

RECORD OF SOCIETY OF ACTUARIES 1991 VOL. 17 NO. 2

ANNUITY PRODUCT DEVELOPMENT UPDATE

Moderator: PHILIP K. POLKINGHORN
Panelists: WILLIAM R. BRITTON, JR.
EDWARD F. MCKERNAN
MICHAEL WINTERFIELD
Recorder: PHILIP K. POLKINGHORN

- Tax developments
- Product design issues for:
 - CD annuities
 - "Traditional" SPDAs
 - TSAs
 - Structures and immediate annuities
- Investment strategies
- Reserve issues

MR. PHILIP K. POLKINGHORN: We will talk about annuity product design. We have three panelists who will each address a different subject. I'd like to begin by introducing the panelists and the topics that they plan to address. Leading off will be Edward F. McKernan, who is the marketing actuary for the U.S. branch of Seaboard Life and who is also a member of the Advisory Task Force on Annuity Nonforfeiture Values. Ed will talk about proposed nonforfeiture law changes for annuities. Following Ed will be Michael Winterfield, who is a partner with Ernst & Young in New York City. Mike has 20 years' involvement in annuity product development, and he's presently involved in a mixture of merger and acquisition work, capital and profitability management, and annuity product development activities. Mike will speak to us about annuity product design after cash-flow testing. Finally, we will hear from William R. Britton, Jr., who is a principal in the Hartford office of Tillinghast. Bill has been working quite a bit with market value-adjusted annuities (MVAs) or market-sensitive annuities (MSAs) and we'll talk a bit about the opportunities there.

MR. EDWARD F. MCKERNAN: We may be seeing a revision of the Standard Nonforfeiture Law (SNFL) for deferred annuities in the not-too-distant future. This is a result of regulatory concern over some of the more recent product innovations. One element of the concern is due to inequities between persisting policyholders who annuitize and those who surrender their contracts for the cash surrender value (CSV).

I will first discuss contract features that are increasing the concern of inequity, and then discuss the emerging nonforfeiture proposals.

BACKGROUND

In the last year or two, we have seen a greater emphasis on annuitization values (AVs) available under deferred annuity products; this is primarily a result of enhanced values if the annuity contract is annuitized (which may not be there if the contract is surrendered).

Historically, enhanced AVs were generally delivered by way of granting a discount on the company's current immediate annuity rates; quite often it was a very subtle benefit without fanfare.

PANEL DISCUSSION

An alternative vehicle was the "two-tier" annuity contract (a.k.a. dual-fund annuity), which has generally emphasized the AV. The historic two-tier annuity can be generically described as having two funds accruing at separate interest rates -- one available for surrender and the other available for annuitization.

More recently, in response to competitive pressures and in an effort to deliver greater product value, companies have become more innovative in delivering AV enhancements -- and they are not nearly as subtle as some of the predecessors.

Some of the more recent AV enhancements can be summarized as follows:

- o Percent of account value bonus
- o Percent of premium bonus
- o Return of loads
- o Additional interest credits

The percent of account bonus is a carryover from prior practices. What used to be an immediate annuity "discount" is often now reflected as a bonus to the account value on annuitization. These bonuses range anywhere from 1-15% of the account value.

A percent of premium bonus may be offered at issue. This type of bonus may range anywhere from 5-8%. This is where you often see advertisements offering as much as a 14% first-year yield in an 8-9% credited interest rate environment. However, the fine print will often tell you the additional "yield" may not be available until quite sometime in the future, and perhaps only if the contract is annuitized.

The return of front-end loads may be available at annuitization with or without interest. This can also be viewed as a permanent surrender charge that is waived on annuitization.

The last is a form of the generic two-tier annuity contract.

As a result of some of the more recent product innovations and concern over two-tier annuities, regulators have become more and more concerned that NAIC Actuarial Guideline III may be misapplied, misinterpreted, or both.

NAIC Actuarial Guideline III states that: "For purposes of calculating cash surrender values . . . maturity value in the SNFL for Individual Deferred Annuities shall mean the cash surrender value at maturity."

NAIC Actuarial Guideline III, which defines the term "maturity value" as used in the SNFL, is often used as a sanction of providing benefits on annuitization that may not bear any relationship to the CSVs otherwise available. The SNFL sets minimums on CSVs as a function of the maturity value. Guideline III clarifies the definition of maturity value as the CSV at maturity. Hence, based on some interpretations, there appears to be no mandatory relationship between the AV and CSV.

Probably of greatest concern is the possibility of companies making the policyholder "captive" due to a forfeiture of benefits if the contract is surrendered. If surrendered, all of those annuitization enhancements are lost. So Joe Policyholder keeps the

ANNUITY PRODUCT DEVELOPMENT UPDATE

contract in force. Further yet, the regulators are concerned that once captured, Joe Policyholder won't get a fair shake when the company sets its "current" immediate annuity rates.

About a year ago, primarily in response to complaints regarding two-tier annuities, the NAIC Life & Health Actuarial Task Force (LHATF) appointed an advisory group to perform several services: (1) review two-tier annuity products; (2) determine if the potential for abuse exists; and (3) make recommendations to the LHATF for corrective actions, if needed.

The scope also included disclosure and valuation considerations. The advisory group was formerly titled "Advisory Committee on Two Tier Annuity Products." As a result of its changing scope, however, the group may be renamed the "Advisory Committee on Annuity Products" (ACAP). It is this group's recommendations that I will discuss.

First a side note on a related issue. At the April NAIC meeting, coincidentally the NAIC Life Insurance "A" Committee, whose mission is to consider problems relating to life insurance and annuities, independently identified "problem" areas in the annuity arena. The identification of the "problems" was determined by a survey of the various state insurance departments. Problems identified included the following:

- o Two-tier annuities
- o Annuitization bonuses – especially if illustrated as an additional first-year interest credit
- o One-way market value adjustments
- o Lower interest rates on old money
- o "Zero cash value" annuities (or what might sometimes be termed individual GICs or CD annuities)
- o Pseudo "flex" policies
- o High front-end loads offset with high first-year interest declarations (e.g., 15% load and a 15% first-year interest guarantee)
- o Are deposit administration contracts and GICs annuities? Should they be regulated as such?

NONFORFEITURE CONCLUSIONS AND PROPOSED RULES

SPDA Conclusions

I will now focus on some of the conclusions reached by ACAP, which were expressed in a report to the LHATF in April. The report consists of two basic components: conclusions regarding nonforfeiture value and proposed rules for nonforfeiture values.

First, I'd like to express that the conclusions reached by ACAP thus far should be considered only preliminary. The conclusions have yet to be tested against current and prospective industry practices and product designs. This cannot be underemphasized – that's why you will see the following points labeled "preliminary." If nothing else, however, the conclusions and proposed rules do provide insight as to the future direction of minimum nonforfeiture requirements.

The preliminary single premium deferred annuity (SPDA) nonforfeiture conclusions cover the following categories:

PANEL DISCUSSION

- o Two-tier annuities
- o Loads and surrender charges
- o Equitable distribution of benefits
- o Smooth progression of values
- o C-3 risk exposure provisions

One of the first objectives of ACAP was to define a two-tier annuity. It was resolved that there are two-tier annuities and there are two-tier annuities. It was recognized that the problems associated with the generic two-tier annuity design were also present in contracts labeled single-tier annuities. The common denominator is the enhanced AV, regardless of what name is given the product or how its delivered.

It was recognized that there needs to be consistency between front-end sales loads and surrender charges. ACAP believes that the maximum load, whether expressed as a front-end load or a back-end surrender charge, should not exceed 10% (as expressed in the present SNFL).

On the other hand, contrary to the current SNFL, ACAP believes that permanent surrender charges are acceptable – provided they fall within the parameters of the other conclusions reached. Permitting a permanent surrender charge is consistent with permitting front-end sales loads.

It was recognized that reasonable equity should be maintained between persisting and surrendering policyholders. In addition, it was also recognized that nonforfeiture rules should not limit amounts that companies could pay as additional benefits (e.g., excess interest) or that would inhibit rewarding persisting policyholders within reasonable guidelines.

The objective is to establish procedures for a fair distribution of benefits – not a limitation of benefits.

As an example, the rate of change in AVs (those amounts available at annuitization) should be permitted to either increase due to decreasing surrender charges or increase as a result of the operation of preguaranteed annuitization bonuses or the operation of two-tier interest rates. However, the rate of change should be kept to a narrow range to preserve equity.

ACAP believes a smooth progression of values should be maintained over the life of the contract (i.e., no future sharp increases on a guaranteed basis), since any sharp increase cannot be justified from an equity standpoint.

The present SNFL provides a smoothness test by way of the 1% differentiation in the discount rate of future values. ACAP was split on whether the current SNFL requires prospective testing subsequent to issue. However, in its conclusions, ACAP believes that a smooth progression should not only be verified at issue, but also whenever benefits are enhanced, and such tests should be reapplied on a prospective basis.

It was recognized that provision for a C-3 risk in fixed annuities is highly desirable. ACAP also believes that a C-3 risk provision can be met through the permanent surrender charge feature.

ANNUITY PRODUCT DEVELOPMENT UPDATE

SPDA PROPOSED RULES

Well, it's nice to have an ideal set of nonforfeiture guidelines that will deliver equity to the policyholder, protection for the insurance company, and flexibility to compete effectively in the market. However, how can these conclusions be put into practice without rules? ACAP followed through and laid out a set of rules for SPDA nonforfeiture values.

Again, I want to remind you that the rules are preliminary and may be subject to further modification prior to ACAP's final report to the LHATF.

The rules are expressed in terms of AV and CSV:

- o The AV is defined as the amount available and used to determine an annuity income payout of at least five years, using annuity income rates that remain stationary over the life of the contract. That is, any annuitization bonuses cannot be "hidden" in an ever-changing guaranteed immediate annuity rate basis.
- o The CSV is the amount available in the form of a lump sum settlement on surrender of the contract.

Although ACAP's preliminary report summarized the rules in text and formula formats, I will show you only the formulas.

The preliminary SPDA nonforfeiture rules require the following:

- o $CSV_0 \geq 90\%$ of premium
- o $CSV_t \geq 90\%$ of annuitization value_t (AV_t)
- o $CSV_t/AV_t - 2\% \leq CSV_{t+1}/AV_{t+1} \leq CSV_t/AV_t + 2\%$
- o $\Delta CSV_t/CSV_{t-1} + 2\% \geq \Delta CSV_{t+1}/CSV_t \geq 3\%$
- o Prospective reapplication

The first rule specifies the limitation of front-end loads to 10% of premium.

The second rule controls the relationship of the AV and CSV. In effect, it also controls a permanent surrender charge to a maximum of 10% – the surrender charge in this case being defined as the difference between the AV and CSV.

As an example, given a \$1,000 premium, the initial cash value must be at least \$900 and within 10% of the AV. At issue, we could effectively have a CSV of \$950 and an AV of \$1,050. The \$950 value could be a result of either a 5% premium load or a 5% surrender charge.

- o Subsequent to issue, both values could grow at the same rate, maintaining the 90% relationship, or
- o Through a decrease in surrender charges, the differential could narrow, or
- o Through a decrease in surrender charges on the contract's fund value, and increases in the AV through bonuses, the 90% relationship could be maintained.

PANEL DISCUSSION

The third rule controls the element of smoothness in the relationship of AVs to CSVs. In effect, on a guaranteed basis, the relationship of the CSV to the AV cannot vary by more than 2% in either direction from one period to the next.

In most contracts, this relationship would generally be controlled through the surrender-charge structure. However, this rule would also control the crediting of annuitization bonuses subsequent to issue or the crediting of second-tier interest rates.

It is the relationship of benefits subject to forfeiture that is the element of importance, not the level of benefits. At a maximum 10% forfeiture, ACAP believes the possibility for abuse in creating "captive" policyholders is greatly diminished.

Now that the relationship between AVs and CSVs has been defined, and maximum loads and surrender charges have been defined, the last formula for SPDAs controls the smoothness and minimum rate of growth in the CSV.

Effectively, the fourth rule maintains a minimum CSV growth rate of 3%. In addition, the rate of change in the CSV, on a guaranteed basis, cannot exceed a rate greater than 2% over the prior period – the smoothness factor.

The rate of growth in the CSV is controlled not only by the guaranteed interest rates, but also by the rate of change in surrender charges, guaranteed bonuses, and other contract enhancements.

In addition to the control of value rules, they will need to be maintained over the life of the contract on a prospective basis. That is, since they do not control the granting of nonguaranteed credits to the contract values, whenever such nonguaranteed credits are granted, the product must continue to bear these relationships on a prospective basis.

An example where complications in satisfying the rules could arise is through the granting of guaranteed bonuses at some future date equal to a function of excess interest credits. The granting of the excess interest, or just the possibility of excess interest credits in-and-of-itself, may violate these rules unless the bonuses are brought into the contract on a gradual basis.

Also worth noting, it has been established that the third and fourth rules are not to act as a prohibition of the following: (1) the crediting of increased benefits immediately available to the policyholders; (2) minimum cash value guarantees equal to premiums paid; and (3) surrender charges that are a function of declared interest rates if the contract would otherwise pass the tests on a level interest rate basis.

FPDA CONCLUSIONS

So far I've only discussed single premium products. ACAP has also prepared preliminary conclusions and rules for flexible premium products, although not at the same level of detail. Considerably more time needs to be spent reviewing issues related to flexible premium deferred annuities (FPDAs).

In general, the conclusions reached for FPDAs are the same as for SPDAs except elements relating to the level of front-end loads and surrender charges.

ANNUITY PRODUCT DEVELOPMENT UPDATE

ACAP believes that current maximum loads specified in the SNFL for FPDAs are excessive with today's emphasis on investment returns on annuities, and to some extent should bear some relationship to SPDAs. This is especially true when many SPDAs are sold through FPDA contracts -- the pseudo-FPDA -- as an avoidance of SPDA nonforfeiture requirements.

On the other hand, ACAP believes it is important to permit larger sales loads than SPDAs, especially when being used in the salary reduction retirement plan market and the like.

As a result, the only deviations from the SPDA rules previously discussed relate only to the level FPDA front-end loads and surrender charges.

The preliminary FPDA nonforfeiture rules are as follows:

- o $CSV_0 \geq 80\%$ of premium
- o $CSV_m \geq 90\%$ of AV_m
- o $CSV_t/AV_t - 2\% \leq CSV_{t+1}/AV_{t+1} \leq CSV_t/AV_t + 2\%$
- o $\Delta CSV_t/CSV_{t-1} + 2\% \geq \Delta CSV_{t+1}/CSV_t \geq 3\%$
- o Prospective reapplication

In effect, instead of limiting the front-end sales load to 10%, ACAP recommends a maximum premium load, or initial surrender charge, of 20%. However, the relationship of the CSV to the AV must grade to 90% at some future point in time -- "m."

As it now stands, "m" is defined to be at maturity, and it is the latter of age 70 or 10 years from issue -- the same as the current SNFL.

CONCLUSIONS

Finally, I'll cover issues with respect to equity versus persistency, prospective testing, FPDA loads, and zero CSV annuities.

In conclusion, a major issue being tackled by ACAP is the balance of persistency over equity. Both have merits, and at times they directly oppose each other. There is no unique solution that will satisfy everybody, so if anything is to be said about this consideration, ACAP's recommendations concerning the balance of equity and persistency will not be liked by anybody. In essence, ACAP is straddling a fence on this issue.

The possible requirement of prospective testing subsequent to issue under the current SNFL was new to me, and perhaps to many of you. However, the proposed rules clearly spell out that it may be a requirement.

The limitation on the FPDA loads may be welcomed by many in the industry; however, I envision this element to create considerable debate.

The current SNFL does not require deferred annuities to provide for cash values, and as a result there are various annuity products on the market that are what I term "zero cash value annuities," others call them CDs, individual GICs, and the like. ACAP has sought direction from the LHATF for clarification on permitting zero

PANEL DISCUSSION

cash-value annuities. Thus far, the LHATF supports the continuation of permitting zero cash-value annuities.

As for the future, ACAP anticipates a final report by the fall NAIC meeting. As to the conclusions thus far, I believe the structure achieves many of the goals sought: (1) equity, (2) preservation of persistency, (3) C-3 risk margins, and (4) product design flexibility.

MR. MICHAEL WINTERFIELD: My topic is "Book Value Cash Out Annuities: After Cash-Flow Testing and After Conservatorships." I'd like to begin with three summary viewpoints. First, MVA and variable annuity products will indeed gain further market share, but book value cash out designs will continue to dominate, or at least still represent the significant majority of the annuity marketplace. Second, a skillful combination of persistency-oriented product design, hard-line pricing, and prudent investment risk taking will be needed to compete profitably. Third, the MVA design or a combination of book value and MVA product designs will be a viable option for some companies that simply don't believe that they're going to be able to compete profitably with the book value design. In all cases, my firm belief is that cash-flow testing should become the key factor in both surfacing financial problems and making appropriate strategic responses. In my mind, the future of the book value cash out product line is bright, but it's only bright if we take cash-flow testing very seriously.

I'd like to go through a bit of history and cover some of the challenges that are coming up and see what we might be able to do with them. Let's start with October 1987, which, in my mind, started a nifty period for the annuities -- the "golden age," as I would call it. There was a period of time, 1985 through most of 1987, when single premium fixed life insurance and single premium variable life insurance were really coming on strong. These products were offering the potential for tax-free income through wash loan features, and the indication was that the SPDA product was going to be left behind. Things changed rather abruptly -- within a two-week period. There was a 500-point Dow Jones decline in October of that year, and a big challenge emerged on the tax front with Stark and Rostenkowski. Ultimately, a year later, the tax laws were changed to preclude tax-free income through use of the loan feature.

So it was back to basics for agents and stockbrokers. The good, old tax-deferred annuity concept wasn't that bad after all, so they got re-energized. At about the same time financial institutions got on board with some explosive growth. The SPDA looked like it was a better deal than a CD for many of the financial institutions. The rates were as good as what was being offered on CDs, and they're tax deferred. You couldn't beat that. So, marketing-wise, life was pretty rosy. Financially, things were also pretty good in 1987, and rolling forward for a couple of years. We had stable, gradually declining rates during this period, a drift-down from 10% to 9%, to 8%, and into the 7%*s*. This did wonders on company in-force blocks. There were opportunities for companies that invested long to salt away a little extra margin, reduce renewal rates, and still do a good job with the long-time customer and shift some margin to the new sale. At the same time, if you needed more leverage on new business, the financial markets also looked good. High-yield instruments were on a roll. Everybody told you that this stuff worked out very well over time on a default-adjusted basis, and you could go for equity kickers on other things. New York

ANNUITY PRODUCT DEVELOPMENT UPDATE

got involved, but indicated that it was okay to work with high yield for up to 20% of the total portfolio. So that really wasn't a terrible impediment either. And again, on the product side there were more positive changes. One- to six-year CD-type products were put together that looked more like the bank CDs. All this appealed to both the shorter- and longer-term buyers. There was really something for everyone!

It couldn't all last. Awakenings! A return to reality! All of us have been reading about some of the big cataclysmic events during the last year or two: the collapse of the high-yield bond market, lots of defaults, market value erosion, high-yield portfolios worth 70-80 cents on the dollar. Escalating real estate losses have also come into play recently. Commercial mortgage delinquencies in the double digits. Foreclosures. Two major annuity-writing groups have been taken over by the states within the last couple of months in line with all of this. These problems obviously haven't pertained to many of our companies, but there have been far more general problems that do pertain to everyone. Let's talk a bit about them. Companies that have been in the business for awhile have begun to report on poor persistency experience during free surrender charge periods. A lot of companies were just getting into the business, and didn't have a chance to see what would happen when people rolled out of the surrender period. In some cases, it wasn't so good.

With all of these things going on, and with the mushrooming of asset values, many of the larger insurance companies began to do a lot of rigorous asset/liability testing on their own, and, in fact, many of the major writers went ahead and tightened up pricing. Now we have further changes that will hit everybody. Actuarial Standard of Practice 14 (ASP 14), effective October 15, 1990, requires actuaries to consider cash-flow testing for pricing, for reserving, and for other purposes. Simultaneously, the 1990 Amended Standard Valuation Law requires an actuarial memorandum for cash-flow testing. The states will begin to adopt the 1990 Standard Valuation Law this year. It's not fully effective until the 1992 cycle, but the point is that everybody will be forced to look at cash-flow issues straight on. A note here. With all of these things happening, how many writers could satisfactorily handle a return to double-digit interest rates?

Let's talk briefly about ASP 14, "When to Do Cash-Flow Testing." It's recommended that the actuary look at cash-flow testing for a lot of different things: product design and pricing, evaluation of investment strategies, financial projections and forecasts, and reserve testing. Although not specifically mentioned, there are other obvious applications that should be noted: set investment earnings targets. What kind of a spread over Treasuries should the investment department provide to make these products work? Devise interest-crediting strategies. And determine the basic feasibility of whether we ought to be in the business. I think this is one of the greatest values of the cash-flow testing. We can do cash-flow testing and determine the different ways in which we can lose our shirt if we're not careful. At the same time, we can use cash-flow testing to determine what happens if we don't take any risks at all to speak of, and we can get hurt pretty badly there as well. It might not happen all at once, but if we're not taking any risk in a very competitive market, we might be lucky to break even with our product design. The cash-flow testing covers quite a lot. It's not just a passive measurement tool to look at the adequacy of reserves. I think it's also a financial engineering and a strategic management tool. All of these functions are critical.

PANEL DISCUSSION

Let's look at some of the specific risks for which we need cash-flow testing. We'll start with the C-1 default or asset depreciation risk. A few years ago things looked a lot better. The first line of Table 1 shows a simple weighted average of the high-yield default rates net of salvage value for the 1973-87 time period. Not terribly threatening for a typical single B instrument, where you could pick up 400-500 basis points over Treasuries prior to a 151-point default expectation. Not all that bad, but things have gotten a lot worse. Edward I. Altman, Max L. Heine Professor of Finance, Stern School of Business, New York University, wrote an article a couple years ago indicating that high-yield bond default rates should be looked at a bit differently. It's not proper to just look at the default rates in the first year or two after a high-yield bond is issued. Things are usually pretty good when you're just getting started, but it gets tougher when you're in the third, fourth, or fifth year. Professor Altman looked at high-yield bonds on an aging basis, carrying them through 10-year or 15-year cycles and combined that with some of the worsening experience of 1988 and 1989. His default rates are a lot higher. That single B at 151 points went up to 278 points. If we're going to be doing cash-flow testing today, what do we do? My feeling is that we will need to look at default rates, going forward, that are a lot higher. This is certainly indicated to us by the marketplace. I don't think that we can brush off 15-16%-type single B yields and say that this pick-up in yield is all market overreaction. Perhaps for planning purposes we should say that we should not look to make more than, say, 250 points default adjusted over Treasury yields. If we did that, then we would say for a single B we shouldn't be looking for more than, say, 10.5% net, and that would get you to a 500-point default territory. That's the kind of thing that needs to be put into cash-flow testing.

TABLE 1
C-1 (Default) Risk

	BB	B	CCC
1. 1973-87 Weighted Average	0.21%	1.51%	2.57%
2. 1971-89 Altman Aging Basis	1.15	2.78	3.89
3. 1991 Long-Term Projection		Higher	

Let's move over to C-2 pricing risk, apart from what happens with assets. There's a lot of risk in these products from the persistency side. On CD products there were a lot of lapses during the 30-day windows between each guarantee cycle. On the traditional product where the surrender charge wears off, there are a lot of lapses right after that surrender charge is gone. Many of our companies need to look carefully at whether we're going to have enough persistency and enough margin to recover not only marginal expenses but also fully allocated expenses. In a nutshell, the experience of companies that have been in the business for awhile shows that surrenders in a no-charge period are a heavy multiple of lapses during the surrender charge period. It's not improbable that the traditional product that's been sailing along with 2%, 3%, and 4% lapse rates for five, six, and seven years during a surrender

ANNUITY PRODUCT DEVELOPMENT UPDATE

charge period will suddenly catapult upwards to 15% or 20% just as soon as that surrender charge constraint wears off. This must be factored into cash-flow testing.

Obviously, the one everybody's been familiar with over the years is the infamous C-3 interest rate risk. Rising rates on our portfolios with long assets are going to put big pressures on our credited rates. It's imperative that companies look at much harsher scenarios than just Regulation 126. A lot more can happen than just looking at interest rates going up by 300 basis points or going up by 500 points over 10 years. In 1981-82 we had a time where rates went up by 700 points over three years.

Reducing rates on these products are usually not much of a problem for one-year guarantees, but if we get into longer guarantees, then asset prepayments with mortgages and with bonds have to be looked at carefully. Most of you are familiar with the idea that average profitability over a scenario range is going to be less than the baseline, and you've got to look at it for your particular product line. We'll talk later about dynamic interest-crediting strategy, which I believe can somewhat reduce the profitability gap. What I mean by dynamic interest-crediting strategy is a strategy other than just lifting off the same target interest margin each year regardless of what's happening in the market. Instead of a company lifting off, say, 150 or 175 points, the dynamic settings would have varying margins depending on where the company is at with its portfolio rate versus new-money rates.

Let's turn to what has been perhaps the most popular book value cash out design of the last few years, and talk about the various problems with it: "The CD Annuity Multiple Pitfalls."

I believe that it simply doesn't work well financially. First, let me define the CD annuity as an annuity with matching interest guarantees and surrender charges over a period. For example, a three-year CD annuity would have a three-year initial guarantee with a matching three-year surrender charge. Then typically there would be a window, 30 days for example, where the client can get out free; if not, the client would roll over to another three-year guarantee with the surrender charge or to another guarantee of a CD style that the policyholder might desire. If we look at the short-term end of the market, we've seen high baseline lapse rates -- 20-40%. We have to wonder about the customer profile here. These shorter-term CDs are written with reduced commissions, but they still have other expenses to pick up. Persistence, therefore, has been a big problem here as well. If you switch over to the longer end of the CD market, you're getting a customer with a somewhat longer-term orientation, but there are still problems. You've got to worry about 1035 exchanges after the five-year CD-guarantee period expires. A company simply cannot fully amortize initial expenses over a five-year period, and you can't afford at the start of the next cycle to give the agent another full commission. What you must do instead is come up with some balance and get policyholder renewal incentives. Truthfully, I have not yet seen any of my client companies come up with a really good response to what should be done after that five-year period is up. It's a major stumbling block!

Continuing with these longer guarantees, we've got problems with the nontax deductible reserve strains. The investment risks also will limit longer-term offerings. Another big challenge is the Illinois Insurance Department and its actuary, Larry Gorski, who have challenged the traditional method of Commissioner's Annuity

PANEL DISCUSSION

Reserve Valuation Method (CARVM) calculations. That's been pertinent to companies in the CD business. Larry Gorski, for some good reasons, believes that it's totally wrong to build a 5-6% surrender charge at the end of a five-year guarantee CD annuity into the reserve. Larry asks the logical question of what happens the next day? On the first day of the sixth year they can walk away from it. Therefore, you ought to be reserving on that basis. This has become a hot topic, and a couple of other states have certainly shown sympathy to Larry's position. I think that the reserving on these longer-term contracts is up in the air. From an asset/liability standpoint, you really need to be closely matched so that you can offer a new money rate at each renewal point. You can't be stuck with overly long assets, and, unfortunately, there is a lack of investment product at the shorter end for these one-, two-, or five-year CDs.

I indicated at the outset that I certainly don't think it's all doom and gloom. I do think that there are a number of ways in which companies can move forward on a prudent basis within the book value arena. As a general theme, I believe that companies will need to look at long-term accumulation rather than short-term liquidity as the driving force. We simply can't be all things to all people. Along these lines, I see a shift away from the shorter-term CD annuities, like the one- and the three-year CD. I forecast moderate strengthening and lengthening of surrender charges. It would be naive to say that everybody will go from five years to 10 years, but I would see companies looking more at, say, having a steep, six-year or seven-year charge rather than hanging in there with a weak five years. A lot of these changes will be borne out by doing the cash-flow testing. As one of the possible answers to problems with long guarantees that produce a lot of nontax deductible, reserve strain, I see a greater use of the one-year renewable guarantee, with a relatively high bailout rate, to serve as a substitute. This can give a company more leverage to offer a better level rate for five years, but on a nonguaranteed basis. The bailout gives some credibility to the customer about good intentions. If something happens such that a company can't make good on the initial rate, the customer has the bailout. This product is a good response to traditional, longer guarantees.

I think you'll find that our talks will dovetail together pretty reasonably. Ed spoke a lot about other product designs coming up: persistency bonuses and two-tier annuities. I see a good future here. We can do a lot with persistency bonuses. We can use them in a traditional form right after the surrender charge period, when we see lapses going to 20% in the first few years, after you roll out of the surrender charge. Why not reserve a little bit of interest? Have some persistency bonus kickers to get the customer to hang in there for a few more years. The up-front allocation also has some merit. Allocating up front 101%, 103%, 105% of the premium as an additional bonus, but subject to vesting down the road over the course of three to four years after the surrender charge period, has some viability to it. Again, the two-tier annuity, in my mind, has a lot of viability. There has been bad press about excesses with that product, but when it's designed properly, it meets the objective of long-term accumulation. It's an opportunity to pass on good long-term value.

As an option, of course, and one that Bill will discuss, I certainly see some companies deciding after cash-flow testing that it isn't worth it; I'm going to join the MVA crowd. Also, I see underlying all of this a real reversion to hard-line pricing. A lot of the bigger companies are doing it. I think this will become pervasive. Appropriate

ANNUITY PRODUCT DEVELOPMENT UPDATE

risk charges will be included not only by the big companies, but also by the smaller companies that are going to be forced to examine cash-flow testing like everyone else.

Lastly, I'll briefly mention dynamic interest-crediting strategy which I spoke about earlier. A lot of this will come out from cash-flow testing. Actuaries have traditionally used a constant-margin approach, which seems to ensure good equity and track model assumptions. There are a lot of parallels to dividend setting. When we do our C-3 risk analyses, though, we see how much profit we lose when rates go up, and if we maintain the same margin, we see when rates go down that we're not doing anything more than breaking even. This suggests there might be a better way. With the dynamic margins, we can try to increase the average profitability by increasing margins when rates drop. That can give us some cushion during the good cycles and help to take care of some of the bad cycles.

MR. WILLIAM R. BRITTON, JR.: I'm going to shift gears a little bit. Our first two speakers have talked about *nonforfeiture requirements and changes in general risk elements* that you need to look at in annuities. I will cover a family of products that I'm calling market-sensitive annuities (MSAs) and how these products deal with some of the points that have been raised in the earlier comments. We'll talk generally about what MSAs are, why they are gaining in popularity, and the issues facing the product design actuary and the valuation actuary.

An MSA is an annuity that has an interest and book value guarantee at the end of a specified period chosen by the policyholder. Early withdrawals are subject to a market value adjustment and also subject to a surrender charge if there is one. These annuities are known in the regulations and on the street as modified guaranteed annuities (MGAs) or market-value adjusted annuities (MVAS). They come in a variety of forms. They can be group or individual. The assets and reserves can be in the general account or in a separate account. Some companies hold assets and reserves at market value, others at book value. Some are registered with the SEC and some are not.

A number of companies are active in the business. Dave Hall of The Hartford mentioned that they were the first to introduce a product, I believe in 1984. Several companies had sales last year somewhere in the half-billion area or maybe upwards of that. There are some significant new entrants this year into the market. Sales, as far as we've been able to track, have been *primarily through stockbrokers*. There may be some through insurance agents, but it doesn't appear to be a bank product as yet.

Why are MSAs popular? For the annuity buyer market, MSAs offer longer guarantee periods than are available in book value products. We see products with five-year, seven-year, 10-year guarantees, and even one on the market now with a 15-year guarantee. MSAs also offer higher long-term interest guarantees than are available on book value products, plus the opportunity for capital gains.

If you take a look at the offerings in the marketplace, you will note significantly different patterns of credited rates for fixed annuities compared with MSAs. The Table 2 illustrates two products, both from companies with A+ Best ratings.

PANEL DISCUSSION

TABLE 2
Illustrative Recent Credited Rates
(A+ Best's Rating)

Type	Guarantee Period			
	1 Year	3 Years	5 Years	10 Years
Fixed	7.90%	7.70%	7.60%	N/A
MSA	6.75	7.50	7.75	8.05%

One is a fixed annuity, which guarantees 7.9% for a one-year product, 7.7% for three years, and 7.6% for five years, the longest guarantee period offered by the company. Note that the pattern of rates forms an inverted yield curve.

Now, a typical MSA will have interest guarantees sloped more like a positive yield curve. In the example shown, rates are 6.75% for one year, 7.50% for three years, 7.75% for five years, and 8.05% for 10 years. Somewhere between three and five years you typically see the credited rates offered by MSAs exceed credited rates of fixed annuities.

The disadvantage of MSAs is that buyers could suffer a market value loss if they need to withdraw cash before the end of the guarantee period at a time when interest rates have risen.

Why are MSAs attractive to insurance companies? There are several reasons. First, there's a lower cost of policyholder options, since the ability to make a market value adjustment reduces the cost of the cash-out. Second, the company can take advantage of higher valuation interest rates, which will be covered in more detail below. Third, many companies believe you can hold less target surplus on these products than you would have to on book value products, and thereby you can get lower surplus strain and lower overall capital cost. Finally, there's a fairly convincing argument that there will be a better buyer profile, in that the people who will be attracted to this product may be savers rather than investors, and thus will exhibit better persistency characteristics. We won't know the outcome for some time, but the argument seems plausible to me.

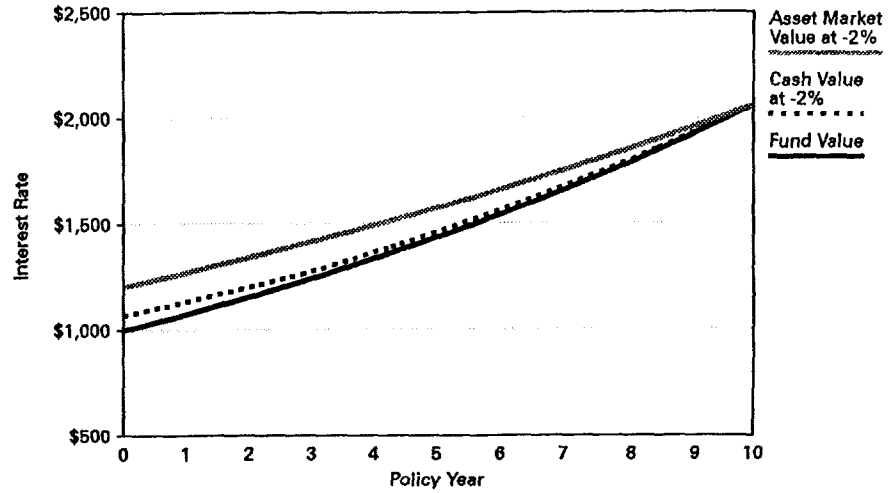
How does the market value adjustment provision of a typical MSA work? Let's look at an example of a product with a 10-year interest rate guarantee of 7.5%.

Chart 1 shows the pattern of asset market values and cash surrender values if interest rates drop 2% immediately and stay level over the 10-year period. As would be expected, note that cash values (before any applicable surrender charges) exceed fund values throughout the period. Note further that the company has designed the market value adjustment formula in a manner expected to pay out less than the "true" asset market value.

Chart 2 illustrates the operation of this same product under the assumption that interest rates increase by 2% immediately and stay level throughout the period. This particular product has a guaranteed return of premium, which serves as a floor to the market value adjustment formula. The distances in the chart above the gray line and

CHART 1

Illustrative Market Value Annuity 10-Year 7.5% Product



Illustrative Market Value Annuity 10-Year 7.5% Product

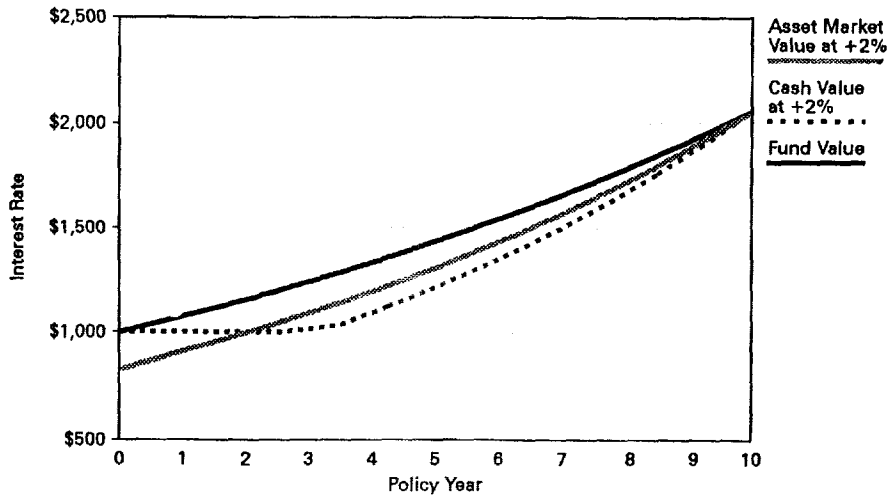


CHART 2

ANNUITY PRODUCT DEVELOPMENT UPDATE

below the dotted line represent the cost to the company of providing the return of premium guarantee to any terminating policyholders.

MSAs present some difficulties for companies. First, the administration of the product is going to be more complex. Also, you will have a higher reinvestment risk. You don't have to take a very long look at a 10-year product to see that a major risk is being able to achieve the compounding over 10 years. If you invest in a simple bond, you then have to get the same rate of return on reinvestment of the coupons that you receive. There's also the potential for buyer misunderstanding. Although MSAs should be sold by a sophisticated distributor and should be bought by a sophisticated buyer, somebody out there is not going to realize that there could be a negative market value adjustment, leading to some possibility of disgruntled policyholders filing lawsuits. There's also the possibility of being subjected to SEC regulation, which we'll discuss in more detail.

Let's take a look at the relative surplus strain of MSAs versus fixed annuities. Table 3 shows the projected maximum SPDA valuation rates for SPDAs written in 1991. As you know, those are determined on a June-to-June measuring period based on a Moody's corporate average. With two months to go, unless there is a substantial change in interest rates from current levels, these will be the maximum rates. The chart shows rates by reserving basis (change-in-fund versus issue year), product type B (MSA) versus product type C (fixed annuity), and length of guarantee period. You can see that the typical fixed annuity will have a 7% valuation rate this year, as compared with 9% for a MSA.

TABLE 3
Projected 1991 SPDA Valuation Rates

Guarantee Period	Valuation Basis			
	Change in Fund		Issue Year	
	Type B	Type C	Type B	Type C
5 or less years	9.00%*	7.00%	7.25%	6.75%*
5 to 10 years	9.00*	7.00	7.25	6.75*
10 to 20 years	8.25	6.75*	6.50	6.25

* Increased .25% from 1990.

To illustrate what this means, we'll look at surplus strain for a "no-frills" MSA product, which has 8% interest guaranteed for five years, then 4% thereafter. Surrender charges grade from 5% in the first year to zero in the sixth year. The death benefit is equal to the fund value. Just so we don't get too many things moving around in the calculation of the CARVM reserves, there is no bailout, return of premium, penalty-free withdrawal, or nursing home waiver.

Chart 3 illustrates the comparison of the valuation requirements and resulting surplus strain for MSAs and fixed annuities valued on a change-in-fund and issue year basis. An MSA (type B) valued on the change-in-fund basis would use a 9% valuation rate. For our "no-frills" product, this will mean a first-year reserve of \$1,031. Since the tax

PANEL DISCUSSION

CHART 3

*Comparison of Valuation Requirements
"No Frills" SPDA Product Design
8% Interest for 5 Years*

	1991 Valuation Rate	First-Year Policy Reserve		Additional Surplus Strain		
		Statutory	Tax	Reserve	Tax at 34%	Total
<i>Change in Fund</i>						
Type B	9.00%	\$1,031	\$1,031	—	—	—
Type C	7.00	1,110	1,053	7.9%	(.8)%	7.1%
<i>Issue Year</i>						
Type B	7.25	1,099	1,053	6.9	(.8)	6.1
Type C	6.75	1,120	1,053	9.0	(.8)	8.2

ANNUITY PRODUCT DEVELOPMENT UPDATE

reserve is floored at the statutory reserve, it will also be \$1,031. For a company deciding to issue the same product as a fixed annuity valued on the issue-year basis, the valuation rate will be 7%, and the statutory reserve will be \$1,110. The tax reserve will be calculated at the applicable federal interest rate (AFIR) of 8.42%, giving \$1,053. So, there is an increase in statutory reserve of 7.9%, offset by having a tax reserve increase of 0.8%. The net surplus strain will thus be increased by 7.1%, before consideration of target surplus. So there is a significant difference in your surplus strain and in your pricing results with MSAs.

Now let's look at the nature of market value adjustments. The regulators require that they operate in both directions. Usually, but not always, the adjustment is not applied on death or annuitization. Your formula may ignore some minor changes in interest rates since the issue of the product, and you can have a positive bias for the company in the market value adjustment, as the product that I illustrated earlier had.

With respect to the degree of market value adjustment, there are three general levels. You can invade principal, so that the market value adjustment could result in the buyer receiving less than the premium. You can have the market value adjustment applied to all credited interest, so that principal would be protected. Finally, you could have the adjustment apply to excess interest only, so that the buyer would get principal plus guaranteed interest, and the product can be designed to satisfy the standard nonforfeiture law.

Your choice is really a trade-off between the asset risk that you're willing to take and SEC regulation. SEC Rule 151 provides a safe harbor for annuities that satisfy several conditions: the value of the annuities does not vary according to the experience of the separate account, there's a guarantee of principal and a minimum credited rate of interest, excess interest will not be modified more than once per year, and the product is not marketed primarily as an investment.

Clearly the products that have assets invested in separate accounts will not satisfy Rule 151, but there are some products that have received legal opinions that they will not be subject to SEC regulation. Even if an annuity does not satisfy the provisions of Rule 151, it can still be exempted under the general provisions of Rule 3A8. Prevailing opinion seems to be that if your product invades principal, you're going to have to register it with the SEC. At the other extreme, if it only invades excess interest, a number of companies are taking the position that it will be exempt from regulation, and there are a number of products issued on a nonregistered basis. If it invades all interest that's credited, it's a little more problematical, and I'm not sure that there is a consensus of opinion.

MR. ROBERT J. LALONDE: I have a question for Mr. McKernan. Would you elaborate on the applicability of Actuarial Guideline 3 and its interpretation with respect to its use in the nonforfeiture law on annuities?

MR. MCKERNAN: Going back quite some time, the standard nonforfeiture law, in essence, has two tests in determining minimum values under deferred annuity products, and one of the tests referred to a maturity value within the contract. The definition of maturity value was not very clearly defined within the nonforfeiture law, and, as a result, NAIC Actuarial Guideline 3 was introduced, which did define maturity

PANEL DISCUSSION

value within an annuity contract, maturity value defined as the cash surrender value at maturity. It is the cash surrender value at maturity which is a future value used to determine minimum interim values if a surrender value is available. It is this future value that is discounted at the 1% differential interest rate. There's no reference to a maturity value as being an annuitization value in the contract other than the paid-up benefits available under the contract. So, there's no mandatory relationship between annuitization values and cash surrender values in the contract as the current law is being interpreted through Guideline 3, and this is where I think regulators are somewhat concerned that you can have a very large disparity between the values in the contracts, and there's no real clear authority to regulate that.

FROM THE FLOOR: I am with the New Jersey Insurance Department, and I have a question for Bill Britton. What is the justification for having a market-value adjustment that is larger on the downside than on the upside?

MR. BRITTON: The company will still be retaining some asset risk, such as product guarantees (like a return of premium), and the risk of asset default. The company will need to maintain some liquidity and has the risk of asset marketability. Also, there will be expenses associated with the sale of assets.

MR. POLKINGHORN: I think that New York State explicitly permits a maximum differential – a maximum bias towards the company of 25 basis points, and I think Bill's point is well taken, that the company is really on the risk for a market loss. The policyholder isn't really foregoing a market gain because there isn't a market for deferred annuities. They could hang on and get their full guaranteed interest rate if they desire.

MR. BRIAN TODD CORNISH: I have a question for Mr. Winterfield concerning the dynamic interest crediting strategy. In particular, while we've thought about something like this, the big problem is you can do it in testing very easily, but to do it in practice is something that could be entirely different, and I wondered if you'd comment briefly about possible different strategies and the practical problems of actually implementing such a strategy in practice.

MR. WINTERFIELD: I think the greatest problem with the practical application of dynamic interest crediting is to carefully communicate to the field force and to policyholders what you're doing. I think if a company does a good job of explaining what it might do in the future, it'll be all right. Companies get into trouble if they make statements in literature indicating that the crediting rates are going to track the market up, track the market down. That limits your flexibility in the case when rates go up. The company just has to do a good job of stating what it intends to do.

MR. JOHN J. PALMER: Let me follow up that last question with another one. Assuming you follow this dynamic strategy, what sort of accounting techniques can you use to bank the gains from the fat years to carry you through the lean years?

MR. WINTERFIELD: This is one that we've wrestled with a lot, and from a statutory accounting standpoint, the gains and the losses just come out year by year. I think in order to do the smoothing out you would have to do it through an internal management accounting system. I don't see any neat way to do it statutorily.

ANNUITY PRODUCT DEVELOPMENT UPDATE

MS. MARY JO NAPOLI: I have a question for Mike. On the use of harsher interest rate scenarios than the New York 7, where would you begin in terms of selecting harsher scenarios?

MR. WINTERFIELD: I'd say two things. If you're going to look at deterministic types of scenarios, I always like to look at the worst things that have happened historically. I have noted a 700-point type rise that we saw in the early 1980s. It was actually 1979-81 when we saw that kind of a rise, which is a lot higher than what we use for New York testing. Also, I think going forward companies should look at stochastic scenarios and use a full range. Of course, in setting up the stochastic scenarios there's going to be tremendous judgment about what kind of volatility factor you put in, whether you're going to assume the same kind of volatility we had in the past, whether it should be 150%, 200%, or whatever; so, judgment is always going to come into play.

