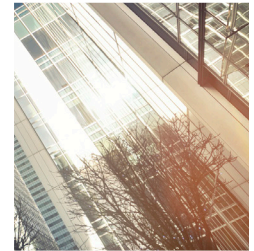


**PENSION
SECTION
NEWS**

ISSUE 83 | MAY 2014



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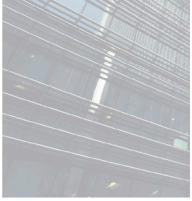
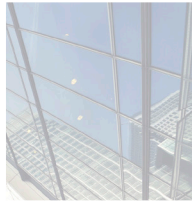
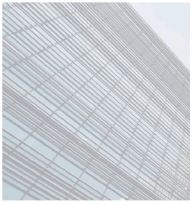
SEARCHING FOR REVENUE IN A VERY WRONG PLACE

By Mitchell I. Serota

Mike is a freshman at University of Illinois, majoring in actuarial science. He lives off I-294 and school is easily accessible from I-57. Looking at a map of northern Illinois, one can observe I-294 clearly intersecting I-57, but there are no ramps to connect the two. To get to school, Mike either has to backtrack on I-80 or exit the highway system for a two-mile stretch through a questionable neighborhood. By the time Mike is a senior, he will be able to glide from I-294 to I-57 via brand new ramps. He has MAP-21 to thank for his good fortune. Moving Ahead for Progress in the 21st Century, the official title of the law, was enacted July 6, 2012. Fundamentally, it is a highway and infrastructure improvement act, which brought relief to areas in desperate need of rehabilitation, most notably Appalachia.

Buried in the act's provisions was relief for defined benefit plan sponsors who were experiencing cash flow problems and could not afford to pay the minimum required contribution for 2012. Offsetting that relief was a quantum jump in PBGC premiums and variable rate premium rates. Why were all these provisions mixed together? Because any legislation enacted by Congress has to be "revenue neutral." That is, if Congress is going to spend additional money, there has to be a source of revenue to pay for the spending. For better or for worse, the Republicans have convinced the Democrats that no bill without revenue neutrality can ever be passed by Congress.

In MAP-21, the appropriation for highway improvements is \$80 billion. Without these funds, the Highway Trust Fund would have been depleted. Transit systems are allocated \$20 billion. Add other infrastructure needs, Federal Lands Transportation Projects, disadvantaged business enterprises, hazardous waste, etc. and the total



PENSION SECTION NEWS



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To join the section, SOA members and non-members can locate a membership form on the *Pension Section Council Web page* at <http://www.soa.org/pension/>

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CHAIRPERSON'S CORNER

By Azita Bassiji

In preparation for writing the Chairperson's Corner for the May issue of the *Pension Section News*, I went back and reviewed all the May/June issues of the *Pension Section News* dating back to 2009. It is rewarding to see that a number of projects and activities of the Pension Section Council which we talked about back then have come to fruition. It is also great to see that some of the activities and projects have progressed to the next stages.

The Pension Section Council, through its three committees, is responsible for continuing education, research and communication to our membership.

CONTINUING EDUCATION COMMITTEE IS CONTINUING TO EXCEED ITS GOALS!

Over the last several years, in response to our membership, the number of sessions sponsored or co-sponsored by the Pension Section Council has increased during the Society of Actuaries' annual meetings held in the fall. The sessions usually have themes associated with them and it allows our membership to deep dive on a particular topic. The feedback from attendees has been positive and we plan to continue to deliver meaningful sessions for our membership's continuing education. We are planning to hold approximately 20 sessions for the 2014 Society of Actuaries' annual meeting in Orlando, Fla.

Over the last several years, the Pension Section Council has offered and continues to offer several webcasts throughout the year. In 2013, the Pension Section Council offered the second largest number of webcasts among all Society of Actuaries' sections. From time to time, there is an additional need for just-in-time training on pension related issues. The Continuing Education Committee works tirelessly to offer additional webcasts. The schedule of the 2014 webcasts and the intended topics are available on the SOA website. Keeping the needs of our Canadian membership in mind, we have offered Canadian specific webcasts or have added Canadian perspective in our webcasts. We plan to continue this effort.

Just as the Society of Actuaries' released exposure drafts of the RP-2014 Mortality Tables Report and the Mortality Improvement Scale MP-2014, the Canadian Institute of Actuaries, through its Pension Experience Subcommittee of Research Committee, released the Final Report: Canadian Pensioners' Mortality in February 2014. In preparation for the release of these reports, the Pension Section Council held a webcast on April 16, 2014 to review the technical details of the development of RP-2014 Mortality Tables and Mortality Improvement Scale MP-2014, and provides a Canadian perspective on differences between the U.S. and Canadian reports. We recognize that more education is required. Our membership needs to be equipped to inform plan sponsors. Therefore, an additional webcast was held on April 29, 2014 to further practitioners' knowl-



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edge on the broader topic of longevity and provide practitioners with a “tool kit” to use in discussions with plan sponsors.

The efforts that started in 2013 in educating and marketing pension actuaries in the area of investment will continue in 2014. We will once again sponsor a the Investment “Boot Camp” in some major North American cities and plan to publish a curriculum for pension actuaries who desire to further their development in the area of liability driven investment.

EXPANDING OUR KNOWLEDGE!

Private plan sponsors continue their effort in de-risking, through plan design changes, settlement of obligations, and better matching of their assets and liabilities.

Continuing the momentum that started several years ago with *Retirement 20/20*, the Research Committee has arranged for several pieces of research on variations of defined benefit and defined contributions pension plans:

1. “Hybrid Pensions: Risk Sharing Arrangements for Pension Plan Sponsors and Participants,” published in February of 2014;
2. “Embedded Options in Pension Plans: Valuation of Guarantees in Cash Balance Plans,” published in January of 2014; and
3. “Market Consistent Valuation and Funding of Cash Balance Pensions,” published in November of 2013

Additional research expected to be released later this year or in early 2015.

1. Optimizing Application of Risk Management Concepts to Pension Plans;
2. Pension Plan Design & Risk Management;
3. Pension Risk Transfer: Evaluating Impact and Barriers to De-Risking Strategies (jointly sponsored by Committee on Finance Research);
4. Target Benefit Plans in Canada; and
5. Communicating Financial Health of Public Plans (initiated by Social Insurance & Public Finance Section)

KEEPING US INFORMED!

The Communication Committee keeps us informed of the webcasts, research and issues which we need to be aware of and for which we have to make time. It also raises our awareness of important issues by arranging for articles in *Pension Section News*, *Pension Section Update*, *Pension Forum* and podcasts. You can take advantage of the [podcasts](#) on your ride to work!

ADDITIONAL PLANS FOR 2014

We plan to explore plan sponsor and other stakeholders' views on sufficient, efficient and sustainable delivery of retirement plans. Through their lens, we may be better equipped to focus our research and education in the upcoming years.

CHANGES TO THE PENSION SECTION COUNCIL

I would like to welcome Julie Curtis, Larry Pollack and Carol Bogosian to the council. In 2014, Carol will serve as the treasurer and Larry as the secretary. Monica Dragut will continue to serve in a dual role as an elected member of the council and as the Continuing Education Committee chairperson.

I would also like to welcome Aaron Weindling in his role as council vice chairperson, John Deinum in his role as Research Committee chairperson, Martin McCaulay in his role as the editor of the *Pension Section News*, Ray Berry in his returning role as the Communication Committee chairperson, and Ian Genno in his returning role as board partner.

Last, but not least, I would like to thank outgoing members for their contributions to the work of the council. Thank you to Faisal Siddiqi, chairperson, Charlie Cahill, council member, Eric Freden, council member and Communications Committee chairperson, and Cindy Levering, Research Committee chairperson, for all your hard work. ■

NOTES FROM THE EDITOR

By Martin McCaulay



Martin McCaulay, FSA, FCA, EA, MAAA, is an actuary with the U.S. Department of Energy in Washington, D.C. He can be reached at martin.mccaulay@hq.doe.gov.

We have a diverse set of topics in this issue of the *Pension Section News*. In his article “Searching for Revenue in a Very Wrong Place,” Mitchell I. Serota editorializes on recent pension legislation in the federal budget and its impact on plans.

We examine some current mortality studies. Laurence Pinzur summarizes key items in the SOA’s exposure drafts on pension mortality released in February 2014. Faisal Siddiqi discusses the CIA’s recently released Final Report on Canadian Pensioners’ Mortality.

We also have two national retirement system articles. Eric Atwater introduces us to The Reformer, an interactive tool developed by the Committee for Responsible Federal Budgets that allows users to choose different scenarios to make the U.S. Social Security system solvent. The Reformer is similar to a game the American Academy of Actuaries developed that allows users to test various solvency solutions for the system. We also have a reprint of a Pensions Policy Institute article that discusses changes to the State Pension Age in the United Kingdom’s retirement system.

Public retirement plan solvency and policies continue to be of significant interest to the profession. Dan Moore discusses the Texas Pension Review Board’s Guidelines for Actuarial Soundness and compares the guidelines to GASB requirements. We also have reprinted the Government Finance Officers Association’s best practice recommendations for actuarial audits of public plans. Finally, we have the recommendations of The Blue Ribbon Panel on Public Pension Plan Funding. The panel was commissioned by the SOA to assess the current state of pension plan funding and to make recommendations to improve the financial strength of public pension plans going forward. The report from the blue ribbon panel on public plans evolved from an SOA task force on reputational risk.

In this issue, we have included two articles on current retirement issues. Evan Inglis reports on the SOA sponsored fifth triennial Living to 100 Symposium in Orlando and current efforts and thinking on life expectancy. We have highlights

with commentary of the findings of the 2013 Risks and Process of Retirement Survey in an article written by Anna M. Rappaport, Cindy Levering and Carol Bogosian.

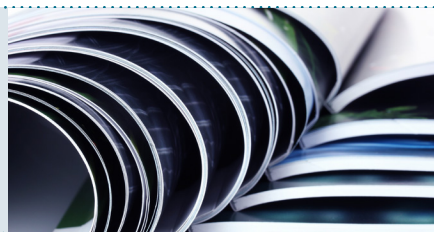
With respect to risk management, in the article “Flight Paths – A Dynamic Investment Strategy,” I introduce a conceptual process for investment policy formation for pension plans where investment risk appetite is determined as function of the plan’s funded ratio. And provide some useful reference data on employer compensation costs in “Employer Costs for Employee Compensation in December 2013.”

Thanks to the authors for their contributions to this issue.

For more resources on [longevity and retirement](#) and [ERM](#), visit [SOA.org](#).■

Have an article you think will be of interest to others in the Pension Section?

You can email them to the newsletter editor at martin.mccaulay@hq.doe.gov.





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outlays for MAP-21 amounted to \$118 billion. Some revenue to pay for these improvements is referenced in Title II of the Act, “Pension Funding Stabilization.” Buried in legislation otherwise devoted to transportation, the Act amended the Internal Revenue Code to stabilize segment rates. There was some logic, Congress-style, to link the two.

The intent to provide defined benefit plan funding relief is specifically stated in the conference report: “The plan sponsor may contribute less money to the plan when interest rates are at historical lows.” By contributing less money, corporations deduct less on their corporate income tax, which, as a result, increases revenue to the federal government. But upon reflection, the corporate plan sponsors that are taking most advantage of this relief to reduce their contributions are the ones facing cash flow problems. Might this group be paying little or no corporate income tax anyway, because they are operating in or close to a deficit? Moreover, the SOA has clearly demonstrated that the afforded relief in the first few years will be totally dissipated and reversed by 2017, meaning that minimum required contributions will increase and corporate income tax receipts will decline commensurately.¹

Immediately following the provisions for relief to plan sponsors was the hike in PBGC premiums. The PBGC charge per person jumps from \$30 in 2012 to \$49 in 2014. The charge would increase with inflation thereafter. The variable premium rate of \$9 per \$1000 of Unfunded Vested Liability increases to \$19 in 2015. But there is a leveraging

effect to also consider. By reducing the minimum required contribution in the first five years, the act provides incentive for pension plans to become more unfunded by the amount of that reduction, relative to where they would have been without the act. Between these two provisions, revenue for this program from defined benefit plans has been estimated at \$18 billion.²

But this MAP-21 story is so 2012. Last year, under the guise of a “Bipartisan Budget Act of 2013,” Congress went back to the same till for revenue. The rate of \$19 per \$1000 of underfunding is now set to increase to \$29 in 2016, from \$9 in 2013. And the fixed rate of \$49 per participant jumps to \$64 per participant in 2016. The increase in revenue is estimated at \$7.9 billion over 10 years.³

As a profession, we have been here before. Recall the Retirement Protection Act of 1994, which was part of The General Agreement on Tariffs and Trade (GATT) enabling legislation. (Back then, Congress was mixing pensions with tariffs and trade.) As stated in 1995 in *The National Law Journal*, “The purpose of the act’s pension reforms is to help the government raise some of the money lost due to lower tariffs under GATT. Whether revenues increase will depend on how well the government anticipated taxpayer response to the changes. The reforms impose increased plan funding and management costs on employers and their success will depend on the ability of employers to bear the added burden. Enough plans could be terminated that government revenues would decrease rather than increase.”⁴

The warning in 1994 was as clear as it was prescient. There was little to no outcry, because there was at least some cover of protecting retirement plan sponsors. MAP-21 also provided relief which was desperately needed at the time. But the bipartisan bud-

MANY POLICYMAKERS AND OTHERS HAVE FORGOTTEN TO TAKE A MACROECONOMIC VIEW. BUDGET SCORING USING “TAX EXPENDITURES” HAS CHANGED THE WAY CONGRESS THINKS ABOUT EMPLOYEE BENEFITS AND FINANCIAL SECURITY.

get gratuitously enacted punitive measures against defined benefit plans. Plans will be forced to pay 2.9 percent of their underfunding using *PBGC* segment rates of course, not the *IRS* segment rates which afforded the relief. Overfunded plans, presumably with much less risk, are not granted any reduction in premium.

As applied to defined benefit plans, this whole procedure of “revenue neutrality” is a farce. Rather than acknowledge that the Highway Trust Fund is an investment in the future which needs periodic replenishment, Congress plays ridiculous games to make it appear that there is actually money to pay for it by taxing defined benefit plan sponsors.

Even now, Congress is invoking the same contorted logic as GATT, MAP-21 and the BBA to increase revenue at the expense of retirement plans. To pay for an unemployment benefit extension, Senate Bill 1845 proposes giving defined benefit plans additional funding relief with PBGC premium increases. Simultaneously, the latest budget proposal seeks to limit the amount that a defined contribution account can grow over the course of one’s working lifetime. That provision would raise \$28 billion to fund the President’s infrastructure and job-training package.

As before, the projected revenue increases are mythical. In theory, at least, they remain bipartisan. “There isn’t really much of a partisan difference in the types of gimmicks each side prefers, though Republicans tend to prefer those that produce revenues on paper without actually increasing taxes and Democrats prefer those that appear to reduce spending without actually cutting spending.”⁵

Michael’s mother is sincerely pleased that

the highways are getting fixed to alleviate his travel to school and back. But she also knows that the burden for these improvements is being carried on the back of the ever weakening defined benefit pension system. Her advice to Congress is the same as her outcry to Michael and his brothers during their interminable horse play: “CUT IT OUT!” ■

ENDNOTES

- 1 <http://www.soa.org/research/research-projects/pension/proposed-pension-funding.aspx>
- 2 <http://www.transportationissuesdaily.com/cheat-sheet-for-map21-new-federal-transportation-bill/>
- 3 <http://www.cbo.gov/sites/default/files/cbofiles/attachments/hr4348conference.pdf>
- 4 <http://www.readabstracts.com/Law/US-pension-law-reform-under-GATT-Retirement-Protection-Act-trims-benefits-in-Congressional-effort-to.html#ixzz2uOxUeMs8>
- 5 http://www.rollcall.com/news/for_budgeting_tough_accounting_for_gimmicks-230991-1.html?pg=2

A VIEW FROM THE SOA'S STAFF FELLOW FOR RETIREMENT

By Andrew Peterson



Andrew Peterson, FSA, EA, MAAA is Staff Fellow – Retirement Systems at the Society of Actuaries headquarters in Schaumburg, Ill. He can be reached at apeterson@soa.org.

In the column I wrote for the January 2014 *PSN*, I wrote about the topic of mortality tables in the context of the anticipated release from the SOA's Retirement Plans Experience Committee (RPEC) of new pension-based mortality tables and projection scales. While not intentional, this May issue continues the theme of mortality/longevity topics, with three articles that fit that theme.

In addition to the RPEC's February 2014 release of exposure draft reports for RP-2014 base tables and the MP-2014 projection scale (for use by U.S. pension actuaries), the Canadian Institute of Actuaries (CIA) also released new final pension mortality tables for Canadian pension plans. The CIA study is unique because it is the first time that pension mortality tables have been developed in Canada using Canadian data. I won't write more specifics about either the SOA or CIA projects here but instead commend the articles in this issue written by Larry Pinzur and Faisal Siddiqi, on the respective projects.

These two projects were premised on the understanding that mortality has been improving and therefore pension actuaries need up-to-date mortality tables (and projection scales) to use when valuing pension plan obligations. Complementing this work is a third article written by Evan Inglis that summarizes the SOA's January 2014 Living to 100 conference. I also encourage you to read this article as it provides a very nice and relatively succinct overview of the issues discussed at the event. I was fortunate to be able to attend the event as well and particularly enjoyed the sessions where some of the leading experts in the field talked (and debated) about future prospects with respect to the biology of aging and possibilities for slowing down that process. I found a presentation by Dr. Anthony Atala, Director of the Wake Forest Institute for Regenerative Medicine, particularly interesting as he talked about using amniotic stem cells to grow human tissues and organs that can then be implanted back into patients. Several of his talks are available online (via TED talks or YouTube) and they are worth watching. How this technology will actually develop remains to be seen, but there are certainly very interesting implications for longevity issues.

In this context of longevity discussions and new mortality tables, the SOA is also working to fulfill our education mandate by providing opportunities for actuaries to learn about the new tables and also have materials that can be used when discussing mortality improvement with their clients. By the time this newsletter is published, the SOA will have hosted two webcasts in April on these topics and had RPEC representatives speaking at the Enrolled Actuaries Annual Meeting. We are also working on an educational presentation deck that will include "client-ready" slides that actuaries can insert into their own presentation decks for use in



client situations when discussing mortality improvement, in general, and the new SOA tables. *(Note that we expect these to be complete and posted to the SOA Pension Section webpage under mortality resources by the time this newsletter is published.)* In addition, we are planning sessions for the various fall meetings that pension actuaries typically attend.

One of the great things as staff fellow is engaging with members and volunteers on an issue that's so important to the pension practice. We have a professional responsibility to evaluate and incorporate the latest research and best practice when setting or recommending mortality assumptions. It certainly is an area where the public expects us to have expertise. In the current U.S. environment where many private sector pension plans are "de-risking" and evaluating "exit strategies," the mortality assumption becomes even more important as it becomes

THE SOA IS WORKING TO FULFILL OUR EDUCATION MANDATE BY PROVIDING OPPORTUNITIES TO LEARN ABOUT THE NEW MORTALITY TABLES AND PROVIDING MATERIALS THAT CAN BE USED WHEN DISCUSSING MORTALITY IMPROVEMENT WITH CLIENTS.

a difference maker in assessing the value of the pension obligations in a transaction.

There are many new developments in the mortality/longevity area for pension actuaries—some of which are discussed in this issue—and I encourage practitioners to learn from your fellow members about this new information, so you can incorporate it into your practice. ■

PERSPECTIVES FROM ANNA: THINKING ABOUT THE FUTURE OF RETIREMENT AND EMPLOYEE BENEFITS

By Anna M. Rappaport



Anna Rappaport, FSA, MAAA is an actuary, consultant, author, and speaker, and is a nationally and internationally recognized expert on the impact of change on retirement systems and workforce issues. She can be reached at anna@annarappaport.com.

The Employee Benefit Research Institute celebrated its 35th anniversary in December with a policy forum, *Employee Benefits: Yesterday, Today and Tomorrow*. The forum featured a star-studded panel. As I listened to the speakers, it made me think about key issues that we will need to address for benefits today and in the future. This article reflects my personal perspective on what I heard. I recognize that there may be contradictory viewpoints on each issue listed. This perspective combines ideas from the policy forum and other meetings, and offers some policy ideas for the future, as well as some personal observations. I have divided the discussion into five major topic areas:

- Population issues
- Societal perspective: issues driving employers' approaches to benefits
- Retirement plans and retirement
- Health plans
- Employment and workforce issues

POPULATION ISSUES

The policy forum discussion was heavily focused on thinking about generational differences in the U.S. population. I was a delegate to the 2002 Saver Summit which also focused on this same topic. I sense a renewed interest in this area as *Benefits Quarterly* selected benefit issues connected with generations as a theme for their second quarter 2014 issue. I have an article in that issue titled "Reflecting Generational and Life Cycle Issues in Benefit Plan Management."

Below are the notes that I made as I thought about the presentations:

- Boomers differ from the prior generation (Silents), as they have less coverage under defined benefit plans and are not retiring as early. A comment was

made about a growing number of homeless Boomers. I had not considered that issue.

- Boomers want to age in their own homes, and want to be near kids. Some will move to be near family, particularly when there are grandchildren.
- Silents were well educated, risk averse, covered by DB plans, affluent, had intact marriages, and were generally in good health.
- 80 percent of post-65 Americans live independently, 16 percent with other family members, four percent in institutional settings (like nursing homes).
- Gen X was hardest hit by the great recession; some show new frugality—work less, spend less, spend more time with kids, keep life simple, do-it-yourself culture. I was surprised by this comment about the great recession, and think it bears further review and study.
- Millennials are different: they want advice and have solid relationships with their parents.
- We should also remember that the Boomers are a very large group, currently entering traditional retirement ages. My sense is that they have more debt than the groups before them, and higher expectations. They started work during the time that paternalism was still common, jobs were more plentiful, salaries were increasing beyond the cost of living and employer provided DB plans and health plans were the order of the day. The culture changed around them, mid-career, but many of them did not understand the implications or adjust well. (Early Boomers had much better access to good jobs than the second half of the Boomer group.)

SOCIETAL PERSPECTIVE: ISSUES DRIVING EMPLOYERS' APPROACHES TO BENEFITS

I heard a number of big picture issues that impact employer philosophy and practice:

- The failure to have a national retirement and long-term security policy is a problem. I completely agree.
- Employers differ with regard to their organizational philosophy about retirement security and some employers are in transition. Employers are trying to balance business needs, a competitive environment and employee needs.
- There is a societal loss of longer-term thinking leading to a short-term focus. The evolution of accounting rules requiring market valuations and focus on quarterly financial reporting have contributed to shorter-term thinking. The focus on market values is particularly impactful.
- Many policymakers and others have forgotten to take a macroeconomic view. Budget scoring using “tax expenditures” has changed the way Congress thinks about employee benefits and financial security. This is an important point that I had not considered previously, and I suspect many other actuaries may not have considered it.
- There is no strong Congressional leadership around employee benefits, and when combined with the influence of the more extreme parts of political parties, this creates a problem for sensible benefit legislation.
- There have been many unintended consequences of public policy. For example, while ERISA served to improve financial security in its early years, that changed later as raising tax revenues

became one of the Government’s main objectives. Regulation can protect participants but it can also drive plan sponsors away.

- Complex rules are a big problem: regulations have become far too complex and are creating problems for the system. My view is that there are too many benefit areas where multiple agencies are involved, and where insurance and benefit regulation get intertwined.
- Technology and better choice options create opportunities for more effective benefits. But the various generations use technology in different ways when handling finances and when communicating. Dealing with the generational issues creates challenges.
- Portability is an important issue in light of emerging demographics and work patterns.
- I believe that there is a big difference of opinion on the importance of risk pooling in the future and its value.

My policy wish list includes:

Address national retirement policy issue. It would be very desirable to develop and implement a unified retirement policy for the United States. And even though this seems to be impossible in the current partisan environment, this should continue to be on the list of what needs to happen.

Unify and simplify regulation, or where not possible, provide “road maps” to enable users to understand multiple regulations. Think about long-term disability regulation as an example. Insurance contracts are regulated by state insurance departments and benefit plans by Federal agencies under ERISA. The Americans with Disabilities Act regulates discrimination in employment and the EEOC also enters the picture. The Social Security Administration deals with both disability and retirement benefits. Some disability is connected to worker’s compensation. It is particularly important that regulations support each other and are not inconsistent where there are multiple agencies or where there is a mix of state and federal regulations.

RETIREMENT PLANS AND RETIREMENT

There are major challenges in the U.S. retirement system. Below is my synthesis of some of the comments I heard from the EBRI Policy Forum, the 2014 Society of Actuaries Living to 100 Symposium and other conversations.

- There has been a major move from DB to DC, but individuals are not positioned to make good decisions. We need to focus on making DC plans a more effective retirement plan.
- DC plans can produce adequate retirement benefits (with adequate savings over a long enough time period). Default options are an important element, but are not enough to ensure adequate benefits. Contributions are a major driver of success in DC plans. Both employers and employees need to increase their share of contributions.
- There are very diverse views about the future. Some observers see the death of DB vs. others who focus on new types of risk pooling arrangements that share risk differently. There are also split views on cash balance plans—with different views of their pros and cons. I hope that the new arrangements will grow and that new options will be accepted by policy makers and in the marketplace. The 2014 Pension Research Council conference will focus on a number of new designs.

JOB OPTIONS FOR RETIREES WHO WANT TO CONTINUE WORKING ARE IMPORTANT. A FOCUS ON FLEXIBLE AND PHASED RETIREMENT WOULD BE VALUABLE IN CREATING SUCH JOB OPTIONS.

- At the EBRI policy forum, it was noted that PBGC premiums have become a real barrier to DB plans.
- There are mixed views about the value of and importance of pooling risk. This is particularly important with regard to mortality risk.
- Longer lives should mean longer work lives; retirement age is a big issue and has not kept up with longer lives. This was a key point of discussion at Living to 100 Conference, but was hardly mentioned at all in other forums. It has been pointed out that while life spans have increased a great deal overall, there is a huge amount of variation by group. For example, economic status is correlated with differences in life spans.
- Job options for retirees who want to continue working are important. A focus on flexible and phased retirement would be valuable in creating such job options.
- Job options and work for older Americans were also big discussion topics at both Living to 100, and a forum sponsored by TIAA-CREF in November, 2013. In March, 2014, I was contacted by both a writer working on a story for the *New York Times* and *National Public Radio* on issues related to phased retirement and working in retirement. While this is not a new subject, there seems to be a lot of interest in it at present. This may be the result of Boomers moving into retirement ages.
- At the EBRI policy forum, one of the statements that jumped out at me was that lump sums have damaged the retirement system. A new aspect of lump sums today is that some companies have made lump sum offers to retirees who were already receiving pensions. The pros and cons of lump sums from both

plan sponsor and participant point of view would be a good subject for debate.

- One of the major challenges of a system built on defined contribution plans is that most plans do not include a mechanism for paycheck replacement. It is unclear to me how much interest plan sponsors have in providing lifetime income or any system for paycheck replacement. Where DC plans are primary retirement savings vehicles, I see this as an extremely important topic. This is a major topic of focus for the actuarial profession and the Committee on Post-Retirement Needs and Risks.
- One of the things to watch for is new investment paradigms and options.
- There is a diversity of opinion with regard to how retirement ready the population is, as well as how to actually define retirement readiness. Regardless of the standard used, there are many people reaching traditional retirement ages who have limited resources. Social Security is critically important for much of the population. It is the only source of income for a substantial group of people, and the most important source of income for many more. It is a very important part of retirement, except for the highest income and asset holding Americans. For about three-quarters of the population, it is extremely important.
- Long-term care and major health risks both are very important issues, with the potential to create major problems for retirees. When planning takes these shocks into consideration, the solutions will likely be better than they would have been if they had not been considered. Holistic approaches are important.
- An issue not raised at the Policy Forum and often not raised is the impact

My policy wish list includes:

Enabling new retirement plan designs: There is growing recognition that new plan designs which enable risk pooling and more risk sharing offer alternatives to the public that are better than either the traditional DB or DC.

Encourage more use of Lifetime Income Options:

Offer safe harbors for a menu of default options for the post-retirement distribution period.

Facilitate individuals taking a portfolio approach and annuitizing a little bit at a time. Offer safe harbor to employers who offer a menu of choices for the distribution period—think of it as similar to 404(c)

Offer safe harbor options for illustrations of income in statements. Include showing a range rather than single number as an option covered by the safe harbor.

Disability: Make it possible to provide for continued 401(k) contributions during periods of long-term disability. This is the equivalent of a waiver of premium provision that is available in life insurance, or it can also be viewed as equivalent to continued crediting of service in defined benefit plans.

of long-term disability on retirement security. This is particularly difficult in a DC environment, and this issue also needs attention.

HEALTH PLANS

I am not an expert on health plans and benefits, but am very aware that employer health benefit spending has crowded out retirement benefit spending, and health care benefits have been vital not only to the competitive employment package, but also to retirement security. The EBRI policy forum provided me with ideas as we think about how health benefits fit and where they might be going. I heard the following comments:

- While most employers have not abandoned their health plans, with the introduction of the Affordable Care Act, some have made and/or are predicting changes.

- Private exchanges enable real DC health plans, but might lead to a pull back on wellness benefits.
- Private exchanges may also lead to meaningful health care cost management on an industry level.
- New ideas are enabling employers to hold employees more accountable for health outcomes—a hope was expressed that these ideas will not be lost.
- Boomers are less healthy than the generation before them. Today’s workforce is subject to a great deal of stress, time pressure and uncertainty or change.
- A significant share of health costs are lifestyle related.
- Health problems today: 33 percent of workforce depressed, 33 percent overweight, 40 percent are stressed, 20 percent high blood pressure.
- Dementia is a big problem, particularly at older ages.
- Some employers are reducing or eliminating spousal coverage where the spouse has other coverage options.
- Disability benefits and approaches need to be modified to fit longer work life.

My comment to add to this discussion is that I believe that the competitive employment proposition will likely change. If the exchanges are successful and individuals have good options to get health coverage without employer based coverage, health benefits will be much less important in the employment package. A key question for us is what will take its place and how will the competitive employment package emerge.

Another big topic with regard to health plans in the current environment is retiree health benefits. Employment based post-retirement medical benefits have declined for many years. I believe that they will decline even further in the new environment, increasing the needs for cash and pre-retirement savings, particularly by early retirees.

EMPLOYMENT AND WORKFORCE ISSUES

The world is changing rapidly and the workforce is aging. The conversations at EBRI, at the World Future Society annual meeting in 2013, at Living to 100 in 2014, and at the TIAA-CREF meeting on working longer have led me to think about some key points with regard to the evolving workforce.

CONCLUSION

Thank you to EBRI for an interesting and stimulating policy forum; to TIAA-CREF for focusing on work at older ages; and to the Society of Actuaries’ Living to 100 effort to stimulate broad thinking about longer life spans.

A lot is happening in the economy, the workplace, and with employee benefits. Many moving parts affect each other. As actuaries,

My policy wish list includes:

Phased retirement, longer work and later retirement ages: Over the long run, it is really important to facilitate longer work and to encourage employers to offer phased retirement.

- Develop safe harbors for creative work arrangements and the rehire of retirees with key focus on bona fide termination of employment
- Consider new classifications of workers tailored to encore careers
- Undertake broad review of policy with regard to both retirement ages and phased retirement
- Enable private plans to increase normal retirement ages
- Adjust disability policy to coordinate with higher retirement ages

we need to think about this complex environment, and how we can contribute to the discussion by integrating what is happening around us with the systems on which we are working. We live in a time when Boomers are reaching retirement age and if for no reason other than their sheer numbers, we will likely see a continuum of their impact on and changes in society that they have had all of their lives reflected in changes in what we think about and how the patterns of retirement are evolving. Their actions impact not only them, but also the generations to follow. Our challenge is to find solutions that fit the evolving world, and to help others find solutions that fit their needs.

SOCIAL SECURITY IS THE ONLY SOURCE OF INCOME FOR A SUBSTANTIAL GROUP OF PEOPLE, AND THE MOST IMPORTANT SOURCE OF INCOME FOR MANY MORE.

For more information on how individuals are looking at retirement issues, look at the [research](#) from the Society of Actuaries Committee on Post-Retirement Needs and Risks. A separate article in this issue discusses the results of 2013 Society of Actuaries retirement risk survey. ■

SOA PENSION MORTALITY STUDY: EXPOSURE DRAFTS RELEASED

By Laurence Pinzur



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On Feb. 4, 2014 the SOA released in exposure draft form two research reports that were recently completed by its Retirement Plans Experience Committee (RPEC):

- The RP-2014 Mortality Tables report, which includes 11 new sets of updated gender-specific tables of 2014 mortality rates based on the experience of approximately 10.5 million life-years (and over 220,000 deaths) of participants in uninsured private retirement programs in the United States, and
- The Mortality Improvement Scale MP-2014 report, which presents a new two-dimensional method for the projection of future mortality rates.

These two papers represent the SOA's first comprehensive reexamination of U.S. pension-related mortality assumptions in over a decade and the culmination of a Pension Mortality Study begun by RPEC in late

2009. The objectives of the study were the following:

- Propose an updated set of mortality assumptions that would supersede both the UP-94 and RP-2000 base tables;
- Provide new insights into the composition of gender-specific pension mortality by factors such as type of employment (e.g., collar), salary/benefit amount, health status (i.e., healthy or disabled), and duration since event; and
- Develop an updated mortality projection scale (and associated methodology) that reflects actual historic mortality improvement trends as well as anticipated future levels of increased longevity.

The chart on page 19 presents a summary of the key phases of the project.

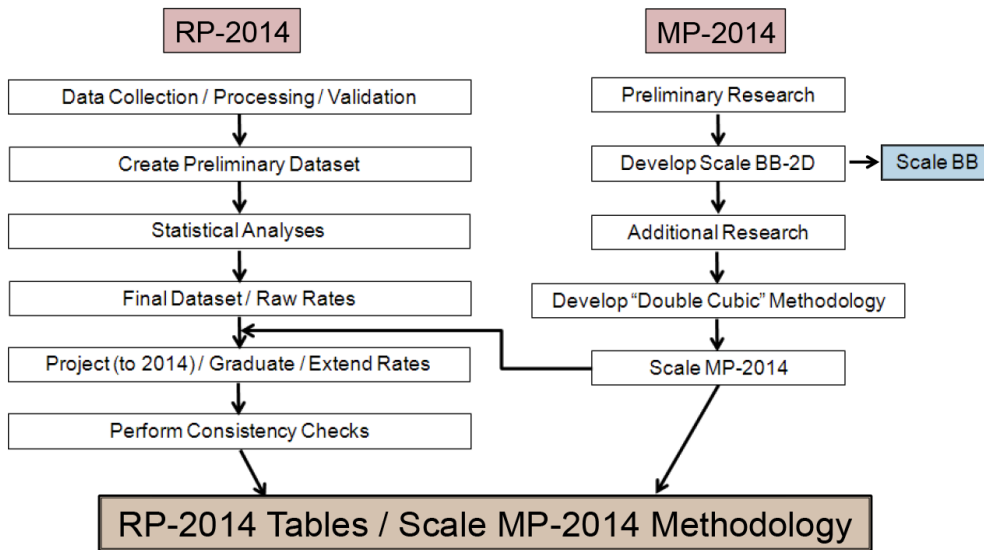
RP-2014 TABLES

RPEC received raw data from 120 private plans and three very large public plans. After an extensive processing and validation process, RPEC developed a final dataset that reflected the mortality experience of 38 (mostly large) uninsured private pension plans.

RPEC first projected the raw mortality rates from their central year (2006) to 2014 using the Scale MP-2014 mortality improvement rates. Those projected rates were then graduated using Whittaker-Henderson-Lowrie methodology, and subsequently extended to extreme (very old or very young) ages using a variety of standard actuarial techniques.

The final result was a set of 11 gender-specific amount-weighted tables with base year of 2014:

- Employee Tables (ages 18 through 80)
 - Total (all nondisabled data)
 - Blue Collar
 - White Collar
 - Bottom Quartile (based on salary)
 - Top Quartile (based on salary)



- Healthy Annuitant (Healthy Retiree and Beneficiary combined) Tables (ages 50 through 120)
 - Total (all nondisabled data)
 - Blue Collar
 - White Collar
 - Bottom Quartile (based on benefit amount)
 - Top Quartile (based on benefit amount)
- Disabled Retiree Table (ages 18 through 120)

For completeness, the committee also developed gender-specific juvenile rates covering ages 0 through 17.

MORTALITY IMPROVEMENT SCALE MP-2014

With the exception of certain remaining statutory requirements, Scale MP-2014 is intended to immediately supersede both Scale AA¹, which was released in 1995, and the interim Scale BB, which was released in

2012. As anticipated by RPEC in its Scale BB Report, the new Scale MP-2014 is two-dimensional, with gender-specific mortality improvement expressed as a function of both age and calendar year. Alternatively, the new gender-specific rates can be thought of in terms of age and year of birth, a basis that provides more insight into the methodology used to construct the individual Scale MP-2014 rates.

The conceptual framework for Scale MP-2014 is similar to that used to develop the two-dimensional mortality improvement rates upon which Scale BB was based (denoted Scale BB-2D). In particular, both scales were patterned after the Mortality Projections model developed over the past decade by the Continuous Mortality Investigation (CMI) group within the Institute and Faculty of Actuaries in the United Kingdom. The key concepts underpinning that CMI model include:

- Near-term mortality improvement rates should be based on recent experience;
- Long-term mortality improvement rates

- should be based on expert opinion; and
- Near-term mortality improvement rates should blend smoothly into the assumed long-term rates over an appropriate transition period.

While RPEC believes that the above conceptual framework for the construction of mortality improvement scales is sound, the committee has come to the conclusion that certain technical aspects of the CMI methodology are more complex than are necessary for most pension-related applications in the United States. As a result, the Scale MP-2014 methodology incorporates a number of computational techniques that are intended to be simpler and more transparent than those used in the CMI model, but without compromising that model's conceptual soundness; see subsection 3.5 of that report for details. This new methodology has the additional benefit of being relatively easy to refresh, enhancing the prospects for more frequent updates to U.S. mortality improvement scales.

The development of credible mortality improvement rates requires the analysis of large quantities of consistent data over long periods of time, two requirements that are difficult to achieve when data for pension mortality studies are collected infrequently and from many different sources. As a consequence, RPEC based the starting historical array for Scale MP-2014 on the most recent Social Security mortality dataset (through calendar year 2009) supplied by the Social Security Administration.

The model's single most important assumption is the long-term rate of future mortality improvement in the United States. Scale MP-2014 is based on an assumed long-term rate of 1.0 percent per annum through age 85, and reflects a modest gradient between ages 85 and 95 before decreasing linearly to

zero at age 115. The rationale for RPEC's long-term rate assumption is described in subsection 3.3 of the MP-2014 report.

ESTIMATED FINANCIAL IMPACT

Most current pension-related applications in the United States involve projection of RP-2000 (or possibly UP-94) base mortality rates using either Scale AA or Scale BB. RPEC believes that it will be considerably more meaningful for users to assess the combined effects of adopting RP-2014 Tables projected with Scale MP-2014, rather than trying to isolate the impact of adopting one without the other. The financial impact of the combined change is expected to vary quite substantially based on the starting mortality assumptions; for example, the impact of switching from a static projection using Scale AA will typically be much more significant than the impact of switching from a generational projection using Scale BB-2D.

The following table presents a comparison of 2014 monthly deferred-to-age-62 annuity due values (at an annual interest rate of 6.0 percent) based on a number of different sets of base mortality rates and generational projection scales, along with the corresponding percentage increases of moving to RP-2014 base rates projected generationally with Scale MP-2014. (For purposes of this table, RP-2014 Employee rates were used for ages through 61, and RP-2014 Healthy Annuitant rates were used at ages 62 and older.)

For example, moving from a mortality basis of RP-2000 (projected generationally with Scale AA) to RP-2014 (projected generationally with Scale MP-2014) would increase the 2014 female age-75 monthly life annuity value by approximately 8.1 percent.

RPEC RECOMMENDATIONS

- RPEC recommends that all pension actuaries in the United States carefully review the findings presented in the two exposure drafts.

- Subject to standard materiality criteria (including Actuarial Standard of Practice No. 35) and the user's specific knowledge of the covered group, RPEC recommends that the measurement of U.S. private retirement plan obligations be based on the appropriate RP-2014 table projected generationally for calendar years after 2014 using Scale MP-2014 mortality improvement rates. (The projection of mortality improvement beyond 2014 also applies to disabled lives.)
- RPEC recommends that the individual characteristics and experience of the covered group be considered in the selection of an appropriate set of base mortality rates. While statistical analyses summarized in this report continue to confirm that both collar and amount quartile are statistically significant indicators of differences in base mortality rates for nondisabled lives, RPEC believes that the use of collar-based tables will generally be more practical than the use of amount-based tables.
- RPEC recommends that users who wish to develop Combined Healthy tables are encouraged to blend appropriately selected RP-2014 Employee and Healthy Retiree tables using plan-specific retirement rate assumptions.

RPEC is currently in the process of reviewing public comments on the two exposure drafts,² and anticipates that final reports will be released by the SOA prior to Sept. 30, 2014. ■

THE NEW SCALE MP-2014 IS TWO-DIMENSIONAL, WITH GENDER-SPECIFIC MORTALITY IMPROVEMENT EXPRESSED AS A FUNCTION OF BOTH AGE AND CALENDAR YEAR OF BIRTH.

Base Rates Proj. Scale		Monthly Deferred-to-62 Annuity Due Values; Generational @ 2014					Percentage Change of Moving to RP-2014 (with MP-2014) from:			
		UP-94 AA	RP-2000 AA	RP-2000 BB	RP-2000 BB-2D	RP-2014 MP-2014	UP-94 AA	RP-2000 AA	RP-2000 BB	RP-2000 BB-2D
Age										
Males	25	1.3944	1.4029	1.4135	1.4115	1.4379	3.1%	2.5%	1.7%	1.9%
	35	2.4577	2.4688	2.4881	2.4880	2.5363	3.2%	2.7%	1.9%	1.9%
	45	4.3316	4.3569	4.3963	4.4012	4.4770	3.4%	2.8%	1.8%	1.7%
	55	7.6981	7.7400	7.8408	7.8739	7.9755	3.6%	3.0%	1.7%	1.3%
	65	11.0033	10.9891	11.2209	11.3199	11.4735	4.3%	4.4%	2.3%	1.4%
	75	8.0551	7.8708	8.2088	8.3367	8.6994	8.0%	10.5%	6.0%	4.4%
85	4.9888	4.6687	5.0048	5.0992	5.4797	9.8%	17.4%	9.5%	7.5%	
Females	25	1.4336	1.4060	1.4816	1.4904	1.5195	6.0%	8.1%	2.6%	2.0%
	35	2.5465	2.4931	2.6145	2.6299	2.6853	5.5%	7.7%	2.7%	2.1%
	45	4.5337	4.4340	4.6264	4.6534	4.7497	4.8%	7.1%	2.7%	2.1%
	55	8.1245	7.9541	8.2532	8.3155	8.4544	4.1%	6.3%	2.4%	1.7%
	65	11.7294	11.4644	11.8344	11.9486	12.0932	3.1%	5.5%	2.2%	1.2%
	75	8.9849	8.6971	9.0650	9.1654	9.3995	4.6%	8.1%	3.7%	2.6%
85	5.7375	5.5923	5.9525	6.0148	6.1785	7.7%	10.5%	3.8%	2.7%	

ENDNOTES

- ¹ Scale MP-2014 replaces Scale AA for pension-related purposes only. The use of Scale AA in connection with statutory group annuity requirements is not affected by this report.
- ² The SOA is soliciting feedback from potential users of the proposed pension mortality assumptions. Comments on the two Exposure Drafts should be sent to Erika Schulty at eschulty@soa.org no later than May 31, 2014.

CANADIAN PENSIONERS' MORTALITY: A REVIEW OF THE FINAL REPORT

By Faisal Siddiqi



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This article provides an overview of the Final Report on Canadian Pensioners' Mortality (Report) of the Pension Experience Subcommittee (subcommittee) of the Canadian Institute of Actuaries' (CIA) Research Committee following its landmark study of mortality patterns in Canada. For the full Report, please visit the CIA website and search for [Document 214013](#).

INTRODUCTION

In 2008, the research committee formed the subcommittee to review mortality experience of Canadian pensioners and to develop and maintain Canadian pension mortality tables and improvement scales.

To achieve those two goals, the CIA commissioned two experience studies:

- The first study ("C/QPP Study") reviewed mortality experience of all persons receiving a retirement pension from the Canada Pension Plan and the Quebec Pension Plan, individually and in both plans together using data from 2005 through 2007. The results are contained in a report prepared by Louis Adam of Université Laval, available at this link: [Phase 2 C/QPP Study](#). The C/QPP Study also reviewed the trends in mortality experience since 1967, the first year that C/QPP pensions became payable, which helped develop the mortality improvement scales in the Report. The results of this part of the C/QPP Study can be found here: [Phase 3 C/QPP Study](#).
- The second study (the Registered Pension Plan Study [RPP Study]), reviewed the experience of a number of Canadian registered pension plans in the public and private sectors. The results of the RPP Study are summarized in the Report.

The primary goals of the two C/QPP studies and the RPP Study were to build base mortality tables and mortality improvement

scales that may be used for actuarial valuations for funding and/or financial reporting purposes. In addition, the Report notes that these same tables may be considered for use to determine lump sum pension commuted values or division of pension benefits on marriage breakdown.

The Report presents a set of mortality rates based on the RPP Study and mortality improvement scales, the latter based on the C/QPP Study and assumptions used in the [26th CPP Actuarial Report](#). As stated in the Report, the subcommittee notes that adjustments to the published tables may be appropriate in many circumstances.

CONSTRUCTION OF THE MORTALITY TABLES

The RPP Study used mortality experience from calendar years 1999 to 2008 from a subset of Canadian public-sector and private-sector registered pension plans. From this data, the following mortality tables for 2014 were developed:

1. 2014 Mortality Table (CPM 2014) – developed from the combined mortality experience of private-sector and public-sector plans.
2. 2014 Public Sector Mortality Table (CPM 2014 Publ).
3. 2014 Private Sector Mortality Table (CPM 2014 Priv).

The final mortality tables can be found via a [link in the report](#) in Section 1.1.1 along with [separate tables](#) produced for the years 1999 to 2013.

The Report makes the following notes and comments regarding the use of these tables:

- **Industry Experience:** The subcommittee was not able to develop mortality tables by industry due to lack of data. However, the subcommittee did make observations on actual to expect-

ed (A/E) ratios relative to the CPM tables by industry and prepared an Excel workbook to assist actuaries in this area.

- **Blue, White, and Mixed Collar:** The subcommittee received very little data by collar type, so no such breakdown was provided.
- **Size Adjustment Factors:** The subcommittee found that in both the RPP Study and C/QPP Study there was significant experience variation by size of pension. As a result, the subcommittee developed size adjustment factors that can be used with the base mortality tables, available via a [link](#) in Section 1.1.4.
- **Application:** The Report expresses the expectation that actuaries working on Canadian pension plans will adopt the table that is most reasonable and appropriate for the plan in question. The subcommittee has the view that actuaries should consider whether modifications to the base tables are warranted to reflect actual and credible experience in plans with sufficient scale and/or experience in similar plans within the same industry.

CONSTRUCTION OF MORTALITY IMPROVEMENT SCALES

Based on the C/QPP Study’s review of trends in mortality experience since 1967, the following male and female improvement scales were developed.

- CPM Improvement Scale B (CPM-B) – improvements by age that decrease in a linear fashion for years 2012 to 2030, and ultimate rates applicable for years after 2030.
- CPM Improvement scale B1-2014 (CPM-B1D2014) – improvement rates by age only, designed to approximate

THE USE OF SIZE ADJUSTMENTS FACTORS IS WARRANTED DUE TO THE OVERWHELMING EVIDENCE THAT ALL ELSE BEING EQUAL, MORTALITY RATES VARY SIGNIFICANTLY WITH THE SIZE OF A PENSION.

CPM improvement Scale B for pension valuations in 2014 and 2015.

The subcommittee recommends that practitioners use the two-dimensional mortality improvement scale CPM-B. CPM-B1D2014 is applicable for 2014 and 2015 valuations only and should not be used thereafter as it would result in an overstatement of actuarial liabilities.

The Report observes that notation for mortality rates and improvement rates is not standardized within the profession. The subcommittee used the following definitions, which were also used by the Society of Actuaries in connection with the two-dimensional Scale BB:

q_x^y	means the probability that a person, age x nearest birthday at the beginning of calendar year y , will die before reaching the end of the calendar year. Both x and y are defined at the beginning of the one-year period.
I_x^y	means the improvement rate in mortality for persons aged x nearest birthday at the start of calendar year $y-1$ to those aged x at the start of calendar year y . In this case, x is constant throughout the one year period, and y is defined at the end of the period.

$$q_x^y = q_x^y (1 - I_x^y)$$

DEVELOPMENT OF MORTALITY TABLES AND SIZE ADJUSTMENT FACTORS

The Report describes data gathering and analysis in some detail and states that

thirteen contributors were ultimately used in the RPP Study. Some points to note regarding the data used are as follows:

- no salary information was used for active lives;
- no beneficiary data was used;
- pensioners with monthly incomes of \$10 or less were excluded and incomes were capped at \$10,000;
- the form of pension was not considered because insufficient information was available;
- IBNR factors were based on the CIA's Individual Annuitant Mortality Study.

Comparing the data with A/E ratios using UP94@2004 Scale AA, the subcommittee found that the UP94@2004 mortality and improvement scale both had much higher mortality rates and that the slope of the curve was quite different from the CPM tables.

INDUSTRY WEIGHTINGS

Each study noted that mortality does vary by industry. However, the data received by the CIA for the RPP Study was not distributed by industry in the same proportions as found in the Canadian population; i.e., education was over-represented in the data while construction and finance were under-represented. However, the subcommittee did adjust the data by industry using Statistics Canada CANSIM Series 280-011 for a count of Canadian DB plans by industry and using information for industry groups under the North American Industry Classification

System and Standard Industrial Classification System (refer to Table 6 in the Report). Records were split into private sector or public sector according to the data. Separate public sector and private sector tables were prepared with the industry-weighted data.

CONSTRUCTION OF THE ACTUAL MORTALITY TABLES

The mortality tables were calculated by Bob Howard using a method approved by the subcommittee, as described in section 2.2.

The Report explains that the use of size adjustments factors is warranted due to the overwhelming evidence that all else being equal, mortality rates vary significantly with the size of a pension. Different size adjustments factors are provided for male and female pensioner groups.

Charts 1 and 2 of the Report illustrate how much lower mortality rates are under the CPM tables as compared to the UP94@2014 rates. The rates coalesce only at ages above 95. Table 10 shows how annuity factors increase in step with monthly pension amounts, reflecting that pension amounts are a key factor in determining mortality rates.

DEVELOPMENT OF THE ACTUAL MORTALITY IMPROVEMENT SCALES

As in previous studies, a new mortality improvement scale was developed in this study. These rates are subjective as they vary by income, level of education and place of residence. The RPP Study did not have enough data to produce a mortality improvement scale but the C/QPP Study did in its Phase III report. Please refer to CAN - 4 - M, F Mortality Improvement Rate Charts, which illustrate that the Scale AA Improvement Scale is too low and that actual mortality improvement has been much higher in Canada since 1967.

The subcommittee then checked the mortality improvement scales against the rates used

THE REPORT SHOWS LIABILITY INCREASES FROM 4.1 PERCENT TO 10.3 PERCENT WHEN COMPARING CPM2014 WITH SCALE CPM-B TO UP94 WITH SCALE AA.

by various social security actuaries. The rates in the future years are lower than the improvement rates currently experienced in the C/QPP Study; however, they provide a level of both conservatism and realism in the mortality improvement scales. For purposes of the Report, the ultimate mortality improvement rates are taken from the 26th CPP Actuarial Report.

The gender-specific improvement scales were developed as follows:

- short-term rates applicable to years 2000–2011 are set equal to the smoothed 10-year experience based on the C/QPP income class 4 (35 percent of maximum pension and above) from the C/QPP Study for ages 65 and higher;
- short-term rates for years 2000–2011 for ages up to age 50 are set equal to the CPP assumption for 2010 as reported in 26th CPP Actuarial Report. Note there are no mortality rates available at these younger ages;
- short-term rates for years 2000–2011 for ages 51–64 are linear interpolations between the above rates for ages 50 and 65;
- ultimate rates (applicable for years 2030 and beyond) for ages 0–114 are set equal to the CPP year 2030 actuarial assumptions for those ages, as disclosed in the 26th CPP Actuarial Report,
- rates for ages 115 and higher are zero;
- rates for years 2012–2019 are derived by linear interpolation between the short-term rates and the ultimate rates.

The subcommittee also encourages the use of the two-dimensional improvement scale versus the one-dimensional table provided for use for the years 2014 and 2015.

FINANCIAL IMPLICATIONS

Based on the results of both the C/QPP Study and the RPP Study, it is clear that the overall level of recent mortality experience is significantly lower than anticipated by UP94 table with Scale AA and exhibits a different shape by age as well. The C/QPP Study also shows that mortality improvement rates experienced in recent years have been substantially higher than indicated by Scale AA. Therefore, the adoption of the CPM tables and scales reflecting Canadian mortality experience is warranted.

Adoption of the tables presented in the Report will likely result in an increase in recognized costs for Canadian pension plans. The Report has attempted to show the impact of adopting the new tables using immediate-annuity and deferred-annuity calculations at an interest rate of 4 percent per annum based on a Jan. 1, 2014 calculation date. Table 11 of the Report (reproduced below) shows increases from 4.1 percent to 10.3 percent when comparing CPM2014 with Scale CPM-B to UP94 with Scale AA. Table 12 also illustrates that size adjustments are material, especially for males, and can result in higher annuity factors.

Table 11.
Monthly life annuities at 4% in 2014 without size adjustment

Table Scale	UP-94 AA	CPM2014 AA		CPM2014 CPM-B	
	Annuity	Annuity	Incr	Annuity	Incr
M55	16.68	17.23	3.3%	17.36	4.1%
M65	13.06	13.98	7.0%	14.17	8.5%
M75	9.09	9.87	8.5%	10.03	10.3%
M85	5.38	5.65	5.0%	5.69	5.7%
F55	17.41	18.04	3.6%	18.23	4.7%
F65	14.10	14.94	6.0%	15.13	7.3%
F75	10.28	11.01	7.1%	11.16	8.6%
F85	6.25	6.63	6.2%	6.68	6.9%

Table 12.
Monthly life annuities on CPM2014 with CPM-B at 4% in 2014 with size adjustment for the indicated monthly pension

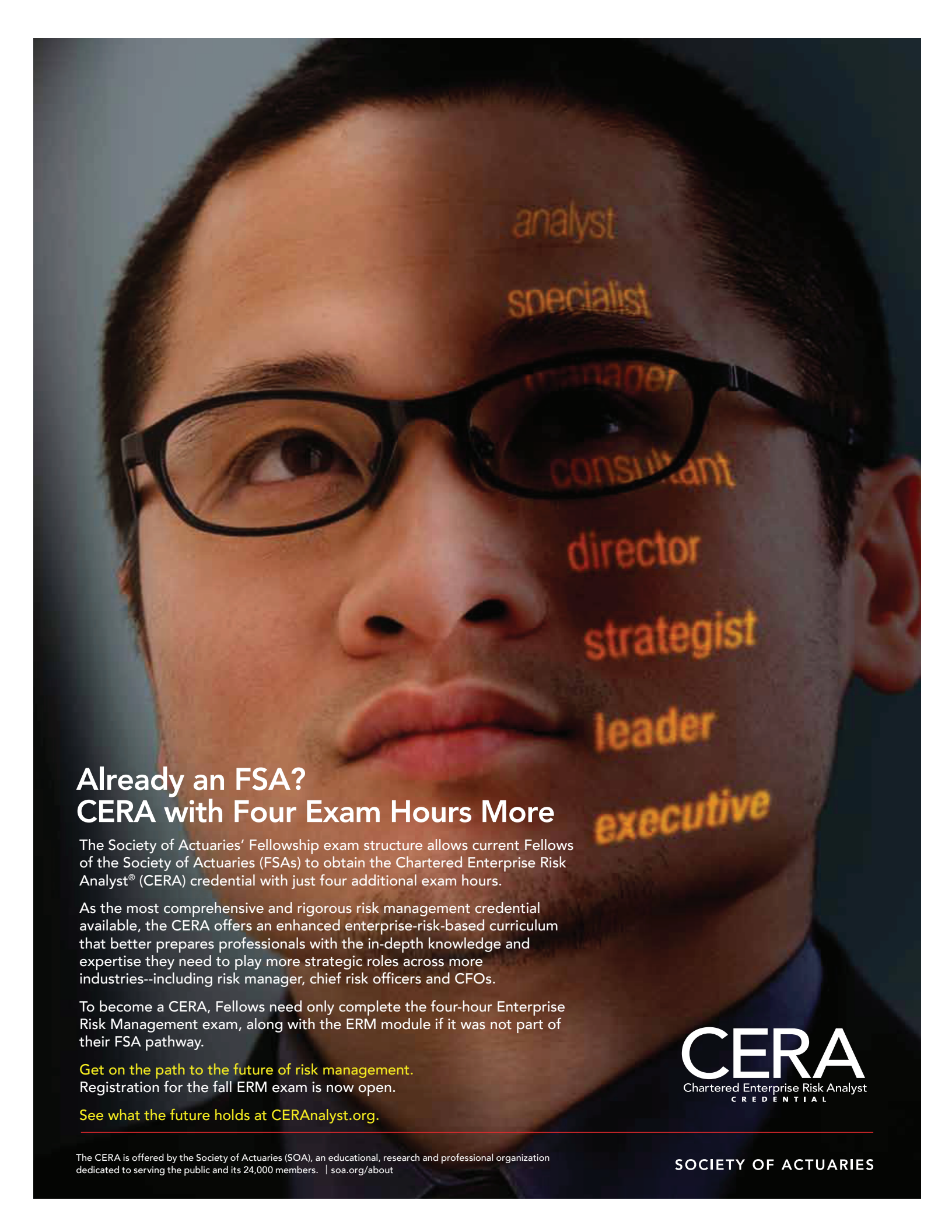
Pension	Not adjusted	\$1,200		\$2,400		\$3,600	
	Annuity	Annuity	Incr	Annuity	Incr	Annuity	Incr
M55	17.36	16.89	-2.7%	17.14	-1.2%	17.54	1.0%
M65	14.17	13.62	-3.9%	13.91	-1.8%	14.39	1.5%
M75	10.03	9.43	-6.0%	9.75	-2.8%	10.28	2.4%
M85	5.69	5.14	-9.5%	5.43	-4.5%	5.91	3.9%
F55	18.23	18.11	-0.7%	18.28	0.3%	18.40	1.0%
F65	15.13	14.98	-1.0%	15.20	0.4%	15.35	1.5%
F75	11.16	10.98	-1.6%	11.24	0.7%	11.42	2.3%
F85	6.68	6.51	-2.6%	6.76	1.1%	6.94	3.8%

CONCLUSIONS

Key conclusions and findings presented in the Report are as follows:

- Canadian mortality experience and improvement rates are better and increase pension costs relative to the United States.
- Pension size is strongly correlated to improved mortality experience.
- Mortality experience differs significantly as between public and private sector pension plan members.

The Report presents the results of a landmark study for Canada for which extensive data analysis was undertaken. Because the Report has significant implications for pension funding and financial reporting, I would recommend that all Canadian actuaries review the Report carefully and that the CIA hold educational sessions at future meetings to explain the Report's methodology, findings and implications. ■



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"THE REFORMER"

AN INTERACTIVE TOOL TO FIX SOCIAL SECURITY

By Eric Atwater



Eric Atwater, FSA, FCA, EA, MAAA, is vice president and consulting actuary at The Segal Company in Atlanta, Ga. He can be reached at eatwater@segalco.com.

BACKGROUND

Social Security provides vital income security to millions of beneficiaries, but it is not sustainable in its current form. The Social Security program currently pays more in benefits than it collects in revenue, and under the latest official projections its trust funds will run out in 2033. At that point, all beneficiaries regardless of age and income will face an immediate 23 percent benefit cut.

Due to this crisis, the Committee for Responsible Federal Budgets (CRFB) has created a tool called "The Reformer" which allows users to choose from a number of options to modify current law in order to close the program's 75-year shortfall and keep it sustainable for future generations.¹

The Reformer lets users pick from a variety of options to modify Social Security and then shows the impact on annual revenue, spending, and trust fund balance. Additionally, it tells the user what percent across-the-board cut to expect absent further action.

ABOUT THE TOOL

The tool is available online at: <http://crfb.org/socialsecurityreformer/>

Once the user accesses the tool, they are taken to the home page of the tool which shows the current projected revenue/expenses and trust fund depletion. There is also a large, gold percent sign that shows how much of the gap is closed. The tool has grouped the choices for the user to modify has into three tabs: Benefit Formula, Other Benefits, and Revenues.

The **Benefit Formula** tab allows the user to vary the primary options related to benefits received from the system. The user has the following options to vary:

- *Reduce (Increase) initial benefits* - user has option of reducing or increasing benefit by any percentage
- *Slow initial benefit growth* - user has

option of slowing initial benefit growth for the top 20 percent, 50 percent or 70 percent of earners

- *Increase retirement age* - user has option of increasing retirement age to age 68 or tying increase to increases in life expectancy
- *Modify cost-of-living adjustments (COLA)* - user has option of changing the methodology used to determine the COLA from the current policy to "Chained CPI," CPI minus 1 percent or CPI-E

The **Other Benefits** tab allows the user to vary ancillary options related to the amount of benefits participants receive from the system. The user has the following options to vary:

- *Reform Disability benefits* - user has option of modifying eligibility and other features related to disability benefits
- *Enact Benefit Enhancements* - user has option of increasing certain benefits like increasing minimum benefit
- *Enact Other Benefit Changes* - user has option of increasing the number of years used to average earnings, tying benefit amount to earnings (i.e., means testing) and reforming spousal benefits

The **Revenue** tab allows the user to vary options related to revenues or taxes received by the system. The user has the following options to vary:

- *Increase (Reduce) Payroll Tax Rate* - user has option of increasing (or reducing) the payroll tax rate by a certain percentage
- *Increase Taxable Maximum* - user has option of increasing the taxable wage base to all earnings, 90 percent of earnings or charge a 3 percent surcharge above the current wage base

- *Raise Additional Revenue* - user has option of increasing additional revenue by including employees not covered by current system, increasing taxation of benefits or applying payroll tax to cafeteria plans
- *Invest in the Stock Market* - user has option of increasing trust fund earnings by diversifying assets to achieve a higher return or diverting payroll tax to “carve-out” accounts

USING THE TOOL

With so many options, I was overwhelmed at what current policy to change. Therefore, I began to think how this tool would be useful in helping society understand the choices available based on their demographic cohort or political affiliation.

I then decided to create four hypothetical groups (Baby Boomers, Generation X, Big Business and Socialist) and vary options based on what is important to each group. I was able to change options that made the system solvent based on each group’s principles but this further highlighted the difficulty in changing the policy. The following are the changes, and percentage of gap closed, each group would hypothetically make to bring the system back into solvency. *Note this is based on my personal views of what these different groups might want:*

- *Baby Boomers* (100 percent of gap closed) – slow initial benefit growth for top 70 percent of earners, increase retirement age to 69 and index to increases in life expectancy, reduce fraud and overpayments
- *Generation X* (100 percent of gap closed) – slow initial benefit growth for top 50 percent of earners, increase retirement age to 69 and index to increases in life expectancy, modify COLA to use “chained CPI,” cover newly hired state/local government workers and diversify investments in trust fund to increase returns

THE REFORMER LETS USERS PICK FROM OPTIONS TO MODIFY SOCIAL SECURITY AND SHOWS THE IMPACT ON THE TRUST FUND BALANCE ALONG WITH WHAT PERCENT OF AN ACROSS-THE-BOARD CUT TO EXPECT ABSENT FURTHER ACTION.

- *Big Business* (97 percent of gap closed) – slow initial benefit growth for top 20 percent of earners, increase retirement age to 68, modify COLA to use “chained CPI,” reduce fraud and overpayments, tighten disability eligibility, prohibit applications above early retirement age, increase earnings averaging period to 38 years and cover newly hired state/local government workers
- *Socialist* (100 percent of gap closed) – increase minimum benefit, apply means testing, increase payroll tax to 100 percent of earnings and cover newly hired state/local government workers

CONCLUSION

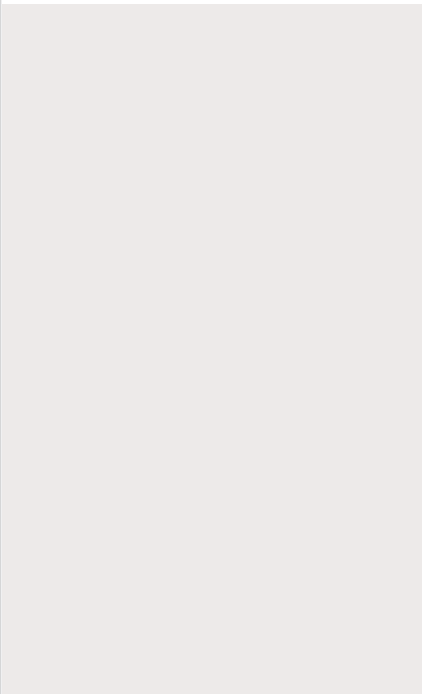
The Reformer is a very good tool for the user to get familiar with regarding the impact of various policy changes on the system’s solvency. For me, it highlighted the job policy makers will have as they tackle this issue. The question is why aren’t people using the tool more? The answer is complicated, but I assume the primary reason is that people are not that interested or do not know the tool exists. We certainly will have a tough time convincing people to get more interested in the topic. However, we can certainly make people aware of the tool so they can see the impact that various policy changes have on Social Security’s long-term solvency. ■

ENDNOTES

¹ Editor’s Note: The American Academy of Actuaries also has a similar tool available on their website at <http://www.actuary.org/content/play-social-security-game>.



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CHANGES TO THE U.K. STATE PENSION AGE

By Pensions Policy Institute

Editor's Note: *This article is being reprinted with permission from the Pension's Policy Institute.*

THE GOVERNMENT'S PROPOSALS

The Pensions Bill proposes to implement a new single-tier state pension from April 2016 that will replace the current Basic State Pension (BSP) and the State Second Pension (S2P). It also makes proposals for increases to the State Pension Age.

The White Paper¹ illustrates the new pension as being set just above the current Guarantee Credit level, at £144 per week (in 2012/13 prices), although the actual level will not be set out in primary legislation, but will be announced by the Government of the day closer to the implementation date of April 2016. The changes will not apply to people who are over State Pension Age (SPA) in April 2016, including those people who reach State Pension Age between now and then.

The single-tier pension will lead to the end of new accrual of S2P and consequently contracting out from S2P.

Alongside the introduction of the single-tier the Government has also proposed a new framework to be used for setting the State Pension Age (SPA) in future.

BACKGROUND

The SPA for women has been increasing from April 2010 in a series of steps to reach age 65 by November 2018 when it will be equal for both men and women. The SPA for women is increasing to 62 in 2014. Both men and women will then see their SPA increase to 66 by 2020.

Legislation to increase the SPA to age 67 in the mid 2030s and 68 by the mid 2040s for both sexes was enacted in 2007.² The Government has since included in the Pensions Bill a proposal to bring forward the increase of SPA to reach age 67 by the mid 2020s.³

The impact of the Government's single-tier state pension reform is a research project funded by the Nuffield Foundation

The PPI is publishing a series of briefings to provide a detailed, comprehensive and independent analysis of the impact of introducing the single-tier state pension.

The first briefing (June 2013) described the main components of the Government's state reform plans and an initial analysis of the possible impact of the reforms on individuals. The second and third briefings (both published in October 2013) considered the management of the transition between the current system and the single-tier pension and the potential impact of a switch away from the triple-lock back to uprating by earnings.

The fourth briefing being published alongside this one considers the abolition of contracting out.

Other analysis will cover:

- Government cost, spending and long-term retirement income implications.

For more information, please contact the PPI.

This briefing explores differences in life expectancy in the UK and the implications of changes to the State Pension Age.

This development reflects changes in the life expectancy of the general population. As life expectancy increases, the state pension would be paid to people for an increasing number of years if the SPA remained unchanged.

The report prepared by the Pensions Commission in 2006 outlined the requirement for the state pension to be sustainable and affordable in the long-term and to be fair between generations.⁴ Both recent changes to the SPA and provisions to review the SPA in the future represent developments to ensure that the state pension remains consistent with these requirements.

The Pensions Bill, currently progressing through Parliament, outlines provisions for the SPA to be reviewed on an on-going basis.

**Chart 1:
Review Process For Setting SPA**

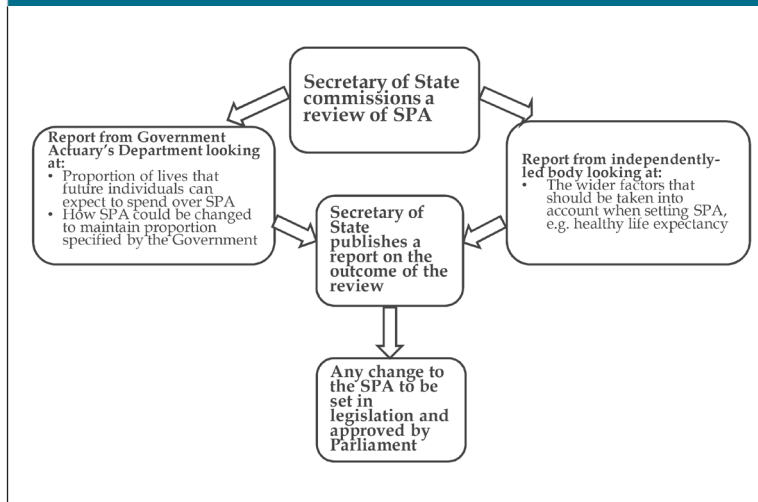


Chart 1, reproduced from the House of Commons library note on the State Pension Age⁵, outlines the review process for SPA. The principle informing future changes to the SPA is that on average an individual should spend ‘up to a third of their adult life in retirement’.⁶ For this purpose adult life is defined as starting at age 20.⁷ In the Autumn Statement 2013, the Chancellor illustrated this principle as implying that the SPA would increase to 68 by the mid 2030s and to 69 by the late 2040s.⁸

Other factors likely to be taken into account include healthy life expectancy, socio-economic, regional variations and economic concerns such as labour market conditions for older workers.⁹ The Pensions Bill specifies that, as part of the review process, both the Government Actuary’s Department and an independent committee must submit reports, which must be published before the end of the period of 6 years beginning with the day on which the previous reports were published, with the first reports being published before 7 May 2017.

The review framework will look to give a minimum of ten years’ notice to those individuals affected by future changes to the SPA.¹⁰

MEASURES OF LIFE EXPECTANCY

Life expectancy will be one of the main factors that influences changes to the State Pension Age (SPA). However, life expectancy can be measured in different ways.

Life expectancy can be defined as how long someone is expected to live based on a set of probabilities of surviving from one age to the next; for instance, how many 65 year-olds are likely to survive to age 66. Once these probabilities are calculated, these are used to calculate the average lifespan.

There are two ways of calculating life expectancy, the period and cohort measures.

PERIOD LIFE EXPECTANCY

The Office for National Statistics (ONS) defines period life expectancy as:

‘Period life expectancy at a given age for an area is the average number of years a person would live, if he or she experienced the particular area’s age-specific mortality rates for that time period throughout his or her life. It makes no allowance for any later actual or projected changes in mortality. In practice, death rates of the area are likely to change in the future so period life expectancy does not therefore give the number of years someone could actually expect to live. Also, people may live in other areas for at least some part of their lives.’¹¹

For example, UK period life expectancy at birth takes a single year and uses the survival probabilities for all ages in that single year to reach an average lifespan. Therefore this is a snapshot of life expectancy at any one time and does not

take account of the fact that, for instance, younger cohorts may have greater life expectancy at age 65 than current 65-year-olds.

COHORT LIFE EXPECTANCY

The ONS defines cohort life expectancy as:

‘Cohort life expectancies are calculated using age-specific mortality rates which allow for known or projected changes in mortality in later years and are thus regarded as a more appropriate measure of how long a person of a given age would be expected to live, on average, than period life expectancy.’¹²

This allows for the fact that younger cohorts will tend to have greater life expectancies at a given age than people who are currently that age if recent trends of people being more likely to survive, and less likely to die, at each age continues. This can be seen and measured from past improvements to mortality, and calculations of cohort life expectancy look to take account of this.

Chart 2 compares the period and cohort measures of males and females aged 65 in a given year. The difference between these two measures is between 2 and 3 years in the given years.

While the Department for Work and Pensions’ (DWP) background note¹⁴ on calculating rises to the SPA states that the cohort measure of life expectancy should be used in setting SPA, some of the analysis used to consider the impact of SPA increases—and which could potentially be used in the review process of SPA—is based on the period measure of life expectancy.

For example, healthy life expectancy refers to years spent in good or very good general health, and is often used alongside estimates of life expectancy to consider whether individuals will be able to have an active retirement.¹⁵ Measures of healthy life expectancy

Calculation of period v cohort life expectancy¹³

Period life expectancy in 2013 for a person aged 65 would be calculated using the mortality rate for age 65 in 2013, for age 66 in 2013, for age 67 in 2013 and so on.

Cohort life expectancy in 2013 for a person aged 65 would be calculated using the mortality rate for age 65 in 2013, for age 66 in 2014, for age 67 in 2015, for age 68 in 2016 and so on.

Chart 2: Comparison of period and cohort measures of life expectancy

Life expectancy (years) of individual aged 65 in the given year				
Year	Males		Females	
	Period measure	Cohort measure	Period measure	Cohort measure
2013	18.5	21.4	21.0	24.0
2023	20.6	22.6	23.0	25.2
2033	21.9	23.7	24.3	26.3
2043	22.9	24.8	25.3	27.3
2053	24	25.9	26.3	28.4

Source: ONS population projections

Chart 3: Period measures of life expectancy and healthy life expectancy provide an estimate of the proportion of life after age 65 spent in good health

Life expectancy and healthy life expectancy (years) at age 65, 2008-10						
	Life expectancy		Healthy life expectancy		Proportion of life over 65 spent in good health	
	Male	Female	Male	Female	Male	Female
United Kingdom	17.8	20.4	10.1	11.6	57%	57%
England	18.0	20.6	10.3	11.8	57%	57%
Scotland	16.6	19.2	8.6	10.8	52%	56%
Wales	17.5	20.2	10.3	10.0	59%	50%
Northern Ireland	17.3	20.1	9.5	10.8	55%	54%

Source: PPI analysis of ONS, *Health expectancies in the United Kingdom*

are often based on the period rather than the cohort measure of life expectancy—they are based on current levels of observed health in the population at different ages, and make no allowance for future changes. This makes the analysis useful for showing differences based on the current population—for example how much of retirement is currently spent in good health and ill health—and how this has changed over time. But these estimates are less useful as a guide to future experience, where many factors are likely to change. Similarly, many estimates of how life expectancy varies by local area are also based on period life expectancy.

The use of the period measure risks significantly underestimating both the number of years of healthy life and life expectancy for future cohorts, and there is also the risk of confusion where the measures used to report life expectancy and healthy life expectancy are inconsistent. ONS figures using the period measure calculate healthy life expectancy at birth to be 63.2 for males and 64.2 for females born in England in 2009-11¹⁶, with total life expectancy at birth at 78.9 years for males and 82.9 for females.¹⁷ But ONS cohort projections for individuals born in England in 2011 are 90.7 years for males and 94.0 years for females.

Chart 4: Estimates of male healthy life expectancy based on cohort measure of life expectancy

Life expectancy and healthy life expectancy*(years) of male aged 65 in the given year				
Year	Life expectancy	Healthy life expectancy with different assumptions regarding proportion of life over 65 spent in good health		
		57%	50%	65%
2013	21.4	12.2	10.7	13.9
2023	22.6	12.9	11.3	14.7
2033	23.7	13.5	11.9	15.4
2043	24.8	14.1	12.4	16.1
2053	25.9	14.8	13.0	16.8

* Healthy life expectancy figures are based on the assumption that approximately 57% of life after 65 is spent in good health
Source: PPI analysis of ONS, *Health expectancies in the United Kingdom* and ONS population projections

Although period measures of life expectancy are likely to underestimate future life expectancy, the period measures for life expectancy and healthy life expectancy at age 65 provide an estimate of the proportion of life after 65 spent in good or very good health. Chart 3 on page 2, shows measures of period life expectancy and healthy life expectancy at age 65 by country and sex, using ONS figures. These figures suggest that approximately 57% of life after age 65 is spent in good or very good health.

If it is assumed that the proportion of life spent in good or very good health will not change in the future, this proportion can be used in conjunction with cohort measures of life expectancy to give an indication of potential healthy life expectancy—in effect keeping constant the proportion of time spent over the age of 65 in good or very good health.

Chart 4 shows cohort measures of life expectancy and healthy life expectancy of males aged 65 in 2013 and 10-year intervals to 2053, based on applying the assumption that approximately 57% of life after age 65 is spent in good or very good health and that the proportion remains constant over time. Chart 5 shows the same measures for women aged 65 in 2013 and selected years.

However, the proportion of life spent in good or very good health after age 65 might decrease as life expectancy increases if, beyond a certain age, very few people experience good health. Similarly, other factors such as medical advances or lifestyle improvements might increase the proportion of life spent in good health after age 65. To reflect this uncertainty, Charts 4 and 5 also show estimates of healthy life expectancy if the proportion of years spent in good health after age 65 reduces to 50% or increases to 65%.

ESTIMATES AROUND LIFE EXPECTANCY

Chart 6, provides estimates of the year in which a third of adult life would be spent in retirement for the given State Pension Age (SPA). This indicates the trigger year, for each SPA, where future life expectancy would be a third of total adult lifetime (assumed to start at age 20). For instance, if these estimates are accurate and the principle is applied, we might expect the SPA in the United Kingdom (UK) to rise to 68 in 2033, provided no allowance is made for regional variations or other factors. These figures are based on PPI analysis of ONS cohort life expectancies.

The indication by the Government that SPA might increase to 68 by the mid 2030s and to 69 by the late 2040s is consistent with these estimates. The trigger year in which the SPA would need to increase to 68 to avoid more than a third of adult life being spent in retirement is 2033. The trigger year in which the SPA would need to increase to 69 to avoid more than a third of adult life being spent in retirement is 2046.

These figures mask differences between the sexes; for instance, for women the trigger year in which the SPA would need to increase to 67 to avoid more than a third of adult life being spent in retirement is 2010, while the equivalent year for men would be 2032.

In addition, these figures apply to the UK as a whole, and there are significant differences in estimates of life expectancy within the UK. While for England, 2032 is the trigger year in which the SPA would need to increase to 68 to avoid more than a third of adult life being spent in retirement, the first year in which this would happen in Scotland is 2045. For Wales and Northern Ireland, the trigger year in which the SPA would need to increase to 68 to avoid more than a third of adult life being spent in retirement is 2036 and 2037 respectively.

Chart 5: Estimates of female healthy life expectancy based on cohort measure of life expectancy

Life expectancy and healthy life expectancy*(years) of female aged 65 in the given year				
Year	Life expectancy	Healthy life expectancy with different assumptions regarding proportion of life over 65 spent in good health		
		57%	50%	65%
2013	24.0	13.7	12.0	15.6
2023	25.2	14.4	12.6	16.4
2033	26.3	15.0	13.2	17.1
2043	27.3	15.6	13.7	17.7
2053	28.4	16.2	14.2	18.5

* Healthy life expectancy figures are based on the assumption that approximately 57% of life after 65 is spent in good health
Source: PPI analysis of ONS, *Health expectancies in the United Kingdom* and ONS population projections

Chart 6: Year in which SPA would increase if the principle were applied

First year in which 33% of adult life* would be spent in retirement					
New SPA	United Kingdom	England	Scotland	Wales	Northern Ireland
66	2010	2009	2020	2012	2012
67	2021	2019	2033	2023	2024
68	2033	2032	2045	2036	2037
69	2046	2045	2057	2049	2050

* Adult life starts at age 20
Source: PPI analysis of ONS population projections

The trigger year in which the SPA would need to increase to 69 to avoid more than a third of adult life being spent in retirement ranges from 2045 (England) to 2057 (Scotland).

The review process outlined in the Pensions Bill, currently being debated in Parliament, provides for regional differences to be taken into account. However, it is unlikely that there would be different SPAs for different areas of the UK as this may be unpopular and would be difficult to administer. If there continues to be one SPA throughout the UK, individuals in Scotland,

Wales and Northern Ireland, who retire at SPA, may experience shorter retirements and may spend a greater proportion of their retirement in ill health than individuals in England. In addition, there may be significant variation in life expectancy across regions and localities within each country of the UK as well as between the countries. For example, ONS reported that healthy life expectancy was higher in the South of England than in the North of England.¹⁸

However, regional differences in life expectancy and healthy life expectancy are themselves a significant issue that could be addressed by other policies. For example, organisations such as those that work in the field of public health are responsible for designing strategies to address health inequalities that could also affect life expectancy. Inequalities in life expectancy between different sections of the population could be addressed alongside changes in SPA and are not necessarily a reason not to increase SPA. It is important that the public has confidence in the review process for the SPA as this has implications for a number of issues, such as an individual's payment of National Insurance contributions and their eligibility for other benefits such as Housing Benefit.

CONCLUSION

The White Paper outlined provisions for the State Pension Age (SPA) to be reviewed on a regular basis and, subject to Parliamentary progress, this will be enacted in the Pensions Act. The principle informing changes to the SPA is that an individual should spend no more than a third of their adult life in receipt of the state pension. Other factors likely to be taken into account include healthy life expectancy, socioeconomic and regional variations and economic concerns.

Two ways of measuring life expectancy are often used- period and cohort life expectancy. Cohort life expectancy recognises the fact that younger cohorts will tend to have

greater life expectancies at a given age than people who are currently that age if it is assumed that survival probability continues to increase. For this reason, the DWP states that the cohort measure of life expectancy should be used to calculate increases to SPA. Period measures of life expectancy, such as those often used to estimate healthy life expectancy or variations by region, are useful in highlighting differences, for example in health status or between regions. However, as they make no allowances for future changes, they tend to understate total life expectancy compared to ONS cohort based projections.

The indication by the Government that the SPA might increase to 68 by the mid 2030s and to 69 by the late 2040s is consistent with PPI estimates of cohort life expectancy.

However, there are differences in terms of life expectancy across countries within the UK. For instance, while in England, 2032 is the first year in which a third of adult life would be spent in retirement for the SPA of 68, this would not happen until 2045 in Scotland.

The review process outlined in the White Paper provides for regional differences to be taken into account. However, it is unlikely that there would be different SPAs for different areas of the UK. If there continues to be one SPA throughout the UK, individuals in Scotland, Wales and Northern Ireland, who retire at SPA, may spend a greater proportion of their retirement in ill health than individuals in England. However, inequalities in life expectancy between different sections of the population could be addressed alongside changes in SPA, and are not necessarily a reason not to increase SPA.

The issues described above highlight the importance of ensuring that the review process for the SPA is independent and transparent and has the confidence of the public. As well

as affecting an individual's receipt of the state pension, the SPA has implications for a range of issues such as an individual's payment of National Insurance contributions and their eligibility for other benefits such as Housing Benefit.

For more information on this topic, please contact Melissa Echalié 020 78484245 melissa@pensionspolicyinstitute.org.uk www.pensionspolicyinstitute.org.uk

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ENDNOTES

- ¹ DWP (2013) *The single-tier pension: a simple foundation for saving*.
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- ⁴ Pensions Commission (2006) *A New Pension Settlement for the 21st century*
- ⁵ House of Commons library (2013) *State Pension age—2012 onwards*
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- ⁷ DWP (2013) *The core principle underpinning future State Pension age rises: DWP background note*
- ⁸ HM Treasury (2013) *Autumn Statement*
- ⁹ DWP (2013) *The single-tier pension: a simple foundation for saving*
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- ¹¹ <http://www.ons.gov.uk/ons/guide-method/method-quality/specific/population-and-migration/demography/guide-to-periodand-cohort-life-expectancy/index.html>
- ¹² <http://www.ons.gov.uk/ons/guide-method/method-quality/specific/population-and-migration/demography/guide-to-periodand-cohort-life-expectancy/index.html>
- ¹³ <http://www.ons.gov.uk/ons/guide-method/method-quality/specific/population-and-migration/demography/guide-to-periodand-cohort-life-expectancy/index.html>
- ¹⁴ DWP (2013) *The core principle underpinning future State Pension age rises: DWP background note*
- ¹⁵ ONS *Guide to life expectancy in the United Kingdom*
- ¹⁶ These figures include people who are in poor health and subsequently die before reaching State Pension—this also accounts for the low figure for healthy life expectancy at birth.
- ¹⁷ ONS *Life Expectancy and Healthy Life Expectancy for males and females at birth in England 2009-11*
- ¹⁸ <http://www.ons.gov.uk/ons/rel/disability-and-health-measurement/healthy-life-expectancy-at-birth-for-upper-tier-localauthorities--england/2009-11/sty-healthy-life-expectancy.html>

TEXAS PRB GUIDELINES FOR ACTUARIAL SOUNDNESS AND RECENT GASB CHANGES

By Dan Moore



Dan Moore, FSA, FCA, EA, MSPA, MAAA, is an actuary at Texas Pension Review Board in Austin, Texas. He can be reached at danpmoore@gmail.com.

The Texas Pension Review Board (PRB) is the state agency mandated to oversee all Texas public retirement systems, both state and local, in regard to their actuarial soundness and compliance with state law. The Texas Legislature created the PRB in 1979. In 1984, the PRB adopted its *Guidelines for Actuarial Soundness*, which are consistent and complementary to GASB (Governmental Accounting Standards Board) disclosure requirements (both the current requirements – GASB 25 & 27, and the new requirements – GASB 67 & 68.)

The PRB *Guidelines for Actuarial Soundness* (Guidelines) are guidelines, and do not have the force of a statute. The principal enforcement measure is for the PRB to invite a retirement system to appear before the PRB to explain whether, how and when they plan to return the plan to actuarial soundness.

The PRB revisited the Guidelines in 1996, but did not take action on amending the Guidelines at that time. Around the same time, the Governmental Accounting Standards Board (GASB) was considering a similar proposal. GASB adopted their proposal and began a phase in period from 1996 to 2006 for changing the recommended amortization period from 40 years to 30 years.

In September 2011, the PRB adopted changes to the Guidelines, which are explained below. The current Guidelines are as follows:

PRB Guidelines for Actuarial Soundness

1. The funding of a pension plan should reflect all plan obligations and assets.
2. The allocation of the normal cost portion of the contributions should be level or declining as a percent of payroll over all generations of taxpayers.
3. Funding of the unfunded actuarial accrued liability (UAAL) should be level or

declining as a percent of payroll over the amortization period.

4. Funding should be adequate to amortize the unfunded actuarial accrued liability (UAAL) over a period not to exceed 40 years, with 15–25 years being a more preferable target. Benefit increases should not be adopted if all plan changes being considered cause a material increase in the amortization period and if the resulting amortization period exceeds 25 years.
5. The choice of assumptions should be reasonable, and should comply with applicable actuarial standards.

The primary 2011 changes to the Guidelines were to Guidelines 4 and 5. Previously, Guideline 5 mandated that assumptions be “reasonable in the aggregate.” Now, Guideline 5 refers to applicable actuarial standards, including pension-related Actuarial Standards of Practice (ASOPs) issued by the Actuarial Standards Board of the American Academy of Actuaries.

The change to Guideline 4 was significant because most of the focus of discussion about the PRB Guidelines concerns a pension plan’s amortization period. The 40-year upper limit was retained, but the preferred amortization period was shortened from 25–30 years to 15–25 years. Also, a sentence was added providing a recommended restriction on providing benefit increases in the absence of a funding trajectory paying off the UAAL in 25 years or less.

The PRB amortization period of a plan is a numerical measure of its funding trajectory—i.e., a deterministic forecast of the plan’s future cashflows based on a snapshot of the present. The deterministic forecast includes an asset return at the plan’s expected rate of return, and payroll growth at an assumed rate, with contributions con-

tinuing at the present percentage of payroll. The lower the amortization period, the better the plan's funding trajectory, and vice versa.

Amortization periods for Texas public pension plans range from zero (for a plan with no UAAL—i.e., 100 percent of the actuarial accrued liability (AAL) is funded) to an infinite amortization period (i.e., under the current trajectory of the plan funding, the UAAL will never be paid off). A plan with a zero amortization period must still fund the cost of benefits as they accrue (i.e., the normal cost), and there is no guarantee that the plan will remain 100 percent funded.

A plan with an infinite amortization period, on the other hand, has a funding trajectory that indicates the plan will run out of money at some point in the future. The PRB makes public the amortization period for 93 actuarially funded Texas public pension plans several times a year. As of this writing (February 2014), 12 of the 93 plans have an infinite amortization period, based on the most recently performed actuarial valuation.

A related measurement is the plan's GASB 27 annual required contribution (ARC). Generally, a plan that receives a sponsor contribution at least equal to the ARC will have an amortization period of 30 years or lower. Despite the 'required' in its name, the ARC is not required, but it has become a de facto funding standard for public pension plans.

Most public pension plans require employee contributions, usually (in effect) on a pre-tax basis. The ARC refers to the sponsor contribution (sometimes the term 'total ARC' is used to refer to the sponsor plus employee contribution based on an amortization period of 30 years). So, the ARC is the sponsor contribution (in addition to the employee contributions) needed to fund the

THE PREFERRED AMORTIZATION PERIOD WAS SHORTENED FROM 25–30 YEARS TO 15–25 YEARS. THERE WAS A RECOMMENDATION TO IMPOSE A RESTRICTION ON PROVIDING BENEFIT INCREASES UNLESS THE UAAL IS 25 YEARS OR LESS.

plan's normal cost and amortize the UAAL over 30 years.

Some plan sponsors contribute on a closed amortization period basis; their amortization period decreases by one each year. Others contribute on a rolling amortization period basis; their amortization period stays the same—generally at 30 years. Others contribute a fixed percentage of payroll, which may be more or less than the GASB 27 ARC. The amortization period for these plans may change significantly from year to year.

Two examples of plans to which the sponsor contributes a fixed percentage of payroll are the two largest Texas retirement systems: Teacher Retirement System (TRS) and Employees Retirement System (ERS). 2013 legislation improved the funding trajectory for both of these plans. TRS went from having an infinite amortization period to a 28-year amortization period. ERS's amortization period remained at infinite, but the projected asset depletion date was pushed back to 2052.

The focus of the PRB Guidelines has always been on funding—i.e., are the benefits promised under the plan being funded adequately? GASB disclosures have provided a consistent, complementary measure in the GASB 27 ARC. A few words are in order about the coming changes in the GASB disclosure requirements, as the GASB pension focus will shift from a de facto funding standard to strictly disclosure.

GASB 67 mandates disclosures for public pension plans, and GASB 68 mandates disclosures for public pension plan sponsors (employers and non-employers). In short, GASB disclosures will still be consistent and complementary to the PRB amortization period, but GASB’s spotlight will soon shine more brightly on plans whose funding trajectory is the poorest. Under GASB’s new disclosures, plans with a poor funding trajectory must disclose their projected asset depletion date, assigned by GASB 67 Paragraph 31b(1)(e) and GASB 68 Paragraph 30. This projected asset depletion date is used in the calculation of the weighted av-

erage GASB 67/68 discount rate (resulting in an increased plan sponsor balance sheet liability for plans that have a projected asset depletion date). The disclosure of this date is illustrated in GASB 67 Appendix C, Illustration 2, Table 3, and in GASB 68 Appendix C, Illustration 1, Table 3.

The group of plans with an infinite PRB amortization period is likely to highly overlap the group of plans disclosing a projected asset depletion date. As the devil may be in the details, here is a summary of the differences between the calculations that indicate a plan with a PRB infinite amortization peri-

Calculation Differences		
Calculation Input	PRB Amortization Period	GASB 67/68 Projected Plan Asset Depletion Date
Cost method	Cost method used for funding ^a	EAN percent of pay ^a
Asset valuation	Actuarial Value of Assets ^b (AVA) used in the actuarial valuation	Market Value of Assets (MVA)
Projected contributions	Actual contribution for the year for which actuarial valuation is performed, projected as a level percent of payroll; and if applicable, legislated future contribution rate changes	Per GASB 68 Paragraph 28 ^c
Plan provisions	Ad hoc COLAs ^d not assumed to repeat	Certain ad hoc COLAs ^d assumed to repeat
Employee group	Future new entrants excluded	Fixed-rate sponsor + employee contributions in excess of normal cost for future new entrants may be included

^a A variety of cost methods may be used to calculate a plan’s recommended contribution. One method, EAN percent of pay, is the Entry Age Normal cost method, with the normal cost determined as a level percent of an employee’s pay throughout his career. This method is required for GASB 67/68 disclosure.

^b Actuarial Value of Assets (AVA) may be set at market value. More often, AVA is a smoothed value, intended to track the market value of assets with fewer up and down fluctuations.

^c GASB 68 Paragraph 28: Other than certain described circumstances (for which (actuarial) professional judgment should be applied), an average of the contributions over the most recent five year period should be projected as a level percent of pay or of ARC.

^d An ad hoc COLA (cost of living adjustment) is a one-time, permanent increase in the level of retiree benefits authorized by a plan amendment or board action.



sure of the direction public pension plans are heading is the first step in keeping them on a sustainable course. The disclosure of Texas’ public pension plans’ PRB amortization periods will soon be supplemented by a GASB 67/68 disclosure of whether the plan is on a trajectory to deplete its assets, and if so, when. ■

od and whether the plan has a GASB 67/68 projected plan asset depletion date:

Under the PRB Guidelines, a plan may have an infinite amortization period. Starting in 2015, (i.e., for fiscal years ending 6/30/2014 and later), such a plan will also make disclosures under GASB 67, which will provide a further calibration of the funding trajectory; namely, whether and when the plan’s assets are expected to be depleted. To be sure, additional disclosures will be required by GASB 67/68, but the projected asset depletion date is one that will likely resonate with public pension plan stakeholders. Also, public pension plans are free to continue to use the GASB 27 ARC calculation, even after the requirement to do so goes away.

The PRB Guidelines for Actuarial Soundness have guided the funding of Texas public pension plans for 30 years. The 2010-2011 review process for the Guidelines revealed wide support among stakeholders for the PRB amortization period as a robust, meaningful measure of funding trajectory. Louis Brandeis remarked that “sunlight is said to be the best of disinfectants”; public disclo-

GFOA BEST PRACTICE

ACTUARIAL AUDITS (2014) (CORBA) (NEW)

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BACKGROUND

Due diligence requires that pension plan fiduciaries and plan sponsors exercise prudence in selecting service providers such as actuaries, and monitor the quality of their work. An *actuarial audit* is a valuable tool for monitoring the quality of actuarial services performed on behalf of the pension plan.

An actuarial audit involves engaging the services of an outside actuary (*reviewing actuary*) to scrutinize the work of the plan's consulting actuary.¹ Actuarial audits are helpful for several reasons:

1. They enhance the credibility of the actuarial valuation process by providing independent assurance that it was performed in accordance with actuarial standards of practice;
2. They increase public trust in how the pension plan is being governed;
3. They help plan fiduciaries to assess whether the pension plan is meeting its funding objectives;
4. They can lead to the remediation of errors that might otherwise go undiscovered; and
5. They can provide recommendations for improving the actuarial valuation process, including how information is presented in the actuarial valuation report and in other communications.

Actuarial audits are not all the same. Various levels of actuarial audits are distinguished from one another by the types of services performed by the reviewing actuary.

1. In a *level one*, or "full-scope," actuarial audit, the reviewing actuary fully replicates the original actuarial valuation, based on the same census data, assumptions, and actuarial methods used by the plan's consulting actuary. In addition, the reviewing actuary examines the consulting actuary's methods and assumptions for reasonableness and internal consistency.
2. In a *level two* actuarial audit, the reviewing actuary does *not* fully replicate the consulting actuary's valuation, but instead uses a sampling of the plan's participant data to test the results of the valuation. The reviewing actuary also examines the consulting actuary's methods and assumptions for reasonableness and internal consistency.
3. In a *level three* actuarial audit, the reviewing actuary examines the consulting actuary's methods and assumptions for reasonableness and internal consistency, but does not perform actuarial calculations.

RECOMMENDATION

The GFOA recommends that public pension plan fiduciaries:

1. Gain an understanding of the types of actuarial audits;
2. Provide for actuarial audits at least once every five years² and when a "red flag" appears, such as
 - a. Significant and unanticipated changes in asset or liability trends or funded ratio
 - b. Computed contribution rates change without adequate explanation.

c. The actuarial methods and assumptions used are not consistent with those approved by the plan's board

d. The actuarial methods and assumptions are not consistent with plan objectives

3. Determine the level of actuarial audit most appropriate to their circumstance.

Often when a new consulting actuary is engaged the new consulting actuary performs a full replication of the previous actuarial valuation to establish a baseline. This practice, when feasible,³ is highly encouraged. ■

ENDNOTES

¹ When procuring services for a reviewing actuary, plan fiduciaries and plan sponsors are encouraged to use the same RFP process as for a consulting actuary. Recommendations for procuring these services can be found in the GFOA best practice, "Procuring Actuarial Services" (CORBA 2012).

² This recommendation is designed to ensure that more than one actuary has performed or replicated the actuarial valuation during any five-year period. Therefore, an actuarial audit would not be necessary if the consulting actuary had changed during that time.

³ A full replication may not be practical, for example, for an agent multiple-employer plan.

EXPERT PUBLIC PENSION PANEL RECOMMENDS IMPROVED FINANCIAL MANAGEMENT, INCREASED DISCLOSURES AND STRONGER ACTUARIAL STANDARDS

WASHINGTON, Feb. 24, 2014 Press Release— Recommendations released today by a multidisciplinary panel of experts provides a guide for trustees, legislators and plan advisors to improve the financial health of public pension plans. Using plans' own financial reporting, the total amount of unfunded public pension plan liabilities in the U.S. amounts to nearly \$1 trillion, according to some estimates.

“Public pension plan funding is a complex issue, with many vexing questions and no easy near-term solutions,” said panel chair Bob Stein, FSA, MAAA, former global managing partner of actuarial services at Ernst & Young. “Taken as a whole, the panel’s recommendations will make available to all stakeholders in public pension systems – employees and retirees, plan sponsors and trustees, as well as taxpayers – more reliable and improved information about the financial status of a plan and the risks it faces. This should enable the development of a stronger funding program, more responsive to the rapidly changing environment in which all plans operate.”

The Blue Ribbon Panel on Public Pension Plan Funding was commissioned by the Society of Actuaries (SOA) to assess the current state of pension plan funding and make recommendations to improve the financial strength of public pension plans going forward. Members of the panel represented a variety of disciplines and interest groups to ensure the panel examined the issue from multiple perspectives. The panel began its work in early 2013 and issued its final recommendations today at an event at the National Press Club in Washington, D.C.

“Leaving the policy decisions about the

level of retirement benefits to states, cities, counties and their employees, the panel focused on how to strengthen the ability of sponsors to keep the benefit promises they have made,” Stein added.

The panel’s report lays out three principles of an effective public pension funding program:

- The costs of future retirement benefits should be pre-funded, and funded in a way that targets 100% funding of plan obligations. Median economic assumptions should be used to avoid being overly optimistic or overly pessimistic.
- Taxpayers receiving the benefit of today’s public employees’ services should pay the taxpayer portion of the costs of those employees’ pension benefits; funding programs should restrain the tendency to shift these costs to future generations of taxpayers.
- While the panel believes that stable costs will be difficult to achieve, it does recognize the benefits that predictable costs can bring to the sponsor’s budgeting processes over short periods of time.

The panel recognizes that funding entities frequently face significant competing demands on their resources and that the full recommended contribution cannot always be made. In such circumstances, sponsors should develop an effective funding program that moves the plan toward a fully funded status in a reasonable period of time.

IMPROVE FINANCIAL MANAGEMENT AND INFORMATION

The panel’s report includes a number of specific recommendations designed to improve

the information available to all stakeholders about the financial condition and level of risk taken by an individual plan.

These recommended disclosures include measures of:

- Plan maturity, such as the ratio of active employees to retirees and the ratio of the market-value assets to payroll;
- Plan cost, such as the ratio of the actuarially required contribution (ARC) to payroll and to the funding entities' total budget;
- Payment experience, the ratio of contributions paid to the recommended contribution;
- Investment risk, such as the plan liability at a risk-free rate; and
- Stress tests, consisting of projections of contributions and funded status under periods of higher or lower investment return, and in which recommended contributions were not fully paid.

“The panel has sought to encourage a higher level of financial management and more rigorous risk analysis among public pension plans,” Stein added. “That focus is manifested in the comprehensive disclosures recommended, which should enable all parties involved to make more fully informed decisions about plan funding.”

CREATE A STANDARDIZED CONTRIBUTION BENCHMARK

To provide a benchmark which plans can use to measure the aggregate level of funding risk, the panel recommends a standardized contribution be calculated and disclosed in actuarial reports. This standardized contribution can help trustees and other stakeholders assess the reasonableness of the assumptions and methods used in the plan's recommended contribution. The Standard-

ized Plan Contribution would use a stipulated rate of investment return and other specified actuarial methods.

STRENGTHEN THE ROLE OF THE ACTUARY

The panel recommends that actuaries be required to disclose the information noted above and that the actuary be required to provide a professional opinion on the reasonableness of the assumptions and methods used in funding the plan. In addition, the panel makes several recommendations about how actuarial assumptions and methods are established and encourages the Actuarial Standards Board to consider including these recommendations in Actuarial Standards of Practice.

IMPROVE PLAN GOVERNANCE

Finally, the panel called for strong governance practices, including the establishment of governance structures that support payment of recommended contributions, the development of a strong risk oversight function at the board level, and the thorough consideration of the cost and risks of proposed plan changes before they are adopted.

ABOUT THE BLUE RIBBON PANEL ON PUBLIC PENSION PLAN FUNDING

The Society of Actuaries assembled the Blue Ribbon Panel on Public Pension Plan Funding in early 2013. The panel membership was composed of representatives from multiple disciplines and stakeholder groups:

- Chair: Bob Stein, FSA, MAAA, Former Global Managing Partner of Actuarial Services, Ernst & Young
- Andrew Biggs, Resident Scholar, American Enterprise Institute
- Douglas Elliott, Fellow in Economic Studies, Brookings Institution
- Bradley Belt, Vice Chairman, Orchard Capital Group and Chairman, Palisades

Capital Management; Former Executive Director, Pension Benefit Guaranty Corporation

- Dana Bilyeu, Former Executive Officer, Nevada Public Employees' Retirement System
- David Crane, Stanford University, Former Advisor to Gov. Arnold Schwarzenegger, CA
- Malcolm Hamilton, FSA, FCIA, Former Partner, Mercer; Senior Fellow, C. D. Howe Institute
- Mike Musuraca, Blue Wolf Capital Partners, former trustee of the NYC Employees Retirement Systems (NY-CERS) and formerly of American Federation of State, County and Municipal Employees
- Laurence Msall, President, The Civic Federation (Illinois)
- Bob North, FSA, EA, MAAA, FCA, FSPA, Chief Actuary, New York City Retirement Systems
- Richard Ravitch, Co-chair, State Budget Crisis Task Force; Former Lt. Governor of New York
- Larry Zimpleman, FSA, MAAA, Chairman, President and Chief Executive Officer, Principal Financial Group ■

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LIVING TO 100 SYMPOSIUM: IS IT TIME FOR A NEW NAME?

By Evan Inglis



Evan Inglis, FSA, FCA, MAAA, is principal at The Terry Group in Vienna, Va. He can be reached at evan.inglis@terrygroup.com.

In January 2014, the SOA sponsored the fifth triennial Living to 100 Symposium in Orlando. For me, the conference seemed dominated by the general sense that we all might be living longer than expected and that our descendants could be living A LOT longer. Consider this:

- the aging process itself has been slowed significantly in the laboratory for certain animals
- 3D printers are printing out live, useable human tissue
- the causes of aging at the molecular level are beginning to be understood

Well-reasoned speculation about very long life expectancies (with good health!) was commonplace at the symposium. “Living to 150” might end up being a better name for future symposiums.

THOUGHTS FROM KEY EXPERTS

A useful way to capture some of the significant thinking at the symposium is to summarize the ideas of some of the key experts who were present at the conference. Three key names that are useful to know about are:

James Vaupel, Ph.D. – Vaupel shows that the trajectory of improvement in life expectancy at birth has been remarkably linear, on the exact same slope, for over 170 years. He presents the implications of assuming that that same level of improvement will continue into the future. For example, the majority of children born today would live to be 100 if life expectancy continues to improve at the same rate.

Vaupel uses a projection based on identifying the country with the longest life expectancy at any point in time (Japan currently). Countries veer off the trend line and then veer back. The United States has veered off of the trend line in recent decades as improvement in life expectancy has decelerated, but it appears to be accelerating again.

While this simple projection technique results in some startling life expectancies for the future, Dr. Vaupel points out that experts in the past have continually forecast that mortality improvement would slow or end and have always been proven wrong to date.

Jay Olshansky, Ph.D. – Olshansky is one of the most prominent researchers in the area of longevity and he seems to have become more optimistic about the potential for increasing human longevity. He speaks passionately about the “longevity dividend” which would be the enormous social and economic benefits that potentially would result from slowing down the aging process.

Olshansky has, in the past, been outspoken about the idea that increasing obesity was reducing the rate of mortality improvement. This was primarily a U.S. phenomenon and mortality improvement in the United States has been accelerating again.

Olshansky may still believe that obesity will have an effect, but at the conference, and in recent writings, he seems more focused on the idea that we can combat aging directly. He is adamant that we should be looking for ways to slow the aging process rather than spending lots of money and resources on attacking the diseases of aging. He believes that there is evidence that aging can be slowed and he seems optimistic that at some point in the future that we will make discoveries in that area. However, he is not nearly as optimistic as Aubrey de Grey in how fast those discoveries will happen or how much impact they will have.

Aubrey de Grey – Similar to Olshansky, de Grey is focused on the potential to attack aging directly, rather than attack the diseases of aging (such as heart disease, cancer and Alzheimer’s disease). He argues vehemently for funding research to attack aging, rather than the diseases and is head of a research foundation with that objective. He has an enthusiastic cult-like following based on



AS NEW MEDICAL TECHNOLOGIES ARE DISCOVERED, LIFE EXPECTANCIES MIGHT GRADUALLY BE EXTENDED SO THAT “LIVING TO 150” COULD END UP BEING A BETTER NAME FOR FUTURE SYMPOSIUMS.

THE big question is whether longevity can be increased only because our lifetimes can be extended closer and closer to some maximum human lifetime, e.g., 120; or whether that maximum human lifetime can somehow be extended. The prevailing perspective is that there is a maximum human lifetime that has not yet been extended, but may be in the future.

his TED talk (I got my picture taken with de Grey to impress my college-age son Tom who is fascinated by his ideas).

de Grey is the source of the highly speculative notion that the first person to live to 1000 may already have been born. de Grey bases this notion on what he calls longevity “escape velocity.” Consider someone who is age 30 today, with a life expectancy to 75. As new medical technologies are discovered, life expectancies might gradually be extended such that by the time this person reached age 60, their life expectancy might have extended to age 100. Then, by the time the person reaches age 90 additional new techniques might have further extended lifetimes such that this person might expect to live to 125. As lifetimes are extended and more and more medical technologies are developed, the expected time of death can be continually pushed out. If the rate of discovery were fast enough (escape velocity), aging would no longer be a factor causing death and people could live until accidents or other unnatural factors resulted in death.

OTHER INTERESTING IDEAS

Other interesting ideas and concepts surfaced in various sessions:

“Senescence” is an important concept. It is a term used for biological aging—the gradual damage to the body’s molecular structure and cells that ultimately result in death, regardless of illness. The process of senescence is not well understood at this time.

The idea that life expectancy has been improving extremely consistently along a linear trend line for a very long time was expressed by others, in addition to Dr. Vaupel. A continuation of life expectancy extension along this trend line implies rates of mortality improvement at older ages of about 2.5 percent. Scale BB improvement STARTS at about this level and trends down all the way to 1.0 percent, so there are experts that would consider Scale BB to be an aggressively low rate of anticipated improvement in mortality rates.

There is some evidence that mortality rates decelerate at higher ages, but also disagreement about this. Deceleration would mean, for example that the difference between the rate of mortality at age 106 and the rate of mortality at age 105 is less than the difference in the age 105 rate and the age 104 rate. That would be contrary to Gompertz’ law that mortality rates increase exponen-

tially with age, after the reproductive phase.

Improvements in life expectancy in the early to mid-1900's was mainly at younger ages, whereas improvements in life expectancy in recent decades has been (and will be going forward) at older ages.

Advances in genetic research mean that more effective disease interventions can be designed by personalizing therapies to individuals based on their genetic makeup or the particular genetic cause of the disease (which may be different from individual to individual).

The advances in regenerative medicine where skin, muscles, blood vessels and other tissue are "grown" from samples of the same type cells or from stem cells (which can recreate any type of organ or tissue)

are startling. All of those types of tissue are being created and are being used to replace injured or defective body parts. Organs like hearts, kidneys and livers are being grown outside of the body, but are not yet useable as transplants.

CONCLUDING REMARKS

There are plenty of sessions at Living to 100 about the impact of changes in longevity on our actuarial work. The potential consequences on the ultimate cost of the programs we work with are very significant. It behooves every one of us that works with pension, annuity and other old age programs to know something about what is going on with medical and aging research. In addition to adding a valuable aspect to your professional knowledge it is a fascinating area rife with interesting tidbits to amaze your friends and family.

Later this year a monograph of all of the presented papers will be available at the 2014 International Living to 100 Symposium website. ■

2013 SURVEY OF RETIREMENT RISKS AND THE PROCESS OF RETIREMENT: CONTINUED CHALLENGES AND OPPORTUNITIES TO HELP RETIREES

By Anna M. Rappaport, Cindy Levering and Carol Bogosian

For more than 15 years, the Society of Actuaries' (SOA) Committee on Post-Retirement Needs and Risks has focused on improving the future for retirees. The 2013 Risks and Process of Retirement Survey (the Survey) is the seventh biennial study of public perceptions related to such risks. The survey was conducted in mid-2013.

This article presents highlights of the findings from the 2013 Risks and Process of Retirement Survey. The study includes a combination of selected repeat questions and areas of emphasis suggested by the group overseeing the survey. Areas of emphasis in 2013 included phases of retirement (or changes encountered during retirement), personal risk management and differences by gender. The 2013 survey employed a different approach to gathering responses than in prior years (see below). As a result, direct comparisons to previous survey results should be considered carefully and in the context of the methodological change.

The Survey was designed to evaluate Americans' awareness of retirement risk, how their awareness has changed over time, and how these perceptions affect the management of their finances.

SURVEY FINDINGS AND COMMENTARY

The hierarchy of concerns found in this survey and the strategies for risk management are similar to those found in previous iterations of the study. There is a general consistency in what respondents say is most important and in how they manage risk.

Risks viewed as most important: The retirement risk that most concerns both retirees and pre-retirees is keeping the value of their savings and investments up with inflation (77 percent of pre-retirees and 58 percent of retirees are very or somewhat concerned). Rounding out the top three con-

Using the survey information: The complete survey report can be found at <http://www.soa.org/research/research-projects/pension/research-post-retirement-needs-and-risks.aspx>. A number of highlight reports focusing on particular areas of emphasis will be released throughout 2014 and made available on the SOA website.

The survey results were presented at the 2013 SOA annual meeting and in a recent webcast. The complete Powerpoint presentation summarizing the results with pertinent commentary is also available for downloading from the SOA website. Actuaries are encouraged to share results they find relevant with clients and use them to spur prudent action. Furthermore, readers of the report are welcome to use the results for their own presentations, of course, with proper attribution.

The results demonstrate that many workers and retirees need help in understanding and managing the risks of the post-retirement period, thereby justifying the investment of employers offering support in that regard. The findings also reveal the need for more planning and better use of planning tools, although not specifically weighing in on whether or not planning tools are adequate to handle the post-retirement period.) In addition, the results may also help advisors and financial service companies identify important opportunities for their organizations.

cerns is having enough money to pay for adequate health care (73 percent and 46 percent) and long-term care (68 percent and 52 percent). Two-thirds of pre-retirees and four in ten retirees also express concern about the possibility of depleting their savings (66 percent and 41 percent) and maintaining a reasonable standard of living for the rest of their life (65 percent and 41 percent).

The series of post-retirement risk surveys has consistently found that the top three risk concerns are inflation, paying for health care costs, and paying for long-term care. Paying for health care costs is a greater concern than paying for long-term care. This is true even though Medicare pays for a substantial part of acute health care costs for Americans over age 65 and there is no parallel universal program to pay for long-term care. There is private insurance available to pay for long-term care, but the vast majority of older Americans have no such coverage. Significant changes in economic conditions appear to generate only a temporary change in levels of concern, if any at all.

THE THREE RISKS IN RETIREMENT OF MOST CONCERN ARE SAVINGS AND INVESTMENTS NOT KEEPING UP WITH INFLATION, THE COST OF HEALTH INSURANCE, AND THE COST OF LONG TERM CARE.

Keeping results in perspective: *Even though there are many risks that Americans face in retirement and even though retirees are often on their own in dealing with these risks, many people are not too concerned about some of them. A significant number of retirees may not be aware of all of the risks. For example, there seems to be little concern or awareness about the risk of fraud or a financial scam. However, the fallout from a financial scam involving identity theft, for instance, can be devastating. The Consumer Financial Protection Board offers a series of [materials on scams](#).*

Managing Risks: As in previous iterations of the Risk Survey, both pre-retirees and retirees tend to focus on strategies of saving and spending to manage the risks associated with retirement. Almost all pre-retirees (95 percent) and retirees (92 percent) report they have already eliminated or plan to eliminate all of their consumer debt. Nine in ten pre-retirees (93 percent) and eight in ten retirees (81 percent) say they already have saved or plan to save as much as they can, while similar proportions have already cut back or plan to cut back on spending.

Pre-retirees and retirees are much less likely to turn to risk pooling strategies to manage retirement risks (other than health insurance). Half of pre-retirees (52 percent) and one-quarter of retirees (23 percent) indicate they plan to or have already postponed taking Social Security. Roughly one-third each report buying (or expecting to buy) an annuity or choosing an annuity option from an employer plan. There is relatively low interest in financial products for risk manage-

ment except for health insurance (including Medicare supplements).

The 2013 survey included a new question to find out how respondents would react if they were running out of money. Reducing expenditures significantly was the top result with 90 percent of retirees and 88 percent of pre-retirees indicating that they would do this. Work was a major area of focus with 76 percent of pre-retirees and 45 percent of retirees indicating that they would either try to return to work or increase the number of hours they were working. Downsizing housing was also a major area of focus with 74 percent of pre-retirees and 63 percent of retirees choosing this option. Housing is a major area of expenditure, but some may have already downsized. These responses were in sharp contrast to the number who indicated that they would get help from family members, friends or communities. The vast majority did not expect to get such help. Fewer than 30 percent expected to get help from children or family members, and an even smaller group expected to get help from friends or community agencies.

The 2013 survey included new questions to understand planning for what happens in the event of widowhood, and what is important to address. It also included new questions about planning for specific situations in widowhood such as having adequate assets and income, ability to manage day-to-day finances, suitable housing, investment management and estate planning issues and others. As with other questions, these questions indicate gaps in planning and an opportunity to help. There is a role for dealing with these planning gaps for actuaries, financial planners, plan sponsors and financial services companies. Actuaries can help their clients through work on the structure of the programs that they are working on and through encouraging more education and communication about them. Program structure includes plan designs and the structure

of choices and how they are encouraged. For example, a plan may include a death benefit or not and it can vary in size. Several levels of benefit might be offered. The automatic choice may be no benefit, or one of the choices. The messaging on the choices can be tailored to encourage or nudge people in various directions. Communications from any of these parties can stress the likelihood that one spouse will die and the issues confronting the survivor. These are just a few examples of how various parties can help.

Keeping results in perspective: *Many people do not have enough financial assets at time of retirement and during retirement to effectively use risk pooling strategies. An emergency fund is a first priority. Recent focus group results indicated that many of the resource-constrained retirees in the focus groups preferred to hold on to assets, making them available as an emergency fund. They tried not to spend down their assets.*

Overall results: Overall, there is much consistency in the results of this work, and there are some main conclusions that have emerged:

- Pre-retiree expectations often do not line up well with the actual experiences of retirees. This is true with regard to retirement age, expectation of working in retirement and other areas. There is an opportunity to provide more information to people and enable them to have more accurate expectations. In each area where there are expectations that are different from reality, there is a need for information and a program to deliver it. There is a role for actuaries, advisors and plan sponsors in doing this. In addition, there is a potential role for various parties to change the situation. For example, many more people expect to work in retirement. To address this issue, the actuary may ask why, and what should be changed? Perhaps it is the

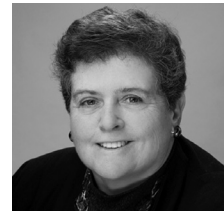
expectation about working or perhaps it is the difficulty of working. If it is the difficulty of working, actions such as coaching programs or new jobs options could help. There is a role for the actuary in helping to establish the reason for the gap between expectations and reality, and there may be a role in trying to help bring about change.

- Inflation, health care and long-term care consistently are among the risks retirees and pre-retirees are most concerned about. There are several risks which the Project Oversight Group views as important but retirees show little concern about them.
- Pre-retirees are often more concerned than retirees.
- Workers nearing retirement today have not really adapted well to the shift to DC plans.

Retirement timing: People actually retire at a much earlier age than people say they want to retire. In the 2013 study, the median age at which people retired was 58 compared to 65 as the median age when people said they want to retire. This is not surprising when involuntary and “pushed” retirements are considered.

Planning as one nears or enters retirement: Planning tends to be cash flow based—people make decisions based on what they are currently spending and the income they expect to receive. Many do not do more sophisticated longerterm planning. Planning horizons are consistently inadequate to cover the period of retirement.

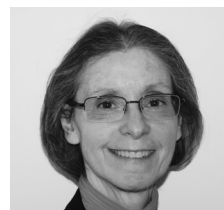
Working during retirement: Working longer is an important strategy, but many more people say they want to do this than actually do work in retirement.



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Keeping results in perspective: *Many people are reaching retirement age today without adequate preparation for what faces them. There are two different paths for dealing with this—help people make better decisions and be better prepared, or structure systems to be less dependent on individual decisions.*

It seems unlikely that there will be much improvement in decision making, so default options and plans that work without individual action continue to be very important.

Researcher and methodology

The study and the six prior studies were conducted on the SOA's behalf by Mathew Greenwald and Associates, Inc. The 2013 study was conducted through an online survey instrument and the prior six studies were conducted by telephone interviews. The survey was preceded earlier in 2013 by a series of eight focus groups, which probed participants on their decision process for retiring and their views on managing assets after retirement. A [separate article](#) on the focus groups was included in the last *Pension Section News*.

As part of the survey, 2,000 adults ages 45 to 80 (1,000 retirees and 1,000 pre-retirees) were interviewed in August 2013. An additional 200 interviews were collected among retired widows. Individuals were selected for participation using Research Now's nationwide online consumer panel. The panel was selected after consultation with the research firm. The firm previously used this particular panel and obtained results that met their scientific standards. The PRNR Committee decided to switch to the online survey instrument in order to probe a larger sample, provide for more in-depth data analysis, and address the difficulties of relying on telephone surveys in today's shifting communications environment. More people are switching to using only cell phones and many are reluctant to consider participating

in survey telephone calls, making it more difficult and expensive to do surveys by landline phones. Two cautions are needed in working with the 2013 results: although some of the questions are very similar to prior questions, comparisons of direct numerical results should be avoided as the methodology affects responses somewhat, and samples are not random with online surveys.

Survey responses from current retirees and those not yet retired (referred to in these reports as "pre-retirees") are analyzed separately. No effort has been made to oversample individuals with high levels of assets and do not provide specific insights concerning high-net-worth individuals. Only 5 percent of pre-retirees and 12 percent of retirees report having investable assets of \$1 million or more.

Anna Rappaport, Carol Bogosian and Cindy Levering work together on the team which oversees the Risk Survey and other work of the Committee on Post-Retirement Needs and Risks. Carol currently serves on the Society of Actuaries Pension Section Council. Cindy is former chair of the Pension Section Research Team. Anna chairs the Committee on Post-Retirement Needs and Risks. All three of them were previously retirement benefit consultants with major consulting firms and have been very active in Society of Actuaries work. ■

FLIGHT PATHS – A DYNAMIC INVESTMENT STRATEGY

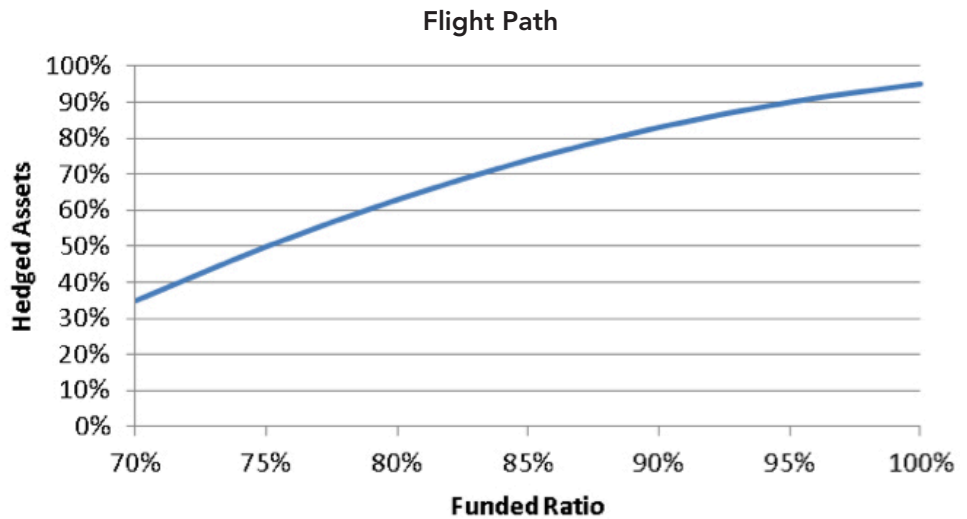
By Martin McCaulay

A flight path is a dynamic investment strategy for defined benefit pension funds to de-risk the plan. The asset mix is changed based on the funded ratio. As the funded ratio improves, the allocation to return seeking assets such as equities is gradually decreased and the allocation to hedged assets such as bonds and interest rate derivatives is gradually increased. The reallocation strategy is continued until the target funded ratio is reached.

Factors to consider when de-risking a plan include plan maturity, the plan sponsor's risk tolerance, and the funded ratio. Plan maturity impacts the duration of the liabilities and the cash flow needs. Mature plans have shorter durations and greater cash flow needs, and more of a need to de-risk than plans that are less mature. Plan maturity and the sponsor's risk tolerance are relatively stable compared to the funded ratio, which can be very volatile.

A flight path is built to fully fund the plan either on an ongoing plan basis or on a plan termination basis and that determines the liabilities that will be used for the funded ratio. The assets to be used are either the market value or a smoothed actuarial value. Because a surplus is of little use to the plan sponsor, the advantages of overfunding are not as great as the disadvantages of underfunding. There will be no exact match to completely de-risk the plan. The asset mix along the flight path will represent a balance between return and volatility. The plan sponsor should choose if the strategy will be to reallocate for funded ratio increases only, or to reallocate in both directions.

For the hedged portion, the duration could be increased as the funded ratio improves. Changes in interest rates can be used as opportunities to decrease risk. As the funded ratio improves and when the interest rates



reach the desired level, the sponsor could look for ways to settle some of the liabilities with lump sums and annuity purchases. ■



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EMPLOYER COSTS FOR EMPLOYEE COMPENSATION IN DECEMBER 2013

By Martin McCaulay



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The U.S. Department of Labor’s Bureau of Labor Statistics (BLS) publishes a broad-based national survey of Employer Costs for Employee Compensation (ECEC). As a percent of compensation, employer costs for defined benefit (DB) plans for state and local government workers are nearly nine times the costs for private industry non-union workers. The DB plan costs for private industry union workers are nearly six times the cost for private industry non-union workers. When employer contributions to defined contribution (DC) plans are added, there is still a significant gap in favor of the public sector and the union workers, but not to the same magnitude. Employer costs for DB and DC plans for state and local government workers and private industry union workers are two to three times the costs for private industry non-union workers.

Employer costs for benefits as a percent of compensation in December 2013 were 40.2 percent for private industry union workers, 28.5 percent for private industry non-union

workers, and 35.5 percent for state and local government workers. Employer costs for DB plans as a percent of compensation were 5.7 percent for private industry bargaining workers, 1.0 percent for private industry non-bargained workers, and 8.6 percent for state and local government workers. Employer costs for DC plans as a percent of compensation were 2.0 percent for private industry bargaining workers, 2.1 percent for private industry non-bargained workers, and 0.8 percent for state and local government workers.

The ECEC is a product of the National Compensation Survey (NCS). The NCS is based on an unbiased set of sample employers. The ECEC measures the average cost to employers for wages and salaries and benefits per employee hour worked. ECEC data on total compensation, wages and salaries, and benefits are produced annually for 15 metropolitan areas. The survey months are March, June, September, and December. The December tables are available by mid-March.

The ECEC press release is available at <http://www.bls.gov/news.release/pdf/ecec.pdf>. The costs for state and local government workers are found in Table A and the costs for union and non-union workers are in Table 5. Supplemental tables with occupational, establishment size and bargaining status series for detailed industries are available on the BLS website at <http://www.bls.gov/ncs/ect/sp/ecsuptc29.pdf>. ■

Benefit Costs as a Percentage of Compensation in December 2013

Benefit	Private Industry Union Workers	Private Industry Non-Union Workers	State and Local Government Workers
Paid Leave	7.1%	6.9%	7.3%
Supplemental Pay	3.2%	2.8%	0.8%
Health Benefits	13.0%	7.0%	11.6%
Life and Disability	0.9%	0.5%	0.4%
Defined Benefit	5.7%	1.0%	8.6%
Defined Contribution	2.0%	2.1%	0.8%
Legally Required	8.3%	8.2%	6.0%
Total Benefits	40.2%	28.5%	35.5%

ON THE RESEARCH FRONT

RETIREMENT PLAN MORTALITY EXPOSURE DRAFTS JUST RELEASED

The Society of Actuaries' Retirement Plans Experience Committee (RPEC) just released exposure drafts of the RP-2014 Mortality Tables and Mortality Improvement Scale, MP-2014. The primary focus of the RP-2014 work was a comprehensive review of recent mortality experience of uninsured private retirement plans in the United States. For pension-related purposes, the mortality projection scale, MP-2014, replaces both Scale AA, which was released in 1995, and the interim Scale BB, which was released in 2012. The exposure drafts are open for comment until May 31.

2013 RETIREMENT RISK SURVEY

The online survey of retirees and pre-retirees from ages 45 to 80 provides a glimpse into individuals' financial approaches to retirement and it identifies gaps in retirement preparations. The issues of most concern for retirees include inflation, paying for health care and the risk of depleting savings. Every two years since 2001, retirees and pre-retirees are surveyed and the results are consistently referenced in a variety of mainstream media and academic publications, including this year.

CIA AND SOA PARTNERING IN APPLIED ACTUARIAL RESEARCH AIMED AT PROVIDING TIMELY PERSPECTIVES ON KEY RETIREMENT ISSUES

The Canadian Institute of Actuaries (CIA) and the SOA are embarking on a new initiative to develop applied actuarial retirement research relevant to Canada. This in-house research capability will allow for the measurement of impacts on Canadian retirement systems such as changes in policy and legislation, funding relief measures, changes in economic conditions, and changes in demographics. The CIA and SOA will collaborate on the development of this applied retirement research initiative in Canada, using a dedicated database and modeling tool and dedicated staff resources funded by the SOA. The joint research effort ultimately intends to provide timely actuarial

perspectives on key retirement issues. This approach differs from the traditional CIA and SOA research methodology, where data and models are developed specifically for each research project and researchers are recruited separately for each project. It is important to note that this initiative is intended to complement—not replace—existing CIA and SOA research programs. The initiative mirrors the SOA's development of a similar capability in the United States, known as Data-Driven In-House Research.

REC STREAMLINES EVALUATION PROCESS FOR REX POOL FUNDING

The Research Executive Committee (REC) recently undertook a thorough review of the application and evaluation processes for the SOA's "Research Expanding Boundaries Pool" (REX Pool) with the goal of better addressing the needs of its stakeholders. Several important changes have been implemented to the REX Pool that will become effective in March 2014. The changes include moving to a continuous cycle of accepting and reviewing applications, streamlining the funding decision process, and expanding the eligibility of topics submitted for REX Pool funding. Full details can be found in the updated guidelines.

HYBRID PENSIONS: RISK-SHARING ARRANGEMENTS FOR PENSION PLAN SPONSORS AND PARTICIPANTS

Hybrid plans have become increasingly popular as companies seek to reduce their pension risks. Due to the creation of a wide variety of hybrid plans, the author of this report, John Turner, has provided an overview of types of hybrid plans, both developed and proposed, provided in several countries. The paper consists of three sections. The first provides four in-depth case studies of plans in the Netherlands, Sweden, the United States, Canada, Japan and Germany. The second section provides a categorization of hybrid plans, and the third provides a risk index for further categorizing plans. The report also includes an appendix presenting a survey of the types of hybrid pension plans used in a small selection of countries. ■

WHAT IS THE PROFESSIONAL DEVELOPMENT COMMITTEE AND WHAT'S IN IT FOR YOU?

By Beth Grice, Terry Long and Judy Powills



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Terry Long, FSA, MAAA, is senior VP and consulting actuary at Lewis & Ellis, Inc. in Overland Park, Kan. He can be reached at tlong@lewisellis.com.



Judy Powills is senior director, Curriculum & Content Development, Education, at the Society of Actuaries. She can be reached at jpowills@soa.org.

The Professional Development Committee's Top 10 Facts:

10. Otherwise known as the PDC, the Professional Development Committee is an SOA board of directors appointed committee.

9. The PDC was formed in 2009.
8. The PDC has overall responsibility for managing the development of the professional development (PD) curriculum (the content, method of delivery and resources provided to facilitate learning) reflecting the SOA's competency framework.
7. The PDC is charged with providing the highest quality learning experiences.
6. The PDC ensures that the PD program is focused on both current and forward-looking technical and non-technical content (state of the art).
5. The PDC ensures that the PD program makes use of instructional technologies to assure timeliness of, and broad access to (globally accessible), relevant and engaging programming.
4. The PDC fosters career-long learning.
3. The PDC is charged with ensuring that the SOA's PD program meets the needs of the profession and is aligned with the SOA strategic plan.
2. The PDC represents the SOA's constituencies including Canadian and international.

And No. 1 ...

The PDC represents you and your PD needs!

Approximately 75 percent of content developed for, and delivered to, SOA members comes from you—the sections! The sections and volunteers play vital roles in the plan-

ning, development and delivery of the SOA PD program. 2014 looks to be an exciting year for section-sponsored PD offerings—section plans reflect an array of offerings targeted to member needs—meeting sessions, seminars, webcasts, podcasts and more. Congratulations to the sections!

If 75 percent of content comes from the sections, where does the rest of the SOA's PD programming come from? The SOA partners with other organizations, actuarial and non-actuarial. The SOA also enters into strategic alliances with other organizations. The PDC is responsible for considering these strategic alliances. For example, if an organization is interested in delivering a seminar, it is required to submit a strategic alliance form to the PDC. The PDC has the responsibility and authority to evaluate the proposals and make a decision as to the appropriateness of the relationship. The PDC also looks to SOA staff to set goals in support of the PDC's initiatives to develop and deliver quality curriculum to meet members' PD needs and support lifelong learning. Remember that the prequalification curriculum with new additions is available to the PD audience, too.

Learning technologies are rapidly changing. The PDC evaluates and makes recommendations for the adoption of new technologies to apply to PD programs—the best in webcasting, virtual sessions and podcasting. And, our e-Learning portfolio continues to expand, offering more for members' technical and non-technical knowledge and skill development.

In addition to overseeing the PD program for members, the PDC sets priorities on an annual basis to provide a comprehensive, progressive curriculum to meet upcoming needs. 2014 priorities include building/enhancing PD offerings for pension actuaries and actuaries internationally, offering more

in the areas of business analytics and general insurance, conducting market research to better understand member needs and gaps, and letting you know about offerings and tools available. Did you know, for example, that you can purchase a group of business and communication skills e-courses from BizLibrary: <http://www.soa.org/bizlibrary/>? Do you know about Tools for Actuaries: <http://toolsforactuaries.org/>? Check it out to find tools relevant to your development including books, e-books and training opportunities.

The PDC is a resource for you. Current PDC members representing the sections are:

- Beth Grice (PDC chair)—Health and Long Term Care Insurance Sections and liaison to the Health Meeting: bgrice@humana.com
- Peter Hayes—Pension and Social Insurance Sections: phayes@eckler.ca
- Donald Krouse—Investment and Joint Risk Management Sections and liaison to the Investment Symposium and ERM Symposium: dkrouse@aegonusa.com
- Terry Long (PDC vice chair)—Product Development, Financial Reporting, Marketing & Distribution, Reinsurance, Smaller Insurance Company, and Taxation Sections and liaison to the Life & Annuity Symposium and Valuation Actuary Symposium: tlong@lewisellis.com
- Kevin Pledge—Actuary of the Future, Education & Research, Entrepreneurial Actuaries, Forecasting & Futurism, International, Management & Personal Development and Technology Sections and 2014 Annual Meeting Chairperson: kevinpledge@gmail.com.

PLANS FOR SECTION-SPONSORED PROFESSIONAL DEVELOPMENT INCLUDE AN ARRAY OF OFFERINGS TARGETED TO MEMBER NEEDS—MEETING SESSIONS, SEMINARS, WEBCASTS, PODCASTS AND MORE.

The other PDC members are Jennie McGinnis (board partner), Lorne Schinbein (Education Executive Group curriculum chair), Genghui Wu (international constituency), Mike Boot (SOA managing director—Sections & Practice Advancement) and Judy Powills (SOA senior director of Curriculum and Content Development). PDC members are also assigned to board-appointed teams including the Issues Advisory Committee, the International Committee and the Transfer Knowledge Team.

The PDC wishes to thank the sections for their contributions. Feel free to call upon us as your sounding boards for your ideas about PD content and delivery! ■

**PENSION
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NEWS

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