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Panel discussion:

Annuitization issues in Social Security reform

As currently structured, Social Security benefits in the United States are paid out as inflation-indexed lifetime annuities with generous survivor benefits. Aside from choosing their retirement age, retireees have little control over how they receive these benefits.

To truly understand the impact of incorporating individual accounts into Social Security, we need to understand the payout phase of these accounts. This is the topic of this panel discussion.

Alan Parikh: The President's Commission to Strengthen Social Security has arrived at three proposals for incorporating voluntary individual accounts into the program. Other alternatives have been proposed as well. If individual accounts are somehow incorporated into the program, there are several important questions about how these individual accounts would be paid out, which our distinguished panel will address.

Here's the first question for our panel: Should these accounts be converted into annuities to insure the longevity risk, or should people be free to spend them as they see fit, based on the assumption that they will act in their own best interests?

Bruce Schobel: That's assuming a lot. People try to act in their own best interests, but they don't always succeed. There will always be tension in this area between the notion that these accounts are people's own property to do with as they wish and the notion that this is a government program intended to provide retirement income. If someone withdraws all his money at age 62 and buys a boat with it, that's inconsistent with providing a lifetime stream of retirement income.

Anthony Webb: This is certainly very much the thinking of the U.K. Inland Revenue, which has recently published a consultation document on this very issue. It displays two main concerns—firstly the fear that people may consume their wealth too rapidly and become a burden on the state and, secondly, that, in the absence of mandatory annuitization, pensions might become more and more a tax avoidance device for the rich. One possible solution to the first concern is the suggestion that one might stipulate mandatory annuitization in an amount which would give people a basic subsistence level of income, or at least take people out of welfare.

Hugo Benítez-Silva: That's a very good point. In fact, I am of the opinion that people do tend to behave in their own interests. And precisely because sometimes they do, they might actually decide to spend the lump sum. However, in Chile, you can actually withdraw a lump sum, but then you must buy an annuity that is going to assure a stream of income above the poverty line, for example, 80 percent of the average wage that you had during the last years of employment. Another issue here is that sometimes you may have to allow for lump sum withdrawals. Imagine that people have some medical needs and very large medical bills, and they know they have this account of money that maybe can take them out of this hole they are in because of this catastrophic health event, for example. Under some conditions, maybe a lump sum withdrawal is not a bad thing.

Webb: Now the counterargument is: the more complicated one makes these things, and the more restrictions one places on people, the less likelihood there is that people will take part in the savings phase of these programs.

James Poterba: Presumably the Social Security would be compulsory.

Schobel: Maybe not. The Bush commission plans are all voluntary.

Poterba: Let me say one thing about the extent to which there is a problem with people withdrawing funds. The watchword in almost all of the retirement-saving literature is heterogeneity. It's very difficult to generalize. When you look at,

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Editor responsible for this issue

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Social Security reform

by Alan Parikh

The political hot potato that is Social Security reform now sits on the sidewalk, baking in the August sun. Nobody wants to pick it up.

The President's Commission to Strengthen Social Security issued its report in December of 2001, with three alternatives for restructuring the program, each incorporating individual accounts along with offsetting reductions to the existing benefit formula, and other changes to bring the program into long-run financial balance. The Commission's recommendations complied with the guidelines set forth by the President—including the requirement that any solution "must include individually controlled, voluntary personal retirement accounts, which will augment Social Security."

Now, with Congressional elections looming and equity markets near their five-year lows, politicians seek to distance themselves from this report. Core assumptions about long-term equity returns are being challenged, undermining the foundations of the rationale for individual accounts. The Office of the Actuary continues to predict long-run deficits for the existing system, providing the ongoing catalyst for the debate. Going beyond the Commission, a much broader range of solutions has been proposed. Regardless of how the debate is resolved, I believe that the questions raised are of great professional interest to actuaries. Here's why:

A shift to individual accounts replaces a defined benefit approach with a defined contribution approach, raising complicated issues about adequacy, individual exposure to volatile capital markets, survivor and spousal coverage and redistribution of benefits among different demographic groups. Sound familiar, pension actuaries?

The conversion of individual accounts into annuities at retirement generates many questions as well: Voluntary or mandatory? Should annuity pricing reflect gender, health status, improvements in longevity? What forms should be offered? Who should provide them? Where will adverse selection creep in? Life actuaries will be on familiar ground here.

Social Security as it exists now is a tangled web of benefits, the result of decades of incremental solutions and compromises. Experts disagree strongly about what the real problems are. Defining, understanding and untangling complicated problems is what actuaries are trained to do

We can only scratch the surface of this debate in these pages. The key points of contention revolve around matters of opinion, including but not limited to:

What is appropriate sharing of risk between individuals, government and the private sector? Between generations of taxpayers?

What is the level and volatility of expected investment returns and the impact of administrative costs on these returns?

How does the program structure affect the economy and savings rates?

What is the true extent and desirability of income redistribution?

How effective are individual accounts, particularly small accounts?

Actuaries can explore all sides of the debate by looking into the resources available on the internet, and summarized on the SOA Web Site, *www.soa.org*. Currently, Andrew Biggs of the Cato Institute and Peter Orszag and Peter Diamond (Brookings Institute and MIT, respectively)

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are engaged in a spirited public debate over the feasibility and effectiveness of the Committee's proposals. The Urban Institute, the Center for Retirement Research at Boston College and many other organizations are publishing fascinating research on the topic. Academics and researchers, including those at the Social Security Administration, are employing sophisticated and powerful models that are yielding surprising insights. Ron Gebhardtsbauer, senior pension fellow at the American Academy of Actuaries, has developed and maintained an excellent set of downloadable resources available to actuaries who are interested in speaking on the topic, or just learning more about it. The experience of other nations facing similar challenges also offers lessons for the debate in the United States, as our panel discussion in this issue demonstrates.

Social Security insures our income in our old age, and helps us even in our working years as it protects the income and dignity of the elderly among us. The future of the program is of vital interest to us as actuaries and as citizens. This issue is intended to highlight those aspects of the problem that are of particular interest to actuaries.

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for example, the portfolio allocations people choose in their 401(k) accounts, we know that there are some folks who are out there plunging into high concentrations of own-company stock; others who are basically holding T-bills; then a broad mass that's spread across the range in between. The tricky thing to making any strong statements about whether what households are doing is in their best interest or not, when they do or do not make these annuitization decisions, is knowing something about the time path of consumption needs when they're in retirement. One can make arguments, as Hugo just did, about the potential need for large lump sums late in the retirement period for medical or nursing home needs. One can also make arguments that say that households are better able to consume and derive utility from their consumption early in the retirement phase. They might like something where the spending is actually front-loaded when they can travel or do other activities, and then ramps down. One of the big unknowns that economists have wrestled with here is trying to figure out what the stream of consumption needs after retirement looks like and then asking the question: How do various annuitization options, whether they are flat nominal annuitization or something that allows a rising path of real outlays, match up with these potential consumption needs? Since households are likely to have differences in their consumption need profiles, that would lead very naturally to differences in what households would choose to do when confronted with standard annuitization options.

Benítez-Silva: You could expect people, if they knew they had this asset, to behave optimally; they are going to take this asset and optimize the utility and some of them may spend a lot in the first five years. On the other hand, a lot of them might be very afraid or very risk-averse to not having those resources when they reach 80, so they may spend very little at the beginning. The policies to tackle these problems have to have some heterogeneity in them and that is what complicates the solution. The ideal would be having complete heterogeneity and everyone would do whatever is best for him or her, but that's basically impossible to manage in a system that could cover millions of individuals.

Webb: Does one create problems of adverse selection if one allows voluntary annuitization?

Schobel: Before the question of voluntary annuitization, you have the more fundamental question of voluntary participation in the first place. Another point is that, in trying to match the income stream to retirement-income needs, these accounts are not operating in a vacuum. Other sources of retirement income include a vestigial government program, employer-sponsored pensions, the opportunity for retired people to work to some degree. It's very tricky to predict how all these are going to hang together. The government-sponsored benefit will probably continue to be inflation-indexed. Most employer-sponsored pensions are not. The one element retirees might have control over in terms of how it's distributed over their retirement years is this annuity, but it might be the smallest of all the elements.

Parikh: It's true that the report proposes that annuitization be mandatory up to a minimum level, just as Hugo described it for Chile. Of course that then raises the issue about if you have other income sources, especially defined benefit plans, defined contribution wealth, how would that minimum interact with those other sources of wealth?

Benítez-Silva: The issue here is that although it may be a relatively small part of people's wealth, it can have a big impact on how people perceive these private accounts to behave. It might have started small, but if this were to work out and people were to use all these opportunities it might be that the private side of the system would start to get stronger, and people would start to understand better how the accumulation of resources over the life cycle can have a big impact on their enjoyment of resources later in life.

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Poterba: I think that's right. I've seen some evidence that workers who have been exposed to financial education in the context of a 401(k) workplace saving plan and have learned about risk versus return tradeoffs are more likely to hold stocks in their own private accounts. I think there's evidence that when people become familiar with these issues through the context of these plans they start to change behavior in other contexts as well.

Schobel: If we're going to focus on the Bush commission proposals, and it's not clear that we need to limit ourselves to those, these accounts are going to be pretty small. Two of the proposals have maximum annual contributions of $1,000 (indexed).

Poterba: With tight maximum limits it is hard for the balances, even with a long working life, to accumulate to the primary component of retirement savings support.

Schobel: That's right. These are really small. Let's not overdo how significant they could possibly be, unless we're talking about a different, hypothetical plan that is not on the table at the moment.

Parikh: Of course the final plan, if there is one, may look similar to or very different from the proposals that are on the table. If we believe that the system should encourage or mandate annuitization, then what kinds of annuity options should be offered? Features could include: survivor benefits for spouses; survivor benefits for non-spouses; inflation indexing; cash refund option and others.

Poterba: I think you would find broad support from economists for doing an inflation-indexed annuity on the grounds that people do not perceive risks to their long-term well-being associated with gradual inflationary erosion of the value of their benefits. We know that a three-percent-per-year inflation rate halves the real value of a nominal annuity payout over 24 years. Non-trivial numbers of retirees today and in the future can expect to have 25 years of retirement. Doing something that provides an inflation-proof element to these payouts is important. One of the challenges to understanding the current U.S. annuity market, the private market, is why there hasn't been more interest in creating inflation-linked products. There are such products in the U.K., and, although they are available, even there they remain a relatively small component of the annuities market.

Benítez-Silva: I find the possibility of having other kinds of payouts, such as survivor benefits, very interesting. But we should take into account that implementing such a system could increase the cost of running these programs. On the other hand, if you think about it, this becomes like an asset. If the annuity loses that property of disappearing at the death of the person who annuitized his wealth, it becomes like an asset for the survivors, exposed to bequests, even exposed to taxation.

Schobel: If you have survivor benefits or refund features or guarantee periods, all of which are different ways to deal with the same issue, you can make mandatory annuitization a lot more palatable. Otherwise, for instance, you are going to have situations like terminally ill people who don't want to annuitize because they are going to die in the near future. Also, I think there's a lot to be said for attempting to match the distribution method for current-law Social Security benefits. There's no fundamental reason why we have to match it, but if the individual accounts are going to substitute for current-law Social Security in some sense, then it's nice to have a comparable payout method, just for comparability. Of course, current-law Social Security does have survivor benefits, and it does have inflation indexing. It does not have a lump-sum option, interestingly.

Benítez-Silva: The issue is that Social Security has survivor benefits, but the fact that it has survivor benefits in

About the panelists[1]

Dr. Hugo Benítez-Silva's research focuses on dynamic models of retirement behavior, annuity decisions, disability and portfolio choice. He obtained his Ph.D. in Economics from Yale University in December of 2000. His research is currently supported by the Center for Retirement Research at Boston College, the Michigan Retirement Research Center and the TIAA-CREF Institute.

Alan Parikh, FSA, MAAA is a principal with Mercer Human Resource Consulting in Chicago. He is a pension consultant with 14 years of experience advising large employers on retirement plan issues.

James Poterba is the Mitsui Professor of Economics at the Massachusetts Institute of Technology. His recent research has focused on retirement saving and household portfolio structure. He is the co-author of a recent book, *The Role Of Annuity Markets In Financing Retirement*, published by the MIT Press in 2001.

Bruce D. Schobel, FSA, FCA, MAAA is corporate vice president and actuary of New York Life Insurance Company. During 1979-88, he was with the U.S. Social Security Administration in various actuarial and policy-development positions. His papers and articles on Social Security have appeared in *The Wall Street Journal*, *Policy Review*, *The Journal of International Taxation* and numerous actuarial publications.

Dr. Anthony Webb is a senior research analyst at the International Longevity Center in New York. He has a Ph.D in economics from the University of California, San Diego, and is a former economic adviser for the British Government.

[1] The views expressed in this panel discussion are those of the panelists and do not necessarily reflect the views of any of the panelists' employers or the SOA.

principle does not affect the level of your benefits. In this case, it might affect the pricing of the annuity and may be worse for people who do not want to leave things to their kids or their spouses, or they are widowed or unmarried.

Schobel: If you have mandatory survivor benefits, then you're going to match current-law Social Security. If a retiree doesn't happen to have any survivors, once again that matches current law. Retirees today who don't have family members don't get larger benefits as a result of not having future survivors.

Webb: On the other hand, under the present system, the contributions are mandatory. The danger is if one makes a voluntary alternative very unattractive to certain classes of people, they won't participate in the first place.

Schobel: That's not really an option under the Bush commission proposals. Your choice is to give the money to the government or put the money in your own account. I don't know how many people would prefer to give their money to the government.

Webb: Can I raise another issue here? I would certainly encourage giving people the option to invest in TIAA-CREF style investment-linked annuities for those people who want to purchase annuities but nonetheless wish to carry on being invested in the stock market.

Poterba: That's certainly been an issue in the U.K., where there seems to be great demand for something besides bond-backed annuity-type products as a way that people can draw down their retirement savings accounts. But I think the issue you run into there connects back to our earlier discussion of requiring people to provide a minimal level of support during their retirement. If one chooses a variable-annuity type of payout structure, and the underlying asset pool experiences negative returns during the retirement period, at what point do you pull the assets out of the risky assets and put them into fixed income so you can ensure that you have a minimal level of income? There are some tricky issues associated with the management of the variable annuities if one needs to guarantee a floor of retirement income for these people.

Benítez-Silva: One issue is with spouses and children, as well. It becomes like a bequest. It might increase the cost a lot, because you'd like to give it away at that point. Maybe you've been managing this for years, and maybe you're encouraged to give a lump sum once the person dies.

Schobel: I don't like to talk about "increasing the cost." A lump sum accumulated during your working life can be paid out in various ways. You could have a life annuity with a payment of, say, $1,000 per month, or you could have a joint-and-survivor annuity where the payment is $700 per month. I don't call the 300-dollar reduction a cost; I just regard it as a redistribution. The present values of these lifetime income streams are the same under all options, if they are fairly priced, and we can assume that no one is going to set up a system that is unfairly priced, at least not on purpose.

Parikh: Anytime that someone can choose among payment forms, anti-selection costs become an issue. Mandatory annuitization would seem to bypass anti-selection issues here. What do we know about anti-selection in annuity markets, both in the United States and abroad, and does the evidence support the idea that the anti-selection costs will be significant unless we have mandatory annuitization?

Webb: We certainly know that people who purchase annuities live longer than people who don't purchase annuities. That may be due to anti-selection, but may also simply be a consequence of the people who purchase annuities being wealthier, and wealthier people in general tend to live longer than poorer people.

Poterba: Amy Finkelstein and I were fortunate to be able to do some work looking at the different products sold by a large U.K. insurer. We looked precisely at this anti-selection effect across different types of products and found that there were noticeable differences. For example, the annuitants who chose to buy inflation-indexed or nominal-increasing, five-percent-guaranteed-increase annuities, tended to live longer than the ones who bought flat nominal annuities. That's just what you'd expect, since the inflation-linked and the rising payout structure are back-loaded policies. Similarly, the people who purchased guaranteed period annuities were also more likely to die sooner relative to the ones who purchased annuities without guarantee periods. That makes me think that even once you've compelled people to participate in the annuity market, if there are some options about the choice of annuity products that are available, you're going to see some anti-selection.

Benítez-Silva: Interestingly this can also interact with the issue of the lump sum withdrawals, because it might be that those who are likely to die sooner are more likely to want the lump sum. That's going to have an effect on the pricing of the annuity of the people who live longer and who would like a steady stream of income for a longer period, so it could exacerbate, actually, the cost of the adverse selection in some cases.

Poterba: In the U.K., there is a compulsory annuity market for the pensioners who have accumulated assets in the tax-deferred retirement schemes. There is also a pure voluntary annuity market. There are price differences between the annuity products that are offered in those two markets. The annuitant who was able to purchase a compulsory annuity policy will get a higher monthly payout than someone who purchases a voluntary market annuity. That pattern is consistent with there being a greater degree of anti-selection in the voluntary market than in the compulsory market.

Benítez-Silva: In the compulsory market you are forcing the pooling of the risks.

Poterba: Because there is some discretion in the U.K. market as to how much of the account you have to annuitize, those who expect to die soon presumably would be more likely to pull out lump sums relative to those who expect to live a long time.

Parikh: Let's turn to interest rates. In the United States, traditional qualified defined benefit plans are required to link their

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lump sum payouts to the 30-year treasury rate, or, now, a proxy for this rate. So individuals nearing retirement are forced to anticipate interest rates if they want to get the biggest lump sum possible. The same process works in reverse when converting from an account balance to an annuity. What options exist that can prevent participant "gaming" of an account-based system? Is a fixed interest rate feasible?

Webb: There's been a lot of pressure in the U.K. recently to do away with mandatory annuitization of pensions for the self-employed, who are currently required to purchase annuities at age 75. One of the arguments that the campaigners have put forward is that current interest rates are extremely low and the purchase of annuities is a bad deal at the current moment in time. There's this notion that people are at risk from adverse movements in the real long-term interest rate. But the very same people who are complaining about low annuity rates are those who have benefited from high bond prices and high equity price-earnings ratios. There's an element of people wanting to have their cake and eat it too. This is a risk that can be insured against by holding long-term bonds in the pre-retirement portfolio.

Schobel: There were people five years ago, and for that matter ten years ago, who thought that interest rates had bottomed out. They were wrong; interest rates just kept going down. I think that it's a very bad game for people to play with the government with their Social Security accounts, to say, I don't want to annuitize now because interest rates are so low. They might find that interest rates are even lower next year. I think the only real solution to this interest-rate problem is to force people to annuitize over some period of time. For example, when a person chooses to retire, instead of taking his whole account and converting it, he would convert, say, one-fifth of it when he chooses to retire, and then one-fourth of it a year later, then one-third a year after that, and so on, until the account has been totally annuitized over five years. But, repeating what I said earlier, at least under the Bush commission proposals, these are pretty small accounts. If you are spreading them into fifths and fourths, you aren't buying very large annuities, and that has costs associated with it as well.

Webb: There's maybe a more pressing issue, and that is that there's evidence from the U.K. that where people have an open market option which gives them the right to take their fund to a different insurance company, the better-off people are generally much more effective at shopping around and getting decent annuity deals than the poorer people who tend either to stick with the deal offered by the pre-retirement fund manager, or aren't very effective at hunting down the best deal.

Benítez-Silva: One issue also with the interest rate is that interest has a risk. We are saying we want this annuity because it's supposed to be covering the longevity risk, but if we make it too variable then people can do too many things, in terms of changing it to different interest rates depending on the business cycle. We are adding the interest rate risk as Jim was saying. It might be that it's not a bad thing to limit the variability, because you're absorbing that risk.

Parikh: What about the mortality basis? Obviously, unisex mortality seems simplest and, on its face, fairest. What are the problems inherent in using unisex mortality in annuitization? I know we have unisex mortality in qualified defined benefit plans in the United States where annuitization takes place. What are the issues with that? What other variables besides gender can realistically be considered in pricing these annuities?

Schobel: Don't we all consider it inconceivable that individual accounts set up under the auspices of Social Security would utilize anything other than unisex mortality?

Webb: Are unisex tables compatible with voluntary annuitization?

Poterba: If you allow individuals to choose whether they are in or out, then you'd see huge gender-based differences in participation if you were offering these things at unisex tables.

Schobel: There is a solution to that problem. It's not a perfect solution, but if you have mandatory joint-and-survivor annuities, and taking into account that something like 90 percent of retirees at the time they retire are married, you can reduce a lot of that anti-selection problem. If you're paying an annuity to a married couple—one's a male and one's a female—and you don't have a huge reduction in the monthly payment at the death of the primary annuitant, unisex annuities really can work.

Benítez-Silva: My opinion on this is that we know that women live longer, for example. It's subsidizing them to have this unisex because if you think about it, you can compare this with any other insurance market. We all agree that the health-insurance prices are different for people with different characteristics. Nobody debates that. If you're a smoker and a drinker and you have a history of bad health, you are going to get a higher price in terms of life insurance or health insurance. I don't see the huge difference in this case, in principle. But since it's a Social Security issue, it can be delicate.

Schobel: Even though women live longer than men on average, you should go back and read the Norris decision of the Supreme Court, where they shot big holes through that argument, even though the data are really incontrovertible.

Benítez-Silva: I agree discrimination issues are there, but we can think of other variables, for example, race. It's a similar issue—we know that the minorities are generally in worse health, and they have shorter life spans. What should we do about that? In that case, we'd like to do affirmative action in some sense, by saying, well, we know you're going to live less, you should get a better price.

Parikh: Isn't that one of the selling points of private accounts? Minorities would have access to the wealth that their higher mortality currently prevents them from obtaining.

Benítez-Silva: But then it's important to annuitize at the rate that is the average in the population.

Schobel: Race-based annuities are simply illegal in the United States. You can't do it, no matter what the data show. I just can't imagine anybody would allow gender-based differences in a Social-Security type of system.

Benítez-Silva: The interesting thing here is that by not allowing for race-based pricing, we're actually discriminating against minorities.

Schobel: I know it, but that's the law.

Benítez-Silva: I understand that, but it's kind of puzzling that a law that is supposed to be defending minorities could end up, under some conditions, actually hurting them.

Poterba: If you are not writing individual specific annuities where you've done genetic testing to figure out all the mortality risks that can be identified ex ante, there will be redistribution taking place across different participants in the annuitant population. You have to decide at what point you're going to truncate that redistribution.

Benítez-Silva: You definitely want pooling in this system—you don't want to make the group so small that there is no pooling and we have high prices.

Schobel: All these things argue in favor of mandatory annuitization and joint-and-survivor and so forth, because they encourage everybody to remain in the pool.

Poterba: The argument for mandatory annuitization is that you reduce the anti-selection and the administrative costs of potentially having to manage a complicated set of different policy options. The counterargument, though, is that in a world where people do have heterogeneous tastes about how they would like to spread their resources over their years of retirement, mandating a single, one-size-fits-all annuity or mandating choice from a limited menu of annuitization options means that you may reduce the welfare of people whose desired consumption stream doesn't quite look like the one that you've mandated. That's the tradeoff.

Schobel: On the other hand, they may have other sources of retirement income that they can tailor more to their needs.

Poterba: Sure, some will and some won't. And with small accounts the argument is far less compelling than when the accounts become potentially large and are substantial relative to the rest of their retirement resources.

Webb: Now one of the issues that's been raised on several occasions has been the question of management costs. The U.K. experience of years gone by is that a lot of the benefits and investment returns have been eaten up in high management costs. The U.K. government has recently come to grips with this issue by setting out standards for simple, straightforward products, which have low management charges. The government lets the companies advertise the product as having been designed to these particular standards. So, as an example, in personal equity plans-the U.K. version of 401(k)s—indexed funds with low management charges are advertised as having been designed to what are called CAT standards. One wonders whether voluntary annuities couldn't possibly be marketed here in much the same way.

Parikh: That would address some of the administrative cost issues, but still wouldn't get around the anti-selection issues.

Webb: But administrative costs in the U.K. have been extremely high in the past.

Schobel: If you have market competition, that problem arguably solves itself. If you have the government setting annuity rates, then you may not even have the problem to begin with.

Webb: The evidence in the U.K. is that competition has worked reasonably well for the wealthier annuitants, but has worked less well for poorer annuitants who tend to be less capable of evaluating prices.

Schobel: On the other hand, they have less at stake. Maybe they are making a sensible decision. If you have a relatively small amount of money to annuitize, maybe you don't want to work that hard to get the absolutely best possible rate.

Benítez-Silva: But it might be that the marginal utility from those resources is much higher.

Poterba: Scaled relative to their total resources for retirement, it may be substantial.

Parikh: We've talked about this issue as if the personal accounts would be annuitized. I think the hidden assumption has been that we would be working through an annuity market much like the U.K. operates now, where different providers compete for the business. At the same time, it would seem that some of the adverse selection issues, and administrative cost issues, might argue for some kind of centralized provider with government backing. What are the tradeoffs involved in allowing people to purchase from private insurers rather than having some kind of a centralized place where the annuities are sold and where those annuities are also backed?

Benítez-Silva: One issue here is that if you think about what the annuity is, you're entering into a long-term contract with these insurers, if there were to be a menu of private insurers. The more characteristics of an asset that these accounts have, the more people will feel they need some backing. You are entering into maybe a 20-year contract. It might be that that company is not there for you when they need to be, and so there is some risk attached to the fact that it might be a small competitor trying to lure clients away from larger firms. Some sort of government backing, I think, would be difficult to avoid.

Poterba: One either has to have some type of regulation to ensure the long-term

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solvency of the insurance companies, or some sort of government guarantees or government provision here. One of the potential advantages of allowing the private marketplace to do this is that you may get more innovation in the products that are available or in the services that are delivered to private individuals.

Schobel: In terms of service, let me just point out that as I've envisioned these annuities—and I'm only speaking for myself here, I haven't seen this in any proposal—it would be quite inefficient for insurance companies to be making separate payments to these people when the government is already making Social Security payments to these very same people. It would be very easy to piggyback on top of the government's payment mechanism, and what other service is there really in retirement? Once the person annuitizes, the only thing you have to do is get the check to the retiree once a month, and the government will probably take care of that for you.

Benítez-Silva: The resources are there, and the system is set up to contact every retiree.

Schobel: So it's really hard for the companies to distinguish themselves in terms of the service they provide because there's almost no service to be provided.

Poterba: I suspect that there might be some opportunities for companies to innovate by designing new payout structures.

Schobel: I see your point.

Parikh: Another role I could potentially see for the government is as the ultimate pooler of risks. If we're looking at significant adverse selection risks due to the multiple payout options or the unisex mortality basis, it's easier for the government to take on these risks than to leave them with the companies which market and sell the annuities.

Schobel: Let me make a comment about risk here. When an insurance company goes broke today—it's a fairly rare event, but it does happen occasionally—state guarantee funds step in and make good on the majority of the contracts that the insolvent company issued. The financing of those state guarantee funds comes from the healthy companies. I think that you have to look at these issues of risk, and who is bearing the risk, pretty thoroughly to come to the right conclusion.

Webb: There is one element of risk that hasn't been mentioned—that is, the nondiversifiable longevity risk that might arise if a longevity increases at faster than the anticipated rates. I can't remember the latest figures, but apparently average longevity is increasing by somewhere in the order of one year or two years every decade. If that rate were to accelerate, it would adversely impact all of the insurance companies and might even possibly lead to insolvency. That is a risk which insurance companies cannot diversify out of.

Benítez-Silva: In fact, there is some written work by Kalemli-Ozcan and Weil (NBER Working Papers #8742) about this issue. They say that this declining mortality actually encourages retirement because people are aware of these changes and they might be behaving rationally with respect to buying the products to kind of offset this effect. Those in the know are more likely to be in that pool of the population who are more likely to be buying these products.

Schobel: We were talking earlier about inflation-adjusted annuities and seemed to agree that it would be good if inflation-adjusted annuities were offered. We don't really know why people don't demand them more than they do, at least here in the United States, but in any event it would be really sensible to offer an inflation-adjusted annuity. But for insurance companies to offer inflation-adjusted annuities, you need underlying inflation-adjusted assets to underlie that risk, the most natural being inflation-adjusted Treasury securities.

Poterba: That's why the U.S. puzzle in some sense is much deepened in the aftermath of the introduction of TIPs in the late 1990s.

Schobel: But if you're going to support your risk with government bonds, then you have to at least raise the question of the value added by the industry. The government can underwrite this risk already through the current Social Security system. It raises some pretty interesting questions about what the private market is really providing.

Poterba: If you look at the U.K., it appears as though the value paid out per pound of annuity purchased in the inflation-indexed annuities is a little bit lower than for standard nominal annuities. One potential explanation of this is that nominal annuities can be backed by purchasing somewhat riskier non-government bonds, whereas in the index-linked market, you're basically forced to hold government-index-linked gilts. In this case, the available rate of return that the insurance companies can earn is somewhat lower for index-linked than for nominal products.

Parikh: I think you can probably split it up into an inflation risk and a longevity risk. Anthony, you mentioned before that the longevity risk itself cannot be hedged. Right now the longevity risk is being borne by the government through Social Security, and therefore the risk is being borne by future generations of taxpayers. If you get a situation where the private markets have to insure not just inflation risk but also the longevity risk, for inflation, you have TIPs, but for longevity, I don't see anything out there.

Poterba: Of course the other side of the longevity market is the life insurance market. If you're long life insurance, and long annuities, you're in some sense hedged for this activity.

Parikh: I'd like to thank everyone for their time and their participation in this discussion.

How would financial risk affect retirement income under individual accounts?

by Gary Burtless

Editor's note: This article was adapted from an issue in brief published by the Center for Retirement Research at Boston College in October 2000. A full copy of this issue in brief (including footnotes and references) is available at: http://www.bc.edu/crr/issues/ib_5.pdf.

Effects of financial market fluctuations

A popular proposal for reforming Social Security is to supplement or replace traditional publicly financed benefits with a new system of defined contribution private pensions. For example, President Bush's Commission to Strengthen Social Security released a report in December 2001 that outlined three alternative plans to supplement Social Security benefits with voluntary individual-account pensions. Workers who participate in the new pension program would be required to accept lower benefits from Social Security. Proponents claim that private plans offer better returns than traditional Social Security. To achieve higher returns, however, contributors are exposed to extra risks associated with financial market fluctuations.

The size of financial market risks affecting the value of pensions under a private defined contribution plan is relevant to considering whether an individual account pension system can deliver dependable income replacement in old age. To assess these risks, it is necessary to calculate the value of accumulated savings available to workers at retirement, the initial annuities that they can purchase given their savings and market interest rates at the time they retire, and the real value of annuity payments over their retirements. The calculations are based on historical stock market prices and dividends, bond market returns, and price inflation in the United States for the period since 1871.

Figure 1 shows real U.S. stock and bond returns over the past century. Because stock market prices fluctuate so much from year to year, the figure shows the annual rate of return on a dollar invested in the stock market 15 years before the indicated year. This method of calculation smoothes out much of the annual variability in real returns, but it still illustrates the wide variability of returns over different 15-year periods. The 15-year trailing return was negative in 1921-22 and 1980-82, but it exceeded 12 percent in the mid-1930s, 1960s, and late 1990s.

U.S. stocks have produced substantially higher average returns than bonds over the past century. In the period since 1910, the average annual real rate of return on stocks, including reinvested dividends, has been 7 percent. The average real return on riskless bonds was only 1.6 percent in the same period. In exchange for higher expected returns, owners of stocks must accept considerably greater short-term risk. For example, the standard deviation—which measures the variation from the average-was 18.7 percent for

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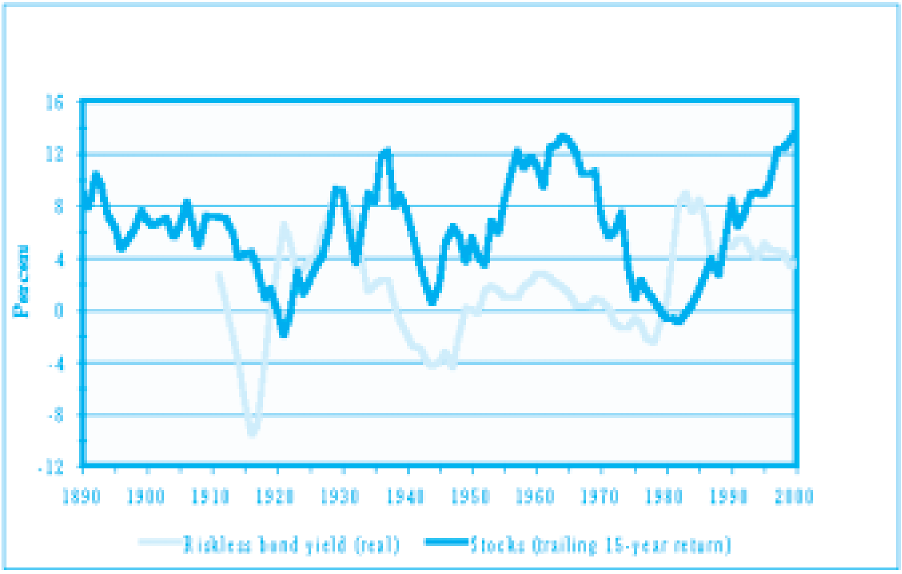
Figure 1: Real Stock and Bond Returns, 1890-2000



Source: Author's calculations using data from Standard and Poor's Composite Stock Price Index (from Schiller (1989) and updated through 2000), Federal Reserve Bank of St. Louis and U.S. Bureau of Labor Statistics.
Note: For details on calculations, see original article, footnote 6.

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annual stock returns but just 3.8 percent for bond returns between 1910 and 2000.

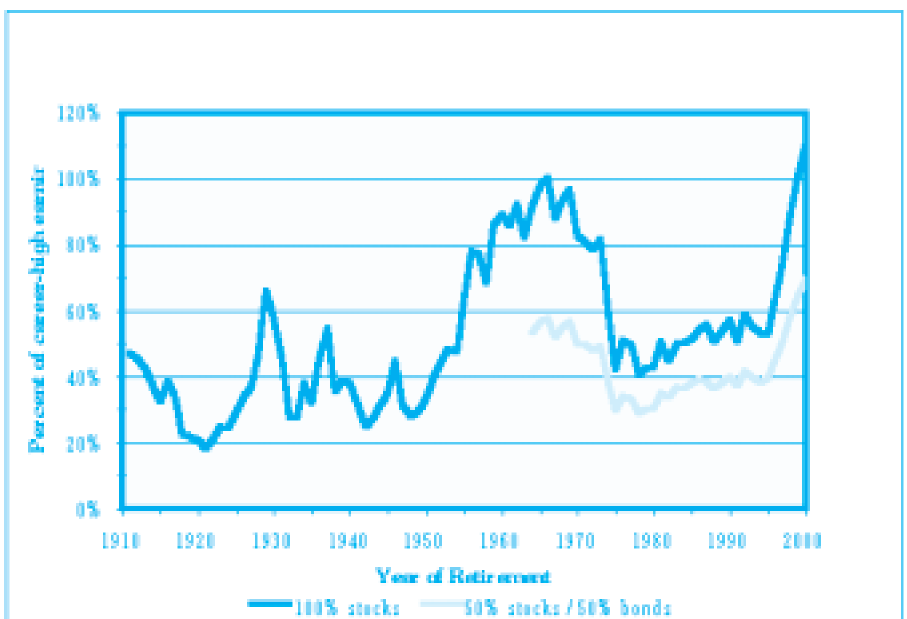
In order to calculate the effects of stock and bond yields on workers' pensions, it is necessary to make several assumptions. The analysis is based on 90 hypothetical workers. The first worker enters the workforce in 1871 and begins receiving a pension at the start of 1911; the last one begins working in 1960 and collects a pension at the start of 2000. All workers are assumed to have identical careers and life expectancies. They are assumed to enter the workforce on their 22nd birthday and to work for 40 years until the day before their 62nd birthday. During their careers, workers contribute a fixed 6 percent of their wages to private investment accounts. Wage growth in the economy at large is assumed to average 2 percent a year after adjusting for inflation. When contributors reach retirement age (62), they convert their retirement savings into level annuities. In determining the price of an annuity, an insurance company assumes it will be able to invest the worker's funds at the long-term riskless bond rate prevailing at the time of purchase. The 90 workers differ from one another only with respect to the stock market returns, bond interest rates and price inflation they face over their careers. These differences occur because of the differing start and end dates of the workers' careers.

In light of the wide differences between stock and bond returns, workers' decisions about how to invest their pension savings can have a large effect on their pension accumulations by the time they retire. To investigate the impact of portfolio choice, this *brief* calculates pensions under two different contribution allocation strategies: 1) 100 percent stocks; and 2) 50 percent stocks/50 percent bonds. All stock dividends are reinvested in stocks, and all bond interest payments are reinvested in newly issued long- or short-term bonds The income flows from both kinds of assets are assumed to be free of individual income taxes at the time they are reinvested.

Simulation results. The value of defined contribution pensions can be calculated in a variety of ways. This *brief* relies on the replacement rate, which measures real pension income as a share of workers' real pre-retirement earnings. "Pre-retirement earnings" is defined here as the worker's average earnings between ages 54 and 58, when wages are at their lifetime peak. For a given worker, the replacement rate can differ depending on when during retirement it is measured. This *brief* estimates the replacement rate at the age workers enter retirement (age 62) and also at successive ages over the workers' retirement.

Figure 2 shows workers' initial replacement rates under the two alternative investment strategies described above. The top line in the figure shows replacement rates obtained by workers who invest all their pension contributions in U.S. stocks. The lowest initial replacement rate under this strategy, about 20 percent, was obtained by the worker retiring in 1921; the highest replacement rate, over 110 percent, was obtained by the worker retiring at the start of 2000. Since both workers have identical expected life spans and career earnings patterns, the striking difference in their replacement rates is due solely to differences in stock market returns and in the interest rate used by the insurance company to determine annuity charges. Readers should note that the calculations shown in Figure 2 end in January 2000, near the all-time peak of U.S. stock market prices. Since that time, stock market prices and nominal yields on U.S. government bonds have fallen. Both trends sharply reduce the real value of annuities that can be purchased after a 40-year career. At stock prices and bond yields in effect in

Figure 2: Real Replacement Rates for Alternative Investment Strategies



Source: Author's calculations using data from Standard and Poor's Composite Stock Price Index (from Schiller (1989) and updated through 2000), Federal Reserve Bank of St. Louis and U.S. Bureau of Labor Statistics.
Note: For details on calculations, see original article, footnote 6.

mid-July 2002, the real replacement rate from an annuity financed by a pension account invested entirely in U.S. stocks would have fallen slightly below 50 percent, more than 60 percentage points below the replacement rate obtainable in January 2000.

Summary statistics for some of the results presented in Figure 2 are displayed in Table 1. This table summarizes the outcomes for the 90 retiring workers under the assumption that all contributions are invested in stocks (i.e., the top line in Figure 2). The first column in the table shows the distribution of outcomes for workers who purchase a single-life annuity. The mean initial replacement rate is 53 percent, and half the replacement rates are between 35 and 66 percent. The second column shows the same set of statistics for workers who purchase a joint survivor annuity.

Table 1: Initial Replacement Rates of Male Workers Retiring after Forty-Year Careers, 1911-2000

	Initial Replacement Rate (percent of career-high earnings)	
	Single Life Annuity	Joint Survivor Annuity
Average	52.9%	41.1%
Minimum	18.2%	14.0%
1st Quartile	35.2%	26.3%
Median	47.8%	37.2%
3rd Quartile	65.5%	51.0%
Maximum	111.0%	88.2%
Standard Deviation	22.9%	17.5%

Source: Author's calculations.
Note: Pension contributions are invested entirely in U.S. stocks.

The lower line in Figure 2 reflects replacement rates for single male workers who invest half of their pension contributions in U.S. Treasury bonds. Workers who invest half their contributions in bonds receive an initial replacement rate that is typically about two-thirds that of workers who invest solely in equities. In comparison with stock investors, the best relative performance of bond investors occurred for workers retiring in the early 1980s, when U.S. stock market prices were very depressed. Even in that year, however, a pension based on a portfolio consisting entirely of bonds would have provided just one-half the pension provided by a portfolio consisting solely of stocks and only two-thirds of the pension provided by the portfolio generated by a 50 percent stock/50 percent bond investment strategy.

The estimates displayed in Figure 2 and Table 1 overstate the typical pensions workers would obtain under the economic conditions prevailing between 1871 and 2000. The calculations assume that stocks and bonds can be bought, sold and held without any transactions costs (administrative fees that are paid to the investment managers). Also, the calculations assume that 62-year-old retirees can purchase fair annuities, whereas, in practice, insurance companies impose a load charge to cover their profit requirements and adverse selection. Management costs and annuity charges would reduce the value of the pension accumulation compared with the estimates shown in the table, possibly by as much as one-fifth.

Some of the variation in replacement rates in Figure 2 arises because of fluctuations in the long-term interest rate, which determines the sale price of annuities at the time workers convert their pension savings into an annuity. The nominal interest rate varied widely over the twentieth century. From 1910 through the mid-1960s, the nominal long-term rate ranged between 2 and 4 percent, and it moved sluggishly. After 1965 the rate soared. Therefore, with the same retirement nest egg, a worker retiring after 1965 could purchase a larger annuity than a worker retiring before that year. The nest egg accumulated by a stock-investing worker who retired in 1982 was about the same—as a percentage of the worker's salary—as the one accumulated by a worker who retired during the worst years of the Great Depression. Yet the replacement rate of the 1982 retiree was about two-thirds larger (45 percent versus 27 percent). The reason for the difference is that the nominal interest rate was almost 13 percent in the early 1980s but just 3.5 percent in the early 1930s.

Inflation after retirement. The discussion so far has emphasized risks associated with stock and bond market fluctuations over the period workers contribute to a pension fund and at the point they convert their pension accumulations to annuities. After workers retire, they face another risk-price inflation. Public pensioners in the U.S. (and most other developed countries) have been spared this risk as a result of indexing. Workers who purchase private annuities are rarely protected against inflation.

In a world where private markets fail to provide indexed annuities, retired workers face substantial risk from inflation. Figure 3 shows the real replacement rate of retired workers as they age. The figure shows replacement rates from age 62 through age 110 for U.S. workers retiring in four selected years—1921, 1929, 1933, and 1966. As noted earlier, the worker retiring at the beginning of 1921 received the smallest initial pension of any worker

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considered here; the worker retiring at the beginning of 1966 received the largest initial pension (see Figure 2). The experiences of these two workers also differed after they retired. Prices were stable or falling during most of the 1920s and early 1930s. A worker retiring in 1921 therefore saw the purchasing power of his annuity increase over much of his retirement, rising from 19 percent to 26 percent between ages 62 and 75. In contrast, a worker retiring in 1966 saw prices climb without interruption after his retirement, causing his real replacement rate to shrink from 100 percent at age 62, to 65 percent at age 70, and to 31 percent at age 80. The experience of the worker retiring in 1966 has been more typical of U.S. experience since World War II. In fact, all workers retiring after the mid-1930s suffered significant losses in purchasing power during retirement.

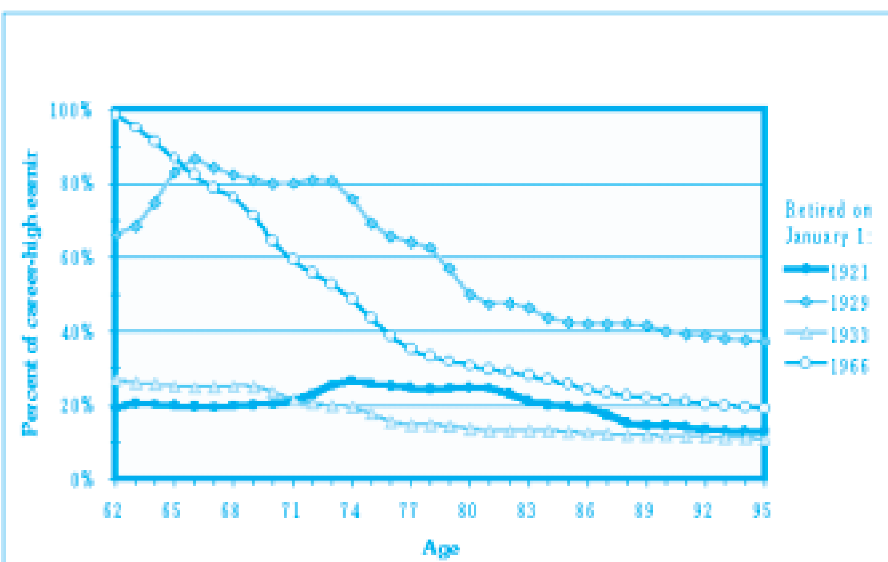
Protections against risk. To reduce the uncertainty of private pensions, workers can follow a couple of strategies. First, they can invest a portion of their retirement savings in bonds rather than stocks, diversifying their investment portfolio. This strategy reduces the volatility of the worker's replacement rate, but it also significantly reduces the expected value of the annuity. Over all 20-year periods in the twentieth century, the return on U.S. bond investments was lower than the return on U.S. equities.

Second, workers can convert their retirement nest eggs into annuities over several years rather than at a single point in time, as assumed in the calculations. Under one plan, each worker would purchase five annuities rather than only one. Since the conversion occurs in five successive years rather than only once, workers would not convert all their retirement savings into an annuity at a time when stock market prices and interest rates make it particularly disadvantageous to do so.

This strategy of phased annuitization yields a distribution of replacement rates that has less variability, but also a lower average. (The following statements assume that 100 percent of pension contributions are invested in stocks before conversion to annuities begins.) The standard deviation of replacement rates is 23 percent if the entire annuity conversion takes place at age 62, but it falls to 18 percent when annuitization is phased in over five years. The average replacement rate also drops five percentage points, however, falling from 52 percent to 47 percent when workers adopt the phased annuitization strategy. This decline in average replacement rates is hard to avoid. When a worker purchases an annuity, he is exchanging stock market investments for a bond market return. By converting his pension accumulation to an annuity approximately two years earlier than would be the case if a single annuity were purchased at retirement, the worker who follows a phased annuity strategy is exchanging two years of stock returns for two years of bond returns. This reduces both the variance and the expected return of his retirement savings.

To protect themselves partially against price inflation that occurs after they retire, workers can retain some of their retirement savings as a nest egg that continues to be invested in the stock market. In the very long run, the real value of equity shares are less likely to be influenced by inflation than bonds that are not indexed to inflation. Alternatively, newly retired workers could purchase variable annuities based on a combined portfolio of stocks and bonds. Holding retirement savings in the form of stocks during part of retirement increases the expected return on the worker's savings. As discussed above, however, it substantially increases the investment risk to which the worker is exposed. If the ultimate goal of a mandatory pension system is to assure workers of at least a minimum real income during old age, a variable annuity backed by stock market assets is unlikely to provide any guarantee that the goal will be achieved.

Figure 3: Replacement Rates by Age and Year of Retirement



Source: Author's calculations.

Conclusion

The argument usually advanced for moving away from pay-as-you-go retirement pensions to a private individual account system is that workers could make smaller contributions and obtain higher benefits under the private system. So, according to this argument, most workers would get a better deal under the private system than under public retirement systems.

The argument has two problems. First, the contribution rates to existing public systems and to a new individual account are not comparable. Contributions to public programs include a large implicit tax to pay for the unfunded liabilities that were accumulated in the past. Virtually all of this tax will have to be paid, regardless of whether the present public system is maintained or is replaced with a new system of private accounts. To make a meaningful comparison between the contribution rates to public and individual account systems, it is necessary to either subtract this implicit tax from the Social Security contribution rate or add it to the rate needed to fund the new private accounts.

Second, a defined contribution system allocates risks in a very different way than a collective defined benefit system. Under most public systems, workers born in the same year who have similar earnings records are provided similar retirement benefits. Pensions are financed with taxes imposed on current workers and their employers, and they are ultimately backed by voters' willingness to tax themselves in order to keep benefits flowing. They are usually indexed to price changes. In the developed democracies, real benefit cuts typically occur gradually and only after intense political debate.

In contrast, pensions under a private individual account system are paid out of financial market assets held in individual retirement accounts. The real value of the payment flows is limited by the current market value of assets held in the accounts. Although proponents of individual accounts are confident that workers can purchase safe assets that will yield high rates of return, U.S. experience over the past century suggests that neither the value of financial assets nor their real return is assured. Workers who follow an identical investment strategy but who retire a few years apart can receive pensions that are startlingly unequal. The investment strategy that produces the highest expected return and biggest pension is also the one that yields the widest swings in pension entitlement. Equally troubling to most aged Americans, the value of a private pension is subject to sizable inflation risk after a worker has left the labor force. Financial market and inflation risks are much more manageable in a public retirement system.

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Message from the EA Meeting Committee

The 2002 Enrolled Actuaries Meeting was held March 10-13 in Washington, D.C. We would like to thank all those that made the meeting a success: the speakers who volunteered their time, the Conference of Consulting Actuaries staff that handled the countless logistical and organizational issues and, most importantly, those of you who attended.

Of the nearly 1000 attendees at the 2002 meeting, about one-third returned our meeting survey. We want to assure you that the EA Meeting Planning Committee takes your feedback seriously. A great deal of our time is spent discussing your suggestions for ways to improve the meeting. We cannot please everyone, but we do review every comment submitted—both good and bad. For example, most survey respondents indicated they liked the meeting location in Washington, but several suggested moving the meeting to other parts of the country (with one request for Hawaii). Our desire to encourage significant government participation, as well as the size of the meeting, restricts our location options; however, we continue to consider other sites. Comments concerning specific sessions and speakers are discussed and analyzed. It will come as no surprise that actuaries seldom agree on anything. We received several comments that a particular presenter was the best speaker at the 2002 meeting, while another attendee complained that the same presentation was horrible.

It may help in your critique of the EA Meeting to understand the objectives for this conference. Certainly we want to provide relevant information to Enrolled Actuaries in an understandable format and in a conducive setting. A primary goal is to allow EAs the opportunity to earn all their required continuing education credit by attending two EA Meetings during any three-year enrollment cycle—this is a lot of credit packed into two and a half days. Last of all, we are very conscious of your continuing education budget. Some actuaries want to get by on the least possible cost while others want more amenities; we attempt to strike a reasonable balance.

We are hard at work planning the 2003 Enrolled Meeting, to be held March 17-19. We hope you will attend and give us your comments!

Ken Hohman, Chair
Enrolled Actuaries Meeting Committee

Social Security reform proposals and women retirees: Seven lessons from *Social Security and the Family*

by Melissa Favreault

Introduction

Although women's issues were once at the forefront of Social Security reform, they have received less attention in the current debate about how to maintain adequate Social Security benefits for future generations. Indeed, when President Bush last year appointed a commission to modernize Social Security, he did not explicitly mandate updating the program to adapt to changes in family structure.

In the spring of 2000, researchers convened at the Urban Institute to consider how changes in American family life affect Social Security. The conference goals were to bring attention to the mismatch between Social Security regulations and contemporary family roles, and to encourage rigorous analysis of the distributional consequences of Social Security and alternative reform proposals. This article describes key findings from the conference, which are detailed in *Social Security and the Family: Addressing Unmet Needs in an Underfunded System*, a new volume from the Urban Institute Press. After providing some background, it discusses seven substantive, methodological and policy implications of research presented at the conference.

Background

The Social Security program awards retirement and disability benefits to workers who accrue entitlement to benefits through payroll tax contributions. The program's benefit formula is progressive, replacing a higher fraction of the pre-retirement earnings of lower-earning workers than of higher-earning workers.

Social Security also awards benefits to the spouses, ex-spouses and survivors of retired and disabled workers. These benefits equal half the worker's benefit while he or she is alive, and one hundred percent of the worker's benefit after he or she dies. In order to receive these benefits, former spouses need to have been married to a worker for at least 10 years, while survivors need to have been married to a worker for a minimum of nine months. A spouse or survivor who qualifies for a benefit on both his/her own record and his/her spouse's record receives the higher amount.

While Americans consistently rate Social Security as the federal program that they like best, it still has critics and generates controversy. Analysts express three chief concerns with the program's current structure of family benefits: its benefits are not always adequate; it treats different earners, particularly married people in dual-earner as compared to single-earner couples, inequitably; and it may discourage work and saving.

Analysts propose a wide array of solutions to the adequacy, equity and efficiency problems that surround Social Security family benefits. Policy proposals range from incremental adjustments (for example, capping spouse and survivor benefits, shifting benefits from couples to widows or instituting child-care credits), to converting Social Security to either a double-decker or two-tier system, to instituting earnings sharing, to creating individual accounts.

The unique nature of the U.S. system

In Chapter 4 of *Social Security and the Family*, Lawrence Thompson and Adam Carasso compare the family benefits of the U.S. social insurance system to those in place in 15 countries of comparable economic development. They find that the U.S. system is unusual in that it combines earnings-related and social-adequacy components in the same program. It is more common to have separate components for meeting these two objectives, as in double-decker or two-tier programs that were proposed in prior Social Security reform debates. The U.S. system provides relatively low benefits to retired workers. Relatively generous U.S. survivor benefits make up part of the shortfall, but they are targeted in way that excludes many workers (for example, those who never marry, those who divorce after less than 10 years of marriage or those whose earnings are close to their spouse's).

Lesson one: The challenges that U.S. Social Security faces are common—nearly all developed countries face population aging—yet unique because of the heavy U.S. reliance on a single system to meet both adequacy and equity objectives. Policy makers should bear in mind that Social Security spouse and survivor benefits to a large extent substitute for flat universal benefits. Reducing or eliminating these benefits could have drastic adequacy consequences if not replaced by minimum benefits, a "first deck" or significantly enhanced "first tier" (Supplemental Security Income, or SSI).

Distributional considerations
In Chapter 5, Melissa Favreault, Frank Sammartino and C. Eugene Steuerle consider several prominent proposals to reform Social Security family benefits. These proposals include increasing survivor benefits, instituting care-giving credits, decreasing the required marriage length for divorced spouse benefits, and expanding minimum benefits. The authors also examine budget-neutral *combinations* of proposals, including shifting spouse benefits to survivorhood, reducing initial benefits while wage indexing subsequent benefits and combining minimum benefits with benefit formula changes and a cap on spousal benefits. They focus on outcomes for women, who receive the overwhelming fraction of Social Security spouse and survivor benefits.

The authors find that the increase in options and balanced packages affect different groups of women differently. For example, while widows benefit greatly from the survivor benefit increase, the gap between Social Security benefits and the poverty threshold is narrowed at lesser expense using minimum benefits. This is due in large part to the fact that survivor benefits do not reach many of the most needy. The reduction in required marriage length for divorced spouse benefits, in another example, helps relatively few women, but helps those few women substantially.

Lesson two: One cannot rely on intuition to discern the effects of Social Security policy shifts. Detailed simulations reveal that some reforms that were intended to be progressive in fact either maintain the existing structure or, in some cases, may even be regressive. Other reforms may have surprisingly little effect due to changes in the composition of the coming aged population, which will be dominated by Baby Boomers, who have had different work and family experiences than their predecessors.

Lesson three: Policy makers should always consider whether a reform categorically excludes any groups. For example, reforms to spouse and survivor benefits cannot alone eliminate the gap between women's Social Security benefits and the poverty threshold because they do not offer any aid to many women at highest risk (for example, those who never marry or do not have a marriage that lasts at least 10 years). Such reforms can thus exacerbate some of the inequities between women who marry (or maintain a marriage for 10 years) and those who do not. However, these reforms can reduce the inequities between single- and dual-earner couples.

Policy makers should bear in mind that Social Security spouse and survivor benefits to a large extent substitute for flat universal benefits.

Lesson four: Policy makers can use models to design reforms to Social Security that meet various objectives. Models frequently reveal that reform packages have advantages over single parameter changes. Using a package, one can sometimes make improvements on adequacy, equity and efficiency grounds simultaneously. Single parameter changes more frequently make gains in one area only at the expense of another.

Privatization
Controversy about whether to integrate individual accounts into Social Security has been widespread, and often bitter. Disputes arise from many sources. Perhaps the most important source of contention is vast differences in individuals' attitudes toward social insurance and the role of government more broadly. Another contributing factor in these arguments is confusion about some of the fundamental issues, for example, the difference between *privatization*, *prefunding* and *diversification*. A third challenge is a lack of detailed, unbiased distributional estimates.

Rudolph Penner and Elizabeth Cove seek to remedy this third problem—the paucity of distributional estimates. They use a dynamic microsimulation model to estimate the distributional consequences of "carving out" relatively small (two percent) individual accounts (IAs) from the existing OASI payroll tax. They focus on outcomes for members of historically vulnerable groups, including low-income families and retired women who are not married, and assume three different real returns (net of transaction costs) to the accounts—5.5 percent, 4.0 percent and 2.7 percent. Their analyses contain many distributionally important implementation assumptions, as is necessary for any study of this type. For example, the authors assume that participants purchase a fairly priced unisex annuity at the normal retirement age. If married, they purchase a joint-survivor annuity. Spouses split accounts upon divorce, and survivors inherit accounts upon workers' deaths if these occur prior to the normal retirement age.

Perhaps unsurprisingly, when returns are high (5.5 percent real above any transaction costs), virtually all women are projected to do better with the carved out IAs than under the current system with a benefit cut to reach 75-year solvency.

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Outcomes in the partially privatized system are more problematic, but still better than under current law for the majority of women, when net returns are 4.0 percent. At the lowest return examined, a net 2.7 percent real, more women are better off under the current system than with the individual accounts. At all rates of return, the fractions of women who do better under the reform increase with lifetime family income and vary in important ways by marital history.

Once again, we find that one's intuition about reform may be misleading. Vast cohort changes in women's labor force activity and a decline in the chances that they will have a marriage that qualifies them for spouse/survivor benefits imply that a more individualized system may be less problematic in adequacy terms than it would have been for cohorts of women currently nearing retirement age. Indeed, such changes could benefit some of the most vulnerable who do not benefit from Social Security redistribution through spousal benefits. Nonetheless, one must bear in mind that the Penner/Cove analysis does not consider transition costs, which would be sizable and distributionally important. Further, the privatized system that the researchers explore does well for women in part because of the mandate of fair, unisex joint-survivor annuitization that an individual account system would not necessarily incorporate.

Lesson five: Individual accounts, and other diversification, prefunding and privatization proposals, can be studied with distributional models. Partial estimates suggest that because of women's greater labor force participation and increased individualization, significant fractions of women could do better in the long run under a certain individual account plan than under current law, even at relatively modest rates of return. At lower net rates of return, however, the majority of women could face losses. Financing a transition to a partially privatized system remains a major obstacle to moving toward such an arrangement. Issues of who bears how much of the transition costs, as well as how much market risk, and how large transaction costs would be, need further exploration.

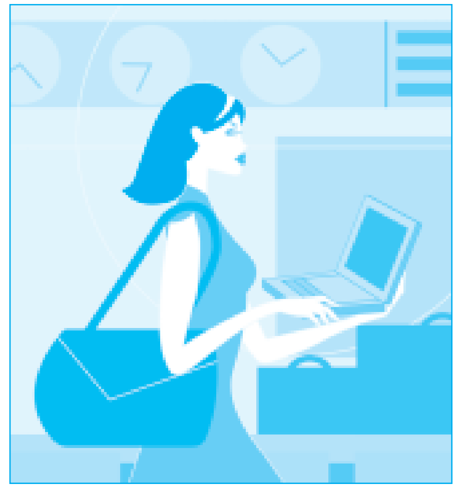
The Complexity of Property Rights for Retirement Assets

Pamela Perun continues *Social Security and the Family*'s discussion of individual accounts by considering the complex property issues that these accounts would trigger. Who has property rights and when? What happens to these rights when families change because of death or divorce? Perun stresses that models for dealing with these problems already exist in our private pension systems, and that policy makers should take the best from existing models rather than reinvent the wheel.

Lesson six: Were individual accounts to be implemented in Social Security, choices about property rights would have important distributional consequences. Proponents should learn from the best models when designing plans. Implementing advance standards about what would happen to private account balances in case of divorce or death will ensure that beneficiaries are aware of their rights. It should also reduce costs of litigation that could deplete account balances.

We strongly believe in approaching questions of Social Security redistribution and reform from a scientific perspective, based on rigorous empirical analysis. No branch of the social sciences has a monopoly on models or methods. We hope that our collaborative effort will encourage other researchers in the field to reach out across disciplinary lines—to actuaries, demographers, economists, historians, political scientists and sociologists—and to professionals in other fields, including business and law.

Lesson seven: Social Security reform, especially fundamental structural reform, is an immensely complex problem that



warrants multidisciplinary analysis. It also demands the use of experts from all sorts of organizations, including academic, government and private sector institutions.

Conclusions

Social Security's fiscal crisis is surely unwelcome. Meeting obligations to future retirees will require that American workers make sacrifices. One positive aspect of Social Security's fiscal imbalance is that it gives us the opportunity to reconsider what we want the program to accomplish. In rethinking the program's objectives, we need to recognize and address the dramatic changes in work and family life that have occurred in our society over the last 65 years. Because Social Security is popular and has been successful in reducing poverty, policy makers should be able to confront its current shortcomings in the adequacy, equity and efficiency arenas. Additional research, like that presented in *Social Security and the Family*, can help lawmakers to ensure that Social Security reform, whether incremental or sweeping, will respond to both the current and future needs of aged and working women.

***Melissa Favreault works at The Urban Institute in Washington, DC. She can be reached at* mfavreau@ui.urban.org.**

Observations from the 2002 Annuity Conference

by Jeff Mohrenweiser and Anna M. Rappaport

The SOA, LOMA and LIMRA have jointly sponsored an annuity conference for the last few years. The conference provides an opportunity for actuaries, software vendors, plan management specialists and marketing managers working with annuity products to meet in a multi-disciplinary setting. This year, the conference was held at Disney World on April 10-12. There were over 20 sessions spread throughout the day-and-a-half conference.

The authors share an interest in annuities from different perspectives. Jeff Mohrenweiser of MMC Enterprise Risk Consulting assists insurance carriers and others in the development, implementation and management of annuity products. Anna Rappaport of Mercer Human Resource Consulting helps employee benefit plan sponsors develop strategies for retirement. Both authors are interested in how post-retirement risk is managed and in the security of older Americans. This article looks at challenges, opportunities and new developments, as well as offer some observations.

Challenges

Although one can never be sure of the economic or business cycle, the events of September 11th, the collapse of Enron and the end of the longest bull market have created a heightened uncertainty in the financial markets and retirement perceptions. The panel for the opening session, "Investing in the Wake of Uncertainty" included an economist, a financial planner and a chief actuary. Each shared his views on investment opportunities, retirement planning and product development needs. The panel focused on the long-term nature of annuity products and the investor challenge to stay the course over a period of time.

In addition, the general public does not rationalize the challenge of the post-retirement risk very well. Recent studies on public perception of these risks were presented by Anna Rappaport for the SOA study and Eric Sondergeld for the LIMRA study. Both studies confirmed that the potential for outliving assets is not well understood and not a first priority in retirement planning. The SOA study showed that while much of the public expects people in general to be in a nursing home at some time in their lives, a much smaller number expects that it will be them. The challenge is addressing the feeling that this is something that happens to the "other person." Find the SOA study at *www.soa.org*.

Consequently, effective communication of annuity benefits is difficult. One session focused on marketing approaches for payout annuities and the need for income planning and employer encouragement for lifetime income. Ian Davies reviewed how TIAA-CREF offers education about the role of its products in long-term retirement planning throughout the life of the contract. Farrell Dolan pointed out that Fidelity focuses on income planning and working with the participant on lifetime income needs. In particular, it was suggested that payout annuities should be considered "longevity insurance" as part of the total financial package and not solely as an investment vehicle. The challenge is the greater use of these products for lifetime income.

Over the past 10 years, the industry has seen considerable product innovation that has increased the attractiveness of annuities. Annuities can be viewed as consisting of two distinct phases—hooked together—an investment/asset accumulation vehicle and a payout/distribution vehicle. There were sessions covering product design, risk features and changes in the Single Premium Deferred Annuity (SPDA), Variable Annuity (VA) and Equity-Indexed Annuity (EIA) products. Other sessions highlighted developments in the Single Premium Immediate Annuity (SPIA) and Variable Immediate Annuity (VIA) lines. The challenge is finding the right innovation at the right price to appeal to market desires.

Most of the historical action has been on accumulation products, but there is an increasing focus on payouts. Products include a variety of guarantees and special features, including different kinds of death benefits, minimum income guarantees and income stabilization options. Speakers in the design update session focused on the tension between the need for flexibility and tailoring versus the need for simplicity and risk. There was a focus on the single product with many options versus separate products with different features. Greater simplicity (at least for the user) is necessary to appeal to some of the sales outlets—particularly those who are selling many different types of products. The challenge is simplicity of use and suitability while meeting customer needs.

Thus, increases in life spans present real challenges when there are long-term guarantees. The challenge is pricing reasonably and still dealing with uncertainty. If the sellers charge too much for the guarantees, then the product does not sell much at all. Work has been done by various academics on the question of whether annuities are fairly priced. Many observers think they are too expensive. Some of the cost can be explained by selection—those who choose annuities have lower mortality than those who do not. Note that in January 2002, the SOA sponsored a symposium on "Living to 100 and beyond." Papers are available on the SOA Web site.

Marketing and distribution of annuity products have received a lot of attention. The main competition for deferred

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Observations from the 2002 Annuity Conference

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annuities, particularly variable annuities, is mutual funds. Indeed, LIMRA estimates the VA account balances to be about $910 billion as of December 31, 2001, versus $6.97 trillion according to the Investment Company Institute. Net new cash inflows were $123 billion for variable annuities and $504 billion for mutual funds. The sellers are often those accustomed to selling mutual funds. Shane Chalke pointed out that a new value chain must be developed, and the sale and processing of annuities from order to delivery must be re-engineered. For example, we need to shift away from the idea of an application to one of an order. The challenge is winning in competitive situations, where the competitive product may be a different type of investment.

E-commerce has a role in the servicing and sale of annuity products. There are still many functions performed manually that can be automated. There is the potential to make major reductions in the typical time from order taking to delivery. Shane Chalke reported that his company's attempts at selling directly to consumers over the Internet were problematic and eventually discontinued, but that sales through independent third-party advisors are growing rapidly. The Internet is effective as a tool to support manufacturers, distributors and financial advisors. The challenge is using technology well in a world where the users have diverse needs and expectations.

Thinking beyond e-commerce, annuity distribution channels are different from traditional life insurance company distribution systems. The sale is relatively complex and involves competing for "mind space" with mutual funds and other financial products. Banks, broker-dealers and fee-based advisors are all in competition with traditional sales forces. The challenge is getting a fair hearing with new distributors.

A time of opportunities

It should be a time of great opportunity for annuities, for several reasons:

Shift in retirement responsibility to the individual from the employer.

- There has been a major decline in defined benefit plans and a growing use of lump sums in defined benefit plans. This will enhance the need for income planning outside of employer-sponsored plans.
- At the same time that more retirement savings have shifted to defined contribution plans, there has been a major drop in equity markets. Declines in stock values have led to major declines in 401(k) plan balances, particularly in companies that went bankrupt and used ESOPs. This should increase the interest in products that combine the opportunity for guarantees with the upside potential of equity investment.
- 2001 tax legislation, EGGTRA, included increased limits for contributions to many retirement plans, both individual savings for retirement and employer-sponsored plans. A session at the conference provided information on how these changes would affect the market.

Continued improvements in life expectancies.

- As the population is aging, there will be more people needing suitable investment and monthly income products for retirement.
- One session showed the evolution of the SPDA market and one can only assume further changes will occur as companies create market share and respond to customer needs.
- Product features can expand to provide links between these products and the needs of the elderly. One session on SPIA highlighted product features such as Cost of Living Adjustments, ancillary benefits such as nursing home coverage and liquidity options such as modified cash refunds or return of premiums upon death.

Technology can be beneficial

- It offers the opportunity for increases in efficiency, reductions in cost and better access to different distribution channels.
- Technology can be a modeling tool. One presenter showed a stochastic model linking mortality risk and investment performance. Similar methodologies could incorporate health care costs and the benefits of having a fixed income stream. Another session discussed asset allocation.
- Increased computer speed and models allow actuaries to hone their pricing skills, product features and risk profiles of their companies.

Some observations

One of the major concerns about future security in old age is the lack of public understanding and protection against post-retirement risk. Annuities can include a variety of different guarantees, benefits or features. Today, typical guarantees offer minimum death benefits, and, in some cases, income stabilization within the context of a variable immediate annuity. Some offer links to long-term care, and the speakers expect to see this trend continue. Indexed annuities can also be used to help pay for rising health care premiums. There is great potential to use these products to better address risk. In order for this to be effective, the products need to be appropriate, the public needs more awareness of post-retirement risk and it would be helpful to have some better links to the retirement system.

To date, most marketing and distribution efforts have been geared towards the higher-net-worth individual. The conference offers a fine chance for people involved in different parts of the annuity industry to get together, but it does not offer any opportunity for exchange with pension professionals—those involved in helping employers design and implement retirement plans. In many respects the pension and annuity professionals operate in different silos. Both could benefit from more interchange that could result in increased thought being given to the use of annuities to solve retirement security problems. There is specialized language that is not familiar to those not working directly with retail annuities. Several comments were made about the importance of attracting 401(a)-qualified plan money into annuities—particularly those in the distribution phase. This speaks to the importance of considering where retirement plan professionals fit into the dialogue.

In policy and academic circles, there is quite a bit of research that has been done on the cost of annuities and whether they are fairly priced. There has been criticism of the cost of annuities and allegations that they offer poor investment value. There was little focus on the perspective of the buyer and no discussion of these perceptions. However, there was discussion about the need for income planning and growing opportunity in the distribution phase. Understanding the issues raised by the critics, having a good response to them and putting them in perspective is also a part of dealing with the future.

The industry continues to go through tremendous change. The evolution of the value chain is only one example. The use of e-business and the development of alternative distribution channels are others. All of this means that new organizations can enter the business without the traditional barriers to entry, and that organizations with links to the new distribution channels and value chain may have significant advantages over traditional insurance organizations. As product innovation, "feature richness" and price competition intensify, sound risk management and timely analytics will play ever-important roles in defining business success from failure in the annuity markets. Insurance companies and other providers will need flexible and sophisticated risk models to keep pace with market conditions, profit objectives and regulatory requirements. Actuaries, as risk professionals, should continue to figure prominently in these developments.

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SOA publications, seminars provide guidance in times of corporate credibility crisis

by Mike Kaster, SOA managing director of Actuarial Practice Areas

Recently, an SOA member was having a conversation with his roofer. The roofer knew the homeowner was a financial professional. The roofer made a serious inquiry, asking the actuary was there some industry in which he, the roofer, could invest that had not only solid fundamentals but also untainted accounting?

As a member of the actuarial profession, how would you answer this question? Being a good actuary, you would probably do some additional research, but it would help to know what might be available to assist you. What type of education has the SOA been able to provide its preparers of financial statements in this accounting-crazy world?

One valuable source is the textbook, *U.S. GAAP for Life Insurers*. This landmark text was published for those actuaries and accountants seeking guidance in preparing financial statements. Let's review how this book can help with some recent headline events:

- WorldCom has been accused of transferring money out of operating costs into capital costs. This cost would then be capitalized and amortized. Chapter 3 of the SOA's GAAP textbook addresses the mandated allocation of expenses and the stipulations that allow them to be capitalized.
- Dynegy had its "Project Alpha," a complex treaty with significant tax-saving implications. Chapter 17 discusses risk transfer measurement and the consequent impacts on the form of booking the arrangement.
- Qwest and Global Crossing both made substantial investments in fiber-optic networks. These capitalized costs should have been subject to impairment (also known as recoverability or loss recognition) testing, as described in chapter 3.
- Xerox advanced the recognition of certain revenues in order to accelerate earnings. The text's chapter 4 outlines the criteria for when to recognize revenue.
- Universal Vivendi would owe a former stakeholder, the musician Herb Alpert, millions of dollars if the value of the Vivendi stock (used to acquire Mr. Alpert's interests) fell below a certain price for a short period of time. No liability had been established until it was 100 percent certain this liability was incurred. Chapter 1 addresses the nature of liability and when it should be recognized.
- Tyco neutralized its investors as the serial acquirer's undisclosed and mystifying accounting for acquisitions kept investors at bay for years. The life company practioner can find ample instruction on purchase GAAP in chapter 15.

Another recent SOA-sponsored event was a seminar on purchase GAAP accounting. AOL Time Warner shocked the world with its massive goodwill write-down. The attendees at the SOA's FAS141/142 seminar on PGAAP and Goodwill were educated on this concept and could easily see this headline ahead.

The Society of Actuaries has provided its GAAP practioners with the source it needs to avoid C1 risk. This C1 risk is keeping your name off of page C1 in the *Wall Street Journal*.

Mike Kaster can be reached at **mkaster@soa.org.**

Practice Area update

Many members have expressed confusion and have asked, "What exactly is a Practice Area of the SOA?" We would like to clarify this for you.

The organization of the Society of Actuaries is focused on the advancement of the actuarial profession through our efforts in basic and continuing education and research. For the past 10 years, these efforts have been organized in a fashion that serves the various areas that actuaries operate in, namely Life Insurance, Health Benefit Systems, Retirement Systems and Finance. To better organize these efforts and to ensure the focus of these efforts truly benefit actuaries working in each of these areas, we have staffed, within the SOA, full-time individuals to work in each of these practice areas. This includes not only administrative assistance, but also project management professionals and actuarial professionals (both fellows and associates).

The updates that follow represent some of the efforts of these individuals.

Task Force on Sections and Practice Areas—(*http://www.soa.org/committees/spa.html*):

This task force has the mission of reviewing the way that Sections and Practice Areas operate and suggesting how to better coordinate all volunteer activities. The Task Force on Sections and Practice Areas completed their report and Chairperson Christopher Bone presented their recommendations to the Board of Governors at the June meeting. Their recommendations are organized as follows:

- The improvement efforts incorporate a two-phase approach.
    - Phase I initiates significant improvements while retaining the current framework of the Sections and Practice Areas.
    - Phase II recommends further integration of Practice Areas and Sections and requires more planning and working through the details.

The BOG accepted the recommendations of the Task Force and has approved the formation of an implementation team to carry them out.

Expect to see regular communication regarding the status of the implementation efforts.

Retirement Systems Practice Area—(*http://www.soa.org/committees/retire.html*):

Much of the work of the Retirement Systems Practice Area is coordinated with the Pension Section. Please check out their combined Web site at *http://www.soa.org/sections/pension.html*. New additions to the web site include:

- The Practice Area held a symposium, in conjunction with the SOA Spring meeting, on the Retirement Implications of Demographic and Family Change. Nineteen papers were discussed. A link to these papers is available on the pension Web page.
- Another new entry on the web page is the paper "Asset Valuation Methods under ERISA." —Work continues on a new turnover study that is expected to produce a series of tables reflecting different levels of turnover. The SOA has also teamed up with the Academy of Actuaries, Conference of Consulting Actuaries and the Pension Committee of the Actuarial Standards Board to consider the relationship between modern financial economics theory and our approach to pension plan valuations. In particular, this group will consider research needed and opportunities to bring this issue and the related debate to our membership at large.

The Practice Area is planning a seminar on public pension plans to be held on September 24th in Washington, D.C. A webcast is also being planned on the topic of errors and omissions liability for pension actuaries. Watch for the announcement.

Finally, the Retirement Systems Practice Area is devoting considerable resources to assist the new working groups that have been put together to review our preliminary and actuarial education process. The Practice Area advisory groups will be working to ensure that the content of our examination syllabus has the relevant material necessary for practitioners in the Retirement Systems field.

If you would like further information about any of these projects, please contact either Judy Anderson, FSA, *Janderson@soa.org*, or Karen Gentilcore, *Kgentilcore@soa.org*, for more information.

Health Benefit Systems Practice Area—(*http://www.soa.org/committees/health.html*):

- Troubled Healthcare Literature Review—Work continues on this project initiated late last year to provide much-needed information on modeling, assumption development and perspectives on the current health care reform debate in the United States. The area is now pursuing a somewhat related data project designed to provide quantitative information on the consequences of various scenarios identified in the troubled healthcare system.

- Disability Income Chartbook—Work is also progressing on a new Disability Income Chartbook, a consumer education piece on disability risk and public and private sources of coverage available to mitigate those risks, being developed by the practice area in cooperation with the Health Insurance Association of America. Subgroups have been formed to create various sections of the chartbook, including *Risk and Disability, Financial Risk Resulting from Disability, Public Disability Income Coverage, Private Coverage,* and *Met and Unmet Needs*.
- Heath Risk Management—In conjunction with the Finance Practice Area, the Health Benefit Systems Practice Area is recruiting health actuaries to participate in a health subgroup of the Risk Management Task Force.

The area is also continuing to provide input into discussions regarding the changes underway for SOA's Education and Examination System, to assure that the needs of health actuaries and their current and future employers can be appropriately considered. If you would like further information about any of these projects, please contact either Maryellen Hilderbrand, *Mhilderbrand@soa.org*, or Kara Clark, FSA, *Kclark@soa.org*, for more information.

Life Insurance Practice Area—(*http://www.soa.org/committees/life.html*):

This area has been recently revitalized with the addition of two new staff members. Narayan Shankar, FSA, now serves as the SOA's Life Staff Fellow, and Karen Gentilcore is working as a project manager for the Life Practice Area. Together, they are working to direct the many different activities of this practice area. Some of those activities include:

- Research projects recently completed or currently underway regarding substandard mortality studies (liver, kidney, diabetes) and an inter-company expense survey.
- The "Living to 100" mortality symposium, bringing together experts from various disciplines, was held earlier this year. A CD containing the presented papers and discussions will be published shortly.
- A detailed review of the SOA's data collection process for conducting inter-company mortality studies is being undertaken, with a view to simplifying and streamlining the process.
- The Practice Area continues its involvement in the SOA's initiative to revise the education and examination system, in order to ensure that future life actuaries have the right skill set and training to be strong professionals.

Finally, the SOA Board members on the Committee for Life Insurance Practice Advancement have continued their effort to identify the needs of life actuaries. The needs to date have been classified as relating to data, technique or "staying current." Various approaches to more fully address these needs are now being worked on. Further information on any of these projects can be obtained by contacting either Narayan Shankar, *Nshankar@soa.org*, or Karen Gentilcore, *Kgentilcore@soa.org*, at the SOA office.

Finance Practice Area—(*http://www.soa.org/committees/fin.html*):

The Finance Practice Area consists of numerous committees and task forces and is headed by the Finance Practice Area Advancement Committee.

One of the recent developments in the Finance Practice Area is the initiation of the revision to the ALM Specialty Guide, last published in 1998 (*http://www.soa.org/library/pasg/SPG9808ALM.pdf*).

- This guide is designed to provide background-reading reference for the practice of asset-liability management. The ALM Specialty Guide Task Force, in charge of this project, has identified several objectives for this undertaking and hopes to provide actuaries with an increasingly better tool they can use in their self-development on the ALM topics.

If you are interested in learning more about this initiative or would like to provide your comments on potential revisions needed, please contact Warren Luckner, *WLuckner@ben.edu*, Valentina Isakina, *Visakina@soa.org*, or Maryellen Hilderbrand, *Mhilderbrand@soa.org*, for more information.

SOA Board election results

Congratulations to:

President-Elect:

Neil A. Parmenter

Vice-Presidents:

Richard L. (Dick) London

Edward L. Robbins

Shirley Hwei-Chung Shao

Board:

Tom Bakos

Janet M. Carstens

Mark E. Litow

Josephine Elisabeth Marks

S. Michael McLaughlin

Kathleen R. Wong

Complete coverage of the election results will appear in the October issue of *The Actuary*.

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Preparing for a paperless Annual Meeting

by John Riley, SOA managing director of Continuing Education

The SOA recently concluded two "paperless" Spring Meetings in San Francisco and Colorado Springs. Over 250 sessions in total were conducted with hardly a handout in sight! This fall, the SOA Annual Meeting will go "paperless" for the first time, providing hard copies of handouts only when essential to the presentation. The vast majority of the presentations will be available for printing or download in advance of the meeting. Additionally, attendees will receive a CD-ROM containing session materials at the meeting. Finally, presentations will be updated and posted on the SOA Web site for public consumption after the meeting is over.

In general, the reviews from San Francisco and Colorado Springs have been favorable. Membership recognizes the inefficiency and waste of printing handout materials that can be captured electronically. The critical element to "paperless" proponents and critics alike is that meeting attendees have the choice to print out those materials they would like to have for taking notes. SOA Continuing Education has strived to make the materials available, but posting them on-line is of little use to someone who does not know how to reach them.

With that in mind, registrants to the Annual Meeting *must* review their confirmation notices when they arrive by mail. The confirmation of registration contains the URL link to the on-line presentations. It is extremely important for anyone signed up for the meeting to keep that information and access the site when the presentations are posted about two weeks prior to the meeting (around October 14, 2002). The site link is not widely shared in advance of the meeting because prior access is open to meeting registrants only. If someone signs up and misplaces this information, he or she can contact SOA Continuing Education to receive it. Providing a link to registrants before the meeting was a decision of the Annual Meeting Program Committee, who felt it would provide those who paid and "need paper" with the option of having it and still preserve the attractiveness of attending the event.

Coming attractions

SOA will be following the Annual Meeting with a number of seminars. The Investment Actuary Symposium will take place on November 7-8, 2002 and Health Disability Income will occur on November 14-15, both in downtown Chicago. This year's Investment Actuary event will include exhibits and a three-track program. December brings courses on Beginning and Advanced Risk Management (December 4-6 in New York City), Underwriting Risk Management (December 5-6 in Tampa), Facilitating New Business Process (December 9-10 in Colorado Springs) and the CSO 2001 (December 9-10 in Orlando). For complete information and registration information, visit the SOA Web site at *www.soa.org.*

John Riley can be reached at jriley@soa.org.

The Computer Science Section's 5th Speculative Fiction Contest

by Gary Lange

Have you ever wondered? Wondered what an actuary in the Jetsons' cartoon would do each day at work?

Wondered about the effect of a 150-year life expectancy on life insurance or annuities? Wondered if the change in an actuary's job from 2000 to 2100 will be as drastic as the change from 1900 to 2000? Wondered what forms of "insurance" will be available tomorrow that no one has ever heard of today?

If you have ever wondered, put your thoughts on paper in some sort of story form that tells us the details of these "wondering thoughts" and enter the 5th Actuarial Speculative Fiction contest proudly sponsored again by the Computer Science Section!

The rules are simple, as they should be when putting speculative thoughts on paper:

- The story must include some sort of actuarial topic.
- The author must have passed at least one actuarial exam.
- The story should be 6,000 words or less (if you have to count the words, you are using too many).

For those looking for incentives other than sharing their unique, clever ideas with the rest of the world, there are prizes in this contest!

First place	$200
Second place	$100
Best use of computers in the story	$50
Best use of actuarial science in the story	$50

The winning entries will be determined by Dr. Bob Mielke, Associate Professor of English at Northeast Missouri State University with comments by your new editor, Gary Lange (Carol Marler has retired as editor, probably so she has more time to write!).

The contest begins with this announcement and ends January 31, 2003. Winners will be announced on April 1, 2003. Submit all entries to me at *glange@marclife.com*. All entries will be published online, so that your brilliant ideas can be shared with those who don't have the vivid imagination you do.

research corner

Finance

The Society of Actuaries' Private Placement Experience Committee has completed its latest report, which measures incidence rates, loss severities and economic loss rates associated with credit risk events for privately placed debt during the years 1986-98.

One of the values of this report is the comparison between private placement bond default experience and that of publicly traded bonds. In this edition of this ongoing study, migration rates for internal and NAIC credit ratings of assets are tabulated for the first time and the relative predictive power of different kinds of ratings is examined.

This report can be found on the Society of Actuaries' Web site (*www.soa.org*) under Research. If you have any questions about this report, please contact Jack Luff, Experience Studies Actuary, at 847-06-3571 or *jluff@soa.org*.

Philadelphia review seminars offered

The following intensive review seminars will be offered in Philadelphia, PA:

Sponsored by Temple University Actuarial Institute:

Course 5:	October 3-8 (October 8: 1/2 day)
Course 8:	September 18-22

For further information, visit *www.sbm.temple.edu/~rmidept/actsci.htm* or contact Bonnie Averbach at 215-204-8153, *baverbac@sbm.temple.edu*.

Health

Now Available—Final Report on Health Section Risk Adjusters Project

The report, *"A Comparative Analysis of Claims-based Methods of Health Risk Assessment for Commercial Populations,"* compares the performance of several claims-based methods for health risk assessment. Both diagnosis and pharmacy based methods of health risk assessment, also referred to as risk adjusters, were analyzed. This research project was sponsored by the Health Section of the SOA. The lead researchers for this project were Bob Cumming from Milliman USA, Inc. and Dave Knutson from the Park Nicollet Institute Health Research Center.

The complete report can be accessed on the Society's Health Section Web site at *http://www.soa.org/sections/riskadjfinalreport1.pdf.*

Life insurance

The 2001 Manulife Reinsurance Mortality Studies, which contains the 1997 & 1998 Experience of Older Age & Large Amount Mortality, is now available on the Reinsurance Section Web page at *http://www.soa.org/sections/mrms_2001.html.*

This is the study that was summarized in the June issue of the *Reinsurance Section News*. If you have any questions, you may contact Jack Luff, SOA Experience Studies Actuary, at 847-706-3571 or jluff@soa.org.

Retirement

The SOA has awarded the contract for the pension plan mortality and turnover database construction project to Steven J. Kopp of the University of Western Ontario. The objective of this project is to produce a database suitable for constructing employee mortality, termination and retirement tables. A request had been sent to pension consulting firms, government agencies, and other organizations in December 2001 to contribute data for this project. As of this date, the SOA is still accepting data contributions. Please contact Julie Rogers (jrogers@soa.org) for details.

CKER Grants

A paper resulting from Robert Serfling's project, "Efficient and Robust Fitting of Lognormal Distributions," has been accepted for publication in the October 2002 issue of the *North American Actuarial Journal*.

Journal of Actuarial Practice (JAP) Call for Papers

Papers may be on any subject related to actuarial science or insurance. Papers do not have to contain original ideas. Preference will be given to practical or pedagogical papers that explain some aspect of current actuarial practice. As an international journal, JAP welcomes papers pertaining to actuarial practice outside North America. JAP also accepts technical papers, comments and book reviews. Papers may be submitted via e-mail in Microsoft Word, WordPerfect or LaTeX format. All papers are subject to a peer referee (review) process.
Deadline for submission is November 30, 2002. Please contact Colin M. Ramsay, Editor, Journal of Actuarial Practice, P.O. Box 22098, Lincoln NE 68542-2098, USA. Phone: (402) 421-8149; Fax: (402) 421-8149. E-mail: absalompress@neb.rr.com. Web: http://www.absalompress.com.

AERF Monographs

Two monographs have recently been published which resulted from research projects funded by AERF.

Dr. Krzysztof Ostaszewski, FSA, CFA, MAAA presents a research project, *Asset-Liability Integration*, which analyzes the asset-liability management (ALM) process in the financial intermediation industry, especially among insurers, from the perspective of what is known about capital markets and practiced in financial engineering.

Retrospective and Prospective Analysis of the Privatized Mandatory Pension System in Mexico, by Dr. Tapen Sinha provides the backdrop of the Mexican economy and traces the history of social security and pension in Mexico.

Both monographs are currently available for purchase at *http://www.soa.org/bookstore/index.asp.*