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REVISITING THE PRICING OF YOUR IN FORCE

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Panelists will discuss insurers' methods for monitoring in-force business and provide pricing guidelines.

MS. LINDA S. STRECK: I am with American Mutual Life Insurance Company in Des Moines, IA. Years ago I had somebody tell me that it was the marketing job to bring the business in the door, and it was my job to make money on it. Now, I do not think anyone here would agree that it is quite that delineated, and as I specifically spend an increasing amount of time in a marketing actuary type of function, I sometimes wonder which particular job I am in, the one bringing the business in the door or the one trying to make a profit at it. The ongoing management of your in-force block of business is a very critical function. There is a delicate balance between making a reasonable profit for your policyholders and the company, versus tipping the scale in either direction. How you manage your in-force block of business will definitely have an impact on your ability to create new sales.

Joining me are three men with extensive experience in this particular topic. Larry Stern is a principal with Tillinghast, a Towers Perrin Company, in their Simsbury, CT office. Larry has been involved with numerous clients in reviewing the profitability of blocks of business. He is a Fellow of the Society of Actuaries, a Member of the American Academy of Actuaries, and has been with Tillinghast since 1991. Prior to joining Tillinghast, Larry was senior vice president and chief actuary with United Presidential Life and was involved in the design, development, and marketing of that company's universal life (UL) products. Tom Phillips will be addressing the in-force block topic with respect to traditional life products. Tom is senior actuary with the Principal Financial Group and has been responsible for individual life insurance product development and the company's dividend scales since joining that firm in 1987. Tom is a Fellow of the SOA, a Member of the AAA, and a CLU. Our third speaker will be Michael DuBois. Mike is assistant vice president and actuary with Mass Mutual where he has had experience in pricing and financial analysis of life and annuity products for nearly 15 years. Mike is a Fellow of the SOA and a Member of the AAA. Our recorder is Carol Grafton with the Principal Financial Group. Carol is an Associate of the SOA and a Member of the AAA.

MR. LARRY N. STERN: When Linda and I talked about my part of this program, she asked me to cover UL products, and pay special attention to survivorship products. Since survivorship is relatively new to the marketplace, there may have been some repricing of products that have been introduced in the late 1980s, but for the most part the rate structures are the same as those in place when the products were initially introduced. We would like to take a look at some special pricing issues currently being assumed that may lead to repricing issues down the road. I also have a case study from a client company that has repriced a block of UL in-force business.

When I started to put together this presentation, I decided to look to see if the profession has offered guidance for procedures to reprice in-force business. I did not have to look very far, since *Actuarial Standard of Practice (ASP) Number 1* deals with the redetermination of nonguaranteed elements. Therefore, before I get into the UL case study and the survivorship product issues, I would like to examine *ASP 1* briefly as a means of setting a foundation.

This standard relates to the advice the actuary gives to a client company in connection with redetermination of nonguaranteed charges and/or benefits for life insurance and annuity business. Since the standard applies to in-force business, as well as new business, the standard of practice also applies to the initial determination of nonguaranteed elements. In support of *ASP 1*, the actuary should submit to the company an actuarial report providing recommended information to enable management to make informed decisions. This report should include the following: (1) a description of the company's redetermination policy, (2) a description of the facts, methods, procedures, and assumptions upon which the advice is based, and (3) a description of special operating practices affecting pricing and repricing issues. *ASP 1* applies to UL contracts, indeterminate premium policies, and excess interest policies. The standard became effective in January 1987.

In developing advice on nonguaranteed elements, the company must first have a redetermination policy for the business it writes. Such policy includes the company's solvency, marketing, and profit objectives. In order to implement the policy, the company will seek to follow a set of operating practices, such as investment, underwriting, claims, sales, service, and administration, that affect the initial pricing and subsequent repricing actions. The redetermination policy and the selection of solvency margins, marketing, and profit objectives are company management decisions.

Examples of redetermination policies include, but are not limited to, those that adjust the original nonguaranteed charges or benefits for differences between the experience anticipated at the time of redetermination and that underlying the original nonguaranteed elements. Under this policy, anticipated experience plays the key role, and explicit profit margins would usually not be changed after issue. Other examples include those that adjust nonguaranteed elements only when the redetermined charges or benefits would be less favorable to the insured and those that set nonguaranteed elements to obtain a particular competitive position. The actuary's advice must include the likely effect of such market-based pricing on the company's operating results and solvency based on the emergence of anticipated experience.

The standard of practice lists the following issues to be considered:

1. *Company policy.* It should be an integral part in developing actuarial advice.
2. *Accumulated gains and losses.* There is no question that future nonguaranteed elements should reflect anticipated future experience, even if it is worse than originally expected. Although the standard originally provided a provision to recover past losses, state insurance departments prohibit such practice. Factors reflecting past experience and/or the recoupment of prior losses are considered dividend elements, and the products must also be considered participating.
3. *Special operating practices.* These are essential to the pricing and repricing of business. In the case of underwriting, these practices would include any special underwriting rules to be applied in first and/or renewal years, and the indication of whether mortality experience should be analyzed separately. In the case of

investments, such practices would include any restrictions by type of investment and any asset/liability matching standards to be applied. The actuary's report should also include the risks involved in deviations from these special factors.

4. *Contract classes.* A contract class consists of all contracts the company groups together for purposes of determining nonguaranteed elements. In general, a class will consist of all contracts that are of a similar type, such as UL or excess interest whole life, have the same structure of guaranteed and nonguaranteed elements, are based on the same anticipated experience factors, are issued over a continuous period of time, and have similar marketing objectives.
5. *Contract factors and anticipated experience factors.* Contract factors are values defined in the contract or values emerging from the operation of its terms, such as face amount, account value, surrender charges, maximum cost-of-insurance charges, and minimum interest. Anticipated experience factors are those elements in the redetermination reflecting expected future experience.
6. *Modeling and averaging.* It is possible that significantly different levels and patterns of premium payments will emerge among the contracts of a given class. These should be reflected in the redetermining charges or benefits by modeling, by appropriate averaging, or by classification of contracts.
7. *The impact of likely deviations from anticipated experience.* Actuarial advice is based on estimates of future experience. It is possible that actual experience as it emerges could be different from that anticipated. The actuary should furnish information concerning the impact of likely deviation in experience.
8. *Sensitivity testing.* Sensitivity testing of the impact of likely deviations in experience should be performed to determine any material effect.

A suit has been filed charging insurers with increasing rates to cover DAC. I hope that by following *ASP 1*, suits of this nature can be avoided. I must point out, however, this suit was brought about because of policy language that stipulated cost-of-insurance charges would only reflect anticipated future mortality experience. If your cost-of-insurance charges incorporate loads for other contingencies, the policy language should specify this clearly in order to enable rate relief should economic conditions warrant.

Now let us take a look at the UL case study to see how *ASP 1* can be applied in principle. Here are the details for a Tillinghast client company that underwent the repricing of a UL in-force block of business during 1994. The company is a large company with assets in excess of $1.5 billion and had a significant block of UL reserves. Policies were issued from 1983 to 1993 with significant portions of business produced in 1985–86. The cost of insurance rates for new business purposes were changed in 1984, 1985, 1987, and 1989–91. Interest rates remained relatively constant from 1983 to 1985 but thereafter changed on a more frequent basis.

Since this was an in-force block of business issued over several years, determining the appropriate contract factors to use for profit testing could have been quite complicated. To simplify the process, the existing cost-of-insurance rates were used to determine a baseline and for investigating the impact of changes. No prior cost-of-insurance rate structures were used. The interest rates actually credited on July 1 of each calendar year, assuming an average issue year to establish the durations, were used retrospectively. The current interest rate was used prospectively.

The company generally uses anticipated experience factors derived from its actual experience. The company experienced mortality between 85–90% of pricing. Additionally, there were expense overruns of about $1 million a year. The company determined that these deviations were offsetting and used the prior pricing mortality and expense assumptions.

The gross interest rate earned was set at the credited rate plus the spread established for each product. A premium persistency study was performed prior to the repricing. The study was used to establish first-year premium and commission adjustments and renewal premiums used for the profit testing. The renewal commission assumption was changed to reflect agent retention. A macropricing system was used. The prior pricing cells were updated with current assumptions. The profit results were generated as though these cells were new business products. Inflation of expense factors was assumed to begin in the current year and continue until the factors doubled. Demographic information was obtained from the UL valuation system. Number of policies, face amount, and cash and account values by issue year were obtained for each product. This information was used to determine where the most emphasis should be placed for repricing and to calculate the estimated cost of the changes. Grouping by issue age was used to limit the number of pricing cells. Other than prohibition against recovering past losses, there were no regulations affecting this redetermination. Since cash-flow testing is performed on an ongoing basis in conjunction with year-end financial reporting, and since small changes were being recommended to an established block of business, no additional cash-flow testing was performed as part of this repricing process.

In all, there were nine products involved. Series I was issued from 1983 to 1989, and Series II was issued from 1990 to 1993. Repricing was conducted as of year-end 1993 with changes effective during 1994. The results of the repricing changed cost-of-insurance rates on two of the Series I products. Cost-of-insurance rates and product loads were adjusted for both Series II products. The adjustments were expressed as multipliers of the original factors in order to keep system changes to a minimum.

The survivorship market is a relatively new one. The first issued products of the current era were introduced about ten years ago. However, most of the business has been produced since 1990. Last survivor products by their nature are long-term obligations. Death benefit payoff will not occur for 35–40 years. The pressure for pricing margins to hold up over this long of a period exposes companies to greater levels of risk.

I would like to briefly highlight specific issues inherent with some of the pricing assumptions employed, which may lead to repricing concerns later on:

1. *Mortality.* The survivorship market is geared to individuals 55–75. Most companies lack credible older-age experience, especially for females.
2. *Underwriting expenses.* Large size policies, sold to older-age individuals, require maximum underwriting requirements with accompanying higher levels of expense. Early duration cost of insurance rates are almost nonexistent, making recoupment of expenses difficult.
3. *Multiple submissions/not taken ratio.* On average, 25–30% of policies that go through the underwriting process will not be placed—a result of case shopping. Unit expense factors must take this additional cost into consideration.
4. *Section 7702.* Definition of life insurance rules are unclear for multiple life products. What is clear is that companies and buyers of these products want the

proceeds payable as death benefits. So, what happens at maturity? Better yet, when is maturity?

5. *Lapse rates.* It has been assumed that survivorship products being matched to a specific need have the expectation for a high level of persistency. This will be enhanced if the policy is owned by a trust. The profitability of a product priced with a level 5% lapse rate may evaporate if lapse experience is actually half this level.
6. *Joint equal age versus the Frasier method.* Joint equal age rules were proxies for more exact methods of combining mortality. Some state insurance departments will not accept them because these rules produce inaccurate rates at most late durations. Joint equal age rules were applicable to products marketed primarily from 1985 to 1991.
7. *Age extreme cases.* Originally, the survivorship market covered ages 55–75. The products were designed to be high protection oriented and low premium funded. The principal profit source was mortality. Because of low mortality cost these products are excellent accumulation vehicles. More than a 10–15-year difference in insureds' ages create rate inadequacies no matter which age calculation method is used. Therefore, companies must be aware of grandparent and grandchild combinations.
8. *Product design.* Products designed originally as protection-oriented products are loss leaders when used as accumulation vehicles, especially if funded with single premiums.
9. *Reinsurance.* Companies with low retention levels can compete in the survivorship market only if adequate reinsurance capacity can be provided. At early durations reinsurance costs exceed mortality charges. In addition, only a limited number of reinsurers participate.
10. *Break-even year.* Low mortality margins and high acquisition costs push the break-even year beyond 15 years. With the potential uncertainty of pricing assumptions, the break-even year may be even later. How long are companies willing to wait to make money?

The presence of these pricing issues dictates the need for extensive sensitivity testing when developing survivorship products. It is well worth the effort to perform such tests now rather than be faced with adverse experience later.

MR. THOMAS A. PHILLIPS: When I was doing research on the topic of revisiting the pricing of traditional whole life and term insurance in force, I noted that this was anything but a new topic. My shelf of actuarial books includes the title *Distribution Of Surplus,* which was published in 1937. Since then there have been many study notes, sessions, and papers on various aspects of repricing your in force and the factors that go into that.

In looking over the mass of material that has already been presented and discussed on revisiting your in-force traditional policies, I decided to take the approach of reemphasizing the basic core ideas that have not changed over the years and trying to bring up what has changed in the last few years and what new ideas are arising. I will also attempt to predict some trends into the future.

To begin I should mention some things about our firm. I work for a large mutual life insurance company. We have close to 750,000 of what we consider traditional

participating life insurance policies in force, with over $50 billion of face amount and over $3.5 billion of statutory reserves. So, needless to say, the managing of the pricing of our in-force policies is a very important consideration to our corporation, and we revisit or reprice our existing policies on a regular basis. We take our mutual company status very seriously, and we attempt to treat all of our policyholders with equity and with considerations to the long-term goals of the corporation.

I am going to talk about things from the perspective of paying dividends on your existing blocks of business. Many of you have more or less traditional policies with nonguaranteed elements or term policies with nonguaranteed premiums. I hope to speak generally enough so that what I say is applicable to any product on which you want or need to revisit your assumptions. We all realize, of course, that there are some theoretical differences between factor adjustments for participating policies and nonparticipating, nonguaranteed policies, but I also think that we realize that these differences have tended to blur in actual practice. Also, I do want to recognize that there may be occasional times when you revisit your existing portfolio of traditional products for special purposes, and I will comment on that later.

I would like to start by reemphasizing what Larry said about *ASP*s. Whenever the issue of revisiting a traditional portfolio is discussed, we need to remind ourselves of the applicable *ASP*. *ASP 15* discusses dividend determination; *ASP 1* deals with nonguaranteed elements. Both of these serve as excellent guides to all of us who work on product portfolios, for both traditional participating and nonguaranteed nonparticipating products. These standards deal with the various factors that go into dividend determination and give good advice as to how and what should be presented to upper management in repricing your in-force portfolio. *ASP 15* does not specifically recommend a time frame for dividend determination, and company practices do vary. At The Principal we look at major factors annually, but we tend not to reprice unless we see that a significant change is necessary overall.

The first question that usually arises when looking at any project is, "Why?" What benefits are there to looking at your existing portfolio? I would like to suggest at least four good reasons. First, from the company perspective, revisiting your portfolio allows you to maintain appropriate profit levels among all classes of policyholders. For example, consider the deferred acquisition cost (DAC) tax changes of a few years ago. We all revisited and repriced our portfolios at that time to correct for the extra cost where possible. This was the obvious reaction to a tax that lowered our profits.

Second, it is also possible that some old blocks of business may be mispriced, or possibly misreserved, in light of today's practices. We have had a number of old blocks of business that were reserved on a very conservative basis, and we have looked at all those reserves over the past few years and adjusted them downward where possible.

From the policyholder perspective we revisit our portfolios to make sure we are charging customers the correct costs for the risks they present to the company, and no group is being charged an inappropriate amount for the risks assumed. I realize that company profits also fit under this heading. Profits are one factor of determining equity. However, here I was thinking more in terms of factors like mortality, for example. With the increased number of underwriting classes that we are seeing today, determining appropriate

mortality classes among generations of policyholders is becoming more difficult. I will address that in more detail later.

A third reason for looking at your existing portfolio is to make sure that it is meeting marketing needs and goals. Here I am thinking about specific marketing situations. We like to think that our products are sold to fit the specific needs of customers and that our products will fit those needs over time. Probably the prime example where our products have recently failed to fit the needs (or at least the goals) of our policyholders is in the vanishing premium illustrations of the mid-to-late-1980s. I would like to be able to say that at The Principal, we were able to do something specific and solve our marketing problems with vanishing premium illustrations, but actually we have had considerable discussion about what to do with existing policies where the premiums were not going to vanish or policies where the premiums had vanished and were reappearing. We came to almost no conclusion. Overall, our customers have been understanding about the interest environment that caused this situation. In certain cases where the situation was severe, The Principal finally decided that it would consider adjustments in base policy face amounts to produce vanish based on current interest rates.

The final reasons for looking at your portfolio may be the most obvious: regulatory law and simple good business practice. New York Circular Letter No. 4, for example, which applies to UL and other flexible factor policies, requires us to review policy cost factors at least every five years. New York law is only illustrating what is actually good practice: it is a good idea to keep up on existing products to keep control of pricing. If you do not revisit your portfolio and make adjustments on a regular basis, you may find that several factors are considerably out of date, and large changes that result might be difficult to implement. For example, if you have neglected your expense factors for a few years, hoping for some improvements, you may find that the effect on dividends of some groups of older policies is politically unacceptable in your company. In such a case it may be necessary to gradually implement changes or find different ways to allocate your expenses.

From another perspective, customers expect us to deliver products at a competitive cost over time, and I expect that most of us want to maintain and develop better long-term customer relationships. Especially with respect to traditional and term contracts, companies tend to see repeat sales and conversions. Revisiting your existing products allows you to keep those products priced correctly and can also give agents the opportunity to visit existing customers on a regular basis and maintain customer contact.

From the company side, I would like to point out one more consideration when you look at adjusting the cost of your existing portfolio: there can be a lot of profit leverage in adjusting your existing block of business. A small change in a pricing factor can produce significant income. Let us do a simple experiment. Take your existing block of business on which you can adjust factors, either dividends or some other charge. Now decide that you want to raise an extra $5 per policy, per year, to offset higher expenses. Multiply $5 by the number of policies that you have in force and decide whether that would have a significant impact on your net income.

What has been happening with dividend scales in general? It has been stated that dividends tend to be sticky downward, that is, companies do not like to show a decreased dividend scale. In our company we get more refined. We do not like to show any policy with a dividend less than the prior year's dividend.

However, the industry seems to be comfortable with the fact that dividend scales are coming down. Generally speaking, our customers have recognized that interest rates are lower in the economy and accept it when they see a corresponding reduction in dividends.

We have had three factors that have worked against dividends in the last few years: the interest rate environments, the DAC tax, and the increase in the federal income tax rate. It does look like companies are reacting to these factors with lower payout on existing policies. If we look at the latest results in total dividend payout from *Best's Review* of July 1994, it does seem that companies are increasingly willing to show (and pay) lower dividends: the *Review* shows that total dividends paid in 1993 were only 1% higher than dividends paid in 1992. More than half the companies paid lower total dividends in 1993 than they did in 1992. The lower payout was influenced by the lower interest rates in 1993, but I greatly suspect that many companies reduced dividends more than the amount of decrease in the interest rates.

Let us turn to what has changed and what has not:

1. *Equity.* What is the same? We continue to have a strong belief in the equity concept. Customers should equitably share the costs of their insurance. What has changed? There is an increased awareness today that corporate financial strength is important and that customers should equitably contribute to that. Five to ten years ago individual equity, making sure that each individual customer was being charged appropriately, was one of the most important considerations in our dividend scale work. We did overall projections of dividend payout and effects on profits, but we put more emphasis on individual factors. Now the situation has become more balanced. While we still pay a significant amount of attention to individual equity, we have increased our attention on the overall payout and the effect on profits and surplus, so that we are now doing a better job of balancing the surplus needs of the corporation with individual equity.
2. *Contribution method.* What is the same? We still attempt to maintain as much individual equity as possible by following the contribution method. At The Principal we use an asset share fund approach to determine dividends. What is different? We are developing an increasingly complex and varied number of products; the contribution approach is becoming harder to define and implement on our computer systems.
   A prime example of the complexities that we now face is the blended whole life concept. We have recently developed a blended product where we combine traditional whole life insurance with a combination of decreasing term and increasing paid-up additions as an additional product feature. The contribution method of calculating dividends on that product will be difficult to maintain in the future. The term insurance costs will need to be balanced with the term costs of our other products, and determining appropriate acquisition and maintenance costs on the product in the future will be a challenge. Since the product can be purchased with a broad range of combinations of base insurance, term insurance, and paid-up insurance, some of our concepts of "per-policy maintenance expenses," for example, have needed to be altered.
3. *Dividend scale systems.* What is new? Over the past couple of years, we at The Prudential have taken to adapting our cash-flow-testing model to our overall dividend estimate. We use that to project dividend payout and surplus requirements over the next couple of years.

The basic idea is that we all have, to some degree, modeled our business through cash-flow testing. If that is a good model, it should give us a good indication of the effect of changes in assumptions on dividend payout and company surplus in the short term. Depending on how good your model is, you might feel comfortable running out the profits and surplus for a given block of business, or for your entire company, through your cash-flow-testing model. At the very least, it should give you a good indication of the effect of any particular change in a pricing factor on an existing block of business.

For our model we can fairly easily model one set of "actual" assumptions versus the second "assumed" set in the dividend payout formula. This should give us a rough idea of the effect on surplus of continuing a given dividend scale in light of an expense shortfall.

We tend to take a fairly short-term perspective, looking only at the next couple of years. Depending on how much you trust your projections, you may go out several years to test the effects of changes.

4. *System constraints*. What is new? When I began at The Principal more than eight years ago, a dividend scale change was one of the most important projects a company could undertake. One major change since then is that we are starting to run into system constraints that we have not seen before. Dividend redetermination has become a more complex project in itself, and it is now facing much more competition from other projects. This change manifests itself in two different ways. First, the dividend scale changes are now balanced with other projects in terms of values to our customers, and second, dividend scale refinements, which produce small changes in equity, are increasingly ignored in light of more important considerations.

Again, five to ten years ago we planned on and devoted considerable time to fine-tuning factors among existing blocks of business. Today, in light of scarce computer system and actuarial resources, we use much broader strokes of equity, and we recognize when other projects will produce better value to our customers.

We are also trying to tailor our resource needs to projects. Our traditional policies are relatively easy to reprice and usually can be handled with factor changes. So, we try to devote fewer resources and keep changes simpler for that block of business.

The result is also that we will be planning our dividend scale changes much more carefully in the future. Again, if I can predict, we will see more massive dividend scale adjustments on a less frequent basis in the future and simpler dividend scale factor adjustments occurring more often.

What is going on with experience factors? I will begin with mortality. Mortality determination has become quite a bit more complex in recent years. The preferred class and even multiple preferred classes have become very common, and it is necessary to more carefully define mortality blocks. We, for example, have not settled the debate over whether business issued on the new preferred standard basis should be separated into its own mortality class, isolating it from past blocks, and, if so, how to do that. Our arguments center around two ideas. First, we have lowered AIDS testing limits quite a bit in recent years and are generally doing enough underwriting at relatively low face amounts to determine preferred status. From that we may infer that mortality on recently issued business might be better than blocks issued five to ten years ago. Second, on the opposite

tack, we build long-term relationships with our clients, and we sell a considerable amount of business to existing customers. We need to be as consistent as possible in mortality classes to try to eliminate antiselection from people who are healthy enough to drop their old policies and obtain preferred status on new contracts. This leaves the old policies priced inadequately.

With respect to mortality experience we have in recent years gone to a database arrangement for our mortality studies in which we record all the policy information in a database by mortality class. We are able to extract that information based on any type of mortality class we desire. We hope this will keep us in control of the information necessary to manage the increasing number of mortality blocks.

Currently, we at The Principal are in the position of being able to break down most of our expenses on a functional basis. We are able to break out our expenses into sales, underwriting, issue, overhead, and many other categories, and sales and certain other expenses can be broken down much finer than that. We further break things down by product line, that is, annuity, life, and health. We are also able to break things down between home office and field expenses.

The traditional approach to dividend determination has been to charge all policyholders the same expense charges. Our definition of equity was to put the same unit expenses into the dividend scale for all policies. Today, I think that concept of equity is being challenged. There is an increasing awareness at our company, and I assume at others, that different types of insurance have different costs of maintenance, especially in terms of existing blocks of business. We are starting to recognize that our blocks of old traditional business and term business are less expensive to maintain than our current set of complex products. We are beginning to wrestle with the idea that different unit costs might be appropriate for existing blocks.

The Principal has never believed in marginal expense pricing, and we do not particularly view this as a method to marginally price our term insurance, for example. We attempt to charge an appropriate level of expense for the specific product. If I am allowed to venture another prediction, I would predict that as we get more sophisticated in our computer systems and in our expense allocation systems, we will move closer to charging appropriate expense levels by product.

Another consideration with regard to expenses is the way we handle existing blocks of business that were priced before the succession of tax changes in the last few years. I have already mentioned the DAC tax and the higher federal income tax rates that were not in the original pricing of many of our policies. We have usually made adjustments to handle the additional costs by making surrogate charges that approximate the new costs. This is another situation that needs to be constantly monitored on existing business to make sure that the charges continue to match the costs.

As a final topic, I will turn to something more difficult: rate of return on existing traditional business. A frequent topic of discussion at most firms is the expected profit level of their business, however defined: return on equity, return on investment, or profit margin as a percentage of premium. In most cases, we have defined at issue an expected level of profit from our existing blocks of business. The question arises when, if ever, is it appropriate to change the expected rate of return on an existing block of business?

A few years ago I think I would have concluded that there are not many situations where it is justifiable to increase the expected return on existing business. Now, however, I think I would come to the conclusion that existing policyholders benefit from a strengthened corporate financial position. In particular, existing old traditional policies, which have a relatively large reserve or cash value, should have a large stake in protecting that investment and should be willing to pay a cost to protect that value. I could see the appropriateness of an increased charge on old blocks of business that protects policyholders' investments.

I have to temper those remarks with a comment: I am told by our legal people that certain states, New York and New Jersey, do not allow you to explicitly change your profit factors when repricing. I have one other brief comment on dividends. We need to pay attention to the proposed illustrations regulation. The proposed regulation requires the illustration to bear a close relationship with experience, and this could cause us to look more frequently at pricing factors for both new and existing policies.

To summarize briefly, what is the same? I still think we have the basics correct. What is new? I think we are adapting to today's business environment. We see that customers want an increased emphasis on corporate financial strength, and we are moving in that direction. We see that customers want competitive products. We have all seen an increased emphasis on expense control at our companies, and we need to adapt to that position. Our existing traditional customers, as well as our new customers, are part of our marketplace, and sometimes are the same as our new customers. So, it is important to keep their pricing appropriate for their risk.

MR. MICHAEL E. DUBOIS: As Linda had mentioned earlier, the bulk of my experience has been in both pricing and financial analysis of individual life and annuity products. To be more specific, my experience has been with annuities for approximately the last ten years. I will be attacking this subject from the point of view of annuities and focusing on what I think is probably one of the more important aspects of repricing, the activity of monitoring. Monitoring is the key to repricing.

Let us start with a definition. The *American Heritage Dictionary* lists the following definitions for monitoring: (1) To keep track of systematically with a view to collecting information. *Monitor the bear population of a national park. Monitor the political views of the people;* (2) To test or sample on a regular or ongoing basis. *Monitor the drinking water of the city for impurities*; and (3) To keep close watch over, supervise. *Monitor an examination.* Monitoring our products means knowing what is happening with sales, persistency, expenses, taxes, and more. Repricing involves collecting this information; analyzing its impact on the company, the client, and the distribution system; and acting where appropriate.

I will address four major issues. The first could be termed, "Why do we reprice?" or "Begin with the end in mind." As has been mentioned earlier, we need to know where we are going. It is important to understand the goals of why we are revisiting the pricing of our product. These goals will shape how we address the issues. The second major issue could be termed, "Repricing begins with pricing" or "Be proactive." When we design and implement our products, we need to consider how we plan on managing them into the future. Choices made at that time can make our revisits a cakewalk or possibly extremely difficult. The third issue is sensitivity testing. Numerous factors impact how

our products perform. The final issue is monitoring systems. Numerous individuals within our companies can help us manage our products. They must be brought on board and made aware of their roles.

Why do we reprice? There are two major reasons for repricing. One is to gather information about where we stand, understanding where we are. The other is to take action, deciding where we go from here. When we are trying to gather information, we are either trying to evaluate where we stand relative to earlier plans, or we are trying to compare ourselves with our competitors. We may be looking to see if we met our profit targets, or if we are meeting the sales goals that we have set. We want to take a look at how we stand versus our competitors, both in terms of how our products fare and how we are doing in sales.

A number of parties are interested in how we are doing. Internally, upper management is always interested in how things are moving along so that it can better manage the business. The boards of directors of all our companies are interested in that, too. Not only do they need that information to manage the business, but also incentive compensation is often based on the results that we achieve.

Externally, probably the most important factor nowadays is the rating agencies. They want to see how we are performing. They want to understand why certain products are doing well, why certain products are not. They want to see if we are managing our fundamentals correctly. Additionally, the regulators do take an interest also.

When we move to take actions, they generally come in one of two arenas. One will be product actions. We can take a look at the marketplace and decide whether it is a market in which we can make a profit, be competitive, and have a meaningful amount of sales. If we determine that this is not possible, we may withdraw our product and not replace it. In some cases a product has been on the market for a while and has just aged. There may be things that need to be done, so we may withdraw and replace the product. Finally, as with dividendpaying products, UL products, and a number of our annuity products, we may have nonguaranteed elements that we can modify to hit profitability targets or to improve competitiveness.

The other types of actions that we can take are distribution-oriented. We can take a look at the compensation structure of our products. In some cases our results are poor because the compensation is not in line with what most of the other companies are paying. We may need to increase it. In other cases, in order to improve profitability, we may need to decrease compensation. We may need to look at how we are supporting our product from a marketing point of view and increase the marketing support. We may also, in our review, take a look and determine that we need to change the markets that we have targeted.

In the lean, mean environment that we are in today, we cannot afford to spend massive resources to revisit the in force. As Tom indicated, there are numerous projects competing for the resources within our companies. Pricing and repricing must isolate critical assumptions and methods of monitoring those assumptions. Sensitivity testing allows us to find those assumptions whose variance causes large changes in our profitability, both positive and negative. We then need to use experts to determine the likelihood of that change and the range that we are likely to see.

In the realm of macropricing that has become common, we are not only looking at profits by cell, but also we are looking at pro forma financial statements. They are a very important tool, and we need to use them. A large change on a unit basis may be irrelevant when we take a look at it on a macro basis. Conversely, we may have very small changes for a larger block on a unit basis that will have massive impacts on a macro basis. The $5 per policy times your number of policies in force that Tom mentioned illustrates that.

In my experience we have several key assumptions that should be watched closely. Not surprisingly, the most important is sales. For good reason, upper management is always interested in sales. If you put a product out on the street, development expenses have already been incurred. People are supporting that product. If you do not generate enough sales, you will not hit critical mass, and you will have a failure on your hands.

In addition, a number of our assumptions assume various mixes of business, age distributions, qualified/nonqualified distributions, and others. By examining your sales you can see whether you are hitting the distributions that were targeted when you priced the product. Another key factor that you can look at with respect to the sales is the average size policy being sold. In many cases, if we cut our average size in half or double it, we have a very strong impact on the profitability we will see.

The other major factor that I think we need to watch is persistency at the contract level. We should take a look at how long policies remain in force, our account values, and the use of partial withdrawal provisions. How fast is money moving out through use of our free corridors or other such provisions? Finally, we should watch our premium persistency. Are people continuing to pay premium, or do we have people dumping in a lot of money in the first year and gradually finding other investments?

There are other assumptions that probably have a less direct impact or that are less important to monitor on a continuing basis. Expenses are a good example because of their nature. Most companies have a fairly good handle on their expenses. We look at those generally once a year and have people monitoring budgets. Due to the good understanding of our expenses, the biggest problems we have in that regard are a failure to reach critical mass and changes in average policy size. This is not to say we do not look at expenses, but it may be one thing that we downplay slightly in order to focus our energies.

Interest is another area that we monitor. We set our crediting strategies, and those strategies allow us to monitor and change the interest frequently. We will see changes in the gross rates earned, but we rarely see changes in the spreads that we need to earn on our investments. Finally, changes in taxes happen less frequently. These changes impact other companies, and we usually have some time to react.

The impact of all of the changes that I have discussed are going to be impacted by product design. Therefore, from product design to product design, various assumptions will be the most critical. Sensitivity testing will help to identify this.

I would like to briefly discuss the monitoring systems at our disposal. We have our financial reporting systems. These systems produce results for our annual "blue book" reporting and SEC reporting. There are quarterly reports that go to the states that contain

a wealth of information. Our cost accounting systems give us information on expenses so that we know we can track allocations by product and function. Our administrative systems have information at a detailed policy level. It is on this level that we can get information with regard to lapses, average sizes, and other factors. Finally, we have our sales reporting systems that give us information on sometimes a daily, even an hourly basis.

Results from our financial systems are generated very frequently, whether we want them or not. They are quarterly results and are publicly available. One of the benefits we derive from this is a basis for comparison with other companies, albeit there are certain differences between companies and how they report these results. The fact that the results are publicly available will result in questions from broker dealers, our board of directors, and rating agencies.

We have some specific tools that we can use. Our general ledger is always a valid tool. When you set up your administration system you can organize it so that you are capturing such items as premiums and surrenders at various levels of detail. This will provide you with a source to monitor performance.

The cost accounting system is another tool that we have that allows us to examine our expenses. You can study the allocations that are occurring, although you must be very careful when looking at allocations at levels as fine as an individual product. We still have to remember that no matter what systems we have in place, our people are ultimately reporting their time. This will impact the accuracy of the expense allocations.

Finally, we do reserve reporting. The level of detail that you are able to get from financial systems varies from company to company. At Massachusetts Mutual, in some cases, we have reporting at a very detailed level. We can look at results for a given product. In other cases, the most detailed results are at the line of business level.

There are several uses for these results. You can compare your results with pro forma financial statements or forecasts. You can make rough persistency estimates or look at your surrenders versus your average account values. You can use the analysis of reserves or a gains-by-source analysis to get an idea where your nonallocated factors are leading you. Finally, you can look at your unit expense analyses.

Administrative systems are a gold mine. You can get detailed information at a policy level customized to your own company. The only disadvantages are money and time that must be spent to obtain the information. These administrative systems are the best source of persistency information. Most lapse studies are done from some type of administrative system data. You can obtain breakdowns by duration, age, sex, region of the country, market, and initial premium size. You can determine what kind of utilization is being made of your partial withdrawal features. You can study automatic withdrawal utilization. You can essentially isolate the source of your persistency problems and look for ways to modify the handling of your in force to better manage it.

Your administrative system is also the source for looking at premium patterns of your in force. You want to determine how much of your premium is coming in as initial lump sums. You can take a look at these patterns by market and by age and determine your persistency by payment mode. You will probably find out that many people paying on a

monthly basis are more reliable than people who are paying on an annual basis. You can determine whether an electronic fund transfer, in which money is drawn directly from the client's bank account to pay the premium, would create better premium persistency.

You can also gain an understanding of your client base by looking at your administrative system. You can determine a distribution by market. How much is coming from the individual retirement account market? How much is coming from the tax-sheltered annuity market? How much is coming from qualified employee benefit plans? You can take a look at your sex, age, and premium distributions. Databases are available which cross-reference income level with the neighborhood of your clients. You can use the system to determine the states in which your distribution system is selling. If there are variances in your product on a state-by-state basis, you can analyze the effect. Finally, you are able to study average contract sizes. As I mentioned earlier, the average size of your contract, initial premium, and account value have an impact on the profitability and the price of your product.

Sales reporting systems can help to answer the question, "How much have we sold?" This is normally the key question in the minds of upper management. Usually we build the systems for management reporting so that there is the potential for a lot of detail. It is the only system that the sales division will have at its disposal and should serve to motivate it to get better results.

We can obtain the following information from a sales reporting system. We can determine our key distribution channels. From that we can decide whether we want to play to our strengths to increase the sales coming from our strongest channels. We can determine what we need to do to improve the weak areas from which we are not getting sales. We will know which distribution systems are most reliable in terms of feedback for current and future product design. This can take the form of input to the most important product features or the competitive environment. I would suggest that you use the Life Insurance Marketing Research Association (LIMRA) to get market share information. This will help to ascertain your position within the marketplace.

For a career agency system company, one of the things that you also may do is examine the cross-selling being done by your agents. If people are being sold annuities, are they also buying life insurance policies, and vice-versa? You may also want to take a look at which agents are doing the best production. Sales by market is very important. You can get leading trends of what is happening in your administrative area by taking a look at your sales information. With mention of the DAC tax, we often have one product that covers both qualified and nonqualified markets. We make assumptions as to the distribution between qualified and nonqualified. If that mix is off from what we project, it will impact pricing. We will see this sooner by watching our sales. We can make comparisons of the current year's sales versus prior years' sales versus our sales goals and our pro forma financial statements. Trends are very important. We can also look at our sales relative to the competition.

To summarize, plan your repricing when you price. Create pro forma financial statements. Determine the key assumptions through sensitivity testing so that you can focus your energies. Set a schedule for your revisiting. Get a management commitment to monitor. This is very important. At Massachusetts Mutual we have product audits focusing on various things to direct the attention of management. We look at our sales statistics. We

look at our distribution by market. We look at our client profile. We look at our agent profile. We look at the financial results. We look at the competition. We get a perspective from our distribution system. And then, finally, we make recommendations for a direction for the future.

Doing the ongoing revisiting will take time. You will be competing with other projects. Revisiting may lag, but we must not forget to do it. When we are pricing we need to build our monitoring systems, working with the areas in our companies that will supply us with the needed information. We work with the financial reporting areas, the system staff, the sales area, and the administrative staff who will be supplying us with information. It is very important to set up early warning systems. Some items need to be caught early, and if we can get everybody to buy in, we are going to be in better shape.

Finally, this all leads to catching your problems early. You get your car's oil changed every 3,000 miles. You need to set up regular maintenance. Cars have warning lights or odd sounds. When that happens, you take the car in to be serviced. Just as with a car, we have to listen and watch for problems. Monitoring is not a discreet activity. It is a commitment over the life of the product. Just as a well-maintained car will run better over its life, a well-maintained product will meet the needs of all parties best.

MS. STRECK: I have a question for Larry. In regard to the UL case study on which you worked with a client company, you mentioned that the cost-of-insurance rates from current schedule were used even though that particular company had a number of changes over the years. Is that consistent with industry trends that occur in the different projects with which you worked?

MR. STERN: Because there were a number of changes to the new business cost-of-insurance rates over the time period, the company chose not to try to do a weighted average of the actual rates that had been applied during that ten-year period. In other situations where we have been looking at repricing of in-force blocks of business, the cost-of-insurance rates did not change that frequently, so companies could more easily determine a weighted average of the actual cost-of-insurance rates that have been applied. This is akin to the cash-flow testing that the company does on a year-to-year basis because there are obvious cost-of-insurance rates that have been set up for those modeled age cells.

MR. MICHAEL A. CROW: This discussion has focused mainly on technical aspects of repricing in force and few of the marketing aspects. One perspective that I have not heard discussed is that of the sales organization or agents. For the case study that was discussed, what participation did the agents have on deciding how to reprice the in force? My own experience is that, particularly when you are dealing with policies sold in the mid-to-late-1980s, where we have taken big dividend reductions, we are getting calls where vanish periods have doubled or even more. These agents are embarrassed. They are a significant source of power when you are trying to resolve the repricing problem, because they have such a great effect on your future sales. I wonder if anyone on the panel or anyone else here can provide any information or experience on how to deal with this issue.

MR. STERN: With respect to this particular company, we were not necessarily involved in the activities that took place after the repricing was done. I do have some experiences with another company that repriced at the time the DAC tax and the change in the federal

income tax were put into effect. It was a stock company with a brokerage emphasis. The people there came up with a letter that was sent to the field because they felt that the agents were the direct customers of the company and that policyholders were clients of the agents. They came up with two communication pieces. One was a piece that was sent to the agents explaining the action of the company. At least they had a fallback position because they could explain the change on the basis of the DAC tax being put in place. They also prepared a similar communication that was sent to the policyholders. The effect of the change for the DAC tax was put in place on policy anniversaries specifically so that the policyholders would not see on their annual reports a big swing in the loads that occurred during a particular policy year. Therefore, there was not a whole lot of comparison that could be made from one year to the next. At least the agents were informed well in advance that the company was going to take this action, and they bought into the process and the principle behind it.

MR. DUBOIS: Based on some of the experiences that we have had at Mass Mutual, we have had some repricings with our variable annuity product over the last five years. In one case we ended up raising guaranteed elements, and in the other, we ended up reducing compensation for the agents, neither of which were very popular. However, we did bring them in, and one of the key items of focus was the need for the financial strength of the company. We brought them in and listened to their views. We told them our reasons for the changes, and we came to a joint conclusion. In order to maintain the financial strength of the company, which was important to the agents, as well as to the management of the company, we made the changes. I think it is important to bring the agents in. In some cases you are going to be dealing with distribution systems other than agents such as broker dealers or, in the future, bank channels. The distribution system is responsible for selling the product, and as I indicated during my presentation, sales is the key to much of our business. If you do not have participation from the distribution system in this process, you are walking into a land mine.

MR. PHILLIPS: At least in our case our agents are aware that we regularly go back and look at our policies. Since they know that this is going to come about, the changes that they see are anticipated to some extent. However, we do not bring them in to discuss those changes explicitly.

MR. DONALD A. SKOKAN: Mr. Phillips, you came close to discussing a question that I have. It has to do with profitability on in-force business. You talked about the fact that, at least at your company, you feel that it should not change as time goes on. At my company, I think this is fairly common. I also see it in industry surveys. We have a rate of return profit goal, and that becomes a little difficult to apply on business that gets quite old, if you have business that has been on the books at least past the profit test period. For a lot of the work that I have done, the profit test period would be 20 years, but you could be looking at policies that are 30–40 years old. I am not very comfortable in trying to decide what profit level is appropriate on those older in-force blocks of business, and I wondered if you had any comments about how you approach that question.

MR. PHILLIPS: We have a great deal of business that is well over 20 years old. One point is that we have tended to take a lifetime look at our policies. When we have priced, we have tried to price over the entire lifetime instead of just looking at 20 years. On our policies that are very old, we have tended to limit our profit factors to a factor that is tied

to reserves, because that is about the only thing you have for those old policies. Generally, the face amounts are small.

MR. DUBOIS: I will add my experiences with a mutual company. The people at this company generally look at profit on an asset share to cash value reserve basis at the end of 20 years. On business that is in excess of that duration, they try to maintain a profit relationship based on that 20th year relationship. This allows the maintenance of a profit position on that older block of business. They use current experience for mortality and expenses to approximate a working asset share. Based on the last dividend scale change going forward, they attempt to pinpoint that same relationship at that point in time. This allows them to determine how much additional surplus could be released through the dividend scale.

MR. JUSTIN N. HORNBURG: I have a two-part question. Another group of stakeholders about which I did not hear much is regulators. When you are repricing your in-force business, both looking at dividend scales on traditional business and cost-of-insurance charges on UL, what kind of information will the regulators want and how detailed should it be? The reason that I ask the question is, I am specifically interested in a particular situation in my company where a block of business has been moved from one department to another. The second department has completely different expense structures. If you did unit expense studies, you would get different factors. If the regulators are going to be looking for certain information, is it enough of an explanation to say, "The business was moved from one department to another, and now we have completely different unit expense charges?"

MR. STERN: Interrogatory No. 3 to Exhibit 8 in the annual statement deals with nonguaranteed elements. When you change the nonguaranteed elements from one year to the next, you are supposed to answer that interrogatory in that fashion and also provide the regulators with a description of what was done. Although they do not have direct authority to approve or disapprove a rate structure, the states want to be notified when cost-of-insurance rates and/or expense loads have been changed. I would make a practice of running it by them, although I do not think that they are in a position to say, "No, you cannot do that." But to satisfy their requirements, you should notify them in advance that you are going to take the action. With regard to answering questions on Interrogatory No. 3 of the annual statement for Exhibit 8, I am not aware of any regulatory official that has come back and said, "You cannot take this action."

MR. PHILLIPS: With respect to our participating or dividend paying policies, we do not have to file that anywhere. There is no specific regulatory authority that oversees how we determine those factors specifically, but I think there would be a lot of eyebrows raised at our company if we were to transfer a block of business from one area to another area which, for example, has much higher maintenance costs. You have made a contract with a customer, and on a higher ethical plane, you should not transfer the customer to an area where he or she is going to see significantly higher costs than those with which the customer started.