swaps is very liquid, and positions can be bought or sold as the needs of the plan change. Other advantages are their low initial cost and flexibility of terms. The disadvantages are the floating rate risk, counterparty risk and collateral posting requirements, and the need for an ISDA agreement. Since there is little cash investment, swaps are often used as an overlay to the underlying portfolio, adding the desired amount of duration.

There are two related interest rate hedging instruments—swap futures contracts and “swaptions.” The futures contract is an agreement to enter into a swap, and a swaption is an option to enter into a swap. Both hedge interest rate risk and are exchange-traded.

RON DONATIELLO is an assistant vice president with Aon Investment Consulting in Atlanta.



MICHAEL EWING

Multiemployer Funding Rules After PPA

Prior to the Pension Protection Act of 2006 (PPA), defined benefit multiemployer plans were generally subject to the same minimum funding rules as single-employer plans, with some exceptions. Notably, multiemployer plans required different amortization periods: past service liability was amortized over 30 or 40¹ years depending on how the liability arose; experience gains and losses were amortized over 15 years; gains and losses from changes in actuarial assumptions were amortized over 30 years; and waived funding deficiencies were amortized over 15 years. In addition, the deficit-reduction contribution rules applicable to single-employer plans did not apply to multiemployer plans, and multiemployer plans generally amortized experience gains and losses over a 15-year period, while gains or losses from changes in actuarial assumptions were amortized over 30 years.

Another difference between single-employer and multiemployer plans before passage of the PPA concerned waivers of funding deficiencies. In the event a multiemployer plan was able to obtain a waiver of a funding deficiency, the waived amount was amortized over a period of 15 years, beginning with the year following the waiver. The interest rate used by multiemployer plans for purposes of determining the amortization on the waived amount was the Federal Reserve short-term rate. The minimum funding requirements for multiemployer plans could not be waived for more than five out of any 15 consecutive years. (Additionally, unlike the rule for single-employer plans, controlled-group liability did not apply to contributions an employer was required to make to a multiemployer plan.)

Whereas these deviations in the law were seen as exceptions to the general rule, however, the PPA created a new playing field for funding multiemployer defined benefit plans. While the traditional credit balance and funding standard account still exist and the actuary still has significant control over the assumptions, the PPA introduced many changes to funding rules effective for plan years beginning after 2007. Though a separate set of special funding rules applies to underfunded plans, the following are some key changes the PPA made to the general multiemployer funding rules.

Actuarial Assumptions

The PPA provides that each actuarial assumption be reasonable, as opposed to prior law, which required only the assumptions for multiemployer plans to be reasonable in the aggregate. The assumptions are still required to represent the actuary's best estimate of anticipated experience under the plan. In particular, the actuary may choose the interest rate, mortality table, and even funding method to determine accrued liability.

1. Generally, past service liability under a plan in existence on Jan. 1, 1974, was amortized over 40 years. Past service liability not in existence on Jan. 1, 1974, was amortized over 30 years, as was past service liability due to plan amendments.

No Pension Plan Left Behind

DIVERSIFICATION OF INVESTMENT is a cornerstone of modern portfolio theory. Staying near the efficient frontier provides both greater return and lower risk, according to current investment philosophy. This theory of investing is enshrined in recent legislation governing 401(k) plans, as well as being required material on the actuarial exams promulgated by the Society of Actuaries.

Another, less-noted theory of investment is a concept called immunization. This idea maintains that by matching a stream of future payments (liabilities) with a stream of future income (assets), an entity's risk can be immunized from future fluctuations in the value of its investments. For this approach to work properly, the streams of both income and outgo must be highly predictable, which in turn means that the assets must essentially be fixed-income securities, i.e., bonds of appropriate maturities. In a subtle way, this approach to pension plan financing is built into both current accounting standards and the Pension Protection Act of 2006 (PPA).

The promises made by defined benefit (DB) pension plans are long-term in nature. An ongoing plan generates obligations to pay benefits for up to 75 years, or even longer. This fact in itself indicates one flaw in the immunization strategy, since bonds extending beyond 30 years are essentially unavailable.

It is generally accepted that the return on equities is roughly 2 or 3 percent greater than that on fixed-income securities for investment horizons exceeding 20 years or so. This is the reason that Congress has encouraged investment education for 401(k) participants. If bond yields were comparable to equity yields over the long term, there would be little reason to educate plan participants about the benefits of diversification.

It is easy to show, using stochastic modeling, that DB pension plans that invest prudently in a diversified portfolio of stocks and bonds face two risks under the PPA—both of which could easily be avoided by using the immunization concept of investing solely in fixed-income securities. These risks are volatility in future contribution streams (and pension expense) and the possibility of irrecoverable overfunding. When liabilities are measured using a rate 2 percent lower than the expected long-term rate of return (determined on a reasonable basis according to modern portfolio theory) and assets equal these liabilities, then overfunding is the most likely outcome.

Due to reversion penalties on the return of excess assets, an asymmetrical situation is created once a plan reaches a fully-funded status. An unexpected burst upward in equity-based assets can be recovered only gradually, through a “contribution holiday,” until additional accruals eat up the surplus, while an unexpected drop in equity values creates an immediate surge in contribution requirements.

It is only natural for actuaries to point this out to their clients, and it appears that large firms are already doing so. It is also natural for sponsors of DB plans to consider the alluring advantages of immunization, especially as their plans approach full funding and the asymmetric nature of equity investment becomes more acute.

However, there are two major pitfalls waiting for us down that road. The first is renouncing the power of equity investing even though a plan's time horizon permits it. The problem with investing solely in fixed-income securities is that the real cost of funding pension promises is more expensive in the long run. The second, more subtle danger is the probable consequence if large pension plans begin selling equities and buying bonds. This would lead to a significant downward movement in the equity markets, coupled with falling corporate bond rates. Falling rates will in turn lead to greater pension liabilities (as measured by PPA standards), and thus lower funded ratios, as plan sponsors make the transition to the immunization strategy. This period of transition would be fraught with peril even for those who act early, because it is simply not possible for large plans to dump their equity positions overnight and replace them with bonds.

Both these consequences would reward those who act ahead of the curve and punish those who continue to believe in the old paradigm of prudent investing. This is the logician's “prisoner's dilemma.” If counting on others to remain true to the principles of diversification puts one at risk, there could be a race to the bottom, with those abandoning this principle first profiting—and the rest losing. Ironically, the Pension Protection Act may well prove to be the Pension Destruction Act.

Editor's Note: The views expressed in this column are those of the author and do not necessarily represent the views of the Academy. **JAMES KENNEY**, a pension consultant in Berkeley, Calif., is a contributing editor to the EAR.

Statement of Actuarial Value

Close Colleagues Thank Gebhardt

After serving 12 years as the Academy's senior pension fellow, in February, Ron Gebhardtsbauer began serving Congress as the Senate Finance Committee's senior benefits adviser, where he helps the committee write U.S. pension law and form policy for employee benefits and related tax issues. During his time as senior pension fellow, Gebhardtsbauer has been a face of the Academy, serving as its spokesperson.

The move marks the third time Gebhardtsbauer has worked for the federal government. He was the lead pension actuary from 1982 to 1986 for the Office of Personnel Management's Federal Employee Retirement System, where he led an overhaul of the pension plans for all federal employees, and the chief actuary of the Pension Benefit Guaranty Corp. from 1986 to 1994.



Gebhardtsbauer testifies to the Senate Finance Committee in March 2003.

Gebhardtsbauer clarifies a point during a Capitol Hill briefing in September 2003.



Gebhardtsbauer talks to Sen. Charles Grassley (R-Iowa) before testifying to the Senate Finance Committee in March 2003.



THIS IS THE END OF AN ERA. Many, many people think of Ron when they think of actuaries—he has represented us well, indeed! Now it's time for him to move on from the Academy and from his official role in the profession. I know a lot of folks join me in a sense of gratitude—both for all he's done for retirement security, as well as for all that's in front of him to do.

It's been terrific working with Ron and experiencing firsthand his goodwill and his endless enthusiasm for what we do. I know that I speak for the entire Pension Practice Council when I say that we will miss him and wish him the best as he continues to pursue his passions.

TOM TERRY, CEO of JPMorgan Compensation and Benefit Strategies in Chicago, is the editor of the *EAR* and the Academy's vice president for pension issues.

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RON GEBHARDTSCBAUER is one of the biggest names in the actuarial profession. That's not just a punch line. Ron truly has made a lasting impression on behalf of the actuarial pension profession during his years at the Academy. I've had the privilege of being able to work with him during my time as chair of the Academy's Pension Committee and Pension Practice Council.

Ron G +13 (as Bruce Schobel nicknamed him) became the face of the Academy on Capitol Hill. In the late 1990s, when the Pension Committee made its annual visits to the Hill, it was, "We're from the American Academy of Actuaries. This is who we are and what we do." Lately, we've needed no such introduction. Now the Hill looks to the Academy for advice, input, and answers to questions. And Ron has been the go-to guy for Washington policymakers, who have been accustomed to seeing him in hearings and calling him—on a first-name basis—for help. Now, Ron is on the other side of the table as the Senate Finance Committee's senior benefits adviser, where he will be performing a valuable service to Congress, the actuarial profession, and the public.

In short, Ron has been a great representative of the Academy—as an actuary and as a person. Always warm, humble, and knowledgeable, Ron will be missed.

DONALD SEGAL, a vice president at JPMorgan Compensation and Benefit Strategies in New York, is a member of the Academy's Pension Practice Council and a former Academy vice president for pension issues.



Gebhardtscbauer addresses pension concerns on CNBC in November 2002.



Gebhardtscbauer leads discussion at a House field hearing in Columbia, Mo., in June 2001.



Gebhardtscbauer discusses retirement security on AARP Radio in 2006.

2008 Enrolled Actuaries Meeting

April 6-9 • Marriott Wardman Park Hotel • Washington, D.C.

This year's program features sessions covering a wide range of topics and issues relevant to enrolled actuaries and pension professionals, including up-to-date information on the Pension Protection Act. The meeting also includes an exhibit of products and services geared to pension professionals.

Several seminars are available before and after the meeting on topics such as:

- ▶ Professional standards
- ▶ Small firms
- ▶ GASB Statements Nos. 43 & 45
- ▶ Plan freezes and termination issues

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do anything unreasonable.”

Segal commended the “no harm, no foul” rule in the proposed regulations that says certifications—whether range certifications or those based on a roll forward—should be made so that when the final results are achieved, the plan’s funding level does not cross critical boundaries (90 percent and above, 80 to 89 percent, 60 to 79 percent, and 60 percent and below). He agreed with the proposed regulations that further precision is not required.

Segal also suggested clarifying a proposed regulation regarding Section 436(f)(1), which allows a plan sponsor to contribute security to increase the adjusted funding target attainment percentage, as long as the sponsor provides the security by the valuation date for the plan year. Segal pointed out that there is no guidance clarifying when a valuation is complete, and he suggested requiring security to be provided

by the measurement or certification date because as of the valuation date—usually the first date of the plan year—the sponsor doesn’t know if security would help the position of the plan.

“Let’s face it, many sponsors don’t want to have to tell their plan participants that there are going to be benefit restrictions,” Segal said.

Finally, Segal lamented what he believes to be “unnecessarily complicated and burdensome” proposed regulations on benefit restrictions. Fearing the proposed regulations would require multiple election forms, multiple annuity starting dates, and retroactive annuity starting dates, Segal recommended using procedures similar to those under Section 1.401(a)(4)-5(b)(3), which deal with the highest 25 highly compensated employees.

“There is one election form. There is one annuity starting date,” Segal said. “It is so much simpler that way.” ▲

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Unlike single-employer plans (which value plan assets based on market value as of the valuation date with an averaging period permitted up to 24 months), multiemployer plans still use the pre-PPA “smoothing” rules that allow up to a five-year averaging period. Multiemployer plans are also still required to report RPA 94 current liability (from the Retirement Protection Act of 1994); however, that liability has no impact on funding requirements. The rules for measuring RPA 94 current liability are similar to those in effect for 2007.

Amortization Periods

The PPA modified multiemployer-plan amortization periods to 15 years for most charges. For example, past service liability due to plan amendments is amortized over 15 years (rather than 30), and experience gains and losses resulting from a change in actuarial assumptions are now to be amortized over 15 years (rather than 30). Experience gains and losses and waived funding deficiencies are still amortized over 15 years, as they were prior to the PPA. The new amortization periods are forward-looking only. The PPA doesn’t require recalculation of amortization schedules already in effect. It also eliminated the alternative funding standard account for multiemployer plans.

The PPA provides an automatic extension of amortization periods for up to five years for any unfunded past service liability, investment loss, or experience loss upon application to the secretary of the Treasury. The application must be certified by the plan’s actuary and state that:

→ Absent the extension, the plan would have an accumulated funding deficiency in the current plan year and any of the nine

succeeding plan years.

→ The plan sponsor has adopted a program to improve the plan’s funding status.

→ Taking into account the extension, the plan is projected to have sufficient assets to timely pay its expected benefit liabilities and other anticipated expenditures.

→ The required notice is provided.

The secretary of the Treasury may also grant further extension of such amortization periods for an additional five years under the same rules applicable for additional extensions prior to the PPA. The law also eliminated the pre-PPA special interest-rate rule for funding waivers and extensions of amortization periods. Now, the plan interest rate applies.

Shortfall Funding Method

The PPA provides that certain multiemployer plans may adopt, use, or cease using the shortfall funding method if approved by the secretary of the Treasury. A plan is eligible for these changes if it has not used the shortfall funding method during the five-year period prior to the date that the plan desires to use it and it is not operating under an amortization period extension and has not operated under such an extension during the same five-year period. Certain benefit restrictions apply during a shortfall funding method period. For example, plan amendments increasing benefits cannot be adopted while the shortfall funding method is in use.

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