

PENSION SECTION

"A KNOWLEDGE COMMUNITY FOR THE SOCIETY OF ACTUARIES"

Pension Section News

Actuaries at the Forefront of the Debate on Pension Plan Funding Reform

by Steven Siegel and Ian Genno

A series of recent *New York Times* editorials bemoaned the current state of pension funding and the ominous signs for the future. Starting with the airline industry, the editorials noted a growing conviction among analysts that even larger defaults are coming, potentially involving major automakers in the future. Further, the editorials urged Congress to act now to protect American workers' pensions—calling for meaningful reform guided by long-term, sustainable principles rather than shortsighted thinking. Concurrently, this same theme was also taken up by numerous other popular publications including *Time* and *Newsweek*. And the problem is not confined to the United States—the private sector pension system in Canada, the United Kingdom and other countries is similarly at risk. Clearly, this topic is on the public's mind—and is crying out for solutions.

How has the actuarial community responded to these challenges? Over the past year, the SOA Pension Section has been at the forefront of efforts to rethink how employer-sponsored pension plans are funded. Our initiative began in the fall of 2004 with a call for papers, asking members of the consulting, plan sponsor and academic communities to develop proposals that innovatively address the future of pension plan funding—with the goal of creating a better system. The challenge was to present new

thinking on pension plan funding, to develop principles applicable across national borders, and to ensure a variety of perspectives would be presented.

The group of SOA volunteers that coordinated this initiative, led by Ian Genno and Tom Lowman, was pleased with the strong response from practitioners in the United States, Canada and Japan, with over 20 abstracts submitted for consideration. In order to provide a forum to discuss the resulting papers and debate various proposals for reform, a symposium was organized for pension experts and stakeholders to meet face-to-face. The symposium, officially titled "The Future of Pension Plan Funding and Disclosure," was held in Washington, D.C., on July 14-15, 2005.

Symposium Summary

For the benefit of those unable to attend, the following is a high-level session-by-session synopsis of the symposium. All sessions were moderated by Ian Genno and Tom Lowman.

Session 1: Funding Reform: Introduction and a Macro Perspective

This session set the stage for the symposium, addressing issues relating to the fundamental principles and objectives of pension funding.

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Chairperson's Corner

by Anne M. Button

Soon you receive the Council's postcard announcing our new strategic project to *Re-envision Retirement*. Anyone who works with pension plans has seen more defined benefit plans freeze in the last few years. The reasons why this is happening today are many, and probably include the "perfect storm" of falling interest rates and falling equity markets, the failure of funding requirements to keep plans solvent, the decline of major industries leading to well-publicized difficulties and plan failures, and changing perspectives on shareholder risk. No wonder that, today, many managers believe that the only viable option available to them is to opt for a defined contribution plan as the only retirement plan.

The Pension Section Council met in January 2005 and set as one of its goals to "save the defined benefit plan." But, over last year, we discovered we needed to step back and look at the bigger picture. We need to design a system from the ground up, based on the new retirement fundamentals of the 21st century: what does retirement mean when people are expected to live healthy lives well into their eighties and could easily begin another career in their fifties? How long-term is any plan, or any company? What risks can shareholders take? Maybe, we realized, it's not that defined contribution plans are better, but maybe a new century demands a new type of retirement system.

To answer that challenge we have embarked on this important project and hope to proactively tap into actuaries' demographic and financial skills, in active collaboration with other experts (e.g., economists, demographers, sociologists) to:

- Understand the needs and competing interests of individuals, shareholders/business and society regarding retirement.
- Understand the changing demographic and economic climate and how that is driving changes in retirement.
- Through this understanding, and our knowledge of risk and risk pooling, design a practical, sustainable and versatile retirement income model to meet evolving conditions and help secure future retirement.

We believe we can be successful in this project, and with that success we will see:

- New retirement risk sharing models are developed that utilize actuarial principles of risk pooling and risk sharing.
- Society looks to actuaries as key players, with others, to design better retirement risk-sharing systems for the 21st century.
- Individuals and employers look to actuaries to help design next generation retirement risk-sharing systems, recognizing that moving all risk to individuals (income, medical and long-term care) is not, by itself, a solution.

The work has already begun. The Pension Section Council has taken steps in identifying the conditions underlying the system, stakeholders in a retirement program, risks associated with each stakeholder, as well as what we need to know in order to develop a system that will accommodate individuals at different life stages. Separately we had launched the “Re-Envisioning Retirement for the 21st Century” call for papers (symposium scheduled for May) to get some fresh ideas into the system. Our next step is to organize a symposium in September where we invite the experts in the different intersecting fields to work actively to respond to key questions such as who should bear the risk, how should risks be pooled, what systematic risks do we need to watch out for, how do you balance individual risks, and what’s missing from the market? We’re excited about the prospect of leading pension actuaries into the 21st century, and we hope you are too. *If you have any questions or comments regarding this endeavor or would like to volunteer, please email us at retirement2020@soa.org.*

While we have committed to this large project, we are also committed to meeting your ongoing needs. Our work to give you the tools you need to do your job today will not cease. Just a few examples of recent work includes:

- The Enterprise Risk Management and Pension Finance Seminar embedded in the 2005 SOA Annual Meeting received very good feedback and we took the best-reviewed session from the meeting and made it available as a webcast in March. In addition, we’ve held several webcasts on hot topics, including GASB 45 and public understanding of retirement risk, and plan for many more in 2006.
- We’re partnering with the Conference of Consulting Actuaries to provide more options in the spring meeting, featuring seven embedded seminars on diverse topics such as frozen plans, investments and the future of pensions. Our goal is to give you opportunity for in-depth learning as well as to earn Enrolled Actuary Credits.
- We’ve launched the stock option exercise experience study to gather real data about option exercise. Once

completed, and we’re over a year from having preliminary results, you’ll have the data you need to do a better job with FAS 123 valuations. This will also give you an edge over your competitors in this work.

And last, but not least, our research efforts keep moving forward. We have: selected a research team from the Harvard Law School to conduct the literature review “Defined Benefit versus Defined Contribution: Inherent and Stakeholder Value;” issued an open request for proposals for projects that would “result in new information, data, or methods useful to practicing retirement plan actuaries;” issued a request for a proposal “Reversion Taxes—Quantifying their Impact on Pension Plan Funding;” as well as issued a request for a proposal regarding “Modeling Long Term Medical Trends for Valuation.”

There is a popular saying that is often attributed to an ancient Chinese curse that goes “may you live in interesting times.” Your section council is ready to meet the challenge of these interesting times. Are you with us?

Please e-mail me at anbutton@deloitte.com with any comments you have about any work of the Council. ♦



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Left to right — Keith Ambachtsheer, Les Lohman, Eric Klieber and Tom Lowman respond to audience questions during Session 2.

Serge Charbonneau presented the CIA's statement of principles for reporting on pension plan funding, and Michael Archer discussed the problems under the current U.S. funding rules, outlined a rational set of objectives for funding and presented Towers Perrin's proposal for funding reform. Malcolm Hamilton provided a captivating commentary on the papers, highlighting what actuaries need to do in order to ensure a more rational approach to funding.

Session 2: Funding Lessons From Past Practice in the United States, Canada and Around the World

Les Lohmann opened this session with his view on funding, asserting that it is a necessary element of the economic exchange between employers and employees, and the natural result of plan sponsors' need to manage liabilities. He further suggested that North Americans should recognize which elements of retirement plan design are universal versus those dictated by cultural expectations.

Eric Klieber presented his proposal for comprehensive defined-benefit pension plan reform that included his thoughts about "model-neutral" funding rules that would allow the integration of financial economics into investments. The session concluded with Keith Ambachtsheer's commentary on the papers, which provided a comparison of the solutions proposed in these two papers with others, including Peter Drucker's and his own.

Session 3: The Role of Governments and Guarantee Organizations

This session focused on the role of governments and guarantee organizations. Although the emphasis was on

the PBGC, the concepts debated in this session directly apply to similar guarantee programs currently in place in Ontario and the United Kingdom.

Some of the most provocative debate at the symposium took place in this session. Larry Pollack offered compelling arguments for abolishing the PBGC altogether, a position that clearly was at odds with the views of many of the attendees. The other paper presented, co-authored by Julia Coronado and Nellie Liang, examined the effect of PBGC insurance on pension fund finances, concluding that the current structure of plan termination insurance has a significant influence on the financing choices of corporate DB pension sponsors. Dave Gustafson of the PBGC, who was unable to attend this portion of the symposium, provided a written commentary on the papers justifying the role of the PBGC and describing PBGC research that corroborated the conclusions of Coronado and Liang.

Session 4: Implications of Sponsor Bankruptcy

In this session, Ray Murphy presented a case study of the United Airlines pension plans, using publicly disclosed information, to illustrate how the current U.S. funding rules can obscure the true picture of a pension plan's financial health. To provide some perspective on what happens after a plan sponsor has failed, Nell Hennessey discussed how U.S. bankruptcy courts address a pension plan's funded status, and the challenges that stakeholders will face in trying to reform the bankruptcy rules relating to pension plans.

Session 5: Examining Stakeholder Perspectives

Session 5 provided some of the more colorful moments during the symposium with Michael Clark's presentation of his paper, *Dr. Phil's Guide to Pension-Funding Reform*. Although Dr. Phil was unable to attend, Michael provided a proposal for reform that looked at a good parenting versus bad parenting model for inspiration. As well, Alan Stonewall and Elizabeth Moore's presentation on improving pension funding by considering "WIFMs"—"What's In It For Me"—charted an entertaining course through the various pension plan stakeholders' points of view. Don Segal provided thought-provoking commentary on each of the papers.

Session 6: Re-examining Funding Methods: Financial Economics Considerations

This session led off with Mark Ruloff presenting the paper he co-wrote with Steve Strake and Howard Winklevoss, demonstrating the effect of adopting a stochastic funding method to manage contribution volatility, and that increased volatility is not necessarily the price to be paid to ensure plan solvency. The paper argued that the current state of pension underfunding is due in large part to the use of deterministic actuarial methods, which have led to contribution holidays—not to the so-called “perfect storm” of poor equity returns at the start of this decade and low interest rates.

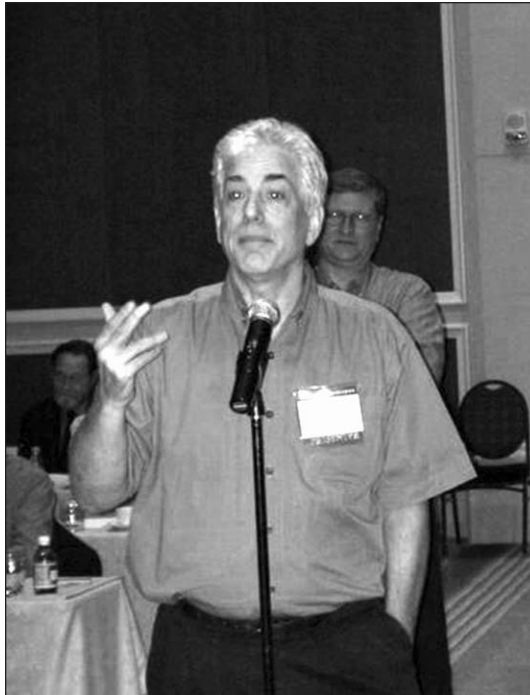
In the second paper presented in this session, Jeremy Gold described his proposal for transitioning into a fully funded and secure pension system through an exchange of bonds issued by the plan sponsor and the PBGC, allowing the capital markets to reflect the risk taken on by the PBGC in securing the plan’s funded status (during the transition period until full funding is achieved). Ed Burrows provided insightful commentary on both papers, including a comparison to principles underlying risk-based capital requirements set by insurance companies.

Session 7: Funding Reform — Future Directions

The closing session of the symposium began with a presentation by Eric Friedman on his proposal for a new set of minimum funding requirements to reduce contribution volatility and increase flexibility for plan sponsors. Ethan Kra and Don Fuerst presented the final paper of the symposium, with their vision for pension funding reform. The paper, which also represents Mercer’s position on pension reform, was guided by four principles: plan solvency, predictable contributions, objective rules and intuitive results. Jerry Mingione tied the discussion together, presenting his views on what works well in the various proposals and what doesn’t.

Luncheon Presentations

Two luncheon sessions were included as part of the symposium. Arnold Shapiro led the luncheon session on the first day, giving an entertaining talk on the history of pension funding. The second day’s luncheon session focused on the perspectives of major stakeholders in the pension system. John Turner of AARP, David Blitzstein of the United Food and Commercial Workers, and Kent



Jeremy Gold makes a point during the Q&A portion of the session.

Mason of the law firm Davis & Harman shared their views on pension funding reform and the papers presented.

Throughout the symposium, attendees contributed significantly to the discussion, debating various viewpoints with the presenters and other attendees. Feedback on the symposium was extremely positive—among the highest ratings for any SOA-sponsored event in recent years. In particular, attendees offered positive feedback on the immediate relevance of the presentations for plan sponsors, government policy makers and practicing actuaries.

Related Initiatives

Webcast

In October 2005, the Pension Section sponsored a two-hour webcast as a follow-up to the Washington symposium. The webcast, moderated by Emily Kessler of the SOA and led by Ian Genno and Tom Lowman, summarized the ideas presented and issues debated in Washington. The webcast also provided an opportunity for participants to vote on several related questions. The webcast was recorded; information on obtaining copies

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can be found at: <http://www.soa.org/ccm/content/research-publications/bookstore/cd-roms/>

Monograph

An online monograph with the papers presented at the symposium, along with the discussants' comments, is available on the SOA Web site through the following link:

<http://www.soa.org/ccm/content/research-publications/library-publications/monographs/the-future-of-pension-plan-funding-and-disclosure-monograph/>

In addition, several other papers that were submitted in response to the original call for papers are included in the monograph (scheduling constraints regrettably did not allow every paper to be presented at the symposium).

We encourage you to review the monograph and read papers of particular interest to you. You may not agree with everything you read in the monograph; the organizing group deliberately chose papers that would present different perspectives and spark debate. We invite you to join in the debate, through discussions with your colleagues, in upcoming professional meetings, and in letters to the *Pension Section News*.

Addressing Reversionary Taxes

One of the themes that emerged at the symposium and in the webcast was the asymmetric funding risk imposed on plan sponsors by reversionary taxes on surplus withdrawals in the United States, and limitations on the ownership and use of plan surplus in Canada. The Pension Section's Research Team has issued a request for research proposals to explore the impact of reversionary taxes in more depth.

The full request for proposals can be found at the following link: <http://www.soa.org/ccm/content/areas-of-practice/retirement-pension/research/reversion-taxes-quantifying-their-impact-on-pension-plan-funding/>

Conclusion

The symposium presenters, commentators, and other authors deserve our thanks for their significant contribution to the success of this SOA initiative. Behind the scenes, thanks also to the symposium organizing group, which included Michael Archer, David Kass, Emily Kessler, Sue Martz, Sandy Neuenkirchen, Anne Seeck,



Ian Genno, during a Q&A discussion.

Steve Siegel, Martine Sohler and Carol Zimmerman (in addition to Ian Genno as chair, and Tom Lowman as symposium co-moderator).

We hope the principles, concepts and proposals presented at the symposium, in the webcast, and in the published monograph will help spark ideas that you can pursue in your ongoing work with plan sponsors—and that the ideas will help inform further debate and action to reform the private sector pension funding system in the United States, Canada and elsewhere.

The Pension Section is committed to playing an integral role in the pension funding reform debate. We welcome your ideas and suggestions for helping us move forward with that goal. Please feel free to contact the symposium organizers, any Pension Section Council member, or SOA staff with your thoughts for future initiatives. ♦



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Fertility Projections for Social Insurance Symposium Held at the 2005 Annual Meeting

by Sari Harrel

The first “Fertility Projections for Social Insurance Symposium” was held on Nov. 14 to 15, 2005 as part of the Annual Meeting of the Society of Actuaries in New York City. The symposium originated from a call for papers (by the Committee on Social Security of the SOA) on fertility and immigration factors affecting social insurance projections. The purpose of the symposium was to discuss fertility rate projections and their relative importance compared to other assumptions for social insurance projections. The focus of the symposium was mainly on the United States and Canada; however, perspectives were also presented on the United Kingdom and the Czech Republic.

The panelists and audience included leading social insurance actuaries, students, academics, demographers and statisticians. Chief and deputy chief social insurance actuaries who presented were Stephen Goss, Chief Actuary of the U.S. Social Security Administration, Alice Wade, Deputy Chief Actuary for Long-Range Actuarial Estimates of the Social Security Administration; Jean-Claude Ménard, Chief Actuary of the Canada Pension Plan; Pierre Plamondon, Chief Actuary of the Québec Pension Plan; and Chris Daykin, Government Actuary of the U.K. Government Actuary’s Department. The symposium comprised five sessions and covered historical overviews, projections, drivers, methodologies and alternative approaches to fertility rate projections.

The first session introduced attendees to a primer on fertility rates with a focus on experience in Canada and the United States and a comparison with other countries. The historical experience presented for Canada and the U.S. emphasized the significant declines in total fertility rates that have occurred in both countries since the baby boom to current levels of about 1.5 and 2.0 children per female, respectively. (The typical summary fertility rate index, the total fertility rate is the sum of the age-specific fertility rates experienced in a specific calendar year; this contrasts with a cohort fertility rate that refers to a cohort of females born in the same year.) In addition, both countries have seen increases in the age at motherhood as fertility rates for those above age 30 have risen. International comparisons of fertility rates showed that the U.S. has a relatively high fertility rate compared to other developed countries. The current projections were discussed for the Canada Pension Plan and the U.S. Old-Age, Survivors and Disability Insurance Program. Sensitivity tests performed on demographic and economic assumptions were discussed, and the resulting beneficiary dependency ratios and financial impacts

were shown. The aim of these tests was to show the relative demographic and financial impacts of varying one assumption compared to another. Over the long term, fertility rates were highly significant.

The second session described in detail the drivers of fertility rates. A wave theory of fertility was explained, whereby small cohorts and large cohorts follow each other in succession and are driven by relative economic advantages or disadvantages. Material wealth of a cohort relative to its parents was explained as affecting marriage, fertility, female labor force participation and higher education. The historical shift in perception of children as being economic assets to being economic liabilities was noted as affecting fertility. Next, a comparison was presented of recent trends in fertility rates between Canada and the United States. Notable differences between the two countries include differences between teenage pregnancy rates, abortion rates, marriage versus common-law unions, religious observance and levels of unemployment. It was indicated that the majority of the difference in the total fertility rate is attributed to the much lower Canadian rates for women aged 15 to 29. Comparisons were also presented between foreign-born versus Canadian-born women, immigrant generations and ethno-racial groups. The increasing importance of immigration to Canada for its population growth was shown, as natural increase is projected to turn negative after the year 2020. This session ended with an analysis of the effect of childbearing age on Social Security projections in the United States. It was observed that the average age at first-time motherhood has increased in the United States and that this trend is present across racial groups and in other countries. In addition to causes already mentioned, another cause cited was the increased use of assisted reproductive technologies. It was also noted that the delay in childbearing could increase the generational period length, and thus old-age dependency ratios and finally, the financial costs to Social Security.

Projection methodologies were described next for social insurance schemes in Québec, the United States and the United Kingdom. The difficulty in projecting fertility rates was illustrated by actual versus expected experience for the United Kingdom. Approaches presented included a combination of run-off triangle techniques, analysis of underlying drivers and historical trends, projection of trends using interpolation to ultimate rates, comparisons with number of intended births and birth parity modeling. The variability of

The purpose of the symposium was to discuss fertility rate projections and their relative importance compared to other assumptions for social insurance projections.

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projections was illustrated by deterministic variants and stochastic modeling. Methodologies were also explained in terms of their components, namely measurement, modeling, judgment and level of detail. One view expressed was that deterministic variants tend either to overstate or understate fertility for extended periods of time, and as such, a better way to incorporate variability would be by a model using a stochastic renewal process. Random scenarios generated by stochastic models without renewal processes were thought to have some of the same drawbacks as deterministic variants.

The fourth session covered alternative approaches, measurement and uncertainty for the future. Sources of uncertainty were identified as accuracy and reliability of data, types of drivers and relationships between them and duration and shifts in trends. It was noted that uncertainty may also apply to population characteristics, ultimate fertility rates and distributions of total and age-specific rates over time. An estimate was given of the total U.S. cohort fertility rates for females born in the 1980s as 2.15 per female. An illustrative example was given in the form of a case study of the U.S. Hispanic population and the associated sources of uncertainty. As well, current and alternative approaches to presenting uncertainty for social insurance projections were discussed. One approach discussed was based on the probability of birth order, that is, the probability of having a second birth given a first birth, and so on. Another presentation covered various models that have been proposed for fertility projections. It was noted that all developed countries have followed a similar development in fertility (the demographic transition) due to similar structural, cultural and technological changes.

The fifth and last session consisted of additional financial projections for the Canada Pension Plan followed by an open discussion between the panelists and the audience. Various topics were discussed through questions and answers. The results of a questionnaire handed out earlier in the symposium were also discussed. The questionnaire asked what the ultimate total fertility rate (TFR) might be for Canada and the United States, whether the probability distribution surrounding the value was balanced or skewed, and in what year the ultimate rate would be reached. The results indicated that the attendees thought that the current estimates of the chief actuaries of the SSA and the CPP were quite reasonable, with the average ultimate TFR surveyed of 1.94 (range of 1.6 to 2.1) and 1.69 (range of 1.4 to 2.0) for the U.S. and Canada, respectively. While for the U.S. the general feeling was that the TFR distribution was symmetric, for Canada two-thirds felt that the fertility distribution was more likely to be skewed high (a fatter tail to the right). A consensus was that the average time until

the ultimate TFR would be achieved was about 10 years. Evaluations of the symposium and suggestions for future symposia regarding social insurance were also sought.

The symposium provided a great opportunity to share knowledge and exchange ideas about the fertility assumptions for social insurance projections. If you have any suggestions for future symposia or would just like to get involved with the Committee on Social Security, please contact Sam Gutterman at sam.gutterman@us.pwc.com.

All of the presentations are available in .pdf format from the archived continuing education presentations/handouts page of the SOA's website: http://handouts.soa.org/conted/cearchive/ce_archivedlist.htm. The sessions were also audio-recorded, and both the presentations and recordings are available on CD-ROM for purchase from Netsymposium. Purchase information for the CD-ROMs of the Annual Meeting may be found at <http://www.netsymposium.com/index.php?select=association&data=88>. ♦



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Pension Actuaries and Fiduciary Responsibility

by Lauren M. Bloom

The Employee Retiree Income Security Act, or ERISA, establishes an important statutory role for pension actuaries in the United States. As part of its statutory goal to protect the retirement security of America's workers, ERISA requires tax-qualified defined benefit plans to obtain an actuarial valuation of plan reserves each year. When valuing the plan's reserves, the actuary is required by ERISA to act on behalf of plan participants. Thus, the plan actuary fulfills an important role in maintaining the plan's ability to meet its ongoing obligations to the plan participants and their beneficiaries.

Often, pension actuaries provide a broad range of services to pension plans that may include, and are certainly not limited to, reserve valuation. Pension actuaries are expert in the design and funding of pension plans and, in addition to valuing plan reserves, frequently offer advice to plan sponsors and administrators on plan design, taxes, benefits, asset allocation, valuation and management. The courts have recognized that pension actuaries have a common law responsibility to act with due care when providing these services, and pension actuaries who fail to do so may find themselves in state courts defending malpractice claims.

A separate question exists, however, as to whether the pension actuary also has the enhanced responsibility, and attendant liability, of a "fiduciary." Under ERISA, a fiduciary's responsibilities to an employee benefit plan are described in detail:

[A] fiduciary shall discharge his duties with respect to a plan solely in the interest of the participants and beneficiaries and ... with the care, skill, prudence and diligence under the circumstances then prevailing that a prudent man acting in like capacity and familiar with such matters would use in the conduct of an enterprise of a like character and with like aims[.]



ERISA also sets forth explicit responsibilities for plan fiduciaries, and describes specific remedies and a structure to enforce them against fiduciaries who fail to fulfill their statutory responsibility.

Section 3(21)(A) of ERISA defines a "fiduciary" as a person who: 1) has any discretionary authority or control over the management of the plan or its assets; 2) renders investment advice for a fee or other compensation, direct or indirect, with respect to the plan's assets or has any authority or responsibility to do so; or 3) has any discretionary responsibility in the administration of the plan. Thus, fiduciary status and responsibility is created by the activities that an individual actually performs on behalf of a particular plan, and not simply by the individual's title. ERISA requires a plan to formally designate an individual as the plan "fiduciary" in the plan documents, but other individuals who meet one or more of the three criteria listed in the statute become "fiduciaries" under the statute whether they are formally designated or not.

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Even though actuaries are required to act on behalf of the participants when valuing plan reserves, the courts have recognized that actuaries who provide traditional professional services to qualified plans are not fiduciaries under ERISA. The leading case in this area is *Pappas v. Buck Associates, Inc.*, 923 F. 2d 531 (7th Cir. 1991). In *Pappas*, the court reviewed ERISA's language and legislative history and concluded that Congress did not intend for actuaries who rendered professional services to plans to be regarded as ERISA fiduciaries. The *Pappas* court acknowledged that an actuary could become a fiduciary by "undertak[ing] tasks that transcend the usual scope of a professional-client relationship." However, the court explicitly found that "the normal role of an actuary providing advice to an ERISA plan" did not involve fiduciary activity and, therefore, did not make the actuary a fiduciary even if the actuary performed professional services in a negligent or intentionally wrongful manner.

The Supreme Court made a similar determination in *Mertens v. Hewitt Associates*, 508 U.S. 248 (1993). In *Mertens*, participants in Kaiser Steel's employee benefit plan alleged that, when Kaiser Steel began phasing out its steelmaking operations and induced many of its employees to take early retirement, the plan's actuary failed to change the plan's actuarial assumptions to reflect its in-

creased retirement costs, causing the plan to become inadequately funded and, ultimately, to be terminated. The participants argued that the plan fiduciaries breached their duties under ERISA and that the actuary should be liable for knowingly participating in the fiduciaries' breach. In holding that the actuary was not liable for damages under ERISA, the Supreme Court specifically stated that professional service providers, including actuaries, are not liable as fiduciaries until they cross the line from advisor to fiduciary by assuming discretionary authority over or responsibility for the plan's assets or administration.

Thus, under ERISA, a pension actuary is not normally a fiduciary. The actuary only becomes a fiduciary by undertaking responsibilities that transcend traditional actuarial practice, assuming discretionary responsibility over the administration or management of the plan or its assets. The question of whether an actuary has assumed such responsibilities is a factual one, depending on the circumstances of each particular situation.

State common law may also create fiduciary responsibilities for a pension actuary. The laws governing fiduciary status vary somewhat from state to state but certain broad principles commonly apply. Some relationships are usually deemed to be inherently fiduciary in nature, for example, the attorney-client relationship, the relationships of corporate officers and directors to their companies, or the relationships between partners, joint adventurers, or close family members. Otherwise, a fiduciary duty is deemed to exist by the courts if a relationship of mutual trust and confidence has developed between them over a period of time prior to the transaction at issue, such that one party is justified in placing trust in the other. The mere fact that an individual trusts a business associate to meet a contractual obligation is not normally sufficient to create a fiduciary relationship, nor is the fact that a relationship is cordial or long-standing sufficient to establish fiduciary responsibility. As with ERISA, the determination of whether a fiduciary relationship exists under common law is a factual question, and the answer depends on the facts of a particular case. Arm's-length transactions between sophisticated business executives and their professional advisors, including actuaries, are not likely to impose common law fiduciary responsibilities on the advisors. If, however, the advisor voluntarily assumes a more confidential role in the relationship, fiduciary responsibilities may apply.

A common law fiduciary's responsibilities are normally comparable to those imposed on plan fiduciaries by ERISA. The fiduciary is required to act on behalf of the party to whom the fiduciary duty is owed, applying the care, skill, prudence and diligence that a prudent person acting in a similar capacity and familiar with such matters would use under the circumstances when conducting a similar enterprise or undertaking.

Fiduciary responsibility certainly can be satisfied; ERISA plan administrators and asset managers successfully meet their fiduciary responsibilities every day. The pension actuary can, therefore, choose to assume fiduciary responsibility and fulfill it if the actuary wishes to do so. However, the actuary is normally wise to *intentionally* assume a fiduciary role, rather than allowing a relationship to inadvertently evolve into fiduciary status. Otherwise, the actuary may be surprised to discover after the fact that a plan representative, and a court, considered the actuary to have taken on more liability than the actuary intended.

An actuary need not be a fiduciary to offer valuable services to qualified plans and their participants. If the actuary chooses to remain in the capacity of professional advisor, the actuary is normally prudent to provide only traditional actuarial services to a qualified plan and to be very clear in communicating to the plan's representatives that the actuary is not acting as a fiduciary. Actuarial Standard of Practice No. 41, *Actuarial Communications*, may be helpful in providing guidance to the pension actuary in communicating with plan representatives on this point. The actuary may want to avoid offering informal advice about asset management and plan administration, particularly when dealing with less sophisticated plan representatives, and may find it beneficial to document conversations with plan sponsors and administrators in writing. If the actuary's relationship with plan representatives seems to be evolving into a more confidential one, the actuary may find it helpful to consult with legal counsel as to whether the actuary has begun to take on a fiduciary role.

If, on the other hand, the actuary chooses to become a plan fiduciary under ERISA or to assume fiduciary responsibilities under the common law, the actuary is well-advised to determine first whether he or she has the necessary qualifications to fulfill fiduciary responsibilities and, if not, to obtain those qualifications before taking on a fiduciary role. Again, communications are likely

to be important; the actuary is normally wise to verify that the plan's representatives understand exactly what the actuary will, and will not, do on the plan's behalf and to document that understanding. Legal counsel can also be helpful to the actuary in defining the scope of his or her fiduciary responsibilities and in determining how best to fulfill those responsibilities once they have been assumed. ♦

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U.S. Social Security Reform: A Diverse Issue for Actuaries

by Steven Siegel



We asked—you responded. In October 2005, the Pension Section Research Team issued a brief survey on the U.S. Social Security System to the actuarial community at large. The survey was motivated by the team's desire to engage actuaries in the ongoing debate on Social Security reform as well as encourage involvement and promote further education in this area. It was not intended to gather data for an official statement on behalf of actuaries nor should the results be interpreted that way. Rather, it was designed as a communication vehicle to help plan future SOA efforts in this area.

We had no need to doubt that actuaries feel actively engaged in this issue. We were overwhelmed by the response with nearly 2,400 actuaries sharing their opinion in over 60 pages of comments. And, clearly, actuaries are not a monolithic group. Suggested changes to the system ranged from complete abolition to significant expansion by requiring all workers to be covered. This article provides a summary of results from the survey as well as a list

of web sites that were suggested for those who would like to learn more.

Survey Questions

The first question posed in the survey asked respondents to rate on a scale of 1 to 5, their level of confidence in the long-term solvency of the current U.S. Social Security System. Overall, the responses were nearly evenly spread among the five possible choices. A few respondents contacted us to let us know that they felt the question could be interpreted in a couple of ways. Because of this potential ambiguity, whether the spread of responses to this question is due to the range of opinions on this question or if it was because of different interpretations, is not entirely clear. However, given the range of opinions expressed in the second survey question, we suspect it is just another indicator of the diversity of opinions among actuaries.

The second question asked what changes, if any, should be made to the current system. Respondents were free to choose more than one proposed change. Of the choices provided, "increasing the normal retirement age to qualify for benefits" received the greatest response with 74 percent of respondents favoring this for at least one of their suggested changes. The complete results are below:

What, if Any Changes, Would You Make to the Current System?

Change	Percent Response
Add Personal Retirement Accounts	29%
Increase Normal Retirement Age to Qualify for Benefits	74%
Reduce Benefits	38%
Increase Payroll Taxes	37%
Invest Part of Social Security Trust Fund in the Private Sector	29%
Other Changes	26%
No Changes	1%
Unsure	3%

Note: Percentages do not add to 100 because respondents could choose more than one change.

If a respondent chose "Other Changes," they were asked to describe the changes. Nearly 1,000 respondents took the time to convey their thoughts, with some writing a whole page of comments. The range of responses was quite startling. Some of the more representative suggestions included:

1. Make the system means-tested.
2. Remove or substantially raise the limitation on which salary/wages can be taxed.
3. Index initial benefits to the CPI, not wages.
4. Abolish the system completely or gradually phase it out.

As far as privatization, respondents to this question had a variety of opinions ranging from urging for complete privatization of the system to outright rejection of privatization in any form.

The SOA's Social Security and Pension Research Teams will use the complete set of responses to this question to help determine future related efforts.

Web Sites

The final question of the survey asked for respondents to provide their favorite Web sites for information about the U.S. Social Security System.

Below are the Web sites that were most frequently mentioned (in alphabetical order):

Web Site	Organization
www.aarp.org	AARP
www.actuary.org	American Academy of Actuaries
www.benefitslink.com	Benefits Link
www.cato.org	Cato Institute
www.irs.gov	Internal Revenue Service

www.ebri.org	Employee Benefits Research Institute
www.nasi.org/	National Academy of Social Insurance
www.soa.org	Society of Actuaries
www.socialsecurity.gov	Social Security Administration

We would encourage you to visit these sites to learn more.

Conclusion

The unmistakable message from this survey is that actuaries are very passionate about this topic. Although this survey was not intended to be scientific, but rather more as a way to provoke discussion among the actuarial community, it clearly demonstrates that actuaries can play an important role in the Social Security debate now and in the future. As a result, the Pension Section Research Team is planning as a follow-up to this survey, a Delphi or similar type of study to gather opinions of the leading Social Security actuaries. Look for results of this study sometime in the future.

We wish to express our thanks to all of you who participated and took the time to share your views! Please feel free to contact me if you have any thoughts about future efforts for research in this area or other ideas. ♦



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Other Assumptions in the Pension Funding Debate

by Victor Modugno



Abstract

This paper is a follow-up to the papers in the January and April 2005 editions of the *Pension Forum*, which focused on the interest assumptions to be used in pension funding. This paper focuses on the other assumptions used to calculate pension liabilities—mortality, early retirement and expense. The early retirement assumptions, in particular, have been a significant contributor to the deficits in some recent distress terminations.

Background

The symposium on the “Great Controversy” in 2003 and the papers published in 2005 in the *Pension Forum* focused on the interest assumptions used to discount pension benefits. The financial economics model uses bond interest rates to discount accrued benefits, while the traditional

actuarial model uses a higher interest rate that factors in historical equity returns to discount projected benefits, where applicable.

Both models have validity for different purposes. The financial model is best used for regulatory purposes—funding and GAAP earnings, while the traditional model can be used for management purposes—such as *pro forma* earnings and allocation of expenses to operating units.

The purpose of funding is to ensure payment of benefits, which requires that the plan have sufficient funds to effect a standard termination. The purpose of GAAP is to provide investors, creditors and other interested parties information that is comparable across companies and reflective of costs incurred during the period. The financial model works well for these purposes.

Management might want to see what pension costs would be as a level percent of payroll if current investment earnings, mortality, salary increases and turnover continued into the future. This could be used as part of the benefit expenses, which are typically allocated to operating units as a percent of payroll. The traditional model works for this purpose and could also be used in *pro forma* earnings, in which GAAP earnings are adjusted for nonrecurring items to give investors a better view of the ongoing business.

The Burrows paper¹ contains a complete discussion of interest and mortality assumptions. Two ideas are repeated here. For GAAP, changes in pension surplus from changes in accrued benefits would flow through operating income while other changes in surplus (from asset-liability mismatch, mortality or early retirement experience) would flow through comprehensive income.

Another is the use of over collateral to allow for equity investments and level contributions if desired by the plan sponsor. As an example, a typical participating group annuity might allow 75 percent in equities with 25

¹ Burrows, “Fixing the Pension Plan Funding Rules”, *The Pension Forum*, April 2005, pp. 19 ff.

percent in a dedicated bond portfolio if the plan has 30 percent over collateral. As the over collateral falls to 0, the percent in the bond portfolio increases to 100 percent. The over collateral could also absorb changes in pension surplus thereby allowing level annual contributions. Tax law changes would be needed to allow funding and withdrawal of over collateral without punitive taxes.

Interest Assumptions

What is the correct interest assumption for discounting pension benefits? It is the one that combined with the other assumptions produces a value equal to where a safe annuity provider would price these benefits. This is the amount needed to effect a standard termination. It is also the fair value of these liabilities—the price at which a willing buyer and seller would exchange them.

To be a safe annuity provider requires minimum ratings of AA-/Aa3. Thus, annuities should be priced inside of a double A financial yield curve, since liabilities in the form of funding agreement notes, which do not have mortality or early retirement risk, could be issued at these rates.

PBGC rates are derived from a survey of insurers in the annuity buyout market. Until recently, an obsolete mortality table was used to extract the interest rate from the insurers' annuity rates making the interest rate appear to be low.² Due to publication requirements, PBGC rates lag the market by two months. However, when adjusted to a current mortality table and a two-month lag, the PBGC rates are close to government bond rates. A study by the American Academy of Actuaries of the pricing of actual annuity purchases compared to PBGC pricing shows that PBGC pricing is close to insurance company pricing.³

Other key points are that assets and liabilities should be marked to market on the same date (i.e., no time averaging) with liabilities valued on a yield curve.

Mortality and Expense Assumptions

A survey of group annuity pricing completed in 2001 showed most providers using the same mortality assumptions for all cases.⁴ While some providers were using older mortality tables, they were projecting them to account for mortality improvement. Continuing mortality improvement, which renders tables obsolete soon after they are adopted, was handled in annuity reserves by building projections into the 1994 GAR. This reserve basis is adjusted for mortality improvement using a static projection from 1994 to the current year with a generational projection thereafter using scale AA.⁵

The RP2000 could be projected in the same fashion to account for mortality improvement, keeping it accurate for many years into the future. This table was designed to replace 1983 GAM in the calculation of the current liability⁶ and is reflective of the mortality of large, private sector plans.⁷

The RP2000 study measured two factors, in addition to age and gender that affect mortality of non-disabled lives—collar and amount of annuity. This study concluded that there was no way to combine collar and amount and that either one (but not both) could be used to adjust mortality.⁸ Plan administrative expenses—keeping records and paying benefits—are per life expenses. By including the expenses in the net interest assumption, plans with large annuities are overcharged while those with small annuities are undercharged, par-

(continued on page 16)

² This changed in 2006 from the 1983 GAM to a projection of the 1994 GAM in 2006.

³ American Academy of Actuaries, "PBGC Plan Termination Cost Study," Cover letter.

⁴ Modugno, "30-Year Treasury Rates And Defined Benefit Pension Plans," *Risks and Rewards*, 2/02, p.14.

⁵ Society of Actuaries Group Annuity Valuation Table Task Force, "1994 Group Annuity Mortality Table and 1994 Group Annuity Reserving Table," p. 909.

⁶ As defined in 26USC412 and 29USC1082.

⁷ Retirement Plans Experience Committee, Society of Actuaries, "RP2000 Tables," Executive Summary.

⁸ Ibid.



tially offsetting the mortality differences from amount of annuity.

Early Retirement

In many cases the early retirement assumptions are as important as the interest rate in pricing annuity benefits. For example, the cost of a 50-year-old collecting 70 percent of his benefit at age 55 is 46 percent higher than collecting his full benefit at age 65 (based on 1994 GAR at 5 percent). This is equivalent to about a 3 percent lower interest assumption. Yet the plan can make any assumption, including no early retirements, in valuing this benefit.

For funding, early retirement assumptions should presume financial distress, which is when plan assets are needed to assure benefit payments. A solvent employer is required to continue funding and paying benefits. A dis-

stress termination, which is usually part of bankruptcy reorganization, is the only time benefits are cut or paid under the PBGC insurance program. In this situation, early retirements (in many cases involuntary) are very high, regardless of what the experience or expectations of early retirement were prior to financial distress. PBGC's expected retirement age method is used to value plans it takes over in distress terminations.⁹ This method was validated in a study of actual compared to the expected retirement ages in 1994 that was updated in 2002.¹⁰ It shows a high rate of early retirements in distress terminations.

For GAAP accounting for companies where bankruptcy does not appear imminent, it could be argued that early retirement expectations based upon recent experience would give a more accurate picture of the ongoing business. However, the insurer pricing a standard termination would not use the plan's early retirement assumptions in cases with low rates of retirement and heavily subsidized benefits even where the employer's business was sound. The insurer would have to take into account the possibility of deterioration of experience in the future. Thus the fair value of the early retirement benefit would reflect more conservative assumptions than recent experience would suggest in cases with low early retirement rates.

Lump Sums

Lump sum options have become increasing by popular in defined benefit plans, particularly after GATT lowered the cost of paying them.¹¹ When offered lump sums, 95 percent¹² of low income participants take the cash, with less than 20 percent of that money rolled into an IRA.¹³ The social benefits of defined benefit plans in reducing reliance on public assistance programs are lost when retirement funds paid in lump sums are dissipated.

Minimum lump sum calculations are based upon long-term treasury rates. For cases with early retirement

⁹ 29CFR4044.55.

¹⁰ Weiss, et al., A memo dated 4/26/02 re Status of Assumed Retirement Age Assumption (XRA) for the PVFB.

¹¹ Committee on Retirement Systems Research of the Society of Actuaries, "Safest Annuity Rule" p.47.

¹² Watson Wyatt, "Choose Employees Choose Lump Sums!"

¹³ Working Group On Retirement Plan Leakage, "Are We Cashing Out Our Future?"

benefits, lump sums are usually less expensive than annuities, since only the normal retirement benefit is discounted. The PBGC does not have lump sum options for plans it takes over. However, lump sums can drain a plan of assets prior to takeover. So, for funding, the greater of the annuity cost or the lump sum cost should be used.

For GAAP accounting, assuming a rate of lump sum elections can offset some of the cost of early retirement. The smart money (i.e., large annuities) is likely to choose the most favorable options for their circumstances, and this could affect the experience of the remaining annuities. In the event the safety of the annuity is in question, everyone will run for the exits. In pricing lump sum options, insurers will be conservative because of possible anti-selection.

Conclusions

The use of standardized, conservative demographic assumptions and government bond interest rates should lead to adequate reserves in most cases. It will lead to higher reserves than needed in some cases. The higher contribution levels do not increase the cost of pension plans, which depend on future experience. The employers and their advocates who are lobbying for actuarial assumptions that minimize required contributions are really trying to transfer costs to others—future shareholders, taxpayers and retirees.

One concern is that higher required contributions and recognition of costs under GAAP accounting will accelerate the decline of defined-benefit plans. Why have defined-benefit plans lasted this long? They favor long-service, older employees and so in groups where these employees have power, such as in the public sector and unions, they are likely to continue. However, in the competitive private sector, where employers are trying to recruit younger employees who change jobs frequently, newer companies offer 401(k) plans instead of defined benefit plans. Defined benefit plans continued at older companies, in part, because they allowed management to manipulate operating income by using pension income to meet earnings targets. The stock market boom of the 1990s left plans over-funded, so no cash contributions were required. Cash balance plan conversions became popular because they allowed employers to keep the accounting and funding advantages of defined benefit plans while giving employees the account balances of 401(k) plans. The excise tax on reversions also played a role in cash balance conversions for over

funded plans by giving these plans a way to use up the surplus without paying this tax.

The stock market decline in 2000 and falling interest rates combined to make plans that had been over-funded and had not made contributions in many years suddenly under-funded. Some of the companies sponsoring these plans went into bankruptcy and shed their pension plans in distress terminations, resulting in losses to the PBGC and employees who were above the insurance limits. A regulatory system that produces these results is defective and needs revision. ♦

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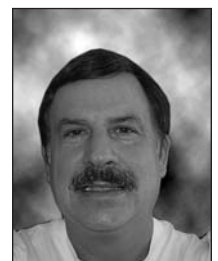
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Analysis of Mortality Improvement Based on Recent SOA Studies

by Kevin S. Binder



The Retirement Plans Experience Committee (RPEC) of the Society of Actuaries (SOA) is a standing committee that monitors pension plan mortality experience. Most recently, the committee developed the RP-2000 mortality table. This table was the first published North American mortality table based solely upon private sector pension plan mortality experience. Previous tables developed by the RPEC such as GAR-94 and UP-94 were based primarily on a combination of group annuity, and U.S. federal employees and retirees mortality experience.

The RP-2000 table was based on 1990-1994 experience. Because the table was created to provide information to the United States Department of Treasury to assist in selecting a mortality assumption to be used to calculate current liability under IRC Section 412(l), the table's experience was based entirely on private sector plans that would be affected by the legislation. The underlying data used to develop the RP-2000 table excluded public sector, multi-employer and Canadian experience.

In 2001, the RPEC requested 1998-2002 mortality experience for general use. Data was requested from all types of pension plans, including public sector and Canadian plans. Although the RPEC did receive data from several private sector plans, 96.1 percent of the data was collected from the Civil Service Retirement System of the United States (CSRS) and the United States Military as summarized by Table 1 on page 19.

The RPEC also received 841,034 life years of active employee experience. However, this data included only 1,495 deaths and was thus deemed insufficiently credible for further analysis.

In preparing the GAR-94 and UP-94 tables, the RPEC noted that 1986-1990 Group Annuity Mortality (GAM) and CSRS¹ experience were similar. Because of the similar experience, the RPEC combined GAM and CSRS data to prepare the GAR-94 and UP-94 tables. The GAM experience was used for ages 66 and greater, while a blend of CSRS retiree and active data was used for ages 65 or less. This data was graduated and projected to 1994 as described in the Transactions of Society of Actuaries (TSA) to produce the UP-94 table. The GAR-94 table is the same table as the UP-94 table with a seven percent reserve margin for insurance purposes.

This analysis compares the 1986-1990 data used to prepare the UP-94 and GAR-94 tables with the non-military data gathered from 1998-2002. The 1986-1990 based rates can be found in Tables 3 and 6 in the TSA Report previously mentioned. While the UP-94 and GAR-94 tables used GAM data to develop rates for ages 66 or greater, the RPEC also noted then that the GAM and CSRS experience were comparable. Thus a comparison of the 1998-2002 data to the underlying data supporting the UP-94 and GAR-94 tables can be used to monitor mortality improvement over the 1986-2002 time period (approximately 12 years because the prior data is centered in 1988 and the current data is centered in 2000).

Tables 2 and 3 on pages 20 and 21 respectively of this analysis compare the 1986-1990 experience to the 1998-2002 experience for males and females. For each age between age 50 and age 95, the experience is compared. To

Table 1
SOA-RPEC
Summary of 1998-2002 Retiree Exposure

	# Plans	Exposure (Life Years)
Other Retirement Plans	65	512,046
Civil Service Retirement System	1	9,175,835
Military	1	3,354,183
Total	67	13,042,064

give the reader an indication of the credibility of the current data, for each age and gender, the number of deaths in the 1998-2002 data is provided. Both tables are income based; that is they are based on the annuity amounts rather than the number of lives. For example, if there are two lives age 90, with annuities of \$9,900 and \$100, and the person with an annuity of \$100 died, the q shown is .01 rather than .50. The column labeled "Ratio" is an indication of the total improvement over the 1986-2002 period; the column labeled "Average Annual Decrease" is equal to the "Ratio" raised to the 1/12th power. Because these amounts fluctuate, averages for five-year age groups are shown. Charts 1 and 2 on pages 22 and 23, respectively, compare the average annual decrease for ages 66 and over in five-year age groups to the Scale AA improvement trends that were developed for the UP-94 and GAR-94 tables.

Observations

Male mortality has improved considerably more than female mortality. Male mortality improvement is roughly 2 percent per year for ages 60 to 75, then gradually decreasing with virtually no measurable improvement for ages greater than age 90. The improvements for males are generally greater than the Scale AA trends. While there seems to be some female mortality improvement for ages 65 to 85, it is considerably slower than the male mortality improvement and is less than .5 percent per year (and less than the Scale AA trends).

The comparison of 1986-1990 experience to 1998-2002 experience seems to indicate that mortality rates *increased* for males less than 60 and for females

less than age 65. We believe that the differing experience at younger ages may be due to the use of active lives in the 1986-1990 data as documented in the TSA report. The RP-2000 report found that retiree mortality rates are 50 percent to 100 percent higher than the same aged active employee mortality rates. As noted above, the 1998-2002 data studied consists entirely of retired lives. Thus, different populations were used for ages less than age 65.

Note that some of the trends indicated by this analysis are consistent with other research on mortality improvement. For example, in a paper presented at the 2005 Living to 100 and Beyond seminar, Ulrich Padika and Jurgen Wolff used the Berkeley Mortality Database (<http://www.mortality.org>) to show a comparison of mortality improvement trends for ten developed countries for ages 60 to 89 over rolling 20-year periods from 1960 to 1999. The paper can be viewed at http://ce.soa.org/living-to-100/4b_papers.pdf.² Of the countries illustrated, all but two show female mortality improvement rates leveling off or decreasing. Three of the countries show leveling off and/or decrease in mortality improvement for males as well.

The RPEC is in the midst of collecting recent experience data for an updated mortality table. Those interested in contributing data can contact either Gavin Benjamin, current chair of RPEC, or Jack Luff, Experience Studies Actuary in the SOA office for further details. It is anticipated that in addition to the creation of a new table, further mortality improvement analysis will be possible with this new data. ♦



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¹ *SOA Transactions*, Volume 47, Pages 865-919.

² Ulrich Pasdika & Jurgen Wolff, "Coping with Longevity- The New German Annuity Valuation Table DAV 2004 R."

Comparisons of 1986-1990 GAM and Non-Military 1998-2002 Experience • Table 2 - Male

Age	1986-1990 ¹	1998-2002 Non-Military	Ratio	Average Annual Decrease	Five Year Average Decrease	Five Year Average Scale AA	1998-2002 Non-Military Deaths
50	0.003070	0.012486	406.71%	-12.40%			551
51	0.003447	0.010426	302.47%	-9.66%			593
52	0.003698	0.010447	282.50%	-9.04%			704
53	0.004081	0.008934	218.92%	-6.75%	-6.57%	1.96%	718
54	0.004963	0.007907	159.32%	-3.96%			799
55	0.004763	0.007144	149.99%	-3.44%			936
56	0.005751	0.007067	122.8%	-1.73%			1,080
57	0.007180	0.007301	101.69%	-0.14%			1,213
58	0.007569	0.007713	101.90%	-0.16%	-0.15% ²	1.66%	1,367
59	0.008356	0.007828	93.68%	0.54%			1,449
60	0.009165	0.008373	91.36%	0.75%			1,635
61	0.010456	0.008848	84.62%	1.38%			1,889
62	0.011893	0.009534	80.16%	1.83%			2,270
63	0.013728	0.010518	76.62%	2.19%	1.99% ²	1.44%	2,630
64	0.015347	0.011620	75.72%	2.29%			3,044
65	0.017188	0.013102	76.23%	2.24%			3,531
66	0.019269	0.014835	76.99%	2.16%			4,177
67	0.020827	0.016005	76.85%	2.17%			4,647
68	0.021989	0.017936	81.57%	1.68%	1.96%	1.38%	5,144
69	0.025223	0.020141	79.85%	1.86%			5,740
70	0.027970	0.022103	79.02%	1.94%			6,236
71	0.030305	0.024250	80.02%	1.84%			6,797
72	0.034400	0.026702	77.62%	2.09%			7,441
73	0.037566	0.032996	81.12%	1.73%	1.84%	1.48%	8,565
74	0.041715	0.032996	79.10%	1.93%			9,248
75	0.045670	0.037498	82.11%	1.63%			10,352
76	0.049899	0.040824	81.81%	1.66%			11,195
77	0.055961	0.044859	80.16%	1.83%			12,042
78	0.060834	0.049383	81.18%	1.72%	1.71%	1.20%	12,323
79	0.066465	0.054157	81.48%	1.69%			12,715
80	0.072808	0.059766	82.09%	1.63%			12,652
81	0.083702	0.065279	77.99%	2.05%			12,233
82	0.087230	0.073909	84.73%	1.37%			11,894
83	0.100734	0.082199	81.60%	1.68%	1.48%	1.48%	11,464
84	0.108259	0.090591	83.68%	1.47%			10,709
85	0.109440	0.099252	90.69%	0.81%			9,651
86	0.118562	0.113071	95.37%	0.39%			8,952
87	0.137411	0.120946	88.02%	1.06%			7,811
88	0.151901	0.136404	89.80%	0.89%	0.53%	0.78%	6,983
89	0.15654	0.149855	95.78%	0.36%			6,061
90	0.161550	0.162286	100.46%	-0.04%			5,157
91	0.199729	0.189106	94.68%	0.45%			4,382
92	0.1947780	0.202534	103.98%	-0.33%			3,494
93	0.234746	0.221054	94.17%	0.50%	0.12%	0.30%	2,723
94	0.232451	0.242746	104.43%	-0.36%			2,057
95	0.267373	0.257150	96.18%	0.32%			1,511

¹ Blended CSRS from Age 50-65; GAM from Age 66 to 95.² As noted, the 1986-1990 data is likely not comparable to the 1998-2002 data for ages less than 65 because the 1986-1990 data used active lives.

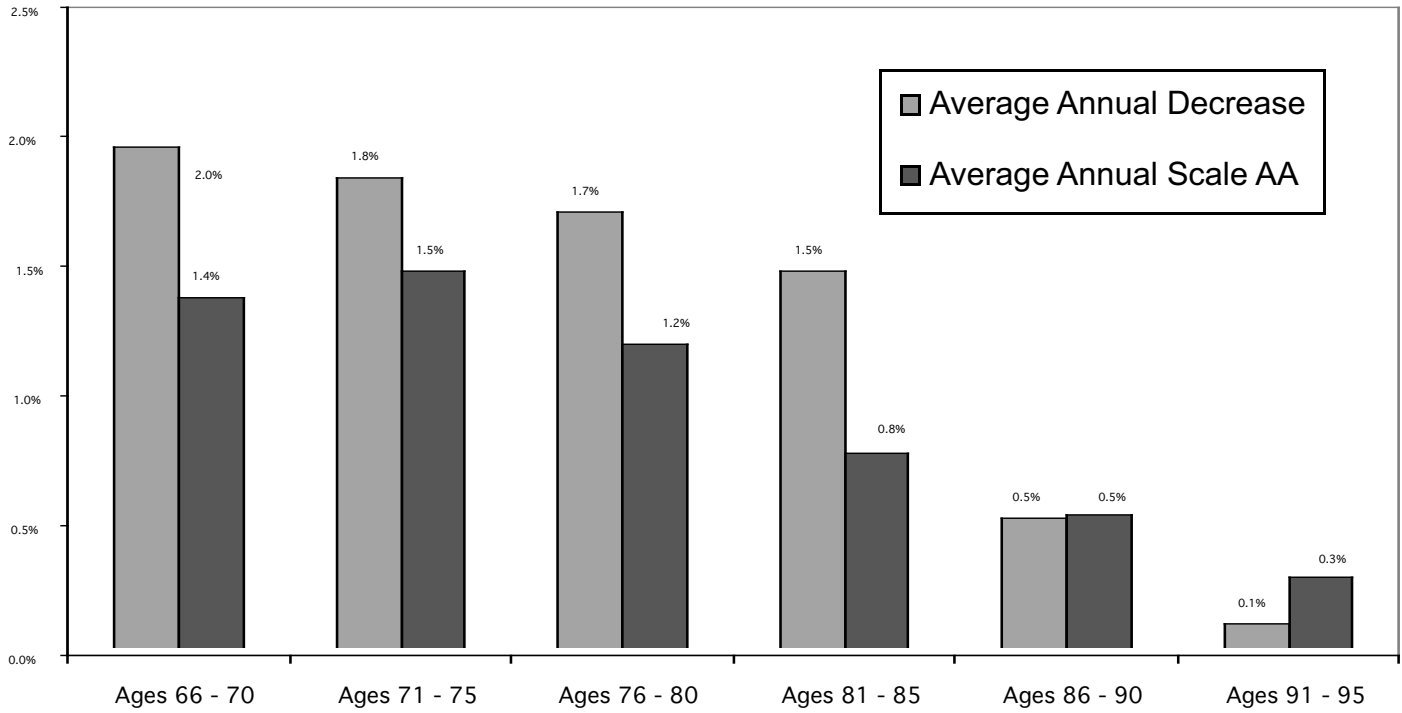
Comparisons of 1986-1990 GAM and Non-Military 1998-2002 Experience • Table 3 – Female

Age	1986-1990 ¹	1998-2002 Non-Military	Ratio	Average Annual Decrease	Five Year Average Decrease	Five Year Average Scale AA	1998-2002 Non-Military Deaths
50	0.001540	0.011366	738.05%	-18.12%			266
51	0.001766	0.010933	619.08%	-16.41%			331
52	0.002068	0.009700	469.05%	-13.75%			315
53	0.002153	0.009284	431.21%	-12.95%	-12.42% ²	1.20%	343
54	0.002313	0.007319	316.43%	-10.08%			336
55	0.002522	0.007018	278.27%	-8.90%			389
56	0.002669	0.007431	278.42%	-8.91%			478
57	0.003222	0.007462	231.60%	-7.25%			484
58	0.003703	0.007514	202.92%	-6.07%	-6.16 ²		532
59	0.004186	0.007216	172.38%	-4.64%			558
60	0.004759	0.007561	158.88%	-3.93%			608
61	0.004990	0.007911	158.54%	-3.91%			670
62	0.005865	0.008702	148.37%	-3.34%			824
63	0.007110	0.008989	126.43%	-1.97%	-2.15 ²	0.50%	871
64	0.008633	0.009705	112.42%	-0.98%			947
65	0.009975	0.010664	106.91%	-0.56%			1,071
66	0.011659	0.010781	92.47%	0.65%			1,172
67	0.011558	0.011535	99.80%	0.02%			1,242
68	0.012648	0.013057	103.23%	-0.27%	0.20%	0.50%	1,389
69	0.014816	0.014256	96.22%	0.32%			1,492
70	0.016470	0.015968	96.95%	0.26%			1,732
71	0.018468	0.018263	98.89%	0.09%			2,003
72	0.019646	0.018900	96.20%	0.32%			2,193
73	0.022562	0.021638	95.90%	0.35%	0.23%	0.68%	2,502
74	0.022690	0.023571	103.88%	-0.32%			2,758
75	0.026181	0.024035	91.80%	0.71%			2,877
76	0.031442	0.031934	90.10%	0.86%			3,363
77	0.033878	0.031934	94.26%	0.49%			3,534
78	0.035267	0.034266	97.16%	0.24%	0.49%	0.72%	3,648
79	0.040115	0.038361	95.63%	0.37%			3,721
80	0.045878	0.043140	94.03%	0.51%			3,850
81	0.050633	0.047094	93.01%	0.60%			3,864
82	0.053618	0.053192	99.21%	0.07%			3,948
83	0.062886	0.060423	96.08%	0.33%	0.23%	0.68%	4,057
84	0.067163	0.068632	102.19%	-0.18%			4,063
85	0.079880	0.076621	95.92%	0.35%			4,061
86	0.083499	0.082021	98.23%	0.15%			3,948
87	0.093969	0.094976	101.07%	-0.09%			3,898
88	0.106342	0.106439	100.09%	-0.01%	-0.12%	0.38%	3,743
89	0.112547	0.115825	102.91%	-0.24%			3,459
90	0.127477	0.133534	104.75%	-0.39%			3,329
91	0.14480	0.149869	103.73%	-0.31%			3,033
92	0.161609	0.164484	101.78%	-0.15%			2,653
93	0.193206	0.188557	97.59%	0.20%	-0.43%	0.24%	2,378
94	0.178502	0.204159	114.37%	-1.13%			2,021
95	0.199738	0.218872	109.58%	-0.77%			1,559

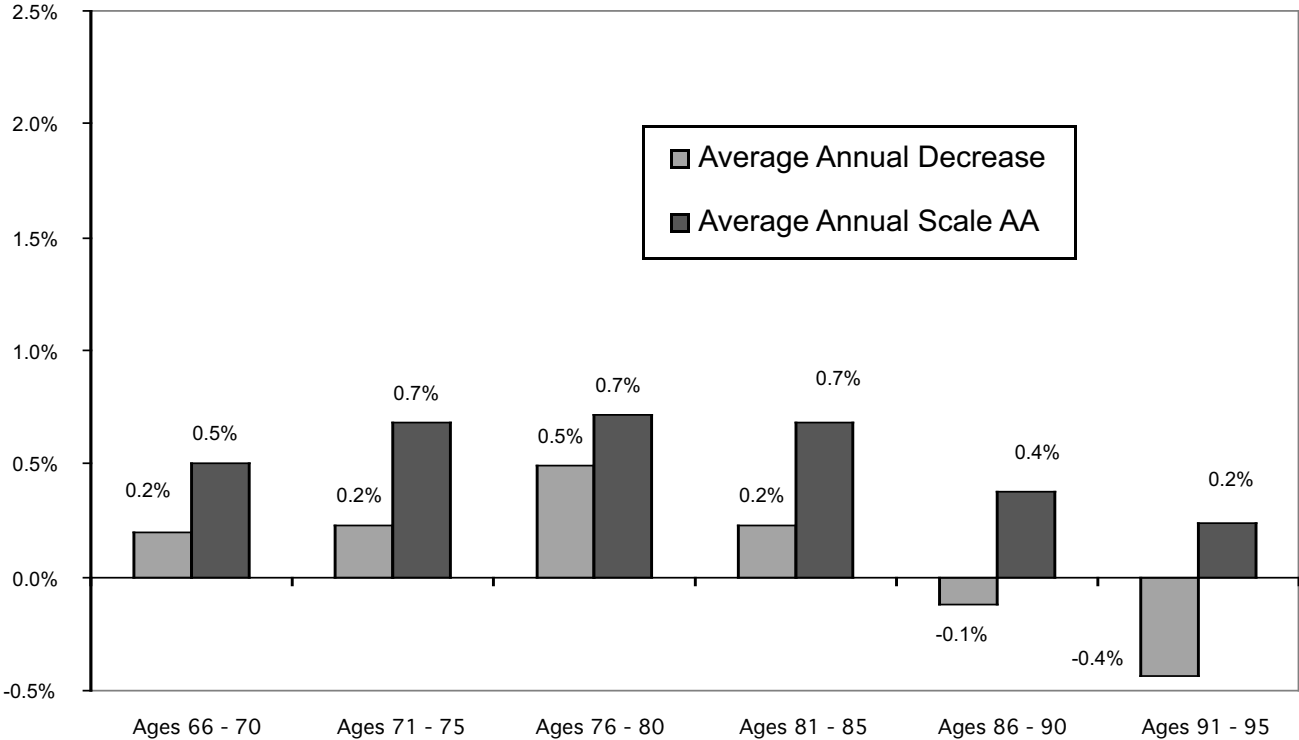
¹ Blended CSRS from Age 50-65; GAM from Age 66 to 95.

² As noted, the 1986-1990 data is likely not comparable to the 1998-2002 data for ages less than 65 because the 1986-1990 data used active lives.

Comparison of 1986-1990 GAM and
Non-Military 1998-2002 Mortality Experience (Males)
Chart 1

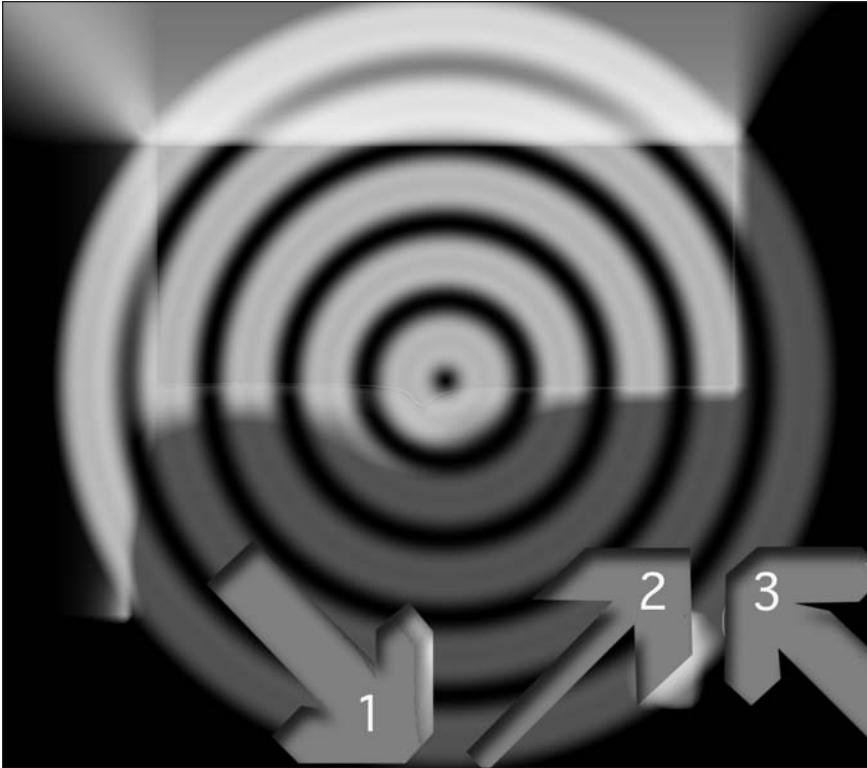


**Comparison of 1986-1990 GAM and
Non-Military 1998-2002 Mortality Experience (Females)**
Chart 2



The Third Way: Building New Retirement Systems

by Emily Kessler



The *Economist* article, “Actuaries and the pensions crunch: When the spinning stops” (Jan. 26, 2006) certainly has created quite a stir within the pension community. For those who haven’t read it, it outlines the pensions “crisis” in the United Kingdom and talks about the mistakes made by “old actuaries” (the traditional actuarial paradigm), the insights brought by “new actuarial thinking” (the teachings of pension finance, a.k.a., financial economics), and what that might mean for the future of pension plans. The last paragraph of the article sums up the authors’ premise very well.

[T]he insight that pension schemes need more security is becoming well established in Britain and in America. Ultimately, the old actuaries failed because they did not properly anticipate, calculate and communicate the rising costs of retirement provisions, especially once inflation slowed and real interest rates fell from the mid-1990s onwards. The promise of the new actuaries is that, as their

ideas spread, such mispricing will never happen again. *If that has come too late for many defined-benefit schemes, at least it might offer a bit more certainty when planning for the next generation’s old age.*

We can respond to the article on several levels. Certainly there are inaccuracies, and many misunderstandings of the roles pension actuaries typically play in the United Kingdom and the United States. We know the reasons for the decline of the defined benefit (DB) plan are far beyond the effort of any single plan sponsor and are wrapped into changing economic and business models. So we can challenge what happened, and why, on factual grounds. But another way to respond is to take up the challenge that is offered, probably unwittingly, in the last sentence. Can we take our understanding of the global economy, business models, shareholder expectations, employee expectations, employment risks, pre-retirement risks and the emerging retirement paradigm and create a new retirement system?

What would that mean to us? Is that about the revival of the defined benefit plan, using the new financial paradigms taught to us by the financial economists? Is that about strengthening the defined contribution system to make it work better? Or can we envision a third way: a whole new generation of retirement systems created from these lessons, and others. The third option provides the most challenge, and opportunities, to actuaries.

Where We are Today

The *Economist* article talks about the “new actuarial thinking” derived from the lessons of financial economics as the right financial framework. And the lessons of financial economics are attractive to the markets right now because it fits better with global marketplace and current shareholder expectations. What else has changed that we need to think about going forward? How does that change what society will expect from future retirement systems?

Global Competition, Shorter Business Lifespans.

As noted, we’re working in a global marketplace. Global competition has made increased competition, decreased

costs but increased volatility. Companies have to constantly reinvent themselves to stay in business. This creates increased risks for shareholders, who demand increased transparency and better understanding of risks taken by corporations.

Increased Longevity

People are living longer and (generally) living healthier. Most people can and will work longer than their parents and grandparents, although this will vary significantly by industry and individual.

Stabilizing or Declining Working Age Populations

Until very recently, each generation has been larger than the last. Now, with declining birthrates worldwide, many countries are starting to see smaller generations into the future. This puts strains on traditional social insurance models that rely on the transfer of wealth from one generation to another for their sustainability.

How has society reacted? We've seen these stresses play out several ways in current markets, including a move away from defined benefit plans. If we look at why this is happening, we can learn valuable lessons for our future.

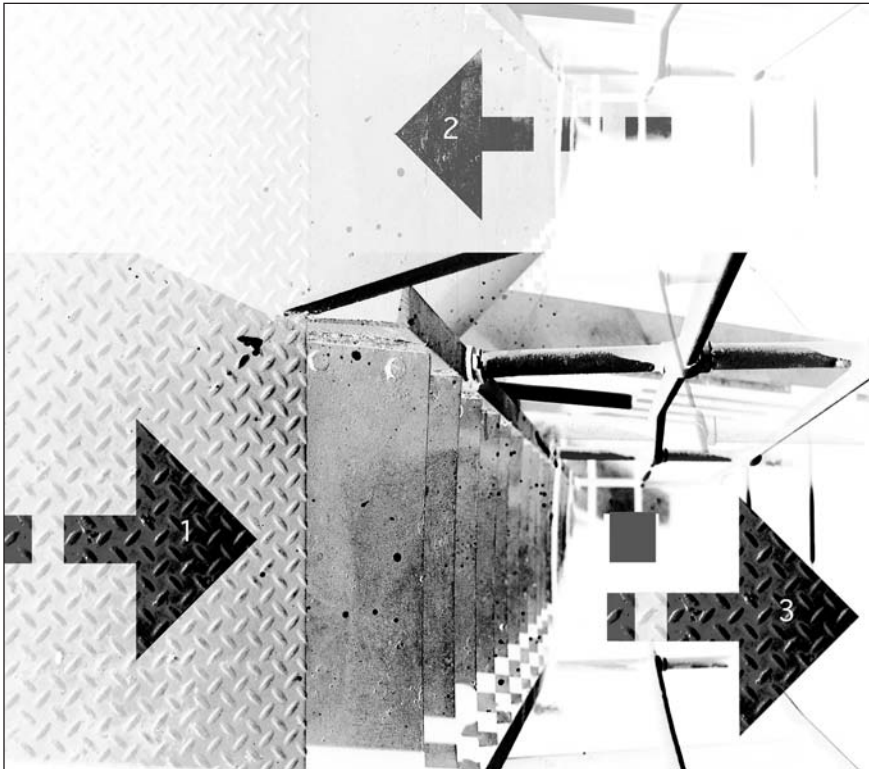
Much of what characterizes the traditional final-pay DB plan is not attractive in the 21st century global economy. And this is not being driven primarily by the demands of multiple careers. One reason why these plans have fallen out of favor at this moment is that the markets have reevaluated their cost and determined the cost of these plans has been set too low. The traditional actuarial funding models assumed long stable companies that could support the risks of equity investments in their DB plans because the company's lifespan was deemed infinite. The financial economists would argue that was never the case—and they're correct (nothing is forever and it's never proper to ask future generations of shareholders to pay for the mistakes of prior generations)—but that's not the point. Companies were perceived to have infinite lifespans, so plans were designed, priced and funded as if there was always time to make up for past mistakes. This model of the ongoing plan influences ERISA and current FAS 87 accounting standards. In my early career, a wise actuary described it as “a trip to the moon but you never actually get there, and you have opportunities to make infinite course corrections along the way.” But we realize now that's not the case; great companies crumble and die. Worse, they shrink, in the light of

global competition, to a fraction of their prior selves. If you've not prepared for that day, your shareholders are left with a core business dragged down by a pension plan (British Airways is referred to as “a large hedge fund with a struggling airline attached.”). If you were an investor, and you'd seen what you interpret as DB plans dragging down the steel, auto and airline industries, would you find them attractive in the company you're purchasing? Remember it's not the plans themselves, but the way markets first got used to thinking about their cost and risk. They were sold to corporations and their shareholders based on certain cost and risk structure. To come back today and readjust that cost/risk structure, however appropriate, simply doesn't work. It's still a tomato—and not even a bigger or tastier tomato—and why would I pay more or risk more for the same tomato?

Should we have readjusted our thinking sooner? Maybe. Possibly. But were shareholders and the financial community ready? Early in my career, my employer tried, when presenting asset/liability modeling studies, to use the “economic” cost as the true cost of the plan on which to base decisions, measuring economic cost using a 30-year Treasury rate. Their argument was that the economic cost was the true cost of the plan, regardless of what accounting or statutory contributory standards told you. But the stock markets were booming, companies were focused on what the accounting standard said or what the statutory body required as minimum contribution, and the economic cost of the plan quickly came out of our asset/liability presentations. Maybe the clients weren't sophisticated enough, but I don't agree with that either; one client was a prominent investment trust company sophisticated enough to adjust the correlation matrix in the asset projection model. The time simply wasn't right.

Many other traditional features of defined benefit plans also are no longer attractive, and in fact will soon be counter to good work force management. Consider the early retirement subsidy and its cousins, the early retirement supplement and open window. All features designed to encourage and easily move workers out of the workforce and into retirement. These features were added to benefit plans in large numbers in the 1970s and 1980s. But in tomorrow's retirement landscape, they simply aren't needed and in fact work against good work force management. Simply put, most companies are going to want to encourage at least some of their workers

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to stay and work later than retire early. And society in general will encourage this trend, as longer working careers take pressure off of overburdened social insurance systems.

The Road We Don't Have to Take

So what's the solution? Are defined contribution (DC) plans the answer? Of course not. Should we work harder to revive the DB system? Maybe. But neither of these solutions picks up the challenge left to us in the *Economist* article.

DC plans are a great way of encouraging retirement savings. They're easy, convenient and they can provide investment opportunities more cost effectively than mutual funds. But they don't make a retirement system. This may be obvious to actuaries, but most people don't have our understanding of risk. How many people understand longevity risk? Inflation risk? Investment risk? Risk from death of a partner? These are just a few of the risks retirees face. And what about retirement timing risk, the risk that you may have to retire earlier than expected? DC plans as they are today, and as most people use them in retirement, protect against none of these. Proper annuitization can solve many of these issues, but our annuity market is not yet well enough developed to handle all

these needs (as compared to the United Kingdom, for example, where, due to tax incentives, most people annuitize at least some portion of their benefit). And annuitization only covers some of these risks.

Should we work to revitalize DB plans? We know that DB plans, when benefits are properly annuitized, do much for society and the individuals who benefit from them. But I'm not sure pouring energy into widespread DB revitalization is worth it. There was an article in *Pensions and Investment* ("A new era needs new technology", January 23, 2006) that compared the DB plan to the mainframe computer and the 401(k) plan to the PC. The author used this analogy to show how outdated DB plans are: the mainframe was how computing was done, the PC is how computing is done today, and into the future.

Like it or not, conventional wisdom has it that the DB plan has seen its day. It's not that we won't still continue to see DB plans; mainframe computers, after all, are still more powerful, and more reliable, than the PC, but they are no longer the primary computing engines. DB plans are no longer going to be the primary source of retirement income for most people. But they will still survive, for some private companies and for state and government plans and for unionized workers (particularly multi-employer plans). And they may come back in certain situations.

The mainframe/PC computer analogy points out a few other factors for us to consider.

DB Plans are Too Blunt an Instrument

Part of the reason the traditional DB plan is outdated is it's too blunt of an instrument. Just as the mainframe is just right if you have high-powered computing needs, it's too much if all you want to do is calculate your taxes. Retirement systems may have to unbundle, streamline and customize for the future. Note that's still not the 401(k) model, either. It's something else entirely that hasn't been invented, at least not yet.

DC Plans Don't Work That Well

Do you remember the PC of 1986? That's where the DC plan is right now. Could your PC "talk" to another PC? How much data did it hold? What about the graphic capabilities? The 1980 era PC had green screen monitors, DOS, floppy disks and you couldn't print from your PC unless you had a rickety dot matrix printer attached. What has made the PC revolution work is linking PCs.

Office networks, e-mail and the Internet all turned the PC from a box that sits on your desk to a communication tool. In some respects, similar improvements will happen to DC plans: they'll get better at doing what they need to do. We've seen some of it already; lifecycle accounts and auto-enrollment are the equivalent of color monitors and network printing.

But even then ... do you keep all your data on your hard drive? Do you trust your PC never to crash? Of course, mainframes can crash too, but less often. The risk when they do can be catastrophic. The point is any computer is only as good as its backup. In other words, you wouldn't run the **risk** of losing all your data by only storing it on your PC hard drive. So why are we encouraging millions of individuals to **risk** their retirement through a DC-only strategy?

It Doesn't Have To Be A Binary World

Right now we have a binary system. DB plans were born, codified in ERISA, then someone figured out how to set up DC plans. We have a binary system because that's all we've needed up to now, so that's all that is enshrined in our tax code. But it doesn't have to be that way. There are more retirement systems in heaven and earth than are dreamt of in our tax code, to paraphrase Shakespeare. We just have to set ourselves to dreaming.

The Third Way

So, what makes a retirement system? First, a way to systematically, cost-effectively ensure that large numbers of people have sufficient income to cover their basic needs in retirement. Traditional Social Security, whether you agree with the current design or not, has done that extremely cost-effectively for prior generations and, with minor tinkering, could do it for many generations to come. It provides most of their retirement income needs for the bottom quartile of the income distribution, and very necessary, foundational income for the middle two quartiles. Individual savings, through DC plans, adds another layer of security and protection and gives people something beyond basic needs, and is important to supplement income for the middle quartiles of the income distribution and to maintain lifestyle for the upper quartile. But most people, those who are neither very poor nor very rich—the middle two quartiles of the income distribution—need an additional layer of protection.

So how can we provide this? We have to think of new models of risk sharing and risk pooling that replace the DB plan. What form these models will take is unclear today. We do know that putting all the risks on the shareholders (the DB model) is as unsatisfactory a solution as putting all the risks on the employees (the DC only model). That doesn't mean that shareholders couldn't take some risks—for example, shareholders will always be exposed to employment risks (termination, disability and retirement timing) and they could possibly continue to take some of those risks. But some risks may have to be pooled, insured or passed to others.

If we agree that we need to pool risks, the old models won't work for our new challenges. Just as the financial economists have presented us with new financial models, there are other challenges being put to actuaries to solve:

- *Not everyone can work longer.* Some people won't be able to because their primary career—e.g., heavy manufacturing—is physically strenuous and after 30 years, they can't work any longer than they're able to work today. There will probably need to be differentiated retirement patterns by industry and type of job. In addition, if the working career is extended, then individual disability risk increases. Models will have to be constructed that support individual risks of having to retire earlier than the new norm.
- *Current systems don't address systematic risk.* Pooling mechanisms work well for idiosyncratic risks, but fail for systematic risks. One example of systematic risk is generational longevity improvement. Past generations have been able to pass on the costs of their longevity improvement to future generations, which works well with large families and growing nations. That forward risk transfer doesn't work if future generations are of equal or smaller size. Mechanisms must be built to share risk within generations, not just between them. For example, the Swedish social security system adjusts benefit payments based on the actual mortality experience of the birth cohort. If the cohort lives longer than expected, all payments to that cohort decrease proportionately (or, more practically, they don't go

(continued on page 28)

up in line with GDP growth). Could similar mechanisms be used by private plans?

- *Current systems don't support phased retirements and other work into retirement schemes.* DC plans can be used for this, but can employers use them to encourage some workers to stay and others to leave? Some of this can be done through cash compensation and may be more properly done through compensation. But as retirement changes from an event to a process, what programs can be designed to help employers and their employees manage this process?
- *As noted earlier, systems will have to be highly differentiated, between employers but also between different classes of employees at the same employer.* A major manufacturer might need to bridge its hourly workforce from the age at which they can no longer work (in their 50s or early 60s) to full Social Security age and at the same time that employer may want to encourage key salaried employees—not necessarily executives—to keep working into their 60s through work/leisure programs.
- *We live in an unbundled world.* The traditional DB plan bundled a bunch of protections into one instrument. It may be cost effective, but probably doesn't meet the transparency needs of markets or covered employees. New systems may have to differentiate more carefully between risks and show employees and employers what protection they're buying.

These are a few of the challenges facing the new retirement system. Clearly the DC plan doesn't meet these challenges, so there is room for a new and improved model. Not your same old tomato, but something different: a kumquat or passion fruit. These are the challenges to be solved by the third way.

It's my understanding that, if you're flying on a trapeze and you want to go from one bar to the next you have to let go of the first bar before you grab the second bar. It makes sense: you have to let go so the momentum carries you forward to the second bar without being pulled back by the first. If we're going to move to the third way, we have to be ready to let go of the DB/DC binary

model as the only model for a retirement system. We have to let ourselves swing on another trapeze. It's not being disloyal, or abandoning the DB plan; it's exploring new possibilities, a third way. A third way that might better meet the challenges of the 21st century, the challenges posed to us in the *Economist* article. It's using our unique insights on risk and retirement to find another solution. Are you ready to find the third way? ♦

* * * *

Author's Note: The Pension Section Council has launched the Reenvisioning Retirement Project to work toward the third way. To find out more about the project, read the Chairperson's Corner on page 2.



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SOA Publishing New Retirement Research • Spring 2006

SIX NEW RETIREMENT RISK REPORTS

The Society of Actuaries (SOA) is publishing six new retirement risk research reports in Spring 2006. All reports will be available at http://www.soa.org/cem/content/areas-of-practice/special-interest-sections/pension/_post-retirement/.

The **2005 Risk and Process of Retirement Survey**, in cooperation with Mathew Greenwald & Associates and EBRI, reports the results of 2005 surveys of retirees and pre-retirees. The survey asked retirees and pre-retirees about their awareness of retirement risk issues and strategies for dealing with them. The report is a third in a series.

Report on Focus Groups on Financial Management in Retirement presents the results of six focus groups run with retirees ages 60-72 on their experiences of managing assets in retirement. The focus groups looked at how individual retirees made decisions about financial management of assets.

SHORT REPORTS FOCUSING ON SPECIFIC RETIREMENT RISK ISSUES

Process of Retirement: Steps in the Path Toward Reinventing Retirement, Key Findings and Issues, highlights what we know about the evolving process of retirement. It weaves in discussions of employment opportunities for tomorrow's seniors and barriers to phased retirement today.

Understanding and Managing the Risks of Retirement, Key Findings and Issues, highlights what retirees and pre-retirees understand about various retirement risks and risk management strategies. Risks considered include investment, inflation, health care and longevity.

Longevity Risks, Key Findings and Issues focuses on what the population knows about increasing lifespans, the variability of lifespan, their own misunderstandings of their personal lifespans, and strategies to insure against outliving assets.

Women & Retirement, Key Findings and Issues focuses specifically on how retirement risks and understanding thereof vary for men and women, and considers the special risks women face in retirement, due primarily to smaller pensions and longer lifespans.



PUBLIC MISPERCEPTIONS ABOUT RETIREMENT SECURITY

Also on the same website, the **Public Misperceptions about Retirement Security** report, originally published in 2005, takes on data from various sources and combines it to highlight common public misperceptions of the risks faced in retirement. In bringing together data from multiple sources, the report is able to draw a picture of what the public knows, and doesn't know, about various retirement risks.

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Letters to the Editor

Replacing Impressions with Facts

The long standing motto of the Society of Actuaries, from Ruskin, is “The work of science is to substitute facts for appearances and demonstrations for impressions.” In a letter to the editor printed in the January 2006 issue of the *Pension Section News*, David Langer made a number of observations that are, unfortunately, unfounded impressions. I can only hope that David will be more careful in the future.

The principal observation made by David is that the projected 75-year actuarial deficit expressed as a percentage of taxable payroll has increased substantially over the past 20 years or so. In fact, there was no projected deficit, but rather a small surplus projected for the 75-year period 1983-2057 at the time of the last major Social Security Amendments, in 1983. The most recent Trustees Report, for 2005, indicates a projected actuarial deficit of 1.92 percent of taxable payroll for the period 2005-2079.

David indicated that “In reading the trustees’ reports, I found no satisfactory explanation for the plunging deficit phenomenon.” In fact, the reports include annually a detailed table showing the precise reasons for change from the prior report. The difference between the actuarial balance in the 1983 report and that in the 2005 report is 1.94 percent of taxable payroll, and 70 percent of that difference (1.31 percent of payroll) is due to the simple change in the valuation period over the years. As any careful reader of the reports will know, with each new valuation, another year in the distant future where large negative cash flows are projected is added to the period. The balance of the difference is due to a number of changes in assumptions and methods over the years. These have principally been a reflection of evolving economic and disability trends, and of improvements over the years in methods used for the projections.

The assumptions and methods are reviewed regularly by panels of actuaries, economists and demographers who are the best in the nation outside of the Social Security Administration. The most recent panel was appointed by the Social Security Advisory Board and reported in 2003. They took exception to several of the assumptions used for the report, but interestingly would have made changes that would have roughly self-cancelled, leaving the ultimate actuarial balance essentially unchanged.

The report of this and the prior panel may be viewed on the Advisory Board’s Web site www.ssab.gov.

Probably the best measure of the accuracy of past projections of the cost of the Social Security program is to be found in the annual cost expressed as a percentage of taxable payroll. Back in 1983, this cost rate was projected to be 9.90 percent for the year 2005. Due largely to less robust than expected economic growth and higher than expected disability prevalence, the actual cost rate for 2005 turned out to be 11.13 percent, or about 12.5 percent higher than had been projected. Surely the Trustees were not being overly pessimistic in 1983, and neither are they today. The cost rate for the year 2050 is now projected to be 17.64 percent of payroll, or 15.5 percent higher than the 1983 projected cost rate of 15.27 percent of payroll. These facts do not seem to support the impression that there has been a conspiracy to inflate the official projections provided to the Congress each year to assist that body and the American people in understanding the actuarial status of the Social Security program.

David also questioned both the Trustees and my judgment, and integrity, with the example of the projected rates of change in the United States Gross Domestic Product (GDP) for these annual reports. It is true that GDP is projected to grow at a substantially slower rate in the future. Real growth averaged nearly 3.4 percent between 1960 and 2004, but is projected to average only 1.9 percent between 2005 and 2080. However, growth in GDP is basically the combination of growth in employment and growth in economic output per worker (productivity). Over the historical period 1960 to 2004, productivity increased at 1.7 percent per year on average, and it is projected to increase at an average annual rate of 1.6 percent between 2005 and 2080. Not much difference. The basis for slower projected growth in GDP is employment, which grew at an average rate of 1.7 percent since 1960, but is projected to grow at only 0.3 percent per year between 2005 and 2080. Why the slowdown in employment growth? The population at ages 20-64 is projected to grow at less than 0.3 percent per year through 2080 reflecting the low birth rates experienced since 1970, and the expectation that birth rates will stay at about the stable level of the past decade. In this, as in many other cases, a simple extrapolation of the past would be inappropriate.

I am sure that all members of the Pension Section and of the SOA will join me in inviting David to continue thinking critically and speaking out on topics of nation-

al importance. However, I would also ask David to be a little more careful in his analysis, and particularly in making accusations about others' judgment and integrity. Impressions and appearances are useful as a starting point in our investigations. But facts and demonstrations must be the fruit of our efforts if we are to contribute in a positive and useful way to the general understanding of the important issues in which we are so fortunate to be involved. ♦

*Steve Goss, ASA, chief actuary,
Social Security Administration*

To the Editor of *Pension Section News*

This letter responds to David Langer's comments regarding Social Security and its financial projections in the January 2006 *Pension Section News*. SSA's actuaries can address—better than I—Mr. Langer's comments regarding the assumptions themselves. I will restrict myself to matters involving the process used to prepare the reports that Mr. Langer criticizes.

Mr. Langer states, "... in the process of accommodating the trustees, the chief actuary [of SSA] has apparently violated two actuarial standards of practice. ..." The irony here is striking, in that Mr. Langer himself risks violating the code of professional conduct in his unwarranted criticism of other actuaries. Mr. Langer has for many years misunderstood the very nature of Social Security's annual Trustees Reports. These are, as clearly indicated by their title, reports of the Board of Trustees, not of the chief actuary. The Board of Trustees has ultimate responsibility under the Social Security Act for selecting the actuarial assumptions and writing the report, which is required by law. In short, it is not an actuarial report at all, even though it presents figures prepared by actuaries.

Of course, as one might expect in the U.S. system of government, checks and balances exist. The Social Security Act has for almost a quarter-century given SSA's chief actuary responsibility for certifying that (1) the Trustees' actuarial assumptions are "reasonable" and (2) the methodology used to prepare the projections is "generally accepted within the actuarial profession." Social Security's Board of Trustees would be very unlikely to issue a report without the chief actuary's required certification—and, in fact, has never done so.

When the chief actuary certifies that the Trustees' assumptions are reasonable, he is not saying that the assumptions are exactly what he might have selected if he

had the statutory authority to select the assumptions. "Reasonable" assumptions cover a rather wide range of possibilities. The chief actuary has plenty of opportunity to discuss the selection of assumptions with the Trustees and their staffs, but in the end, they make the final decision, subject to the need for actuarial certification.

The chief actuary can certify that his methods are "generally accepted within the actuarial profession" because he follows ASOP 32, "Social Insurance." That standard of practice was properly exposed and ultimately promulgated by the Actuarial Standards Board, and SSA's chief actuary follows it.

Going beyond the chief actuary's role, Mr. Langer has accused the Board of Trustees (in his words, "all presidential political appointees") of manipulating the actuarial deficits shown in the annual Trustees Reports in order to bolster the case for private accounts. This is strong stuff! But is it true?

Social Security's Board of Trustees has six members: three cabinet secretaries, the commissioner of Social Security and two members of the public who are required by law to be from different political parties. The two "public" Trustees are appointed by the president to four-year terms, subject to Senate confirmation. These are hardly political hacks. One was even an actuary himself: Steve Kellison, the SOA's immediate past president, signed the 1996-2000 Trustees Reports as a public Trustee! Mr. Langer says that the political conspiracy to make Social Security's financial condition look worse than it really is began in 1984 and continues to the present day. That would cover the administrations of three Republican presidents and a Democratic one. Only a very unusual conspiracy could include such a politically diverse group, to say the least! And the 1994-96 Advisory Council on Social Security, which Mr. Langer takes to task, was appointed during the Democratic Clinton Administration. (Incidentally, that advisory council also included an actuary, Marc Twinney, formerly of Ford Motor Company.) To my knowledge, neither President Clinton nor his Board of Trustees ever advocated establishing individual accounts under Social Security, even though a majority of his advisory council did. These facts make Mr. Langer's accusations more than a little hard to believe.

I hope that this additional information helps actuaries to evaluate better the projections shown in Social Security's Trustees Reports and the environment in which they are produced. In my opinion, Mr. Langer's accusations are really quite unwarranted. ♦

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