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Martine Sohier, FSA, FCIA

Our outgoing Pension Section Council chair, Martine Sohier, provides some parting thoughts on the retirement system of today and tomorrow.

Full article>>

"RENAME THE PSN" CONTEST RULES

Faisal Siddiqi, FSA, FCIA

It's official. The Pension Section has one of the three most boring newsletter names in the entire Society of Actuaries. Here's your chance to get creative! Be the one to rename the *Pension Section News*!!

Full article>>

REPORT FROM THE 2007 RETIREMENT 20/20 CONFERENCE: ALIGNING ROLES WITH SKILLS

Emily Kessler, FSA

Curious about the *Retirement 20/20 project*? Read Emily Kessler's summary of the 2007 conference…. Full article>>

SOA RELEASES NEW LONG-TERM HEALTH CARE COST TRENDS RESOURCE MODEL

Steve Siegel, ASA

Read about the SOA's recently completed research project related to long-term health care cost trends. Full article>>

INFORMATION SOURCES FOR DB PLANS OUTSIDE THE UNITED STATES

John A. Turner, Ph.D

If you have clients with global operations and need to learn more about the retirement systems of different countries, this article may be helpful.
Full article>>

Countdown to Share Comments on CPD Requirement Begins!

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PPA...READY OR NOT

Brian Donohue, FSA

2008 is upon us. Pension reform, a concern for most of the decade, is here. This article provides a review of the single-employer funding rules under PPA, reflecting regulatory guidance through December 2007. The discussion does not cover special issues for hybrid plans and does not consider at-risk calculations or benefit restriction rules. Full article>>

A PENSION SECTION NEWS BOOK REVIEW: ANNUITY MARKETS AND PENSION REFORM

Michael B Price, ASA

Read the Pension Section News' review of *Annuity Markets and Pension Reform*, by George (Sandy) Mackenzie. Full article>>

SOME INTERESTING INFORMATION ABOUT PHASED RETIREMENT

Anna Rappaport, FSA

The concept of phased retirement continues to generate significant interest as the baby boom approaches the later stages of its collective working life. This article summarizes the highlights of a Conference Board-sponsored Web cast on phased retirement that took place in June of 2007. Full article>>

IN DEFENSE OF ASSUMPTIONS AND METHODS

Lawrence Mitchell, FSA

The first *Pension Section News* was published in June of 1989. In this, our 20th year, we plan to take a look back in time by reprinting selected articles from the *PSN*'s earliest issues. We begin with Larry Mitchell's *In Defense of Assumptions and Methods* from Issue No. 5 (June 1990).
Full article>>

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CHAIRPERSON'S CORNER

Martine Sohier, FSA, FCIA

We've all heard about large North American employers taking the defined contribution route over the last few years. When I look at the employers that still have defined benefit plans, I hope, as a pension actuary, that these employers will continue to think and see the world differently. But why would they?

We all know that we have not seen the end of the wave of employers moving to defined contribution plans. There are still some large organizations that have the intention of taking the defined contribution path. But, the end of the defined benefit era may be what it takes to bring the pendulum back eventually, or to push it to somewhere else – to a system that might be better able to respond to the evolving needs of today's and tomorrow's workers.

An employer's rationale for choosing the defined contribution path is obviously to eliminate cost volatility and complexity of administration. When asked about the objectives involved in deciding to adopt a new defined contribution plan, employers all respond very clearly: "The answer is simple. We want to get out of the defined benefit world. All our competitors are adopting defined contribution plans. Young employees do not care about defined benefit plans. They want control of their defined contribution account!" These employer considerations are rather short-term. There is minimal thinking going on about the reality of 10 to 15 years down the road when some of these employees will approach retirement. At that point, the decision makers will no longer be around anyway, maybe retired and living worry-free with their defined benefit pension...

I found a recent situation interesting. An employer who had just decided to implement a defined contribution plan for new hires was using the old now-closed-to-new-entrants defined benefit plan to manage a workforce reduction. This employer assumed that the new defined contribution plan would not impede similar future workforce management initiatives pertaining to the DC plan members, and would have no impact on historical retirement age patterns. The answer to encouraging a long-term orderly exit of DC plan members is to tell employees to save lots!!! The answer to managing next week's downsizing of a DC-only workforce is??? Well, retirement may not be that far off! This presents planning issues for both employers and employees.

As actuaries, what can we do to help create solutions to solve these retirement issues? In a defined contribution environment, we know that increased contribution rates will help achieve (but can't guarantee) better replacement ratios. Should we promote gradual and/or partial annuitization? What about the use of additional target replacement ratio funding? How can we encourage the formation of groups to pool risks?

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What types of groups? Using some of these means could make defined contribution plans more effective in the delivery of retirement income.

When thinking about the future of pension plans and the larger retirement system, who knows if labor shortages will create pressure to encourage the introduction of some new form of program or give employees the power to negotiate individual retirement packages tailored to their specific needs?

We can't predict the future. In the meantime, let's focus on *Retirement 20/20* and work to find the solution we need to respond to the pension challenges that the future is sure to bring.

Changes to the Council

I would like to welcome Sheldon Gamzon, Ann Gineo, Marcus Robertson, and Annette Strand as new Pension Section Council members and to thank outgoing members Josh Bank, Tammy Dixon, and David Kass for their important contributions to our section. Congratulations also to our 2008 chair, Sandi Kruszenski! Finally, I want to thank all of those who continue to contribute to the success of Section and SOA activities through their volunteer involvement.

Comments on how the Pension Section Council can improve the delivery of pension information are always welcome. Please e-mail Sandi Kruszenski at *sandbrd@comcast.net*.

Martine Sohier, FSA, FCIA, was 2007 chair of the Pension Section Council. She is a senior consultant with Watson Wyatt Worldwide in Toronto, Ontario and can be reached at *martine.sohier@watsonwyatt.com*.

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"RENAME THE PSN" CONTEST RULES

Faisal Siddiqi, FSA, FCIA

The *Pension Section News* has been around for almost 20 years. The first issue was published in June of 1989. Other sections have newsletters with names like *Product Matters, Stepping Stone,* and *Expanding Horizons*. We have always been the *Pension Section News*. Now, your Pension Section Communications Team thinks it's time for a makeover – a *Pension Section News* makeover that is.

This announcement marks the official kick-off of the contest to rename the Pension Section newsletter which currently goes by the very descriptive, yet not overly imaginative, name of *Pension Section News*.

We know that there are a lot of creative literary juices flowing out there, and that pension actuaries are hungering to rename this newsletter. Many of you probably have a long list of candidate names at the ready – just waiting for this long-overdue contest. There must be a better name out there.

Here are the rules:

- Only Pension Section members are eligible to submit entries
- A maximum of three entries per member will be permitted
- Please send your submissions via e-mail to *PSN.editor@pensionedge.com*
- Use "*PSN* Contest – your last name" as the subject line
- Please include your full name, e-mail address, and daytime telephone number in your submission
- The deadline for submissions is April 15, 2008

Finalist entries will be announced in the May 2008 *PSN*. This being an election year in the United States and maybe even in Canada, we're going to hold an election as well. Our May issue's poll question will provide each of you with the opportunity to vote for your favorite (if you favor American spelling) or favourite (if you favour Canadian spelling) contest entry.

Get out there and vote when the May *PSN* hits your email inbox – every vote counts – don't let others speak for you – let your voice be heard!

The contest winner will be announced in our September 2008 issue – the last *PSN* (it's all right if you feel like shedding a tear), and there will be a prize awarded to commemorate the winning entry. In January of 2009, the *PSN* will start its 20th year of publication wearing a brand new name.

Thanks in advance to everyone who submits entries. Good luck and may the best name win!

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REPORT FROM THE 2007 RETIREMENT 20/20 CONFERENCE: ALIGNING ROLES WITH SKILLS

Emily Kessler, FSA

Your Pension Section Council recently sponsored the second *Retirement 20/20* conference, entitled "Aligning Roles with Skills." The conference followed an exciting year for the council as the discussions and results of the 2006 conference were featured in industry and national publications. Almost 70 participants from the U.S. and Canada, including actuaries, academics, attorneys, plan sponsors, public policy professionals, investment managers and others, met in Washington, DC in September to debate how best to design roles for three key stakeholders (employers, society, and markets) in 21st century retirement systems.

How the 2007 Conference Came Out of the 2006 Conference

The first step in 2006 was to consider what the new retirement system needed to achieve. The first conference considered individuals, employers, society, and markets as each having a role in the retirement system. For each stakeholder, participants were asked three key questions:

- Who has what needs?
- Who can bear what risk?
- Who can play what role?

Six key themes emerged from the 2006 conference. The six themes focused on how retirement systems (the combination of social insurance, private plans, and individual savings) should work as a whole. The system:

- Should be designed to self-adjust
- Should align stakeholders' roles with their skills
- Should consider new norms for work and retirement, and the role of the normative retirement age
- Should be better aligned with markets
- Should clarify the role of the employer
- Will not succeed, in the U.S., without improvements in the health and long-term care systems

The six themes are explored in depth in the 2006 conference report, which can be found at *www.retirement2020.soa.org*.

The seed for the 2007 conference was found in one of the 2006 headlines: aligning roles with skills. Participants at the 2006 conference discussed the fact that individuals aren't the best suited for retirement planning or deciding how to invest retirement assets, and an employer's goal in business usually isn't to operate a pension plan. This misalignment of roles with skills creates problems in today's retirement system.

For 2007, we set out to determine what the optimal roles are for our various stakeholders. Defining these roles properly is critical for the success of the system. The right role would be one which uses each stakeholder's

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knowledge and talents optimally. So, market experts would work in the markets, and employers could focus on their core business. Defining the stakeholder roles is also necessary before beginning to design the new features of the new retirement system.

The 2007 Conference

So for 2007, we focused on role definition. Particularly:

- Which stakeholder is best suited to take on what role?
- How do you allocate roles based on stakeholder skills?
- How do these role assignments affect other stakeholders?

Roles were considered for three of our stakeholders:

- **Society.** Society in this case is society at large: all citizens and particularly all taxpayers who have to pay the cost of any retirement system designed. In this case, government (including politicians) acts as an agent or representative of taxpayers/society. Taxpayers include current taxpayers and future taxpayers, those who may end up paying for unfunded mandates. Society as a whole is often concerned with issues of intergenerational balance (more money spent on retirees means less money to spend on children and infrastructure) and the redistribution of wealth (social insurance systems, such as U.S. Social Security and CPP/QPP often pay progressive benefits, where wealthier taxpayers receive less money relative to their earnings or contributions than less wealthy taxpayers.)

- **Markets.** Capital markets are where the accumulation and decumulation of wealth takes place. For purposes of our discussion, markets include financial intermediaries (e.g., insurers, mutual funds) who take the raw product of the capital markets and turn them into solutions for individuals and groups. Markets are a key to the success of the new retirement system. They can reduce the cost of retirement risks by providing the proper hedges (e.g., longevity bonds).

- **Employers.** Employers play a key role in today's retirement system, as the sponsors of defined benefit and defined contribution plans, in both the U.S. and Canada. Employers also have motivations that may drive them to want to sponsor retirement plans – as a tool to help attract, retain, motivate, and eventually retire their workforce.

What happened to individuals?

Keen observers will note that we identified four stakeholder groups at our 2006 conference: individuals, employers, markets and society, but the 2007 conference only focused on three of those. The individual as stakeholder was excluded from the 2007 conference. What happened? Mostly driven by logistical considerations, we ended up focusing on the other three stakeholders. However, in the actual conference, even though individuals were not highlighted by a separate panel discussion, they were part of the conference discussions. The debate never strayed too far from what roles the other stakeholders needed to play to best support individuals. Our report will not represent that we highlighted individuals, but we don't believe that considerations of the individual were totally lost.

The conference was organized into three "panels." Each panel began with expert speakers, chosen to present diverse views of the issue, who introduced the topic. After the panel introduction, the participants broke into four pre-assigned working groups to discuss the issue in more depth. A spokesperson then reported the consensus (or lack thereof) of their group back to the full conference. We then moved on to the next panel, which proceeded through the same phases. At the end of the two days, conference participants were given the opportunity to vote for their favorite themes (those that they felt were the most important) from all of those that emerged out of the discussions. The balance of this article will focus on the key themes that emerged.

Panel 1 – Role of Society

This panel opened the conference. The speakers were Malcolm Hamilton (Mercer) and Virginia Reno (National Academy of Social Insurance), and the moderator was Anne Button. Malcolm and Virginia presented an overview of how and how well the social insurance systems are working in Canada and the U.S. Their presentation was followed by a discussion of the proper role of society in providing retirement security and a debate regarding the role society should take with respect to retirement savings. Conference participants then considered these questions, as well as whether society should protect people if they are forced to retire before they planned and whether society should encourage individuals to work longer.

The primary conclusion of conference participants was that the role of society is to provide structure to the retirement system. This comes about primarily through three main roles:

- Help individuals make right decisions
- Set some guidelines about what "ought" to happen
- Provide consumer protection

One goal of society with regards to the retirement system is that it wants to ensure that today's workers save enough that they aren't a burden on tomorrow's taxpayers. Society, when focusing on the roles of helping individuals make the right decisions and setting guidelines about what "ought" to happen, could achieve this particular goal by doing the following:

- **Encourage lifetime income (annuitization).** First, conference participants felt the basic social insurance benefits ought to be structured as lifetime income, and they should maintain their progressive element. Participants discussed whether flat-dollar benefits were better, however introducing negative incentives for individual behavior and the surrounding bureaucracy around means-testing was thought to outweigh any potential savings. Secondly, as a rule, society should mandate or encourage the annuitization of retirement savings. It could do this by mandating or encouraging the annuitization of a portion of savings (e.g., up to a dollar level or percentage of pay). Note that this could be done through tax mechanisms: annuitization could be tax-favored, or not annuitizing could carry tax penalties.

> *"There's an awful lot of work that needs to be done to find ways to alleviate poverty without shifting burdens to future generations [and] without undermining the incentive to save for people with average incomes. To me that's the challenge. Canada's done an OK job, but there's certainly room to do these things better."*
>
> -Conference participant

- **Accumulation of retirement wealth.** Conference participants felt that society should take an active role in helping individuals accumulate funds for retirement. This could be done in several ways. One way would be for society (the government) to mandate a minimum level of savings and encourage more savings (e.g., through tax policy). Another way this could happen would be to set up a mandatory second-tier program that would exist in addition to the social insurance system (Social Security in the U.S., CPP/QPP/OAS in Canada). This second-tier system might be thought of as a mandatory "pension" plan which employers or individuals could elect to opt out of. This idea was revisited and developed more fully in the role of the employer discussions.
- **Oversight.** Society has a responsibility to set the rules and regulations, to provide oversight to the system. This occurs in several ways. First, society provides basic oversight for consumer protection. Secondly, it encourages some degree of standardization to allow consumer comparability. Finally, in providing oversight, the government also needs to "get out of the way" to allow and encourage evolution. The example noted most often was removing barriers to phased retirement and later retirement that could help encourage new patterns of work and retirement in an individual's later life.

Two last observations that arose from the discussions on the role of society:

- Participants felt strongly that society should not set any direction regarding retirement age. Some people have argued that society ought to be encouraging later retirement, particularly for knowledge workers, as this will help to avert the "retirement crisis" by keeping people in the workforce longer (paying taxes into the social insurance system without yet collecting benefits). Conference participants felt that society should

neither encourage nor discourage earlier or later retirement.

- Participants felt that society should have an actual retirement policy, not just a tax policy. Tax policy is certainly one way to influence the behavior of individuals. But, conference participants noted again and again the need for oversight, standardization of products, and education of participants – three potential goals of society that are unrelated to tax policy.

Panel 2 – Role of Markets

The panel on the role of the markets opened with a lively discussion from Keith Ambachtsheer (KPA Advisory Services) and Zvi Bodie (University of Boston), moderated by Bob North. The panelists discussed the imbalance between the markets and the very sophisticated individuals who work in the markets, and the individuals who need the markets to help them manage their retirement risks. This is partly due to a lack of symmetric information (market makers and financial intermediaries have more information than users of the market, particularly unsophisticated users such as individuals). Do you fix that asymmetry by using buying cooperatives (unsophisticated individuals band together to hire an agent who understands the markets) or do you offer guarantees (consumers don't have to understand how the car is put together because it comes with a manufacturer's warranty)? In identifying a solution, one must consider that buying collectives may not achieve what is desired if their agents don't have the proper incentives.

The animation of the panelists spilled out into the working groups, where participants considered how the markets can best be used to hedge retirement risks. They considered whether the informational asymmetry that the panelists discussed could be better handled by focusing on variety or standardization (particularly of products), whether we should focus on designing better solutions for individuals or encouraging increased formation of groups, and how to get all of this done.

Participants concluded that it is very important, when we think about the retirement system, to consider how we use the markets. Structure became a recurring theme, because it was felt that a little bit of additional structure would help the markets work better. Participants saw this structure represented in the following four characteristics of a new retirement system:

- **Groups.** Markets work best when groups approach the markets. One participant quoted a study where groups (in the form of institutional pension funds) performed at least 200 basis points better than individuals (in the form of mutual funds) when all other factors were controlled for (the difference was largely, but not completely, attributable to fees). Conference participants felt that large groups were best, that groups could be either for-profit or not-for-profit, and that competition among groups was essential. A for-profit/not-for-profit model could mean that you could have government agencies establish groups, as well as insurers and other financial institutions who establish groups that individuals or employers could elect to join. Competition is necessary to ensure that participants experience the best outcomes (groups that have to compete would be more efficient than groups that do not compete).

- **Incentives.** Agents help groups (and individuals) use the markets better, but agents need proper incentives. Agents in this case can include agents working with a large group (such as investment managers, actuaries, administrators) and agents

working with individuals on their retirement plans (such as financial planners). One conference participant works at a public pension plan, and described the principles they use to run their fund (run it like a business, don't do in-house what they can purchase cheaply, reward employees competitively to maintain talent). The discussion on how to give agents the right incentives to work on behalf of individuals included disclosure of costs/fees of products (both as a dollar amount and a percentage) and a better alignment of agents' compensation with the interests of the group members (for example, agents' bonuses increase when group members' benefits increase).

- **Standardization.** Conference participants discussed whether market innovation or standardization was necessary, and came to the conclusion that a degree of market standardization was important going forward. Markets need to offer standardized products so consumers can comparison shop. Today, while specialized features on products such as annuities can be very helpful, it's difficult, if not impossible, for most consumers to determine if the special features add value. The analogy was made to U.S. Medicare Supplement plans, which are standardized into twelve basic designs (made a bit more complicated by the introduction of Part D) to allow price comparison by seniors. One advantage of standardization in the retirement system context would be that middle income consumers who had a relatively small amount to annuitize (say $50,000 to $100,000) would be able to get more for their accumulations, given that standardized products should improve comparability, increase competition, and drive down prices. For these consumers, an additional $10 of monthly benefit would come at a lower price than at present, in the long term, all other things being equal.

  Conference participants discussed whether there should be standardized products (e.g., standard form for a life annuity with a 10-year guarantee period) or standardized features (e.g., "guarantee period" option works the same on all annuity forms). Participants clearly felt that standardized products were necessary because standardized features did not clear up enough of the confusion. However, the development of standardized products would not mean that insurers and others could not offer products that were not standardized.

> *"Behavioral finance certainly emphasizes [that] you want to offer few choices. If you give too many, you muddy the waters. Toyota only offered three good cars in the 70s, meaning they only offered three cars, as opposed to GM [which] had lots of bad cars, but you could get lots of variety in those bad cars."*
>
> -Conference participant

- **Innovation.** We need to encourage market innovation, particularly in the development of instruments that can hedge retirement risks. Markets have become very efficient at hedging financial risks. For example, the ability to sell mortgages on the secondary market has greatly increased the pool of money available to middle-income consumers for mortgage loans. However, retirement risks are somewhat different than most financial market risks. Pension plans and annuities have long tails

> on their obligations. We know today that, in the U.S., the supply of long bonds is far outstripped by the potential demand (from pension plans and insurers), and what long bonds do exist don't match the duration of pension plans and insurer obligations. In addition, systematic longevity risk (the risk that a cohort of individuals will outlive expectations for that cohort) is not a risk that markets can currently hedge. This can make annuitization, in particular, very expensive. Markets must be encouraged to develop the instruments to meet the needs of tomorrow's retirement system.

One thing was clear from the markets panel discussions: markets need to work better. To some extent, this may happen by changing how we use the markets (using groups and agents), but we also need to make the market work better for the retirement system (some standardization, and more innovation). Defined benefit plans sponsored by employers arose in an era before many of today's hedging vehicles were developed. We ought to be able to both better exploit what the market is doing today, and also demand more from the markets, as we design better retirement systems.

Panel 3 – Role of the Employer

Rounding out the two-day conference was a panel that explored the role of employers in the retirement system. Panelists Elaine Noel-Bentley (Alberta Local Authorities Pension Plan trustee) and Robert Patrician (Communication Workers of America), with moderator Mike Archer, worked through what role, if any, the employer should have in a retirement system. Their discussion covered points such as whether the employer ought to have a role (yes), whether that role should be mandatory or voluntary, whether the employer role should be to put aside money for employees (capital financing), to provide payroll deductions to the employee's fund of choice (facilitate savings), to act as a "trusted agent" to determine the best accumulation and decumulation vehicles, and whether the employer should ever be the guarantor of the retirement promise (as they are today in defined benefit plans). And finally, critically, if not the employer, who?

> *"I think we have to challenge ourselves. What is so fundamentally sacrosanct [with] the employer being the entity that sponsors the pension plan? In the US, that's a creation of wage price controls of World War II..."*
>
> -Conference participant
>
> *"Employers are where it all starts. That's where your compensation comes from, so they are always going to have a role in this. You can't just say "well, you have nothing to do with it" unless you're going to just go with [a] totally general- revenue-financed type of program."*
>
> -Conference participant

The working groups debated these same questions at length and basically came out agreeing that employers ought to have a role in a retirement system, but that role could look very different from the role they play today. Today, their role in the retirement system is really based on a binary choice: they sponsor a plan (DB or DC) or they don't. There are some circumstances where they can offer access to a plan (e.g., universities and TIAA-CREF) and some circumstances where they participate in industry-wide plans (e.g., multi-employer plans), but these are limited.

When thinking about the role of the employer, the working groups developed the following possibilities:

- **Facilitator.** Participants felt that employers should continue to play the role they do well today in terms of facilitating employee savings. Payroll deductions are a powerful tool to help employees prepare painlessly for retirement.

- **Educator and trusted advisor.** The working groups also focused on the role of the employer as educator and trusted advisor. We know that employees trust their employer to give them unbiased information about retirement accumulations. In addition, the employer can truly be an unbiased agent – the employer realizes no monetary gain from the choice the employee makes, and in fact may be biased to ensure that the employee plans well, which would assist the employer in easing the employee out of employment were this to become necessary or desirable later on.

- **Elective employer roles.** Other possible employer roles include purchasing agent, distributor of income, and guarantor. As a purchasing agent, the employer might select groups for employees to participate in or investment funds that meet specific retirement targets and provide superior performance at a reasonable fee level. Many employers play the purchasing agent role today with defined contribution plans and other employee benefits. As a distributor of income, the employer would help employees to structure the transition from accumulation of wealth to creation of lifetime income. Employers wouldn't necessarily guarantee the lifetime income, but they would help structure the choices, such as by setting up preferred arrangements with insurers and other third parties. Finally, the employer could act as guarantor, a role it has played historically in defined benefit plans, whereby the owners of the business (taxpayers for public plans) guarantee some or all of the retirement risks faced by employees. One way this might differ from the traditional defined benefit sponsor role would be that the employer might choose to guarantee part of the risk (e.g., longevity risk) but might pass other risks back to the employee, or hedge them on the markets.

Ironically, by opening up a debate on the appropriate role of the employer, we can begin to entertain the possibility of mandating "second-tier" coverage as one feature of the new retirement system. Second-tier coverage in the U.S. and Canada has been, to date, employer-sponsored pension plans (with the first tier being social insurance). One criticism of the current private employer retirement system is that it has never covered the majority of workers. Small employers in particular are unable to play a role, because the cost and risk of sponsoring a pension plan are simply too much for them to bear.

If there were plan sponsors other than employers, and if the employers' role could be simply to ensure that a payroll deduction makes it from the employer's bank account to the plan of choice, then you could mandate participation in the system. We already mandate participation in the social insurance system (with some exceptions), and the employer's role in its financing and administration (to remit contributions on behalf of itself and its employees). There could be opt-out options for employers (permitting an employer to sponsor its own plan) and/or for employees (permitting employees to elect to contribute to a plan of their choice).

Next Steps for *Retirement 20/20*

A full report of the 2007 conference will be developed in the first quarter of 2008, and made available on the *Retirement 20/20* Web site (*www.retirement2020.soa.org*). There are several other projects underway

under the banner of *Retirement 20/20*. These include the development of measurement frameworks to evaluate proposed designs based on the criteria developed at the 2006 conference, and the launch of several Calls for Papers – the outcomes of which will be the focus of the 2008 conference.

You can find these Calls for Papers at

www.soa.org/research/other-research-projects/data-requests/research-cfp-changing-signals.aspx

and at

www.soa.org/research/other-research-projects/data-requests/research-cfp-inc-self-adjust-retire.aspx.

Emily Kessler, FSA, EA, has been working with the Pension Section on the *Retirement 20/20* project. She is a Managing Director at the Society of Actuaries and can be reached at *ekessler@soa.org*.

Retirement 20/20 is the Pension Section's initiative to rethink retirement systems. The goal of *Retirement 20/20* is to consider what's possible, beyond the limitations of what's happened historically or what is in today's tax code. For more information, visit *www.retirement2020.soa.org*.

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SOA RELEASES NEW LONG-TERM HEALTH CARE COST TRENDS RESOURCE MODEL

Steve Siegel, ASA

What will the world look like 30 years from now? How about regular commuters to the moon celebrating the launch of the first lunar Starbucks with Venti Mocha Frappuccinos at the special grand opening price of $52.95 (just $1 more than the regular price of $51.95 on Earth)? Or, how about the ultimate in Bluetooth technology, where cell phones are actually implanted permanently in eardrums? Talk about hearing ringing in your ears! And what new, wondrous technology for critically ill patients will impact health care costs?

Although my first two predictions for 2038 are clearly tongue-in-cheek, the last question is part of a real exercise in projection that actuaries who produce FAS 106 and GASB 45 valuations go through regularly. To help these actuaries, the SOA's Pension and Health Sections recently released a new resource model for projecting health care trends through the year 2099. The model and accompanying documentation can be found on the SOA Web site at: *http://www.soa.org/research/health/research-hlthcare-trends.aspx*

The original idea for the project came from Kevin Binder, who also served as chair of the group that oversaw development of the model. Binder, an actuary with Bolton Partners, had read a 2004 article in Business Week on possible increased scrutiny by the U.S. Securities and Exchange Commission (SEC) into assumptions made in connection with accounting for post-retirement benefits. The SEC was concerned that some assumptions might have been manipulated to meet companies' profit and balance sheet targets. Included among the assumptions that the SEC flagged was the level of health care cost inflation in relation to retirees' medical benefits.

The SEC's concern underscored the lack of actuarial research concerning long-term health care trends. Binder suggested that having a resource model that was both transparent in methodology and that clearly documented its data sources and economic assumptions would be a valuable tool for selecting long-term health care trend assumptions. Furthermore, the model could be used to help explain, document, and justify the assumptions to interested parties. With this objective in mind, the Pension Section's Research Team set out to hire a researcher to develop such a model – one that could easily be used by knowledgeable practitioners.

Subsequently, a Request for Proposals was issued and proposals from several leading experts were received. From those proposals, Professor Thomas Getzen of Temple University was selected to create the model. Prof. Getzen, a well-known health care economist, is also Executive

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Director of the International Health Economics Association (iHEA). His textbook, Health Economics and Financing (Wiley; 3rd ed.), is on the SOA exam syllabus as part of the Health Systems Overview FSA module.

To oversee the research, prominent actuarial practitioners from both the Pension and Health Sections were recruited (with Binder chairing): John Cookson, Marilyn Oliver, Adam Reese, Russell Weatherholtz, and Keith Williams. The group was excited to forge a partnership with a researcher from outside the profession and felt that the multidisciplinary perspective Getzen provided would result in enhanced interest in the work by a wide range of health care professionals.

The results of the research include an Excel model that projects per-person expenditures and growth rates through 2099 using a set of equations and assumptions developed by Getzen with assistance from the project oversight group. The model includes baseline assumptions as well as flexibility for user-inputted alternative assumptions. The data sources underlying the model assumptions are specified in the accompanying technical documentation. This provides transparency and support for the ultimate results.

To further illuminate the model, the project oversight group authored a document that describes practical issues that might be encountered by actuaries using the model. Issues discussed include the relationship of short-term trend rates inputted by users to long-term projected rates, characteristics of the prescribed substantive plan to be valued and special cases that may require model adjustment. As well, examples of sample report language are provided.

To keep current with the latest health care data, the model will be updated annually. The timing of the updates will be dependent upon availability of the latest health care cost estimates from the Centers for Medicare and Medicaid Services (CMS) and other sources.

Interested readers may want to consider signing up for an SOA Web cast on the model that is planned for late February or early March. Details will be posted on the SOA Web site in the events section as soon as a date is finalized.

The Pension and Health Section Councils would like to express their thanks to the project oversight group for its dedication and valuable assistance in completing this effort. All of us involved in the project would also welcome any feedback you may have on the model, and thoughts for future related projects. Please e-mail me at the address below. Your comments are greatly appreciated!

Steve Siegel is the research actuary for the Pension and Health Sections at the Society of Actuaries. He can be reached at *ssiegel@soa.org*.

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INFORMATION SOURCES FOR DB PLANS OUTSIDE THE UNITED STATES

John A. Turner, Ph.D

The Internet is a valuable information resource. However, so much information is available that pension practitioners and researchers generally cannot make full use of it. Search engines help, but they do not always find the relevant information. This article was commissioned by the Pension Section Research Team to provide practitioners and researchers with a listing of Web sites containing information about DB plans outside the United States. It also lists some non-Internet information sources.
The research team's primary motivation for the article was its belief that readily available comparative information on the pension environment, including current design and funding issues, in other countries would benefit practitioners and researchers dealing with similar issues. In particular, a collection of available relevant resources on the Internet (as well as other sources) would allow an expeditious review of those materials to highlight the most salient and applicable information.

To limit the scope and provide focus, the following criteria were used as to Web sites that are excluded from the list. Web sites are excluded that:

1. are for individual plans
2. are the Web sites of individual researchers
3. are not in English
4. require a fee for use
5. focus on defined contribution (DC) or social security plans

Most of the Web sites selected focus on pensions. A few sites do not focus primarily on non-U.S. DB plans, however the sites are included because they provide some relevant information. Even within these limitations, the listing below is not exhaustive. Those responsible for relevant Web sites not listed here are invited to contact the author at the e-mail address below to be included in future updates of this listing. The non-Internet information sources generally require a fee. It would be also helpful to receive comments on those sites that may prove the most useful for a particular situation or issue.

For convenience, we have assembled the suggested resources into a handy, one-page exhibit for future reference. The Web sites are organized into those for particular countries and those that cover multiple countries.

Please click here to download the list of resources.

John A. Turner, Ph.D, is a pension policy consultant based in Washington, DC. One of his areas of focus is lessons for U.S. policy from the experience of other countries. He can be reached at *jaturner49@aol.com*

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PPA...READY OR NOT

Brian Donohue, FSA

Note from the editor: *2008 is upon us. Pension reform, a concern for most of the decade, is here. This article provides a review of the single-employer funding rules under PPA, reflecting regulatory guidance through December 2007. The discussion does not cover special issues for hybrid plans and does not consider at-risk calculations or benefit restriction rules.*

Overview

Many of the mechanical aspects of the minimum-required and maximum tax-deductible pension funding calculations under PPA are fairly well understood by now.

Beginning in 2008, a plan's minimum funding requirement for a plan year, determined as of the valuation date (which must be the first day of the plan year for plans with at least 100 participants) is equal to the target normal cost plus an amortization payment on any unfunded liability. So far, this is all very familiar.

Plan liabilities (the funding target and target normal cost) are calculated using the unit credit funding method. For pay-related plans, benefit increases due to current year pay are reflected in the normal cost, very much like current liability or ABO calculations. For tax deduction purposes, liabilities may reflect the value of future pay increases on benefits earned to date — a projected unit credit or PBO-type number.

It may be useful to think of PPA funding rules as putting pay-related and non-pay related plans on a similar footing, with required contributions based on benefits earned to date and tax deductions that are indexed for pay (or assumed multiplier increases based on past practice.)

If this were all there was to it, we might be forgiven for wondering what the big deal is. However, the assumptions used to determine the funding target differ from those used for current liability in a couple of important ways, and the mechanics for setting up bases and amortizing unfunded liabilities is different from prior law.

Let's look at assumptions first. PPA provides new rules around several important assumptions used to measure pension liabilities, including mortality, interest rates, and the valuation of lump sum benefits, as discussed below. Afterwards, we'll touch on other aspects of the minimum funding calculations, including asset valuation and amortization calculations.

Mortality

PPA changed the mortality used to value pension liabilities, but the IRS effectively accelerated the adoption of the new mortality basis by requiring its use in calculating current liability for 2007.

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The mortality table is based on RP 2000, which was developed based on the experience of participants in single-employer US pension plans, so it is arguably a better reflection of plans' anticipated mortality than other tables. RP 2000 publishes separate tables for annuitants and non-annuitants, and PPA requires separate annuitant and non-annuitant mortality be used for plans with more than 500 total participants.

The standard mortality rates under PPA are determined separately for periods prior to and after benefit commencement. Prior to benefit commencement, rates are based on the RP 2000 non-annuitant table projected (using scale AA) 15 years beyond the valuation year — for 2008 valuations, that's a 23 year projection. For periods after benefit commencement, rates are drawn from the RP 2000 annuitant table, projected seven years beyond the valuation year.

For plans that only pay annuities, the new mortality table may increase liabilities as much as 7-8 percent for heavily male populations. Since the new table was required for 2007 current liability, plans should already be aware of the impact.

For annuity plans, the impact of the new mortality table will be more significant than any other change to the liability calculation for 2008.

For plans that pay lump sums, the opposite is true: since these plans are not underwriting significant mortality risks, they saw little impact on liabilities due to the new mortality table in 2007, but will see a more significant increase in liabilities (barring a change in the calculation of lump sum benefits under the plan) in 2008.

The mortality used in each valuation after 2008 will be slightly lower than the preceding year's table, producing liability "creep" of maybe 0.1-0.2 percent per year.

The rules do allow for the use of a fully generational version of the RP 2000 mortality table, which will generally increase liabilities by about 2 percent as compared with the standard table, while eliminating the "creep" alluded to above.

Finally, large plans (with 1,000 deaths per gender over a four-year period) can submit tables based on their own experience (with Scale AA generational improvements added in). However, our sense is that obtaining IRS approval for this change may be difficult and not timely.

Interest Rates

The most challenging computational aspect of the new funding rules is the use of a yield curve, rather than a single interest rate, to discount plan liabilities. The key point in applying the yield curve to plan cash flows is that the curve is composed of spot rates— i.e., yields available on zero-coupon bonds that mature at that point. So, cash flows for any given year under a plan will be discounted to the valuation date using a single interest rate, but different rates will apply to cash flows at different points in time. The example below illustrates these calculations:

Example 1

	(a)	(b)	(c)	(d)	(e)
Year	Benefit Payments	Discount Period (Years)	Interest Rate (Oct 2007)	Discount Factor, {1/[1+(c)]}^(b)	Liability, (a) x (d)
2008	1,000	0	-	1.0000	1,000
2009	1,200	1	5.09%	0.9516	1,142
2010	1,400	2	5.05%	0.9062	1,269
2011	1,300	3	5.12%	0.8609	1,119
2012	1,100	4	5.26%	0.8146	896
2013	900	5	5.41%	0.7684	692

The example assumes cash flows occur at the beginning of each year and applies the corresponding rate from the yield curve to each of those cash flows.

The published yield curve includes rates at 6-month intervals, and actuaries will need to think about how to apply the curve to actual valuations. Depending on the form of payment assumed (lump sums vs. annuities) and the timing of decrements (beginning or middle of year), it may make sense to use beginning of year yield curve rates, middle of year rates, or both in a given valuation.

The PPA yield curve is similar to curves many actuaries are familiar with from consulting around FAS 87, but there are a couple of differences:

(1) Single-A and triple-A bonds are included, in addition to double-A. Since there are lots more single-A bonds than triple-A and the curve reflects this weighting, this produces slightly higher rates than under FAS 87.
(2) Yields are based on bid prices. Auditors may prefer data from actual trades or a bid/ask average. Again, the PPA methodology produces slightly higher rates.
(3) Rates are averaged over one month, rather than being based on a specific day. So, the PPA curve will be slightly less volatile than FAS 87, and liabilities may diverge from "market liabilities" based on a significant within-month movement in rates.

Based on the data so far, it appears the PPA yield curve will produce "effective interest rates" within about 0.1-0.2 percent of FAS 87 rates. In most cases, PPA liabilities valued using the full yield curve should provide a reasonably tight fit with "market liabilities" for purposes of liability-driven investment strategies.

But PPA doesn't require the use of the full yield curve to value liabilities. As one of the more dubious aspects of pension simplification, PPA introduces the concept of "segment rates." The first segment rate is simply the average of the first ten data points from the yield curve (maturities 0.5 through 5.0), the second segment rate is the average of the next thirty data points (5.5 through 20.0), and the third segment is the average of the next eighty data points (20.5 through 60.0).

The impact of using segmented interest rates vs. the full yield curve to value liabilities is negligible, a couple of basis points at most (apart from unusual cases for small plans where the liability is concentrated among a few participants and the yield curve is steep). The salient difference between these two methods, however, is that, under PPA, plans that use segment rates base the rates on 24-month, rather than 1-month, averages. In essence, the difference between the full yield curve and the segment rates is the 24-month smoothing, not the segmenting itself.

The example below applies the 24-month segment rates in lieu of the full yield curve from example 1:

Example 2 - 24 Month Average Segment Rates

	(a)	(b)	(c)	(d)	(e)
Year	Benefit Payments	Discount Period (Years)	Interest Rate (Oct 2007)	Discount Factor, {1/[1+(c)]}^(b)	Liability, (a) x (d)
2008	1,000	0	-	1.0000	1,000
2009	1,200	1	5.31%	0.9496	1,139
2010	1,400	2	5.31%	0.9017	1,262
2011	1,300	3	5.31%	0.8562	1,113
2012	1,100	4	5.31%	0.8131	894
2013	900	5	5.88%	0.7515	676

One curiosity of the segmenting approach is that the 5.0 rate from the full yield curve (5.41 percent), which is used to discount the 2013 benefit payments in Example 1, is included in the calculation of the first segment rate in Example 2, while the second

segment rate from Example 2 (5.88 percent), which is used to discount the 2013 benefit payments in Example 2, is based on rates during the period 5.5 to 20.0 years. C'est la vie.

In addition to the full yield curve/segmented yield curve decision (which is essentially a smoothing decision), plans have the option to phase-in to the PPA interest rates, using a weighted average of the PPA rates and the pre-PPA (4-year long-term corporate bond average) basis. The phase-in would use 2/3 of the pre-PPA basis for 2008 and 1/3 for 2009. The phase-in is the default election, so plans that do not wish to use the phase-in must make an affirmative election not to do so.

Finally, plans have the option of choosing from among five “lookback” months for determining interest rates. Note that for plans that use the phase-in and blending with pre-PPA rates, the same lookback month used for the post-PPA rate will be used to determine the pre-PPA rate (and not the one-month lookback that was effectively dictated under pre-PPA law).

Based on recent IRS guidance, it does not appear that plans that adopt the full yield curve have access to the phase-in or lookback options. In any event, it seems unlikely that plans using the full yield curve would be interested in the phase-in or lookback options anyway.

All told, plans will be able to choose from at least 11 combinations for determining the 2008 interest rate. How do we help them navigate?

In general, whatever plans choose for 2008 will determine the approach used in subsequent years unless the plan gets IRS approval for a change. There are, however, two exceptions to this:

(1) Plans that use 24-month segment rates can move to the full yield curve later.
(2) Plans that adopt the phase-in for 2008 can choose not to apply the phase-in for 2009.

Why might a plan choose to adopt the full yield curve? Generally, this approach will be attractive to sponsors that wish to “mark liabilities to market.” Plans may wish to do this for a variety of reasons:

(1) As part of an asset/liability matching strategy
(2) To improve the transparency of the plan’s funded status
(3) To better align funding and accounting liabilities

At the other end of the spectrum, a sponsor with a more traditional asset allocation may want to maximize the predictability and minimize the volatility of pension funding.

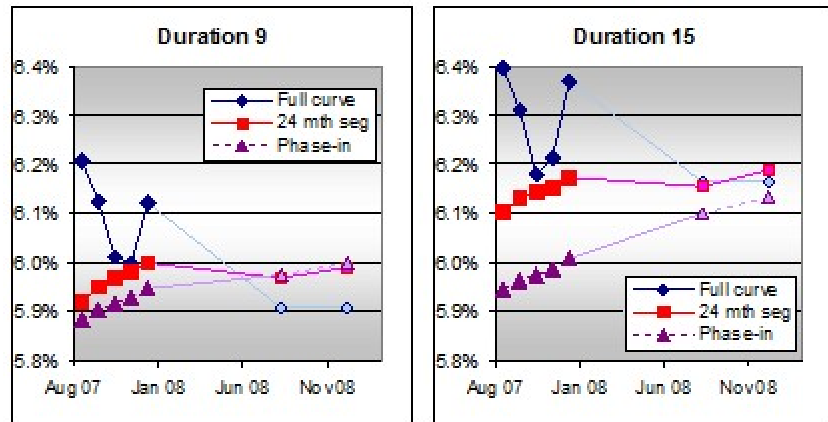
In this case, the 24-month segment rates will reduce volatility and the August lookback month will maximize the predictability of future pension funding.

As for the phase-in, this is a comparatively minor decision, since it only affects results for the next two years. For all but very short duration plans, the phase-in will produce lower interest rates (i.e. higher liabilities) for 2008. For many long duration plans, this will continue to hold true for 2009, in which case the phase-in has no value. For some shorter duration plans, however, the phase-in may produce higher rates for 2009, particularly if interest rates move lower in the months ahead.

Rather than merely identifying the approach that produces the best 2008 result, plans will want to consider the longer-term impact of the PPA interest rate decision. The graphs below estimate the effective interest rate for a short and long duration plan for 2008 and 2009. For purposes of the estimates, we assume no change in the shape of the yield curve after January 7, 2008 (monthly averages after December 2007 are

estimated):

Example 3 - Estimated effective interest rates for 2008 and 2009



The graphs reinforce a couple of points made above: (a) 24-month segment rates produce less volatile results, and (b) the phase-in is of limited value.

In the preamble to recently-released proposed regulations, the IRS has indicated that the basis used to determine the plan's funding target for minimum funding purposes will carry over to other PPA liability calculations, such as the maximum deductible contributions and the AFTAP calculations in connection with benefit restrictions under IRC section 436.

Finally, for all the attention paid to the subject, the fact is that the new interest rate basis will not be a major source of disruption for most plans for 2008. The maximum current liability rate for January 2007 was 5.78 percent. As you can see, the effective rate for 2008 for most plans will be higher.

The table below summarizes the 24-month segment rates (with and without phase-in) for each lookback month of relevance for January 1, 2008 valuations:

	Segment Rates			Segment Rates with Phase-in		
Lookback Month	1st	2nd	3rd	1st	2nd	3rd
August 2007	5.26%	5.82%	6.38%	5.66%	5.85%	6.03%
September 2007	5.29%	5.86%	6.40%	5.68%	5.87%	6.05%
October 2007	5.31%	5.88%	6.40%	5.70%	5.89%	6.06%
November 2007	5.31%	5.90%	6.41%	5.70%	5.90%	6.07%
December 2007	5.31%	5.92%	6.43%	5.72%	5.92%	6.09%

Valuation of Lump Sums

Prior to PPA, pension liabilities were discounted using long-term corporate bond rates, but lump sum benefits were determined using 30-year Treasury rates. Valuation rules, specifically for current liability, did not allow plans to reflect the additional liability associated with the fact that the yield on 30-year Treasuries is lower than that on long-term corporate bonds.

Under PPA, this situation has been corrected, so that any "subsidies" associated with lump sum payments versus the PPA yield curve must be reflected in liabilities to the extent the plan assumes lump sums are elected (which, generally, is most of the time).

So, plans that continue to pay lump sums using 30-year Treasury rates in 2008 and beyond will see an increase in liability as compared to prior law, reflecting the value of the more generous 30-year Treasury basis.

Of course, in conjunction with PPA's change to the IRC section 417(e) rates, plans can change their lump sum calculation to the yield curve basis, which is phased in over five years beginning in 2008. By doing this, plans can reverse most of the increase in liability they would otherwise see in 2008 due to this lump sum subsidy issue.

Presumably, Congress viewed the disconnect under prior law as a problem for pension funding rules. One of the benefits of harmonizing the interest rates for calculating pension liabilities and the rates for calculating lump sum benefits is that it addresses this issue.

The result is that, for plans that adopt the yield curve basis for calculating lump sums, the lump sum is no longer subsidized versus annuities, so the liability should be the same whether participants elect annuities or lump sums (other than a mortality difference, because of the blending of male/female and annuitant/non-annuitant mortality for lump sum calculations.)

Under this approach, we implicitly assume that the yield curve at the time the lump sum is paid is based on the forward rates embedded in the current yield curve.

Some actuaries have approached the problem in a different way. Calculating liabilities, they reason, is a two-step process: (1) calculate the benefit payable at decrement, and (2) discount the benefit to the valuation date. The first calculation requires an assumption about the shape of the yield curve at the time of decrement. It may be reasonable to suppose for this purpose that the curve is identical to today's curve.

Following this approach, the (typically lower) short-term interest rates from today's yield curve will be used to determine, in part, the value of any lump sum, even for a person not expected to receive benefits for fifty years. For decrements prior to year five, the short end of the yield curve is applied to the liability calculation twice – once to determine the lump sum benefit and again to discount it to the valuation date.

Proposed regulations issued in December are consistent with the first interpretation above. The IRS view is that, for plans that adopt the new 417 lump sum basis, lump sum benefits should be valued as annuities, using the unisex 417 mortality table rather than the sex distinct PPA morality assumption for the period after benefit commencement.

Generally, these calculations will reflect the current 417 mortality table for all future years. In other words, 2008 valuations will use the 2008 417 mortality table after benefit commencement to value 417 lump sums payable in all future years.

However, plans that opt to use generational mortality to value pension liabilities may, but are not required to, use a 50/50 unisex version of the generational mortality table for purposes of valuing 417 lump sums.

This leaves the small matter of the phase-in of the corporate bond yield curve between 2008 and 2012. The proposed regulations allow, but do not require, plans to reflect differences between the 417 phase-in interest rates and the valuation interest rates with respect to these benefits. The math can get pretty complex however; so many plans (and their actuaries) will welcome the opportunity to ignore this additional liability in 2008-2011 valuations.

Finally, plans that continue to pay lump sums on a more generous basis than PPA, such as the pre-PPA 417 basis, will need to reflect the additional value of these lump sum benefits in their funding target.

* * *

One additional change under PPA is to clarify that the funding target and target

normal cost reflect only benefit liabilities. Unlike pre-PPA rules, there is no scope under PPA for reflecting expected plan expenses in the liability calculations.

Asset Valuation

PPA retains some ability to smooth out changes in asset values, allowing an average over the prior 24 months. IRS proposed regulations, however, interpret the term average quite literally, as an average of historical asset values adjusted for intervening cash flows (contributions, benefit payments, and administrative expenses) only. Unlike pre-PPA asset smoothing rules, plans cannot reflect expected earnings on prior asset values in determining the average.

Contributions for the prior plan year made after the valuation date are included, discounted to the valuation date using the prior year's effective interest rate. Since 2007 is a pre-PPA year, though, such accrued contributions included in the 2008 asset value are not discounted. Also, for small plans that use a valuation date other than the first day of the plan year, current plan year contributions made prior to the valuation date, and earnings based on the plan's effective interest rate, are subtracted from the value of plan assets.

Averaging of prior asset values must use historical values that reflect equal periods of time (e.g. monthly, quarterly, annually) not greater than twelve months and can't include data prior to the last day of the twenty-fifth month preceding the current year valuation date.

Finally, the result of asset averaging must be between 90-110 percent of the fair market value at the valuation date.

The example below comes directly from the proposed regulation:

Example 4-Asset Smoothing

Average value as of January 1, 2019	2017	2018	2019
Fair market value: January 1	196,500	238,000	228,000
Net Adjustments:			
Contributions	128,000	66,000	
Benefits Paid	49,000	25,000	
Expenses Paid	14,500	7,500	
Total	261,000	271,500	228,000

Average value as of January 1, 2019 equals: [$261,000 + $271,500 + $228,000] ÷ 3 = $253,500

Because asset values are expected to increase over time, PPA averaging will tend to produce lower values than fair market value, although, as the example above shows, this will not be the case if assets decline in value during the averaging period.

So, plans face a trade-off: averaging asset values will reduce volatility at the expense of higher expected contributions. Because the averaging rules are less favorable to plans than pre-PPA rules, we expect fewer plans will avail themselves of this option under PPA.

This is particularly true for plans with a "market value" orientation that use the full yield curve to calculate their funding target. Even in this case, though, since the yield curve is really a one-month average of rates, plans may consider minimal asset averaging, such as one-month.

Amortizing Unfunded Liabilities

The issues discussed so far relate only to the measurement of assets and liabilities. Once we have these amounts, the rest of the funding calculations are fairly straightforward.

The first question is: does the plan wipe out prior year amortization bases? Of course, this is not an issue for 2008, since there are no prior bases, but it will be an issue for succeeding years.

The answer to the question is yes if and only if:

$$\text{Assets} - \text{COB} - \text{PFB} >= \text{FT},$$

where

COB: carryover balance (pre-2008 credit balance)
PFB: prefunding balance (post-2007 credit balance)
FT: funding target

Also, if this is the case, the minimum contribution for the year is based on a full funding-type calculation:

$$\text{Minimum} = \text{FT} + \text{TNC} - [\ \text{Assets} - \text{COB} - \text{PFB}\ ], \text{ not less than zero,}$$

where

TNC: target normal cost

The next question is: do I set up a new amortization base for the current year?

The answer to this question is no if:

$$\text{Assets} - \text{PFB}^* >= \text{FT}$$

* The PFB is not subtracted if no part of it is used to meet the current year funding requirement.

There is a transition rule available to plans that are exempt from the deficit reduction contribution rules for 2007. For these plans, no new base is established for 2008-2010 if the plan is “fully funded,” as defined below:

$$\text{Assets} - \text{PFB}^* >= \text{Y percent x FT},$$

where

Y = 92, 94, and 96 for 2008, 2009, and 2010, respectively. If the transition funding target is not met in any year, it is unavailable for subsequent years.

For plans that must set up a base, the next step is to calculate the funding shortfall:

$$\text{Funding shortfall} = \text{FT} - [\ \text{Assets} - \text{COB} - \text{PFB}\ ]$$

The outstanding value of prior bases, if any, is subtracted from the funding shortfall to determine the current year amortization base.

The calculation of the amortization payment is a little funky, since it is based on both the first and second segment rates. Also, the calculation of the outstanding amount of prior bases is strictly forward-looking, applying the current year segment rates to the remaining amortization payments.

The example below illustrates these calculations. For this purpose, the plan uses the 24-month segment rates, no phase-in, and the October lookback month (2009 rates are estimated) and applies the carryover balance to the 2008 funding requirement:

Example 5- Amortization calculations

		2008	2009
(1)	Funding Target (FT)	20,000	21,000
(2)	Assets	18,000	18,700
(3)	Carryover Balance (COB)	1,000	0
(4)	AFTAP including COB	90.00%	89.05%
(5)	AFTAP subtracting COB	85.00%	89.05%
(6)	Wipe out old shortfall bases? [No if (5) < 100%]	No	No
(7)	Establish new shortfall base? [Yes if "fully funded*"]	Yes	Yes
(8)	Funding shortfall [(1) – (2) + (3)]	3,000	2,300
(9)	Prior Base ***	0	2,657
(10)	New shortfall base [(8) – (9)]	3,000	(357)
(11)	Target normal cost	1,000	1,050
(12)	Shortfall amortization **	502	442
(13)	Minimum contribution [(11) + (12)]	1,502	1,492
(14)	Plan year contribution (Made at the beginning of the year)	502	1,492

* "Fully Funded" means line (4) is at least 100% or, for plans eligible for transition targets, 92%, 94%, and 96% for 2008 - 2010.

** $502 = 3{,}000 / [\, 1 + 1/1.0531 + 1/1.0531^2 + 1/1.0531^3 + 1/1.0531^4 + 1/1.0588^5 + 1/1.0588^6 \,]$

*** $2{,}657 = 502 \times [\, 1 + 1/1.0498 + 1/1.0498^2 + 1/1.0498^3 + 1/1.0498^4 + 1/1.0593^5 \,]$

* * *

Preparing for 2008 is a major challenge for pension actuaries. The new pension funding rules contain some complexities, particularly related to valuing lump sum benefits, but there is much that is familiar, too. The challenge is compounded by regulatory guidance coming out with little lead time. All things considered, it should be an interesting year.

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A PENSION SECTION NEWS BOOK REVIEW: ANNUITY MARKETS AND PENSION REFORM

Michael B Price, ASA

The reader of *Annuity Markets and Pension Reform* by George A. (Sandy) Mackenzie might infer from the book title that this book somehow directly relates to U.S. legislation, Pension Protection Act enacted in August 2006. To the contrary, Sandy Mackenzie's work takes us well beyond today's political fixes or non-fixes of the U.S. defined benefit system. This book provides the basis for a new generation of benefit delivery in this country, as the "grip of public pension systems on the annuity market is now loosening." While not intended to solve every issue that must be addressed to create a viable and efficient annuity market, Mr. Mackenzie does cover many related practical considerations. It is no surprise, considering the author's background as an economist, that the book is written from an economic policy perspective, rather than from the mathematical detail of an actuary or social policy of a bureaucrat. It avoids detailed treatment of the current political climate in the United States which will keep this text fresh in its analysis and opinions regarding annuities for many years.

This is a very readable book, void of the usual plethora of formulas you would expect from such an academic work. Most formulas are relegated to an appendix. There are many references for those desiring more detail on much of the underlying theory and research quoted. The book is organized such that the reader is provided a warm-up history of annuities, followed by a guide to the book and chapter outline. The substantive material is divided into two parts. Part one, "introduces and develops the subject of annuities." Part two, "addresses policy toward distributions." Both parts compare the current U.S. annuity system with those of other countries. The author's conclusions are heavily influenced by past and current practices of other nations. Particular attention is given to Chile's individual account system, which reflects Mackenzie's experience with advising South American governments on individual account reform.

The book has "two main objectives." First, for public pension systems that plan to implement individual account reform, it provides a guide to the policies that should govern and regulate distributions from individual accounts. Second it considers the adequacy of the regulation and supervision of the annuity business, and how private annuity markets might function more efficiently. Mackenzie is specifically concerned with rules that govern the distribution side, touching on which design aspects might be voluntary and which mandatory. Based on the research of various academicians and economists, and his own opinions, Mackenzie provides insight into the reaction of the annuity marketplace, both private and public, both provider and recipient to various aspects of current policy such as taxation, adverse selection, mandatory v. voluntary distributions. For example, he points out that M.E. Yarri has developed a model that shows that under certain assumptions people would invest in annuities and

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nothing else. However, the private annuity market is small in most countries. Mr. Mackenzie explains this paradox in the U.S. through discussion of contributing factors, such as the desired level of consumption in retirement, the desire to leave a bequest, and the tax-favored status of other investment vehicles among other factors.

The book begins by "posing three basic questions." (1) What should the policy towards distributions from individual accounts be? (2) Should annuities be provided by the private or public sector? (3) How can voluntary annuities be made more efficient and regulation ensured? While McKenzie provides his insight into the issues to be tackled in order to develop answers for these questions, I believe that he avoids the one-size-fits-all approach to his conclusions. For example, he notes that we, in the United States, put high value on the private property aspect of individual accounts. This is in sharp contrast with other countries. Other countries put much greater emphasis on the aspect of retirement security. Similarly, choosing the optimal degree of annuitization may better suit one class of individual than another, depending on the individual's "wealth, taste for risk, financial acumen, and life expectancy." The point here is that this book will give the reader the fundamental knowledge to formulate his or her own answers to Mackenzie's basic questions, depending on the geography, demographics, politics and time in history under consideration.

That fundamental knowledge is provided within a number of concise chapters. Each chapter provides a building block leading to a final chapter of conclusions and recommendations that clearly evolve from Mackenzie's perspective developed from his work with international annuity schemes. There is much to learn from the balance of "compulsory annuitization and laissez-faire," and a combination of public and private administration, that is featured in the annuity systems of other countries.

Annuity Markets and Pension Reform
George A. (Sandy) Mackenzie
USA: Cambridge University Press, 2006
248 pages

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SOME INTERESTING INFORMATION ABOUT PHASED RETIREMENT

Anna Rappaport, FSA

A lot has been written about phased retirement. The January 2007 *Pension Section News* included an article (by Steve Siegel and this author) about phased retirement after the PPA. This 2008 article provides some new information and perspectives on the topic.

On June 26, 2007, the U.S. Conference Board sponsored a Web cast on phased retirement. There were several interesting aspects of the Web cast and ensuing discussion. These included:

- Polling results
- Focus on case studies about how employers have implied phased retirement, including examples of how employees are moved from job to job as they entered phased retirement
- Participation by a number of employers, indicating their interest in the topic.

This article will focus on the first two of these three elements.

The polling questions reflect very quick responses to an informal poll. The sample respondents are limited to people who are interested in the topic. Nevertheless, the responses offer some interesting findings:

- Does your organization currently offer phased retirement?
  - 63 respondents
  - 41 answered no, 1 said yes to a formal program, and 21 said yes with informal arrangements

- How likely is your organization to offer some phased retirement option within the next three years?

  - 69 responses
  - 33 said very likely, 26 said somewhat likely, 6 said somewhat unlikely and 4 said very unlikely. More respondents (33 versus 28) said that their company was more likely to offer a formal rather than an informal program.

I found these results to be very significant in that they indicate considerable interest in developing phased retirement programs in the future. They indicate that significantly more companies may offer these programs a few years down the road than do now. This is a topic that has been talked about for many years. Maybe we are coming closer to concrete action.

The second interesting part of the Web cast that I want to share with *PSN* readers are examples of how individuals have made phased retirement work for them. These stories are from a presentation by Dawn Malone of

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Bon Secours Health System which was included in the Web cast. Bon Secours offers three phased retirement options which are described in detail in a recent Conference Board report, Phased Retirement after the Pension Protection Act (*www.conference-board.org/publications/describe.cfm?id=1289*).

Dawn Malone told these stories:

"Job-sharing is tougher to accommodate but it can be done, too. Jackie started her nursing career at Bon Secours in 1971. She had been mentoring Becky, who is also a nurse. Last year, Jackie had remarried and decided, after 36+ years in nursing, that she wanted more time to stop and smell the roses. Becky wanted to spend more quality time with her four boys, ages 7 to 17. They had observed a successful job-sharing arrangement elsewhere in the health system and asked their supervisor about co-managing their department.

Their supervisor, James, asked lots of questions, such as if the staff would accept it, if it would create confusion over who was in charge, and if any possibility existed that tasks or information might fall through the cracks. During the decision-making process, he said everyone laid their concerns on the table and discussed them openly. That reflected well on the team, and in the end, the job-share was approved on a pilot basis. It's working well—this is a great example of mentoring and knowledge transfer that's so vital to our business."

"Jane was a nurse at one of our hospitals for 40 years before it closed. Then she transferred to the Rapid Admit Unit at our then newest facility. She was thinking she'd just be marking the days until she could retire. However, the environment at this facility came as a very pleasant surprise. And at age 67, she loved her job and the people so much, she really didn't want to retire. But like many after age 50, she was finding the physical demands of nursing increasingly difficult.

Her supervisor, Jill, recognized that a valuable resource was about to disappear and had something else for Jane in mind. She saw the perfect opportunity to fill a department need with someone who had a tried and true set of skills who could hit the ground running. Jill had no idea whether Jane would be interested—it was a shot in the dark, but she took it. The offer was a welcome surprise to Jane. She called Jill's offer a gift. In addition to being able to stay with friends in an environment she enjoyed, she appreciated the extra income and continuation of her health benefits. She now works 15 to 18 hours over three days each week."

"In this next scenario, we'll look at Nettie's career. She began nursing in 1957. She worked on three units. She was one of the first "working mothers" to request flex scheduling to accommodate child care issues. Her husband was in the military and was gone for months at a time. She was originally hired to work 3 p.m. to 11 p.m. However, with small children at home and child-care issues interfering with her work schedule, Nettie lobbied the Nursing Director to allow her to flex her schedule. She worked 7 a.m. to 7 p.m. for many years.

In 1975, she transferred to Employee Health. During this time, she also worked PRN evenings, and weekends on the units. This made her the first employee allowed to work in more than one cost center—another flex scheduling milestone. In 1999, she retired. Then in January 2000, she returned to work for Employee Wellness. Among other duties, she performs

TB skin tests on employees. She has gradually reduced her hours since retirement. She currently works two days per week. "

"Finally, we have Jean's story. She first retired as a nurse in 1997. She loved her work in the psychiatric department, and she loved her coworkers. However, the physical nature of nursing had led to two knee replacements and later a broken foot.

A few months after she had said her good-byes, she got a phone call from a nurse manager she had worked with who asked Jean if she would come back as a substance abuse counselor. Jean was flattered. She had learned a lot from social workers on the unit, as well as the patients. And, as it turned out, she was wanting to do something else with her time. She talked with HR about reinstating, and found that her retirement benefits would accommodate this situation. She was excited about being able to continue collecting her pension while working part-time. Most importantly, she just loved what she was doing. She has since retired again and is enjoying spending time with friends, many of them former nurses."

These stories offer us an unusual insight into what phased retirement can mean at the individual level. Many of us who think about statistics and groups of people do not envision the practical aspects of how one person's job and role can successfully change during a phased retirement period. These stories help permit us actuaries to think about these issues in a different way. Thank you to Dawn Malone and the Bon Secours Health System for sharing them.

Anna Rappaport, FSA, MAAA, is President of Anna Rappaport Consulting in Chicago, and Senior Fellow on Pensions and Retirement for The Conference Board. She chairs the SOA Committee on Post-retirement Needs and Risks. Anna can be reached at *anna@annarappaport.com*.

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IN DEFENSE OF ASSUMPTIONS AND METHODS

Lawrence Mitchell, FSA

In the U.S. in the late 1980’s, the Internal Revenue Service (IRS) was taking steps to try to institute explicit boundaries for the actuarial assumptions being used in “funding” valuations to determine the appropriate contribution levels for small pension plans. Larry’s article was written in the context of that environment, to defend – as the title suggests – the rights of actuaries to their professional judgement. The courts eventually supported this perspective.

Larry Mitchell is still a pension and health plans consultant. He is President of Lawrence Mitchell Inc. in Woodland Hills, California and can be reached at larrymitchell@att.net.

In a recent meeting, a number of attorneys were discussing the strategy they were going to use in defending their clients. At Issue was the deductibility of contributions to qualified defined benefit plans. During the discussion one of the lead attorneys made a comment which caused me to cringe, not just because he said it, but because others echoed it. His comment was "judges do not understand all this actuarial gobbledygook!"

These trials do not involve a narrow case of deductibility. Rather, you and I, as actuaries, are really the ones who are at risk. And we are being defended by people who do not understand what we do. That is scary.

His remark was made because. We have failed to properly explain what we do with all our complicated machinations. This paper provides another approach.

It will discuss:

- The need to distinguish between benefits and assumptions and between assumptions and funding methods;
- The difference between retirement from the labor force and retirement from the plan;
- The role of funding as it relates to the plan's ability to pay the benefits promised; and
- The fact there are ranges of assumptions which are reasonable, there is no single set of assumptions which is the only reasonable set, and to say "only one assumption is reasonable" is unreasonable.

Benefits, Assumptions and Methods

It is important to distinguish between the benefits a plan is going to provide to the employees and the estimates we (the actuaries) make in order to try to place a value upon these Items. Further, we should differentiate between

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the values of the benefits and the way the client contributes to the plan (the funding method).

An analogy could be made using a house as the benefit. Suppose the employer is going to give the employee a house: The appraiser determines the value of the house. The employer then has to determine how he will pay for it (funding method).

It can be in a variety of ways:

- Interest only, with a balloon payment at the end;
- immediate payment in full;
- a long term mortgage with payments based upon fixed interest and amortization of principal;
- a long term mortgage with a variable interest rate;
- a combination of mortgages; with or with out a down payment; etc.

To carry the analogy further, we return to the determination of the value of the house. The employer will fund for a house whose value will be determined by the fair market value on the date In the future when title will be given to the employee.

To get the analogy closer, the plan could provide the type of house will be determined by the reason the employee has left the plan, his service with the employer, his salary over the year, his marital status, the age at which he leaves, the age at which he wishes to receive the house and the length of time the employee can stay in the house.

Now the appraiser has to project factors which will determine the date the title will be given to the employee and the value of the house at that time. This estimate is made at the outset of the plan and annually thereafter until the last house has been given away. Each determination will take into account any new developments which the appraiser feels are relevant.

The result will be an annual appraisal of the value of the benefits which will be given In the future and an assessment of the difference between that amount and the value of any assets which have accumulated to provide that benefit.

There is an annual adjustment to or correcting of the estimates which had been made previously. The actual cost will not be known until all houses have been distributed and all other expenses related to the administration of the program have been paid.

By the way, a basic tenet of the actuarial profession is the knowledge that none of our assumptions will be met exactly. Rather, we expect our estimates to produce ultimate results which are approximate and which will be adjusted as we get closer and closer to the end result.

If, in the case of pension plan funding, our estimates develop contributions which are too low or too high during a period of time, the following calculations will adjust these .We are taught to "straddle" the target until we get closer and closer to the area of the “bull's-eye." If we hit the bull's-eye exactly, it is an unexpected coincidence.

Retirement Age

We must differentiate the way the term "retirement age" is used. In most labor statistics in the public domain, the term is used to designate a withdrawal from the labor force. In the context of a retirement plan, the term is used to describe the age at which an individual withdraws from the plan (as opposed to the labor force) in order to get his retirement benefit. For

example most police retirement systems allow an individual to retire from the police department at a relatively young age. Usually, the individual who does retire goes to work elsewhere. He has retired from the plan (and the actuary has made assumptions which allowed the sponsor to fund for this), but he has not retired from the workforce.

The actuary looks at the plan and makes his best estimate of when each benefit is payable. In his summary of assumptions, he uses some shorthand notations which describe the process, and which is intended mainly to allow another actuary to develop values which approximate those of the original actuary.

When describing our assumptions, actuaries should have had the foresight to use a better term than the shorthand "retirement age." It is possible some confusion could have been avoided if we used "benefit expectation age for those benefits provided by the retirement benefit portion of the plan," or some such language.

Joseph and the Dreams

There is a story in the Bible about the dreams of a pharaoh and the interpretation of those dreams by Joseph. In effect, Joseph said the pharaoh should be concerned with putting away enough food in fat years so that the country can survive the lean years. So it is with the actuary. He has to protect the plan against the adversity of bad economic conditions and look well into the future (much more than the biblical fourteen). The actuary is aware there are cycles involving the economy and the ability of a plan to pay its promised benefits. If he were to use, for example, an investment yield which is based solely on the rates which were current at the date of valuation, he could lead the plan to ruin.

The reason for this is as follows:
When Interest rates are high, it usually means that the economy is doing well. This is a time when the plan sponsor normally can contribute money to the fund to provide for the future benefits. When Interest rates are low, it generally reflects a poor economy. At such a time, the plan sponsor usually can not contribute as much. However, using a high interest rate will produce a lower contribution, while a low Interest rate will produce a higher contribution. This is the exact opposite of sound funding for the protection of the participants and sponsor.

The actuary, however, is aware that investment yields fluctuate over a period of time. Further, the current investment yield does not reflect what it will be in the near or distant future, nor does it reflect what the reinvestment rates will be. Therefore, the actuary makes his best judgment as to the long range nature of investments in choosing the rate used for the determination of the plan's values.

Range of Assumptions

There is no single set of assumptions which can be called the only reasonable combination.
There is no single result of values of benefits which can be called the only reasonable value of benefits.

These two sentences are basic to the understanding of what is involved in determining a combination of assumptions which are reasonable in the aggregate. It means there are infinite variations of assumptions which in aggregate will produce a range of values which are reasonable, even though they are different. The law requires each actuary to use a combination which is that actuary's best estimate as to what is a reasonable combination. The law does not say the actuary must use a combination

which anyone else says results in reasonable values. The law recognizes that the actuary is a professional and must use his best professional judgment in determining the values.

In today's world, there are respected economists who have widely diverging opinions as to the direction of the economy of this country. Decisions are made by others which depend upon the weight given to a particular economist's estimate of the future. Just because the results are different does not make the prediction an "unreasonable one."

So it is with the actuary. We have those who are extremely pessimistic concerning future economic events. Others are extremely optimistic about the same economic events. And, of course, there are many who tend to go between the two extremes. All such estimates fall within the range of "reasonable." Further, actuaries are taught to determine possible scenarios such that the actual events will have a high chance of occurring within the projections made by the actuary. Each of us then tends to add some conservatism within his estimates of reasonable values.

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