



theactuary

the newsletter of the Society of Actuaries

The evolving U.S. retirement system

Insurers view expansion of income annuities

by Jeff Mohrenweiser

The numbers are staggering—rollovers from defined contribution and defined benefit plans have helped multiply IRA assets to \$2.5 trillion today, up from \$600 billion in 1990, according to the ACLI. In addition, LIMRA estimated in 2001 that individual nonqualified annuities exceed \$750 billion. With a fairly simple value proposition—exchange a lump sum payment for lifetime income payments—it appears payout annuities would be poised for

significant growth. However, statistics show that retail sales are barely \$4 billion per year (see Figure 1 on page 3).

Three representatives from insurance companies having significant positions in the variable annuity (VA), immediate payout annuity and 401(k) arenas recently discussed the state of the market and possible developments. The panel included Jim Baumstark from Allstate Life, George Green from GE Financial and Chris Mayer from the Principal Financial Group.

In general, panel members felt that retail payout annuities would grow to meet the impending demand, but would remain a niche product. Issues such as

the inherent value of the product, financial planning and controlling interests of retirement funds are stunting growth opportunities. However, new product creations and delivery options are elevating the possibilities and increasing the exposure of retail payout annuities.

Marketing and distribution

Mohrenweiser: Let's start off with a roll-up-the-sleeves assessment of retail payout annuities and how your company is participating in that market.

Baumstark: Our VA book is between \$12 billion and \$13 billion. However, less than 1 percent of that business actually annuitizes. That's a low rate—but in line with industry averages. A lot of our business was put on the books over the last three or four years, with an average purchase age in the 50s or early 60s. So people aren't really yet at the age where we would think that they'd be converting their entire account balance to income, especially in light of weak equity markets that have destroyed a lot of retirement savings. However, we do generate over \$300 million of immediate annuity sales in other channels.

Green: We are the largest writer of single premium immediate annuities (SPIAs), with annual sales in excess of \$1 billion. We primarily deal with a field force of career agents and brokers who bring new money from individuals who have accumulated it

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The evolving U.S. retirement system

by Alan N. Parikh

Pension actuaries in the United States have learned their trade in the defined benefit world. They are comfortable navigating the complicated maze of pension funding rules, applying the various accounting standards, and designing pension programs that meet an increasingly arbitrary set of regulatory requirements. Their specialized knowledge in this arcane field puts a roof over their heads and allows them a comfortable standard of living.

As U.S. retirement systems evolve towards defined contribution, account-based programs, pension actuaries' continued success will depend on their ability to

Pension actuaries will discover new ways to help individuals understand and plan for retirement and, in the process, will create a greater demand for and appreciation of retirement savings of all kinds. Eric Sondergeld describes the shortcomings of existing retirement planning tools and identifies areas where actuaries' skills are needed.

Pension actuaries will reach a more sophisticated understanding of who their clients really are, expanding their focus to include not just the plan sponsor but also plan participants and shareholders. Our interview with Larry Bader in this issue will shed some light on this question.

Ultimately, pension actuaries will start calling themselves "retirement actuaries" to reflect their broader range of skills.

understand and adapt to this evolution—and to learn from other experts, both within and beyond the actuarial profession.

In a defined contribution world, the burden of managing postretirement financial risks falls on individuals, who must look to the marketplace for ways to minimize these risks. Pension actuaries will look to life actuaries to help understand the range of annuity products available to individuals with retirement plan assets to spend, and how these products are sold and used in the real world. This issue's panel discussion addresses this important topic.

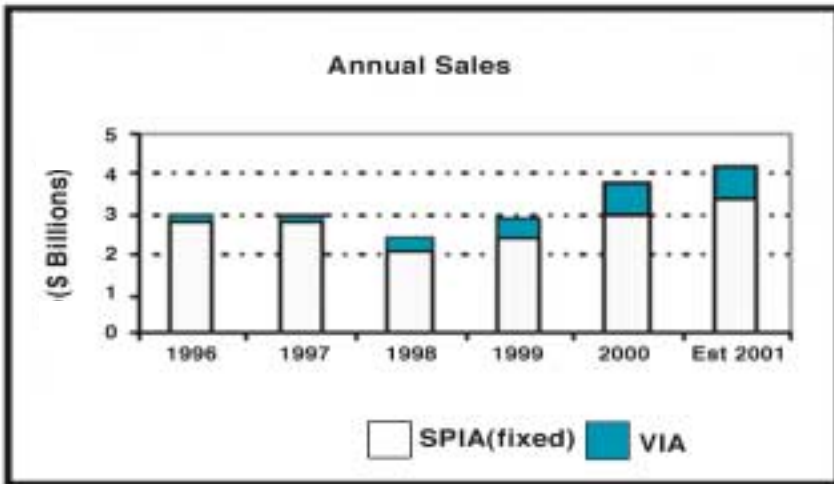
Pension actuaries also will expand their understanding of how our retirement systems have evolved over time, so that they can anticipate the direction and magnitude of future trends. In "The shifting structure of pension saving in the United States," James Poterba, Steven Venti and David Wise discuss this evolution, both past and future.

Ultimately, pension actuaries will start calling themselves "retirement actuaries" to reflect their broader range of skills. This issue of *The Actuary* is intended to help build a "big picture" understanding of some of the forces currently at work in the retirement arena. □

The evolving U.S. retirement system

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Figure 1



Source: LIMRA

through some other type of instrument. It could be a deferred annuity, but it seems more common from other savings vehicles—mutual funds, IRAs or personal savings.

Mayer: Our 401(k) business and retail annuity products are combined in a single business unit at the Principal. Annuitization rates from these products are also less than 1 percent. However, immediate annuity sales from all channels exceeded \$250 million this past year and are growing rapidly.

Mohrenweiser: There were 77 million people born in the “boomer” years of 1946 to 1964 (see Figure 2 on page 4), and that group is amassing enormous sums of retirement funds. If 5 percent of those funds annuitizes every year, there seems to be a large potential. Can this product become viable as they approach retirement?

Baumstark: One would certainly think there should be a growing “tidal wave” of outflows on the horizon to support income needs, but it seems 5-10 years away. Insurers are positioning themselves with income-oriented products, putting their stake in the ground and waiting for the flows to start. At Allstate, we are trying to raise awareness of retirement issues and highlight features of the payout phase of our products. However, the representatives and agents selling our products are still primarily making accumulation sales.

Green: Fixed payout annuities are going to remain a niche product, but probably a growing one. Take a look at the stock market recently and people are realizing that the kind of growth that they’ve been seeing in year’s past is not guaranteed, and the only product out there that does guarantee a lifetime income is the payout annuity.

Mayer: While I’d agree that annuities won’t take up the lion’s share of income-type vehicles, they will grow significantly from their current relatively small base. Not only are the demographic factors going to drive in that direction, but many people are going to be

There were 77 million people born in the “boomer” years of 1946 to 1964, and that group is amassing enormous sums of retirement funds.

forced into annuitizing because they haven’t saved enough for retirement. When they look at the hard facts of what’s the most efficient way to generate retirement income, an annuity is going to be a better solution than just taking a monthly withdrawal out of the assets they have accumulated.

Also, fewer people are being covered by traditional defined benefit (DB) pensions. According to the Employee Benefit Research Institute, in 1974, 56 percent of retirement income was coming from guaranteed

sources, namely DB plans and Social Security. Cerulli Associates projects that will drop to 24 percent by 2030, so people are going to have a lower base of guaranteed income. They’re going to have to supplement that with something.

Mohrenweiser: Do you see changes in the way that the product is distributed or marketed?

Mayer: The delivery method is evolving and we’re seeing interest on the part of retirement plan sponsors to provide annuities to their employees. In essence, this is a shift from focusing just on accumulation to helping their participants as they near retirement to have a good-quality annuity. We’re seeing some demand for what I’d call institutionally priced annuities. Rather than have a retail-priced annuity, they can get the benefit of group purchasing power to provide a higher monthly income to their participants than they might be able to get by calling up their local agent.

Mohrenweiser: In this employer-sponsored market, is there a push by consultants and agents to use group mortality rather than an individual basis?

Mayer: I think the distribution cost savings is bigger than any mortality difference. Agents have plan participants that are already in the door, and the employer

doesn’t want the participants to pay another distribution expense. Group purchasing power should be able to lower the cost to participants in retirement plans.

Baumstark: To expand distribution, the industry needs to find a way, especially on the fixed-payout side, to address the “commoditized” nature of the sale. It’s pretty much a rate game in a lot of markets. It will be more important to find ways to add value through features and services.

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Otherwise, it could go the way of the term life business, a highly rate competitive market where very few carriers make any money.

Mohrenweiser: Changing lifestyles and medical advances are prolonging longevity and the SOA recently published several articles on “Living to 100.” Will health underwriting become more prevalent?

Green: A market for us in the immediate annuity business is actually in the wealth transfer market, where, for wealthier folks, the agents recommend a life insurance contract to pass money between generations, but fund the premiums through a SPIA payout. We’re doing underwriting on those SPIA payouts in conjunction with the underwriting for the life insurance sale. It’s actually kind of reverse underwriting; you’re looking for poor health in order to offer the customer even a better payout than the table would suggest.

Baumstark: I think we will see growing use of health assessment in annuity purchases, but it’s not a big factor in the “retail” market today. It could become an important component of future growth in the market, especially if more attention is focused on the “insurance” component of annuities—protection against living too long.

Green: You want to be very careful, if you’re writing a life-only contract on someone age 90, that the person understands fully that, once he dies, there are no more payments to be made. We have due-diligence procedures to avoid anything that smells improper.

Product education and planning

Mohrenweiser: An ACLI report found that 71 percent of the women and 60 percent of the men surveyed are concerned that it will be difficult to make their retirement savings last a lifetime. In addition, a common financial planning tool is the financial advice column in the Sunday morning business section, right next to favored stock picks. We mentioned earlier the low annuitization rates from the VA line, how are educational needs being met?

Figure 2



Source: Baby Boomer Headquarters www.bbhq.com/bomrstat.htm

Baumstark: The industry needs to find a way to meaningfully display and communicate portfolio values once in the payout phase. In my view, it is one of the major reasons traditional DB pension plans have declined in popularity—the significant gap between perceived and actual value. It’s hard for people to place a value on a promised monthly income for life, especially when they are used to seeing quarterly statements with the exact amount of their retirement portfolio. Annuitization may make them feel like they’ve “lost” or given up their savings. People want to know how hard their money is working for them.

tax concerns with allowing partial annuitization in nonqualified contracts. It would be nice if the government could step in and provide more flexibility in order for annuities to become a more attractive investment option in retirement.

Green: Ideas about “risk” have to change. Right now, people think of stock market betas when, really, the risk facing them is outliving their assets. Once their idea of risk in this product line changes, people are going to understand that this is a viable product for managing that risk.

Annuitization may make them feel like they’ve “lost” or given up their savings. People want to know how hard their money is working for them.

Mohrenweiser: There is a behavioral finance or psychological element. A \$1,000 monthly benefit will cost more than \$100,000 and many people have not spent that much money at one point in time. At least with a car or a house you have something tangible rather than a “promise” of future payments. In addition, entering the retirement stage of a person’s life is full of change and apprehension.

Mayer: It is a challenge for people to understand the value of an annuity. One potential tool is a chart showing the return on investment (ROI) of an annuity. For someone who doesn’t live very long, the ROI can be low. But for someone who lives a long time, the ROI is very good. We need tools to help people understand the trade-offs, and the real value of buying longevity insurance.

Baumstark: Another barrier is that annuitization of a contract is generally an “all or nothing” proposition. There are significant

Mohrenweiser: Assessing one’s own mortality is not always a pleasant thought or exercise. Thus, some retirees may take a “what I don’t know, won’t hurt me” stance

which makes that initial cost estimate seem that much higher. Obviously, this is the risk space that insurers and actuaries feel most comfortable in.

Mayer: The focus needs to shift from being a product sale to a financial planning process. You must become a trusted adviser and be able to provide a range of product solutions. If today is not the right time to buy an immediate annuity, then you need another product on the platform to meet their current income needs. We need to have a wider range of alternatives so that we're not just selling a commodity product but a planning process for income distribution.

Mohrenweiser: Has the Internet and financial planning software affected your means of distribution or does the adage "insurance is sold rather than bought" still apply?

Mayer: The Principal has retirement planning software that helps people focus on how much they need to save to meet their retirement income objectives. We're looking to expand our income planning tools, but I haven't seen in the industry tools that help people develop a complete income plan. For example, what's the best way of combining multiple products, such as fixed immediate annuities, variable immediate annuities and systematic withdrawals from mutual fund assets? If you're going to buy an annuity, which pot of money should you use first? Should you use your qualified assets or nonqualified assets? When should you start taking Social Security benefits?

Green: To show value with payout annuities, the mortality element needs to be modeled in that software as well. That's really where the benefit of the lifetime guarantee shows up—when you show the impact of living too long and outliving your assets. I haven't seen any software that models that element in addition to the economic scenario element.

Mayer: A comprehensive income plan should consider all of these issues, but the software to do that needs to be fairly complex. Talented advisers can do that today for high-net-worth individuals, but I don't know that anyone has found a cost-effective way to bring that kind of advice to the masses, which I think is the industry challenge. For example, the call centers serving the Principal's 401(k) client base have specialists in income planning and greater expertise surrounding different options

available at retirement for income distribution purposes.

Product developments

Mohrenweiser: Payout annuities are often criticized for their lack of liquidity, insufficient inflation protection, lack of investment control or uncompetitive commissions. Can you describe recent product development efforts to resolve these issues?

Mayer: There will continue to be pressure to add liquidity-type options, and many new products will have them, but they certainly come at a cost. To the extent that you add more liquidity features and cashout options, it starts to dilute the value of an immediate annuity in the income plan.

Green: All the things mentioned can be addressed with current products. Although

Payout annuities are often criticized for their lack of liquidity, insufficient inflation protection, lack of investment control or uncompetitive commissions.

more prevalent with structured settlements, an annuitant can buy a SPIA with an annual increase, but gets a smaller initial payout. Products have a term-certain of whatever period of time you might want—a 20-year-certain and life is the most common type of product that we sell. There are return-of-premium-on-death riders, both as an installment refund and as a lump sum, but it's a less common feature for people to select.

Mohrenweiser: What initiatives within the industry are making it easier to purchase an annuity, such as overcoming the "sticker shock" effect?

Green: We have a new product called GE Retirement Answer. It's a variable annuity with unique characteristics. This product guarantees a minimum monthly payment as long as all contract requirements are met. It also offers upside potential, meaning that the policyowner could get a higher monthly payment depending on subaccount performance, but never less.

The concept is simple. The policyowners select a date at least 10 years in the future when monthly payments would begin. They

choose how much money they want to receive every month, and we have illustration software to calculate how much they will need to contribute. Contributions can be made monthly, to gain the benefits of dollar-cost averaging, or in a lump sum. The payout is for the greater of life or the period-certain selected by the policyowner.

Baumstark: The variable immediate annuity (VIA) is a possible product solution to many of the traditional barriers associated with payout annuities. Many VIAs provide significant control and flexibility by offering liquidity, growth potential, minimum payout guarantees and investment choice.

Inflation-protection needs can be addressed through investment choice—by making allocations to equity funds or other funds that typically have returns that keep pace with inflation. Some carriers let you switch

between variable and fixed payments, providing flexibility to essentially "lock-in" previous investment returns for life, if desired.

Some companies, Allstate included, have addressed consumer concerns over investment risk in the payout phase by offering optional features that put a guaranteed floor on the variable payout stream. The customer retains the upside potential with the security of knowing their income will never fall below a predetermined floor level.

And, uncompetitive commissions seem to be less of an issue with VIAs. Fees for VIAs are charged through a daily asset fee called the mortality and expense charge, which, perhaps unfortunately from the consumer's perspective, is somewhat less transparent than a traditional immediate fixed annuity. In a traditional fixed annuity, the lower rate needed to support higher commissions shows up directly as a lower starting payment, and that lower payment is locked in forever. In a VIA, the future growth in payments takes the "hit" from higher expenses.

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Mohrenweiser: Although very flexible, we are looking at the other end of the product complexity spectrum compared to a level, fixed income stream.

Baumstark: Complexity is certainly an issue, which brings us back to the importance of education and effective communication. The VIA product structures that exist today seem well suited to meeting consumer needs in the retirement market. The combination of income for life, investment choice and flexibility is pretty unique. People don't really see that clearly yet. The challenge is to get the message out and tackle that complexity through effective positioning and communication.

Mohrenweiser: The insurance industry is not the only one searching for solutions for the baby boomers. The mutual fund houses and other money managers are not going to give up this money freely and will provide stiff competition. Any thoughts about the consolidation of the financial services industry?

Mayer: At the Principal, we recently launched a new program that offers both mutual funds and immediate annuities within a single IRA. Basically, picture two circles, a mutual fund circle and an immedi-


per. Unlike a traditional annuity where, when you buy it, you start receiving a check whether you want it or not, we recognized that, with retirements in the future, people are going to be going back to work part-time. With the IRA wrapper around this immediate annuity, the individual has the ability not to take constructive receipt of the income and actually reinvest it back into his or her mutual funds. There is a lot of flexibility associated with the Principal Income IRA program—40 mutual fund investments, 10 fund managers.

The beauty of the program is that it's driven by a financial-planning algorithm that actually provides Monte Carlo simulations. It gives clients an estimate of what their income stream will be, so that, as they enter the mutual fund portfolio, they can begin to plan into retirement whatever level of income they feel comfortable achieving once they hit that secure retirement stage.

When you purchase the annuity, each year you're buying a slice of a flexible purchase immediate annuity that has various optional benefits associated with it. In addition to the typical annuity features, there is a "legacy" benefit, which is akin to a period-certain except that it's tied to a person's life expectancy. There is a "caregiver" benefit that

going to want to look at the *Wall Street Journal* to see how my funds are performing. The idea of giving up a little bit of control every year feels pretty good." So the Principal Income IRA program helps the person shift that mindset from the accumulation phase to the payout phase in a time frame that is determined by him or her.

In our view, it's a more efficient way to buy these benefits. If you separately buy these products, there is conservatism built into each of the elements. For example, if you buy an annuity, insurers assume you're going to live a long time, but if you buy life insurance, the pricing assumes you will die faster than average. If you put all these building blocks together within a single product priced on a consistent set of assumptions, it's more efficient. Plus, it's more convenient.

If people have the need for funds, for example, to leave an inheritance, there might be more efficient ways of providing that benefit than having a certain period on the annuity. You might combine it with life insurance or other features that, in combination, would be more efficient than adding those features onto the annuity itself. 

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The mutual fund houses and other money managers are not going to give up this money freely and will provide stiff competition.

ate annuity circle with an IRA wrapper around both of them. Clients can enter the mutual fund arena and, over a period of time—anywhere from one day to 15 years—transition from at-market exposed mutual funds to an immediate annuity income stream. At any point in time, customers can change their transition period—either shorten or lengthen it.

It basically allows clients to convert their DC plans to their own personal DB plan over a period of time and gives them the benefit of dollar cost averaging out of the mutual funds and benefit cost averaging into the immediate annuity. The unique thing is that it's in an IRA wrap-

basically is like a disability insurance policy for clients so that, if they are unable to perform two activities of daily living, they can increase their pension income by 25-100 percent. A number of the benefits, such as "survivor-and-legacy" can be sold back to increase their monthly pension income.

Mohrenweiser: How has the reaction been toward the financial planning and total benefits package?

Mayer: Focus groups on this concept were extremely favorable. A 67-year-old gentleman said, "I enjoy having the control and the ability to select my investments right now, but at some point in time, I know I'm not

The shifting structure of pension saving in the United States

by James M. Poterba, Steven F. Venti and David A. Wise

We are currently studying the growing role of 401(k) plans and other defined contribution (DC) plans in providing retirement income for American households. Over the past 20 years, private-sector retirement saving in the United States has shifted from employer-provided defined benefit (DB) pensions toward personal retirement accounts.

These accounts include 401(k) plans for private-sector employees, 403(b) plans for employees of nonprofit organizations, 457 plans for state and local government employees, the Thrift Savings Plan for federal employees, Keogh plans for self-employed workers and IRAs.

Contributions to these plans, and the assets held in these plans, have grown enormously in the last two decades, while employer-provided DB pension plans have declined in relative importance. In 1980, 64 percent of contributions to private, employer-based retirement plans went to DB plans, while the remainder went to conventional DC plans. In 1999, about 85 percent of private contributions were to accounts, including conventional DC plans, in which individuals controlled how much to contribute to the plan, how to invest plan assets and how and when to withdraw money from the plans.

This article is based on our forthcoming study, "The Transition to Personal Accounts and Increasing Retirement Wealth: Macro and Micro Evidence," which will be published this year by the University of Chicago Press in *Analyses in the Economics of Aging*, edited by David Wise.

Our research analyzes recent changes in the magnitude and composition of saving for retirement. We examine the impact of

the shift from employer-sponsored DB plans to self-directed accounts on the overall flow of retirement saving. We also consider several broader issues, such as the relationship between retirement plan saving—which is close to 8 percent of personal income—and the National Income and Product Account (NIPA)

earnings between 1975 and 1981, more rapid growth between 1982 and 1994, following the introduction of IRAs and 401(k) plans and during a period of positive stock market returns and rapidly accelerated growth beginning in 1995, corresponding to large increases in equity market returns.

A central factor in the growth of contributions to DC plans is the rapid growth of 401(k) plans.

personal saving rate, which is currently near zero. The NIPA saving rate, which equals personal saving as a percentage of disposable income, is often reported in the media as showing that U.S. households are currently saving much less than they did in previous decades.

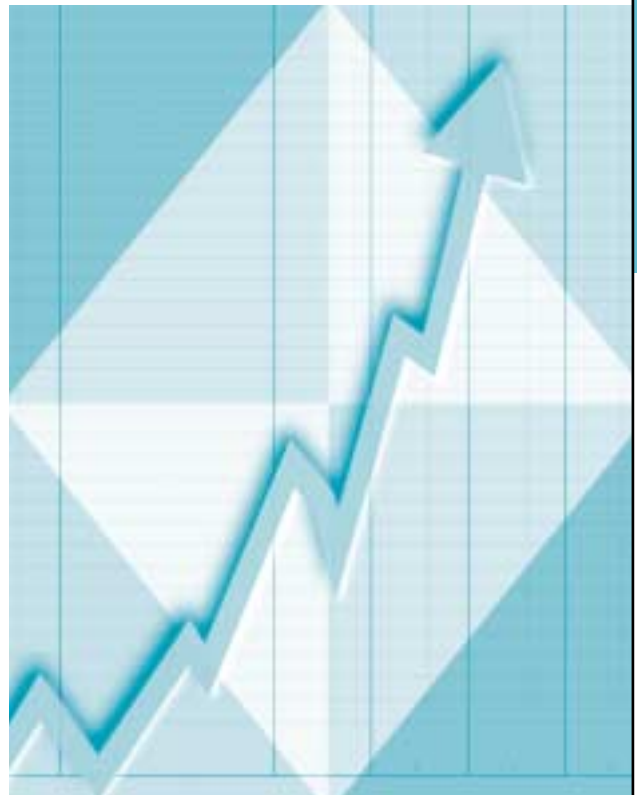
The ratio reached a peak of 191 percent in 1999 and has declined along with equity values in the years since. While assets in DB plans continued to grow after the

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Retirement plan assets

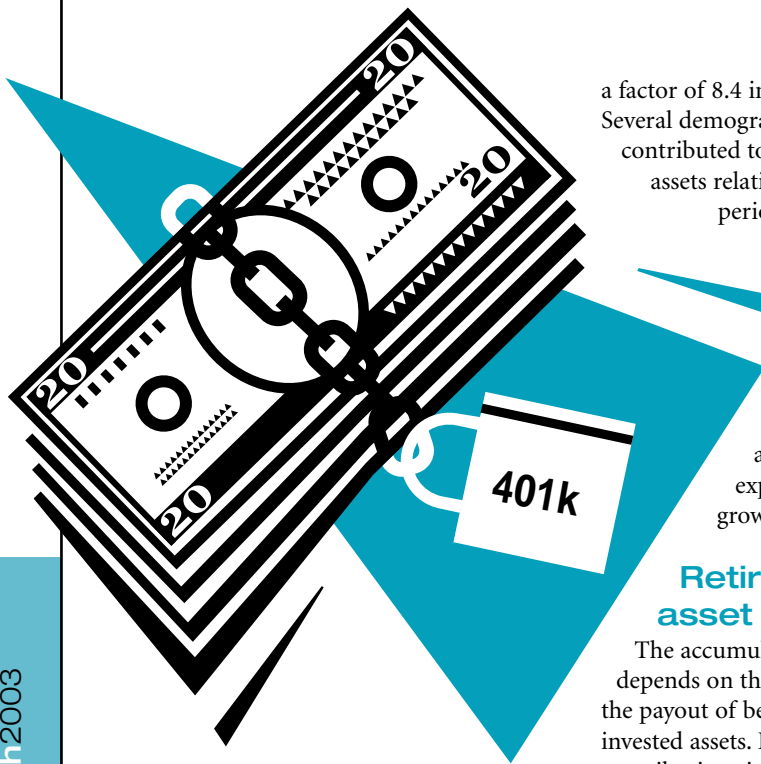
Aggregate retirement plan assets include those in employer DB pension funds and in conventional employer-sponsored individual DC plans, as well as assets in 401(k) plans, IRAs, Keogh plans and other personal retirement accounts. The Federal Reserve Board's Flow of Funds Accounts show that assets in all of these private retirement plans grew from 39 percent to 158 percent of private-sector wage and salary earnings between 1975 and 2001, the latest year for which we have data.

There was modest growth in the ratio of retirement assets to



The shifting structure of pension saving in the United States

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a factor of 8.4 instead of 2.7. Several demographic changes have contributed to the growth of retirement assets relative to wages over this time period. These include changes in demographic composition, mortality rates and labor force participation. None of these factors seems capable, however, either alone or in tandem, of explaining the observed growth in retirement assets.

Retirement asset flows

The accumulation of retirement assets depends on the inflow of contributions, the payout of benefits and the return on invested assets. Private pension plan contributions increased almost six-fold between 1975 and 1999. We define the “retirement plan contribution rate” as the proportion of current earnings that is saved in retirement accounts by current employees.

Retirement plan contribution rates have been remarkably stable over most of the last 25 years, even though the personal saving rate, as recorded in the NIPA and

The relative stability in the retirement plan contribution rates was broken only by a large increase in the plan contribution rate when the IRA program was initiated, and by a decrease when the program was curtailed in 1986. Relative to earnings, both the private and all-plan rates are about two percentage points higher during this period than in the last 15 years.

This stability conceals fluctuations in some of the factors that affect the retirement plan contribution rate. Contributions to private DC plans increased sharply over the 1975-1999 period, while DB contributions varied widely. At the end of this period, DB plan contributions were only slightly higher than at the beginning. The recent decline in the value of assets in many DB plans suggests that the near future will be marked by higher contribution rates to these plans.

A central factor in the growth of contributions to DC plans is the rapid growth of 401(k) plans. These plans, which first became available in 1982, grew to almost 38 million participants by 1997. While 401(k) plan participation grew in the 1980s and 1990s, participation in DB

introduction of 401(k) and IRA plans, most of the growth of retirement assets since the early 1980s has been in individual accounts. Moreover, there is no evidence of a decline in the assets in DB plans during the time period when assets in individual accounts were growing most rapidly.

There is some debate about whether there is a link between the slowdown in the growth DB assets and the rise of assets in individually managed accounts. The aggregate data cannot address the possibility of substitution of DC plans for DB plans since we do not have data on the time path that other retirement plan assets would have followed in the absence of the growth in DC assets.

One suggestive calculation, however, considers what would have happened if all contributions to personal retirement accounts between 1985 and 1998 had come at the expense of DB contributions. In this case, if DC assets had not increased but the contributions had gone instead to DB plans, DB assets would have grown by

Over the past 15 years, contributions per participant to 401(k) plans averaged twice the contributions per participant to DB plans.

published in the *Survey of Current Business*, has fluctuated substantially. Scaled by personal disposable income, the private plan contribution rate was about 3.5 percent in 1975 and 1999, and the contribution rate for all plans, which includes contributions to state and local government plans as well as the federal government’s Thrift Savings Plan, varied between 5 percent and 6 percent for most of the period.

plans declined from about 30 million in 1984 to about 23 million by 1997. Participation in non-401(k) DC plans increased until about 1986 and then declined, ending the period about 30 percent higher than at the beginning. In total, the number of plan participants increased from about 39 million in 1975 to more than 80 million in 1997.

Over the past 15 years, contributions per participant to 401(k) plans averaged twice the contributions per participant to DB plans. This includes both employer and employee contributions. Employer contributions per participant to 401(k) plans are somewhat lower than average contributions to DB plans. During the “unrestricted” IRA period of 1982-1986, IRA contributions, on average, were greater than 401(k) contributions.

Recent legislative changes have set in motion a set of increases in the limits on IRA contributions. By the middle of the current decade, the limit on IRA contributions will be \$5,000. There are also changes under way regarding the limits on 401(k) contributions, which will rise to \$15,000 per participant per year. The current administration has also proposed more substantial changes to the structure of retirement accounts, but whether these proposals will be enacted remains to be seen.

Contributions to DB plans are more erratic than contributions to DC plans. There are at least three reasons for this:

1. There was a slight rise and then a steady decline in the number of active participants (current employees) in DB plans between 1975 and 1998.
2. There is a link between returns on DB plan assets and current funding decisions. Other things being equal, a rise in investment returns increases DB asset balances relative to obligations, thereby reducing the need for additional contributions.
3. A series of legislative changes limited the level of benefits that could be funded under DB plans and discouraged firms from overfunding their pension plans. Prior to 1986, firms could fund their DB plans to a level greater than their legal liability. However, a series of laws, beginning with a 10-percent reversion tax that was part of the Tax Reform Act of 1986,

put stricter limits on funding. Ippolito (2001) estimates that, in the absence of various funding restrictions, DB pension assets in 1995 would have been 28 percent higher.

The substantial fluctuations in the DB plan contribution rate raise questions

Although some have suggested that the rise in DC plans “caused” the decline in DB plans, our research casts doubt on this conclusion.

about how changes in DB plan contributions affect the retirement plan contribution rate. To explore the effects of downward pressures on DB plan contributions, due to both legislative changes and better-than-expected asset returns, we have constructed a “what if” scenario.

Considering the private sector only, suppose that DB contributions per employee had increased at the same rate as wages in every year after 1977. In this counterfactual case, the saving rate in the late 1990s would have been about one percentage point higher than the actual rate at the end of the period. In the years when the DB contribution rate was at its lowest, the counterfactual saving rate was close to two percentage points higher than the actual rate. This case suggests that legislative changes and unexpectedly favorable returns on DB plan assets probably reduced the private retirement plan contribution rate by a substantial amount.

The aggregate data also suggest that the retirement plan contribution rate would have been substantially higher were it not for the curtailment of the IRA program. Between 1982 and 1985, IRA contributions added approximately 2.3 percentage points to the retirement plan contribution rate. Today, they account for only 0.3 percentage points. IRA

rollovers have replaced IRA contributions as the most important source of new funds for these accounts.

Although some have suggested that the rise in DC plans “caused” the decline in DB plans, our research casts doubt on this conclusion. The decline in DB plans

was probably attributable to many factors other than the growth of DC plans.

Gustman and Steinmeier (1992), for example, found that at least half of the decline in DB plans from 1977 to 1985 was “due to a shift in employment mix towards firms with industry, size and union status that have historically been associated with lower DB rates.” And Ippolito (1995) concluded that “about half of the shift is attributable to a loss of employment in large unionized firms where DB plans are used intensively.”

Other issues

In another recent study (Poterba, Venti and Wise 2000), we used current age-specific 401(k) participation and contribution rates, along with projections for future wage growth and demographic structure, to project average 401(k) balances at age 65 for future retirees. Since current 401(k) participants have been covered by their 401(k) plan for two decades, at most, while many future retirees will have participated for four or five decades, we project sharp increases both in the share of retirees who will have 401(k) balances and in the average size of these balances.

For example, we project that the cohort retiring in 2025 will hold 401(k) balances

pension plans

The shifting structure of pension saving in the United States

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that will, on average, be roughly 10 times as great as the balances for those who retired in the mid-1990s, relative to their wage income or the value of their benefits from Social Security.

This is in part of the way the NIPA treats pension contributions. Contributions to pension plans are treated as income in the NIPAs, so these contributions increase saving.

...We project that the cohort retiring in 2025 will hold 401(k) balances that will, on average, be roughly 10 times as great as the balances for those who retired in the mid-1990s, relative to their wage income or the value of their benefits from Social Security.

The sharp increase in retirement assets relative to income stands in contrast to the apparently low level of personal saving that is shown in the NIPA.

Interest and dividends received by pension plans are also imputed as a component of income, but neither capital gains on pension assets nor distributions from pension plans is included in NIPA income.

If pension plan assets experience substantial capital gains, as they did in the 1990s, and if distributions from pension plans are partly consumed, as seems likely, then the rise in pension asset values can raise consumption without any corresponding increase in income. This would reduce personal saving as a share of disposable income, as measured in the national income accounts.

In recent years, distributions from DB plans and IRAs have far exceeded contributions to these plans. Lusardi, Skinner and Venti (2001) estimate that, in 1999, the NIPA accounting of DB pension transactions alone reduced NIPA personal saving by almost \$55 billion. These calculations suggest using caution in drawing any strong inferences based on saving measures from the national income accounts.

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A call to arms

Recent SOA study suggests actuarial skills needed to improve retirement modeling software

by Eric T. Sondergeld

As people continue living longer and as fewer employers offer retiree benefits such as health coverage and pensions, workers are being forced to assume a growing share of the funding for their retirements. But just how much money does a person need to accumulate to support a desired retirement lifestyle?

The answer depends on many factors, including how these assets will be utilized and how the many risks the retiree faces will be managed or mitigated. These risks, which many employers used to cover, include but are not limited to longevity risk (and related mortality risks), inflation risk, investment risk and health-related risks.

To assume the responsibility for retirement effectively, individuals or couples should understand their options, including an understanding of the risks they face and how those risks might be managed. Two recent consumer studies—The *2001 Retirement Risk Survey* (Society of Actuaries, 2002) and *Retirement Risks: How They Are Viewed and Managed* (LIMRA, 2002)—suggest these risks are not well understood.

More recently, the LIMRA and the SOA jointly sponsored a study in collaboration with the International Foundation for Retirement Education (InFRE) to find out how retirement planning software programs address the retirement phase and, more specifically, how they treat postretirement risk. The full study report, *Retirement Planning Software*, is available on the SOA Web site at www.soa.org/bookstore/mono.html.

In this article, I will (1) describe the study and provide some general conclusions, (2) discuss the treatment of risks by the programs analyzed and (3) suggest areas

where actuarial skills would be instrumental in improving methodologies for addressing postretirement risks.

The study

A total of 19 retirement planning software programs were selected for analysis and are generally available via Web sites, CD-ROM or diskette. These include six programs available for consumer use and 13 for professional use. While the professional programs are mostly available for individual planners or planning firms to purchase, two are proprietary (i.e., developed by firms exclusively for the financial planners they employ). We included more professional programs than consumer programs because we felt that retirement planning tools are most often used by professionals on behalf of their clients. Furthermore, very few such tools are available for consumer use.

Since there are many kinds of calculation tools available to help those preparing for retirement, it is important to note what constitutes retirement planning software and what does not:

- *Retirement savings calculators* tell users how much they need to accumulate by a certain age to retire. The result is usually a single answer, which, although helpful as a general guide, does little to consider the uncertainty and risks that the user will face in retirement. Nor do such tools give much consideration to the postretirement period, other than perhaps an assumption of longevity and an income replacement rate.
- *Online advice engines* use a similar approach to retirement savings calculators but go one step further in helping the user select an asset allocation to help achieve that future savings goal.

- *Retirement planning software programs* perform a more comprehensive analysis than savings calculators and advice engines. In addition to helping users or their clients decide how much is needed to retire and how to invest those savings, retirement planning software programs go further in helping to determine how their financial affairs can or should be managed in retirement. These tools allow for many more inputs and often give a wide range of answers. These could take the form of probability ranges or alternative solutions.

To analyze the programs, the study's project oversight group developed six case studies. We ran each case through each program to determine its capabilities, how it treated specific situations and how it treated retirement risks. As a group, the programs offered a long list of features and capabilities. The main value they provide is in generating cash flow forecasts of income and expenses.

Furthermore, these programs are typically geared toward people with considerable investable assets, whose concerns and risks do not fully overlap with more typical retirees. For example, while an affluent couple might be most concerned about wealth growth and preservation strategies, as well as estate planning, a less affluent couple might be more concerned about health care costs, inflation, dealing with debts or outliving assets.

As such, these programs were probably not developed with the main goal of addressing retirement risks. In many instances, they actually mask postretirement risk by asking for a single assumption to an unknown variable such as future life span. Such programs may provide a false sense

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Table 1

Approaches to Addressing Retirement Risks			
Risk	Deterministic	Scenarios	Stochastic
Mortality risk		X	X
Investment risk		X	X
Inflation	X	X	X
Health care costs		X	X
Long-term care costs		X	X

of security if the scenario is successful through that time horizon, when, in fact, resources may run out shortly afterwards.

There was great variability in both the input and, as a result, the output from these programs. For example, some programs treated home equity as a liquid asset while others provided no treatment at all. These and other factors made direct comparisons of a variety of results across programs impossible.

Treatment of risks

There are three primary ways risks can be addressed in planning tools. The deterministic approach allows for a single assumption or scenario (e.g., assuming 3 percent inflation in all years). The scenario approach simply runs the deterministic approach multiple times, changing the assumption(s) with each scenario. The stochastic approach is an automated approach to running a large number of scenarios (often 500, 1,000 or more).

While no single method is perceived to be superior in all cases, it should be recognized that these approaches do not manage risk, but can only serve to demonstrate the impact each risk might have. In addition to demonstrating each risk's impact, programs should have the ability to demonstrate the effect of implementing various risk-management strategies (e.g., purchasing an immediate annuity, changing asset mix, etc.) on a given risk so the client can decide if further adjustments or alternatives are called for.

Table 1 shows the general approaches that may be used to demonstrate the risks we considered in this analysis. Table 2 shows what approaches the programs analyzed use or can be made to use (for example, many programs allow for the scenario approach but do not necessarily facilitate it). The differences between the methods that are appropriate for risk treatment and those actually in use by the programs analyzed suggest areas for improvement in how programs treat retirement risks.

One example is the treatment of longevity risk. Table 2 shows that nearly all programs analyzed use a deterministic approach to this risk, yet Table 1 suggests that this approach is not a valid way to demonstrate longevity risk. Most programs merely show whether or not resources are sufficient to

Table 2

Approaches Utilized by Software Programs (Number of Programs)				
Risk	Deterministic	Scenarios	Stochastic	None
Mortality risk				
• <i>Longevity</i>	18	16	0	1
• <i>Order of death</i>	15	14	0	4
Investment risk				
• <i>Interest rate</i>	19	17	0	0
• <i>Market risk</i>	17	18	7	0
Inflation	19	17	1	0
Health care costs	11	11	0	8
Long-term care costs	8	8	0	11

support the proposed cash flow stream to the end of the planning horizon, which in most cases must be input by the user.

Table 3 on page 17 shows the wide range in the number of years before the money runs out across programs. For example, the assets in Case 1 are depleted anywhere from 2013 to 2034 in seven of 10 professional programs and, in an additional three programs, the resources do not run out by the end of the stated planning horizon. The wide range of results is primarily due to the differences in inputs and treatment of various assets (e.g., real estate) across programs.

How actuaries can help

We realize that these programs are merely tools to aid individuals in their retirement planning and that no "right answer" exists. As such, the results from a particular program should not be the only component of the retirement planning process. In addition, the fact that results could vary widely from one program to another suggests either that less emphasis be placed on the result or that multiple programs be run, if possible.

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Radical revision of the actuarial pension model needed:

An interview with Larry Bader

In “Reinventing Pension Actuarial Science” (*Pension Forum*, January 2003), Lawrence N. Bader and Jeremy Gold proposed a fundamental change in measuring defined benefit pension liabilities. Taking their cue from the insights of financial economics, the authors contend that current pension actuarial practice systematically misprices pension liabilities and misleads shareholders and taxpayers about the risks they bear.

Bader and Gold’s article, along with reactions from several readers and the authors’ responses, can be found on the SOA Web site at www.soa.org/sections/reinventing_pension.pdf.

The *Actuary’s* issue editor Alan Parikh recently interviewed Bader to delve deeper into this important topic.

First, can you tell us a little about your career?

Bader: I worked for 20 years as a pension consultant at Mercer. I acquired the usual pension actuarial initials and served in various actuarial organizations, including the SOA Pension Section Council and the AAA Board of Directors. In 1986, I joined Salomon Brothers, dividing my time between asset allocation research and benefit issues that arose in mergers and acquisitions, bankruptcies, employee stock ownership plans and other investment banking work.

I returned to Mercer for two years, focusing on the intersection between the corporate finance I had learned at Salomon and the traditional actuarial practice. Five years ago I retired to North Carolina, where I continue to ponder the mysteries of financial economics and golf. Jeremy’s career followed a similar trajectory, from A&A and Buck to Morgan

Stanley. After leaving Morgan Stanley, he established Jeremy Gold Pensions. In addition to the standard actuarial credentials, he has earned a Ph.D. at Wharton in insurance and risk management.

We recognized volatility as an important property of markets, rather than as a disease for which smoothing is the cure.

What experiences led you to believe that the current actuarial pension model is flawed and requires a major overhaul?

Bader: During my first two decades of actuarial consulting, I was a true believer in the basic actuarial model. I spoke and wrote in support of the views that actuaries are now raising against my work.

Jeremy and I had similar conversion experiences on Wall Street. We saw how eagerly traders and bankers exploit off-market valuations of assets or liabilities. To realize the market values, they use financial engineering tools such as sale/leaseback, spin-off, recapitalization, securitization and—of particular interest to pension actuaries—dedication, settlement and pension obligation bonds.

Though profitable for the bankers, these transactions commonly create no

“real” value, except perhaps tax savings, but do carry real transaction costs. These transactions led us to see market value as the only meaningful measure of financial instruments.

We recognized volatility as an important property of markets, rather than as a disease for which smoothing is the cure. We believe that these insights must inform a radical revision of the actuarial model—for which our incrementalist standard-setting process is ill-equipped—as the accounting profession moves

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pension model

An interview with Larry Bader continued from page 13

toward market-based accounting and the financial world demands greater transparency.

don't reduce liabilities. Your hopes for your equity investment, lottery ticket or year-end bonus, even if realized, may make your mortgage or groceries more affordable, but they don't make them cheaper.

By misvaluing the simple one-year riskless liability, the actuarial model reveals a fundamental flaw.

What are your primary concerns with the current model?

Bader: I have several concerns, but measurement of liabilities is fundamental. As a simple illustration, suppose that one-year Treasuries trade at a 3 percent yield. A financial entity has an obligation, which it is certain to fulfill, to pay \$103 one year from now.

Financial economics, and the fair value accounting standards under consideration by the IASB and FASB, measure liabilities based on the market value of similar promises. On this basis, the value of the obligation is \$100. But following practices codified in Actuarial Standard of Practice 27, pension actuaries would ask what assets are being held to pay the liability. If those assets are equities that are expected to earn 8 percent, they may conclude that the liability is only \$95. They may even apply stochastic techniques to determine a probability distribution of values for the fixed \$100 liability.

Meanwhile, hundreds of billions of dollars change hands daily in the bond markets on the \$100 basis. Investors would be delighted to find anyone willing to sell such an obligation for \$95.

But if you can earn 8 percent on the equity, why isn't \$95 a reasonable value for the liability?

Bader: Liabilities are discounted at the yields of similar marketed securities—not at the returns of invested assets. High asset returns are always welcome, but they

So, based on your example, you would discount pension liabilities at the risk-free rates of Treasury bonds?

Bader: Only if the liabilities were risk-free, a situation that's difficult to imagine for a corporate plan. When default risk is present, I would discount at the higher rates of bonds with similar default risk.

Doesn't that mean that when a company weakens, its pension liability drops and it might actually be better off?

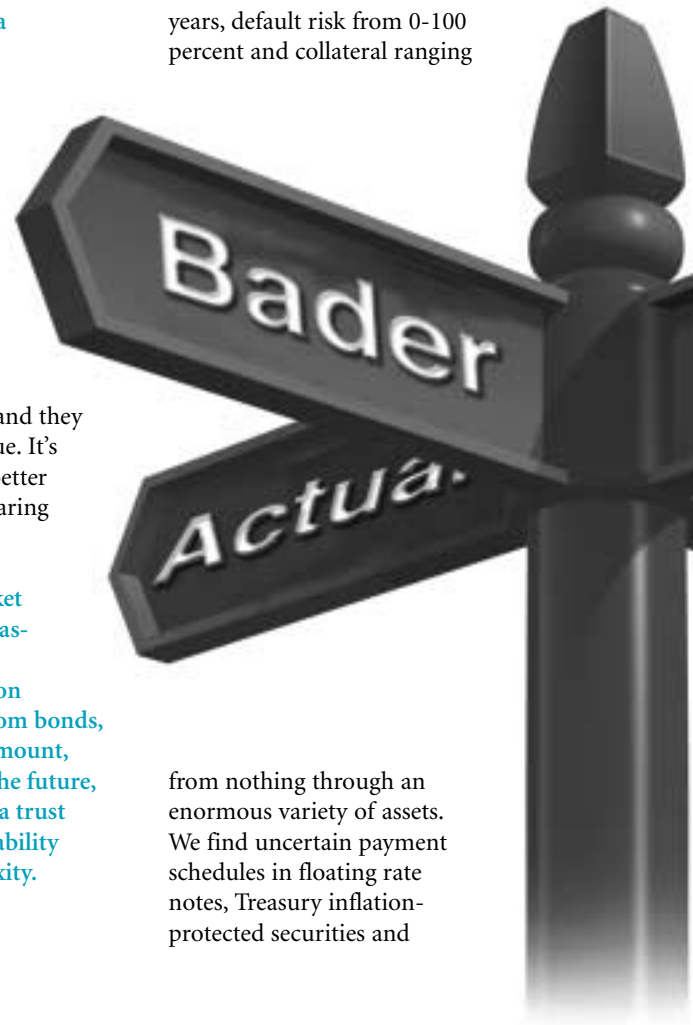
Bader: Not exactly. If a strong company loses \$1 million that it can readily afford, its shareholders bear that entire loss. But suppose a weak, leveraged company loses \$1 million that it can ill afford. Then the creditors and pensioners are at greater risk, and they absorb some of the loss of value. It's not that the shareholders are better off; they just have someone sharing their pain.

So, you look to the bond market for a standard by which to measure pension liabilities. But wouldn't you agree that pension plans can be quite different from bonds, with payments of uncertain amount, extending much farther into the future, and backed by the security of a trust fund? Your illustrative \$100 liability doesn't recognize this complexity.

Bader: Only a narrowly construed accumulated benefit obligation (ABO) properly falls within the definition of a liability, so we can ignore the complexity introduced by service and pay projections. Even with this narrower view, pension liabilities differ from bonds in various ways. But none of those differences justifies inconsistent valuations of \$103 owed to a pensioner and \$103 owed to a creditor. Each obligation can be funded in the same way (taxes aside), with the same sacrifice of corporate resources.

By misvaluing the simple one-year riskless liability, the actuarial model reveals a fundamental flaw. That flaw doesn't disappear with longer deferral periods, default risk or uncertainty about the amount due. Marketed bonds carry maturities from immediate to 100 years, default risk from 0-100 percent and collateral ranging

from nothing through an enormous variety of assets. We find uncertain payment schedules in floating rate notes, Treasury inflation-protected securities and



mortgage-backed securities. The bond market displays all the variety needed to value the vast majority of accrued pension benefits.

What about the PBGC guarantees? Don't they make the pension benefits more valuable?

Bader: The PBGC guarantees make the benefits more valuable to the participants, but they don't change what the company will pay. The value that the guarantees add for participants comes from, and is a liability of, the PBGC, not the plan sponsor.

What does your work mean for actuarial and consulting practice with regard to defined benefit pension plans?

Bader: Before we turn to the practical effects, I have a general comment on how actuaries should respond to the

Financial economics has gained such broad acceptance in the financial world that actuaries must not simply dismiss it as incorrect, irrelevant or dangerous without thoroughly understanding its fundamentals. To maintain the integrity of actuarial science, the profession should think seriously about the principles of financial economics. I expect that actuaries will find that these principles do apply to pensions. Actuaries can then use their

To maintain the integrity of actuarial science, the profession should think seriously about the principles of financial economics.

knowledge and ingenuity to deal with the consequences—they will come whether we like it or not—by redesigning defined benefit practice to deliver the transparency and risk recognition that the financial world demands.

In this redesign, actuaries should be mindful of who actually bears the liabilities that they measure. Actuaries commonly talk about how companies or pension plans can bear risk because they are long-term ventures. But as our Principle 5 states: "Risks are borne and rewards are earned by individuals, not by institutions." That is, the risks and rewards are borne by the shareholders (or taxpayers, in the case of public plans) and by the participants.

Could you expand on that last comment? As consultants to companies who sponsor pension plans, we may naturally tend to view our client as "The Company," an entity whose financial interests may diverge from those of the current generation of shareholders. What's wrong with this view? Certainly, a look at corporate governance over the decades provides countless instances where shareholders' interests have been secondary to those of "The Company."

Bader: Any discussion of corporate governance must start by recognizing that the shareholders own "The Company." The managers are the "hired hands," the agents of the shareholders (principals) who own the enterprise. In legal and fiduciary terms, management owes all its allegiance to today's shareholders. It is erroneous to attribute to "the plan sponsor" financial interests and preferences such as the ability to bear risks or

the entitlement to rewards. These attributes belong only to those who actually bear the burdens of plan sponsorship—the shareholders—and to the participants.

A long-term view by management should not conflict with the interests of current shareholders. The value of a stock is the value of all its future earnings. When management makes an investment that investors expect to deliver long-term benefits, the stock price rises and the value accrues to current shareholders.

Let's move on to pension accounting. What are your primary concerns with the current corporate pension accounting rules?

Bader: My main concerns are smoothing and anticipating risk premiums in the asset return. Smoothing conceals information that the beneficiaries of the plan and the owners of the business—the shareholders—need to understand the progress and the risks of the plan's operations. Anticipating risk premiums enables companies to report as earnings the risk premiums that have not yet been earned for risks that have not yet been weathered. I discuss pension accounting elsewhere [*Contingencies*, September-October 2002], focusing on how to value a company that sponsors a pension plan.

intellectual challenge of financial economics.

By the way, I should say what "financial economics" (or "finance") is: It's a branch of microeconomics that comprises two fields we call "corporate finance" and "investments."



pension plans

An interview with Larry Bader

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I distinguish between the “operating cost” of the pension plan, which is an ABO-based service cost, and the “financing cost,” which includes all other changes in the surplus (market value of assets vs. ABO).

The modified service cost (like a defined contribution) is a type of compensation expense. It figures in the earnings stream used to value the operating business.

The financing cost is needed to reconcile the beginning and ending corporate balance sheet, which would include the market values of assets and ABO. The financing cost would be reported separately from operating results, perhaps in the statement of shareholder equity and other comprehensive income, where the minimum liability charges now appear. To determine the value of the corporation, an analyst would value the operating business and then add the pension assets and subtract the pension liabilities.

This approach eliminates smoothing, while keeping the volatility of the financing costs from clouding our view of the

operating business. It recognizes asset returns only as they are earned. It, therefore, avoids the absurd discussions over whether a company should have reported a 9.5 percent or an 8.5 percent asset return for a year in which it actually lost 10 percent.

When you add pension assets and subtract liabilities, you’re ignoring the barriers between shareholders and the corporate pension funds. Shouldn’t you reflect, for example, the legal restrictions on corporate access to pension surplus?

Bader: Like some other corporate assets, “excessive” pension surplus may not readily generate cash for the company, and a discount may be appropriate. I don’t know how best to quantify that discount, but it would of course be bounded by the penalties imposed on a reversion.

Do you have any concerns about the funding rules for pension plans?

Bader: Concerns, yes; prescriptions, no. Finance principles suggest how to measure whether a plan is fully funded. Like the actuarial model, though, they offer no rigorous basis for saying how quickly, if at all, plans should be required to reach and maintain full funding. That is for the plan sponsor and the participants to decide, subject to the federal government’s interest in protecting the beneficiaries.

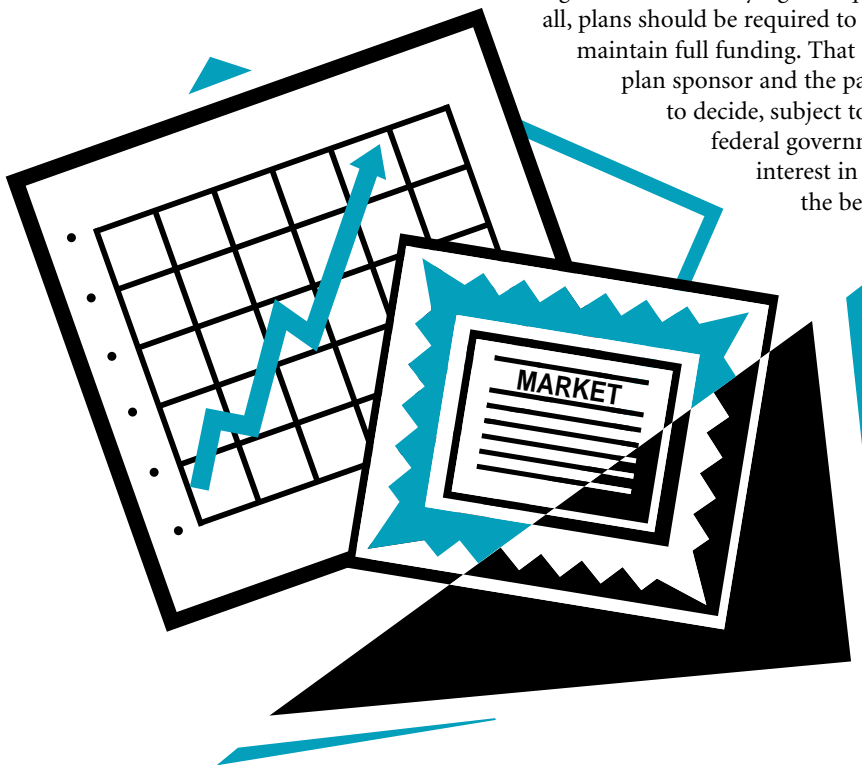
The actuarial model originated as a budgeting system for smooth employer contributions. Despite my adherence to market valuation principles, I recognize the importance to sponsors of smooth cash flows. If contribution stability is desired and the requirements of funding adequacy are met, I would prefer to value assets and liabilities at market and apply smoothing directly to the resulting contributions. Doing frankly what we now do indirectly would reduce the artificiality and obfuscation of the current multiple smoothing levels. (It would also, of course, require statutory change.)

What are the implications of your work for the investment of pension assets?

Bader: Our *Pension Forum* article doesn’t offer guidance on investing pension funds, but finance principles suggest that current allocations are distinctly suboptimal. I have written about pension fund asset allocation elsewhere [current issues of *Pension Section News* and *Risks and Rewards*], as has Jeremy.

Some pension plans have failed over the years but, compared to other financial entities such as the corporations and governments that sponsor the plans, pension plans are generally thriving. If the actuarial model is as flawed as you contend, why have we seen so few pension plan failures?

Bader: We’ve seen relatively few failures because the current methodology hasn’t been stress-tested until now. When I started in the consulting business in 1966, long-term government bonds were yielding 5 percent, about the same as today. The 15-year return on the S&P 500 Index was 15.2 percent. A standard pension valuation basis was entry age normal with a 3.5 percent interest assumption! Even into the early 1980s, when long-term Treasuries carried yields in the teens, funding assumptions rarely exceeded 7-8 percent. Market-based valuations would



have revealed widespread enormous surpluses.


The use of valuation rates that anticipate earning Treasury rates plus a risk premium seems natural today. Viewed historically, though, it's a recent and striking departure from the earlier practice of using Treasury rates minus a margin for conservatism. The risk premium approach was born at a time of very high funding ratios and, until recently, its use coincided with a relentless bull market. So the past three years offer the first true test of the "modern" funding approach. I would benchmark the health of pension plans against banks or insurance carriers rather than general plan sponsors, and I don't believe that they measure up very well these days.

What role do you see for defined benefit plans in a transparent financial economics world?

Bader: The current actuarial/accounting model, in which patience is assumed to overcome risk, gives defined benefit plans an illusory advantage—the ability to report the expected returns of equity investment with greatly understated volatility. Removing this financial magic would force defined benefit plans and their proponents to demonstrate their fundamental value in human resource planning.

Unlike defined contribution plans, defined benefit plans provide guaranteed income amounts that can be precisely targeted to achieve various human resource objectives,

such as encouraging early, normal or late retirement. The target levels are met through good times and bad; planners need not worry that a market plunge will discourage retirements just when the company most desires voluntary departures. Furthermore, defined benefit plans lend themselves more readily to window programs needed to cope with temporary conditions.

Whether these virtues will be sufficient to preserve the viability of the defined benefit system in a transparent financial world, I don't know. But we will soon find out. 

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A call to arms

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Table 3

Running Out of Assets			
Programs/Cases	Ran out of assets		Did not run out of assets ****
	Number of programs	Range of years*	
Professional Programs**			
Case 1	7	2013-1034	3
Case 2	8	2008-2027	2
Case 3	3	2009-2026	7
Case 4	10	2004-2019	0
Case 5	8	2004-2021	2
Case 6	2	2009-2013	8
Consumer Programs			
Case 1	6	2006-2013	0
Case 2***	5	2006-2010	0
Case 3	4	2011-2022	2
Case 4	6	2003-2014	0
Case 5***	5	2005-2012	0
Case 6	3	2007-2014	3


* Not all programs showed the year in which assets were depleted.

** Three of the professional programs did not clearly indicate whether the case would run out of assets.

*** These cases were not run for one of the consumer programs.

**** By the stated retirement planning horizon.

Nevertheless, there are several ways in which the actuarial profession could improve on these programs:

- Many retirement risks are actuarial in nature and are either not at all or not appropriately incorporated into all programs. Actuaries are well suited to help in developing methods for demonstrating these risks and the impact of various techniques to mitigate them.
- Actuaries could determine methods for considering multiple risks simultaneously and the potential interactions between the various risks.
- Actuaries could help improve existing programs to facilitate an understanding of the tradeoffs of various risk transfer approaches.
- Actuaries could help provide guidance about the interrelationships between assumptions and things to think about in setting assumptions.
- While these suggestions apply to retirement planning software tools, actuaries could also work to improve on retirement calculators, too. 

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Was *About Schmidt* about actuaries?

by Lynn G. Coleman

By now, many of you have read the tongue-in-cheek “official” SOA response to the movie *About Schmidt* on the SOA Web site: “Portrayal of actuaries as math-obsessed, socially disconnected individuals with shockingly bad comb-overs ‘97.28892 percent incorrect.’”

Unofficially, though, we wondered what the reaction would be from the “typical” actuary on the street about the main character played by Jack Nicholson. Here is a sampling of the comments:

R. Thomas Herget, executive vice president, PolySystems Inc.

Actuaries are more handsome and in better shape than Schmidt. Seriously, insurance actuaries do have more care for their cause (providing for the population’s financial security) than Schmidt displayed. Schmidt was self-centered; most actuaries have more consciousness and respect for those around themselves.

The lifestyle displayed is commensurate with what an actuary can expect. The actuary trains and works very hard; few people invest more time studying for

their profession than an actuary. He had a comfortable home and an expensive toy. This is just what most actuaries have.

Jay Novik, chairman of Black Diamond Group Ltd. and editor of *The Actuary*

In the novel, *About Schmidt*, the central character is a New York-based lawyer. In the movie, the “hero” has been converted into an Omaha-based actuary. Why? Could it be that Schmidt suffers from conscience and remorse about his life, and this would not be believable in a lawyer, especially one from New York? Curiously, in the switch from lawyer to actuary the writers eliminated Schmidt’s torrid sexual relationship with a beautiful 20-year-old waitress. Is this an example of professional profiling?

Actually, Schmidt’s profession had little impact on the story of a man suffering from the double whammy of a mandatory retirement (I’m assuming that it was mandatory) and the death of his wife of many years.

That said, both Schmidt and his annoying successor are easily recognizable

actuarial types. As actuaries, we know that there are many other types, some with a demeanor more akin to a game show host’s than to Schmidt’s.

Unfortunately, many will see the film and Schmidt will become their image of an actuary. I’m raising money to produce a movie portraying actuaries in a different way. It’s called *Raiders of the Lost Rate Book*. I would like to cast Tom Cruise or Brad Pitt as the actuary. Why not? Remember that Harrison Ford was cast as a professor of archaeology, of all things.

Michael Kaster, SOA managing director, Actuarial Practice Areas

I’m not sure which image was more traumatizing to me—the image that Jack Nicholson portrayed as an actuary or the image of Kathy Bates getting into the hot tub. In either case, my first reaction was “Oh, my God!” I wasn’t at all happy with the image, especially after my wife insisted that the movie was indeed “about” an actuary. I claimed that it was a movie about a guy who happened to be an actuary. In any case, the image isn’t exactly one I want to write home about.

I am sure there are actuaries (and other professionals) who are very much like the character that Mr. Nicholson portrayed. But there are many more actuaries who are polar-opposite of this image. I don’t think he was playing a typical actuary, but maybe he was playing a typical retiring individual who has regrets. This may or may not be typical, but it really has nothing to do with being an actuary. That’s my story, and I’m sticking to it.

Samuel H. Cox, professor of actuarial science, Georgia State University

I saw this with my wife, Linda. In the 10 years we have been married she has met a lot of actuaries, from students to society presidents. I felt that the image *About Schmidt* conveyed was so exagger-



Mike Kaster found several troubling things in “About Schmidt.”

ated that it could not be mistaken for reality. Surely everyone would know it's a movie and actuaries are not really like that. Linda thinks there are actuaries just like Schmidt, perhaps a lot of them. I would be disappointed if she is closer to the truth on this than me.

The lifestyle is pretty much tied up in the image. Some of it is accurate. Schmidt is wealthy, likes his work, and has poor relationships with women. Come to think of it, this fits some male actuaries I know, perhaps a lot of them.


We were both disappointed in the movie. Nicholson plays himself, which I like, but the story is boring and the movie is too slow. The only really good scene is the hot tub with Kathy Bates.

Robert D. Shapiro, president, The Shapiro Network Inc.

In a 1988 survey done as part of the Society of Actuaries' "Actuary of the Future" project, one of the respondents said, "Actuaries are viewed as too inflexible, not people-oriented, not market-oriented, not investment-oriented and too numbers-oriented." The writers of the movie *About Schmidt* must have read our report.

The limited perspective portrayed by Schmidt's character, when carried into his everyday life, could be expected to lead to disaster. Schmidt's insensitivity and, at the end, his sad awareness of feelings he never previously acknowledged, led the friends who saw the movie with us to ask Karen (my wife) as we walked

out of the theatre: "Is Bob really that bad?"

Karen said, "No, but" 

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Brazilian conference seeks state-of-the-art papers on statistical modeling

The Institute of Mathematics and Statistics of the University of São Paulo is organizing the "First Brazilian Conference on Statistical Modelling in Insurance and Finance," to be held Sept. 1-6, 2003, in Ubatuba, São Paulo.

The conference provides a forum for the presentation of state-of-the-art research in the development, implementation, and real-world application of statistical models in actuarial sciences and finance, as well as for the discussion of problems of current national and international interest in the professional arena.

It is open to both academic and nonacademic communities from universities, insurance companies, banks, consulting firms and governmental agencies, and is specifically designed to contribute to fostering cooperation between practitioners and theoreticians in the field.

The conference program promotes discussion and interchange between junior and senior scientists. Several short courses, roundtables, open problems and software sessions are being organized. Students also are encouraged to attend the conference and a special prize for the best student presentation will be awarded.

The conference encourages the submission of original research papers, work-in-progress reports, future research proposals and students papers. Topics of interest include, but are not limited to:

- Collective risk models and ruin theory.
- Elliptical distributions and applications.
- Extreme value theory and applications.
- Insurance (life, nonlife, pension and health) and reinsurance.
- Risk measures and portfolio selection.
- Statistical analysis of insurance and finance data.

An extended abstract of approximately three pages should be submitted by e-mailing a PDF file to ubatuba@ime.usp.br.

It is expected that accepted papers will be presented at the conference and published in special issues of the journals *Applied Stochastic Models in Business and Industry* and *Brazilian Journal of Probability and Statistics*. Simultaneous submission to other conferences with published proceedings is not allowed.

Please note these important dates:

- Submission deadline: April 25, 2003.
- Notification to authors: May 30, 2003.
- Final version due: June 27, 2003.
- Online registration deadline: July 11, 2003.

For details, visit the conference Web site at <http://www.ime.usp.br/~ubatuba>.



Register online for upcoming SOA meetings

Are you looking for a faster, error-free way to register for SOA meetings? Look no further, because the SOA is offering online registration for the Washington, D.C.-based (Life) and the Vancouver-based (Health/Pension) spring meetings, the Valuation Actuary Symposium and the Orlando Annual Meeting.

January's Long-Term Care Insurance Conference offered registrants the opportunity to go online and more than 700 attendees did so. Just go to www.soa.org and link to the meeting of your choice.

Are you interested in sharing your expertise with the SOA membership? We are currently still looking for volunteers to speak at the Washington, D.C., and Vancouver meetings. For available sessions, visit www.soa.org/conted/index.asp.

Two conferences in one location

SOA, LIMRA and LOMA are sponsoring the Pension Conference and the Sixth Annual Annuity Conferences in the same


location. Mark your calendars for April 6–8, 2003, to attend these conferences at the Marriott Baltimore Waterfront.

The Sixth Annual Annuity Conference offers you the opportunity to network with more than 500 annuity and pension professionals to discuss important issues related to income annuities, qualified plans, product design, product management, conservation and more. For complete information, visit www.loma.org/annuity.htm.

The Pension Conference offers attendees a comprehensive conference dealing the marketing, sales, operations and development of pension plans. For complete information, visit www.loma.org/pension.htm.

Registered attendees of either the Annuity Conference or Pension Conference can also attend sessions at the other conference for no additional charge. That means you can choose from more than 30 concurrent sessions and learn the latest developments in the annuity and pension industries. With so many sessions to choose from, you'll want to bring along colleagues to be sure you cover them all.

Additional seminar opportunity

In response to requests from members who are looking to gain a deeper understanding of retiree group benefit measurements, the Health and Retirement Practice Areas developed the Advanced Retiree Group Benefits seminar, scheduled to convene April 10-11, 2003, at the Doubletree Hotel in New Orleans. 

Volunteers sought for the *Record* Editorial Board

The SOA is seeking additional volunteers to join the *Record* Editorial Board as meeting editors for the 2003 Spring and Annual Meetings. Meeting editors verify the actuarial content of sessions that appear in the *Record*. (Sessions are edited in advance for grammar, style and format.)

Transcripts are assigned according to the actuary's area(s) of specialty and/or preference. You may choose to edit for one, two or all three meetings.

The areas of specialty are: Actuary of the Future, Computer Science, Education and Research, Financial Reporting, Futurism, Health, Health Disability Income, International, Investment, Long-Term Care, Management and Personal Development, Nontraditional Marketing, Pension, Product Development, Reinsurance, Retirement, Smaller Insurance Company and Smaller Consulting Firm.

For more information, contact Glenda Greenberg, associate editor, at ggreenberg@soa.org.



Data needed on mortality, turnover and retirement rates

Are you satisfied with the mortality rates, turnover rates and retirement rates you use for your pension valuations? Do they reflect the experience of the plan population? Do they work for hybrid plans? Are they up-to-date? Did you pick them out of thin air? Would you like separate tables for union and nonunion populations?

It's difficult to find good tables, and the SOA is doing something about that, but we need your help! We need as much data as possible from everyone in the industry. These tables are of value to all pension actuaries, so we hope that many of you will serve the actuarial community by providing data from a few of your plans (of any size).

Here's what is happening:

- The Non-Mortality Decrement Task Force (NMDTF) has collected data for 1996-2000 and is producing turnover and retirement rate tables that will be ready later this year.


- For data collection purposes, the NMDTF has joined forces with the Retirement Plan Experience Committee (RPEC) as of 2002. The RPEC produced the RP-2000 table based on 1990-1994 data. The RPEC monitors mortality trends and is attempting to produce mortality tables for particular segments of the population, such as union and salaried employees.
- Starting in 2002, the joint task force/committee initiated an annual data collection process with the goal of attracting as many contributors as possible.
- Tables will be updated every couple of years as the need and data warrant.

To find out how to contribute data, please contact Steven Siegel, SOA research actuary, at 847.706.3578 or ssiegel@soa.org. Data is coded to ensure confidentiality.

Presentations invited for 2003 ARC

The 38th Actuarial Research Conference (ARC) will be held Aug. 7-9, 2003, at the University of Michigan in Ann Arbor, and

the organizers welcome presentations on all topics of interest to actuaries.

To ensure a spot on the ARC program, participants who would like to make presentations must submit an electronic copy of their paper titles and abstracts to Curtis Huntington at chunt@umich.edu by June 1, 2003. 

Presentations will be published in the conference proceedings, *Actuarial Research Clearing House 2004.1*. The conference provides an excellent opportunity for academics and practitioners to meet and discuss actuarial problems and their solutions. It also provides a forum for discussion of general actuarial education issues.

This year's conference also recognizes the first 100 years of the University of Michigan's Actuarial Program (in celebration of the life of Cecil J. Nesbitt).

For more information regarding all aspects of the conference, please visit the ARC Web site at www.math.LSA.umich.edu/arc.

SOA offers new benefit to members

by Meredith Lego, SOA marketing manager

As announced in the January issue of *The Actuary*, the SOA has responded to member needs and is sponsoring new insurance coverage products to its members to be administered through Marsh Affinity Group Services.

The first of these plans is Catastrophe Major Medical Insurance, which is designed to give you the insurance you need if medical costs are higher than what your basic medical insurance, HMO, PPO or even Medicare was designed to handle.

This plan can pay as much as \$2 million for up to five full years and includes home health care and nursing home benefits. Plan benefits are paid directly to you or anyone you choose. The Catastrophe Major Medical Insurance Plan is available regardless of age, and your spouse/domestic partner and children are also eligible for coverage.

Other insurance programs that will be rolled out in 2003 include:

- Professional Liability Insurance.
- Disability Income Insurance.
- Term Life Insurance.
- 10-Year Term Life Insurance.
- Major Medical Market Basket.

For more information about the Catastrophe Major Medical Insurance Plan, to learn about enrollment dates or to inquire about other insurance plans, contact the insurance administrator customer service:

Marsh Affinity Group Services
a service of Seabury & Smith
800.503.9230
www.seaburychicago.com.

SOA creates new working groups

Four new Board-level working groups have been created to add resources and attention to the areas of actuarial promotion/intellectual capital, external relations, governance issues and practice area/sections.

A key responsibility of the SOA president is to decide how the work of the Board can best advance the mission of the SOA and the actuarial profession. As part of this process, President Harry Panjer determined which Board advisory groups, committees and task forces were needed to support the direction being set for 2003. He then assigned Board members to serve on several of these working groups. This approach strengthens the volunteer/staff partnership and provides a more comprehensive link to the Board.


There are seven Board advisory groups, many covering SOA functional areas such as publications, continuing education and research. Other groups cover profession-wide issues such as international issues. Two newly formed advisory groups include:

- **The Board Advisory Group on Intellectual Capital.** Vice President Dick London heads up this committee, which will focus on actuarial promotion, career encouragement, minority recruitment and academic relations. Bruce Iverson, SOA's managing director of research, along with Meredith Lego, SOA's marketing manager, are partnering with London on this effort.

- **The Board Advisory Group on External Relations.** Chaired by Bruce Schobel, this group will create and foster mutually beneficial associations with other professional organizations. While this effort has been spearheaded for years by Anna Rappaport, the SOA leadership would like to expand the resources to this important area. Mike Kaster, SOA's managing director of practice areas, is working alongside Schobel.

In addition, there are eight Board-level committees and two newly formed task forces.

One task force was created to assist with an upcoming governance audit. The goal of the audit is to optimize the volunteer/staff partnership; leadership development; practice area, section and committee functions; among other things. Vice President Brad Smith is chairing the **Governance Audit Task Force**.

Finally, Greg Gurlik is leading the **Implementation Task Force on Sections and Practice Areas**, which is charged with crafting an implementation plan to carry out the recommendations of the Task Force on Sections and Practice Areas. The report can be found on the SOA Web site at www.soa.org. 

Notice: Voting begins this month

Voting for the candidates on the first ballot for the 2003 Society of Actuaries election of officers and board members will be held electronically for all Fellows who have e-mail addresses on the SOA database.

To make certain the SOA has your updated e-mail address, **please check your information** on the online directory at www.soa.org. Voters will be able to download and print the biographical materials and a sample ballot. First ballot voting will begin this month.

Fellows who do not have an e-mail address on the SOA database will receive paper election materials in the mail. Voters will have 30 days to cast their ballots.

For technical questions related to electronic voting, please e-mail us at elections@soa.org.

For general questions about the first ballot election, please contact Lois Chinnock at the SOA office (847.706.3524; e-mail: lchinnock@soa.org).

Feeling disenfranchised?

It has always bothered me that we have a significant group of members—our Associates—who cannot vote in SOA elections. The SOA Constitution requires that a member be an FSA in order to vote.

I feel that it is time for us to extend the votes to ASAs, in particular, long-term or “career” ASAs. For the purpose of discussion, let’s think of all ASAs who have been members for at least five years. For every 10 FSAs there are almost six five-year ASAs. They constitute a significant part of our membership.

If we want to treat long-term ASAs as valued members of the Society, and if the Society benefits from them being active in the Society, one clear strong symbolic gesture is to give them full voting rights in SOA elections. Consider some of the arguments I’ve heard, both for and against extending the vote to ASAs.

Pro:

- “Long-term ASAs pay the same fees as Fellows. Thus, extending the vote would be consistent with treating them as Fellows, at least for the purpose of choosing the leaders of the Society.”
- “Five-year ASAs are mature individuals well into their professional careers. They are knowledgeable about SOA activities and active in meetings and sections.”
- “If we can get them interested in elections earlier, maybe they’ll vote in higher numbers than FSAs currently and remain engaged in SOA activities.”
- “Career ASAs may gain an increased sense that their opinions matter.”

- “There are a significant number of long-term ASAs who choose not to become FSAs but remain active in the SOA. This is particularly true in health and retirement systems practice areas. Extending the vote to them is a positive signal.”

Con:

- “Voting is a privilege that should be afforded only to the highest class of membership. To do otherwise sends the signal that getting the FSA designation should not be the objective of all members.”
- “Voting by ASAs dilutes the impact of FSA votes. Since FSA turnout for elections is currently poor, it would not take a lot of ASAs to vote in order to have a significant influence on elections.”
- “Giving Associates additional privileges demeans the value of the FSA.”
- “ASAs may not even care enough for this gesture to be meaningful.”

You can see that there are many rational arguments that can be made, both for and against giving ASAs the vote. Our constitution and by-laws reflect the overall values of the organization. I feel that as an education, research and membership services organization, the SOA serves both classes of membership roughly equally.

The Board of Governors ultimately determines the types of services provided. It seems logical to me that all members, at least most, should be able to determine who sits on that Board.


I would like the Board to consider allowing long-term ASAs to vote in Society Board elections. However, there is a Catch-22: Approving any extension of voting privileges requires a constitutional amendment that must be accepted by a

super-majority of two-thirds of current voting members. This means that the issue will be decided by the FSAs, not by the Board. The Board is only in a position to authorize a vote on an amendment.

There was a failed constitutional amendment proposal to extend the vote to long-term ASAs in 1992. I think the world has changed since then. In particular, the level of the ASA was raised in 1995 to include much more nontechnical professional actuarial content.

There are numerous five-year ASAs in certain areas—pensions (78 per 100 FSAs), health care (59 per 100 FSAs) and investments (40 per 100 FSAs), for example—who are choosing to obtain the ASA plus some complementary education, such as an EA or CFA, in lieu of completing the FSA. These are smart successful people whom we need as part of the Society. I see no compelling reason to continue prohibiting long-term ASAs from participating in determining who will sit on the SOA Board of Governors.

I hope that you will talk to your colleagues, both Fellows and Associates. Then, if the Board approves a vote by Fellows, please join me in supporting this amendment.

Let’s create a more inclusive Society. 

Harry Panjer

