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ROLE OF THE VALUATION ACTUARY IN PRODUCT DEVELOPMENT

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- Relationship of pricing and valuation actuaries in Canada.
- Financial reporting system as an information source for product development.
- Interaction of the pricing actuary, valuation actuary, and investment officer in designing interest-sensitive products.
- Allocation impact on product development of expense. investment income, tax, and capital.
- Financial reporting information in changing premium rates for nonguaranteed premium products.
- Maintaining consistency between pricing and financial projection models.
- Reserve basis and nonforfeiture basis impact on product development, with special reference to lapse-sensitive products.

MR. ARNOLD A. DICKE: I am the Chief Actuary of Provident Mutual. We have a system whereby pricing is done in business units, and the corporate actuarial area reviews those pricing assumptions, so I have the role of reviewing pricing assumptions and profitability. Additionally, I am responsible for the valuation of liabilities for the company as a whole.

Mr. Jan L. Pollnow is Vice President and Actuary of the Hartford Life Insurance Company. He has company-wide responsibility for the valuation of reserves, financial analysis, projection of earnings, as well as product and profit review. He is also responsible for centralized business planning and corporate actuarial functions.

Mr. John T. Glass is Vice President and Chief Individual Actuary at Lincoln National. He is responsible for the valuation of reserves, negotiating and setting benchmark surplus guidelines, and providing financial projections. Additionally, he monitors the pricing process. Previous to his current position, he was Vice President and Controller for Lincoln National.

Mr. Alan K. Ryder is the Actuary for the Canadian General Life, a small Canadian stock life insurance company. He has the dual role of

being the company's valuation actuary and being responsible for pricing. He has the point of view of the Canadian actuary, who has to integrate a flexible valuation process with the product development process.

MR. ALAN K. RYDER: Federal life insurance regulation in Canada requires that the board of directors appoint a valuation actuary. This individual has the responsibility to value the company's policy benefit liabilities annually. The liabilities established are required to be both adequate and appropriate to the circumstances of the company with the implication that solvency and income reporting concerns need to be balanced in some way. The valuation assumptions may be updated annually to adjust for emerging experience. Few limitations exist on the assumptions used by the valuation actuary. However, the Superintendent of Insurance has the authority to reject a valuation. The result of this environment has been to create a dynamic and responsive reserving process, which should both enhance the solvency of insurers and facilitate product innovation.

Together the law and the Canadian Institute of Actuaries' (CIA's) Recommendations for Insurance Company Financial Reporting require a thorough valuation with consideration for all material contingencies including death, disability, conversion, and lapse. Expenses are considered with issues expenses deferred, subject only to a statutory limitation and a test of recoverability. Dividends may be treated either explicitly or implicitly. Assumptions for valuation purposes should be built up as the sum of an expect value component and a margin for adverse deviations.

The Canadian environment should facilitate product innovation. The process also can become a horrific burden should the pricing and valuation actuaries not agree. It is essential for the pricing and valuation actuaries to have a dialogue under any circumstances, but it is crucial to have this dialogue in our dynamic valuation environment.

There is a need and opportunity for agreement on assumptions. A valuation assumption can be thought of as having an expected value part and a margin. The decomposition of the valuation assumption into two parts allows for a much better understanding of the magnitude of the conservatism introduced in the valuation. It also allows for an agreement on the expected value part.

We have a product in Canada known as Term to 100. This product generically looks like level premium Term to 100 with nonforfeiture values which are generally considerably less than the asset share, and perhaps even zero. The pricing of the product typically uses lapse rates to subsidize premium rates. A pricing actuary might feel that the ultimate expected lapse rates may be four percent on this sort of product and the valuation actuary may think the right number is three percent. That may not sound like a material difference. However, some testing done by myself and by other valuation actuaries in Canada has shown that the difference of about one percent on this sort of product amounts to about ten dollars per thousand in initial reserves. In the absence of a dialogue, the pricing actuary might go ahead and

use his four percent assumption. The valuation actuary may use three percent, less whatever margin he considers to be appropriate, for example, one percent, and all of a sudden at year end, there's a surprise of two percentage points. A dialogue might have reduced this margin, and the surplus strain would have been better identified by the pricing actuary in the beginning.

There is also a need for consistency in techniques. Approaches to renewable term insurance, reentry term insurance, reinsurance, and the identification of issue expenses are areas where variations can be devastating. For example, I know of few pricing actuaries who would price a renewable term product without explicit consideration of renewal periods. But some valuations are still being performed as if the product was not renewable. Systems are the major culprit here, (although systems should not be allowed to stand in the way of a proper valuation), and the moral of the story is that dynamic products and valuation standards demand systems. It is essential to be using the same system for pricing and valuation.

For each new product, I have a "dialogue" with myself. It takes the form of substantial pricing and valuation research, including extensive scenario testing. Valuation research is done at the time of product development, not at year end. The valuation concerns are always given more weight than the pricing concerns, but a balance is somehow achieved. That's the advantage of being one person doing both jobs.

The bottom line on a dynamic valuation environment is that there is a golden opportunity to come to grips with the pricing and valuation dichotomy. Remember, however, that the valuation actuary, at least in the Canadian context, has the last word. The reporting relationships, the nature of the role, and the dominance of solvency concerns add up to considerably more clout for the valuation actuary.

I get much out of my valuation system from a product development point of view. It is essential to integrate pricing and valuation approaches right down to the system level. The use of the same system for pricing and valuation and the decomposition of valuation assumptions into the expected value and margin components yield tremendous benefits.

My pricing and valuation system is written in APL, and is more or less complete independent of my policy administration system. It is essentially an asset share type of calculation. To perform a valuation, we extract the required data from the policy data base, modify, group, and order the data as required, and transfer them into the APL environment. That data are then run through the valuation model as many times as we'd like. We can do all sort of sensitivity tests on live data, and if running a grouped valuation, we can get results in a matter of hours.

The use of an Anderson-type calculation and the separation of the valuation assumptions into the expected value and margin components means that we can, as a by-product of the reserve calculations, look at items like expected aggregate issue expenses, expected maintenance expenses, and expected claims and premiums, both gross and net of

reinsurance. These items are used to set, validate, or update pricing assumptions. They are also used to validate any grouped valuation we are doing. Getting this information has turned out to be an extremely rewarding practice. The expense information gives continuing reassurance that the expense assumptions are reasonable. Since we are quite small, the mortality information is essentially our only mortality study. The premium information helps to validate our grouped valuation models.

Since the valuation and pricing systems are the same, the valuation data is always nearby. We make good use of the valuation data in product design. Our valuation data system delivers information on distributions of business by amount band, issue age, duration, and premium mode. We also get average sizes, percentages reinsured, and persistency information. All of these pieces of information, and perhaps a few more that I haven't mentioned, make their way through the pricing or repricing process.

Finally, a decent job of valuing the liabilities cannot be done without a good look at the quality, duration, and return on the assets. One also needs to pay close attention to unamortized gains and losses. Our systems are not as well-developed in this area, but the information obtained tained in the asset review also makes us aware of the product design process.

MR. JAN L. POLLNOW: I will give you a brief overview of how the positions of pricing actuary, valuation actuary, and investment officer interact at the Hartford Insurance Group. A valuation actuary might report to the board of directors. The Hartford is organized in a way that would make this a fairly easy transition. We already have a semi-independent valuation actuary because our valuation function reports to the senior vice president and chief actuary. We basically have two operating divisions, the Employee Benefits Division and an Individual Insurance and Annuities Division. These devisions are each run by a senior vice president who is responsible for marketing, administration, product development, and the all-important bottom line. The product development actuaries report through this structure and are not directly responsible to the chief actuary, although there is certainly a strong "dotted-line" relationship.

We also have a separate investment function which is probably organized as reporting directly to the president. This is the same as at most companies.

The comptroller only has a dotted-line relationship to the president of the Life Operations, and he reports up through the comptroller of the Hartford Fire Insurance Company, and eventually to International Telephone and Telegraph (ITT). If you wanted to have an independent valuation actuary, you could have a dotted-line in there for the actuary as well, and he could report up to the Board of Directors, independent of the president.

Our valuation area at the Hartford is under my direction, and I report to the chief actuary. Our particular area is responsible for the

valuation of all reserves in the company and for setting profit targets and benchmark surplus guidelines. We also provide a financial analysis and projection function. Finally, we provide a product review and challenge function. With all of these various responsibilities, it is imperative that we work closely with the product actuaries and, of course, with the Investment Department as well.

The interaction should begin right from the start of developing a new product, and it must continue as experience develops and changes are made either to new products or even to the in-force products where possible. Naturally in today's environment, this has become much more important because of the trend to interest-sensitive products and an almost on-line ability of our agents to compare products by just putting them on their personal computers.

In developing a product, it is vitally important that the valuation actuary and the product actuary agree on the statutory valuation basis, because it's impossible for the product actuary to price his product if he doesn't understand the surplus drain that he is going to have and how it's going to affect his future profit stream. It doesn't make a lot of sense for the product actuary to design a product without consulting with the Investment Department. Let's say that 12 percent interest is needed in order to be competitive. If the Investment Department gets involved and says that they can match your anticipated cash flow at only 10 percent, you might not try to develop this particular product.

It is important for the product actuary to know what kind of statutory reserve strain and reserve release he can expect. This must include a review of benchmark surplus requirements as well as the valuation basis itself. Benchmark surplus has also been called target surplus, required surplus, or designated surplus. It is the amount of statutory surplus that is required by each product or line of business in order to reduced the probability of insolvency to a level with which management is comfortable. This level depends on the types of risk that are inherent in the product. These are commonly referred to as the C-1 or asset-default risk, C-2 or pricing-inadequacy risk, and C-3 or the interest-change risk. C-4 is a miscellaneous category that covers everything from governmental meddling to plain blunders.

The product and valuation actuaries must discuss the risks that are involved and agree on a benchmark surplus level. This level is important in determining what investment the company is making in the product and, therefore, what expected return it is going to have. For instance, too high a benchmark level can make the product completely uncompetitive. On the other hand, if you have too low a level, it could lead to some future problems with solvency or solidity and perhaps force you to make some decisions that you did not want to make.

For stock companies, generally accepted accounting principles (GAAP) valuation is also important in product development. The valuation actuary must make sure that the product actuary understands how the product will undergo GAAP and how reported profits will emerge. If GAAP profits could not produce a reasonable return on total capital, either initially or within a couple of years, there is a good chance that

the line manager and others in the company may decide not to develop the product. If I were a president within five years of retirement, and they told me that they were developing a product that was going to product a five percent return on total capital for the first five years, I'd tell them to forget it and find something else.

In the new valuation actuary concept, the valuation actuary will have more responsibility placed on his shoulders under this particular proposal, following what has happened in Canada. For instance, today he could point to the minimum statutory reserve requirements making it a lot easier for him to convince the product actuary that that is the appropriate reserve level for them to hold. As we go through this valuation actuary process, we may find that some of these minimum reserve requirements will loosen up or oven disappear. As a result, the valuation actuary is going to have to defend his valuation levels against an onslaught from the product and marketing people. This won't be completely new because even today, the valuation actuary has to defend the determination of his appropriate benchmark surplus level and the profit targets.

A modified guaranteed annuity (MGA) is what most people call a guaranteed investment contract (GIC) or a guaranteed return contract (GRC). It's a deferred annuity that guarantees return of principal at a specified maturity date and at a guaranteed interest rate. Any cash outs for early withdrawal are based on a market value adjustment formula specified in the contract. This particular contract cannot be written on an individual basis because market value adjustments are not part of the individual nonforfeiture law.

At the Hartford, we are currently writing this product as a group annuity and are actively promoting legislation to allow for the sale of this product on an individual basis. Next month, we expect the National Association of Insurance Commissioners (NAIC) will approve a model regulation for MGAs. Additionally, it is my understanding that in New York, legislation has been introduced which will allow for the sale of MGAs on an individual basis.

When we first began developing this product, we reviewed the valuation law and found that it could become critical in the product development process. Even under the current dynamic valuation law, a long-term compound interest guarantee can result in a substantial surplus drain at issue. This drain will either increase the price, decrease the interest rate you can credit, or reduce the return of the company.

This drain could be eliminated almost entirely by using a simple interest guarantee rather than a compound guarantee. This simple guarantee also negates the reinvestment risk each year. The guaranteed interest payment is either paid directly to the policyholder, or if he chooses to reinvest it, it's at a new guaranteed rate, which is based on the level of interest rates available at that particular time.

It was also important to get the Investment Department involved because we were planning to compete with single premium deferred annuities (SPDAs), paying at that time about 12 percent. The Investment

Department had to decide if it could develop a strategy that would allow for proper matching of our cash flows and still be able to provide a competitive return. The obvious choice was a five-year guarantee, that is, to invest in some type of five-year bonds. On the other hand, to use compound interest, you would probably want to use something like zero-coupon bonds. but back to the simple interest guarantee, we wanted to receive those annual coupons because we could either pay out the cash to the policy holder or reinvest that cash at current interest rates. Even this simple guarantee had some problems because the coupons on the bonds were semiannual, and the interest guarantees that we provide were annual. This gives you a little mismatch which had to be addressed. I'm not going to tell you how we solved it -- that's a trade secret.

MR. DICKE: In the process of developing this product, did the pricing people originally come up with a compound interest approach and then the valuation actuary's review of the product led to the simple interest concept?

MR. POLLNOW: The product actuaries played around the process and came up with the idea themselves. It was not a valuation actuary's idea. We're not that innovative.

MR. DICKE: Was it due to their awareness of the reserve strain that they wanted to change from the compound interest approach?

MR. POLLNOW: Yes, definitely.

MR. DICKE: So there was an interaction there.

MR. POLLNOW: The investment people, the valuation people, and the product people were all involved.

The benchmark surplus had to be considered in developing this product. We again had the interaction of the valuation actuary, the product actuary, and the investment officer. For instance, with proper matching, your C-3 risk or interest-change risk can be reduced to a low level. Thus, you don't have to set aside much surplus in order to support this particular risk. The C-1 risk or asset-default risk, on the other hand, depends on the quality of the bonds and can be eliminated by using government bonds, assuming you believe the government is going to be around. The risk could be substantial if you use low-grade bonds, or what are commonly referred to as junk bonds.

Another risk arises in this product because the market-value adjustment depends on a formula. This formula should be consistent with your investment strategy, and whatever degree of accuracy you have in that formula must be recognized in determing your benchmark surplus requirement (for example, the requirement that there be a maximum valuation interest rate). The valuation actuary then can review the investment strategy and the actual investments being made and decide that perhaps he can eliminate most of his surplus drain even on a compound-interest product. This could happen if the credited rates are

easily matched by yields on your actual investments, and for instance, maybe you have a zero-coupon bond. Hence, you could be exactly matched. So now you have built less margin into your valuation assumptions, and you might want to consider raising the benchmark surplus. On the other hand, if you feel you haven't changed your risk much, you could leave the benchmark surplus requirement where it was.

MR. DICKE: If, in the end, the valuation actuary is not satisfied with the result -- suppose, for example, the company decided to go ahead with an investment strategy that he didn't feel was appropriate -- what recourse would he have? Could he stop the product from being sold?

MR. POLLNOW: Yes, I think what would happen in our company is that the product would go up to the division manager first, and if he wanted to do it and the chief actuary still said no, the division manager could go to the president, and then it's the president's decision. Of course, that's where it ends today. When you go to your annual statement, we have a different issue as to whether or not the opinion would include this type of analysis today.

MR. JOHN T. GLASS: Philosophically, things are similar to the Hartford at the Lincoln National Life Insurance Company. Pragmatically, they don't work in quite the same way, of course. There is a distinct separation between the product development and the valuation function. The valuation function has the responsibility for all the statutory, GAAP, and tax valuation. While we do not have a formalized product review function, we do have a challenge function with respect to the pricing. So we can say to the product people, "You've got to put air in your basketball because otherwise the GAAP actuaries can't make it bounce."

Lincoln's entry into the universal life marketplace was like jumping into a pool without testing the water. This is exactly what the Lincoln did when it purchased First Penn Pacific in the fall of 1981. The potential for current and future sales of universal life looked extremely promising. At the same time it became clear that universal life was a unique product which required an administrative system completely different from anything we had developed before. Our solution was to buy one of the pioneer companies in marketing universal life, which meant that we acquired the computer capability right along with the company. This purchase facilitated a rapid entry on our part into the universal life marketplace.

We hadn't really priced the product, although we had a favorable impression of the return on equity (ROE) inherent in it. Nevertheless, at the time of purchase, there had been no interaction whatsoever among our valuation people, our product pricing people, and our investment people. This all developed after the purchase, and then Lincoln went back and tested the original pricing, using its own assumptions as to levels of expenses, mortality, persistency, and so forth.

Universal life was different enough from the typical ordinary life policy that pricing it was a real challenge. The reasons for this were many.

First, our product actuaries, who hadn't been in on the product design in the first place, had to understand the setup of the product. What were the unique features of universal life that made it different from a conventional ordinary life policy? Second, how could we properly ascertain the C-1, C-2, and C-3 risks related to universal life so that we could price it to achieve a target ROE level? With proper matching of assets and liabilities, you can work the C-3 risk component of your statutory minimum surplus or your benchmark surplus down. The valuation actuary and the product actuary at the Lincoln worked on this C-3 risk assessment and finally got it resolved. And the product actuary and the investment manager worked together to set up a tentative investment policy pending our company's ability to better project the cash flows needed on the liability side.

There were some other interesting aspects to the pricing. Mortality was fairly predictable, but there was no history of any persistency on universal life. Furthermore, it became necessary to distinguish between premium persistency, which was assumed at certain levels for pricing purposes, and traditional lapse rates, which were also assumed in the pricing structure.

The function of the interest was the most intriguing. Initially, it was necessary to define the interest function so that everybody was using the same set of terms. Next, it wasn't clear what would happen if the plateau of interest rates assumed in the pricing structure were replaced in the real world by a substantially different plateau. What effect would there be on a required interest margin in order to maintain the ROE?

While all this was going on, our company was in the process of asset segmentation. Assets were segmented on an initial basis as fairly as possible, accounting for a number of factors: the investment-year method, which had been in place within our general account for a number of years, appropriate lengths of maturities of assets, average yield rates, and so forth. Investment policy was developed for each of the segmented asset portfolios. It was agreed that the asset/liability matching process should be the driving force in investment policy. Although this was accepted theoretically, pragmatically, it was difficult to predict cash flows from a product as new and unique as universal life. We ended up staying reasonably short-term, along with most of the other universal life writers. We traded off some safety for yield, along with everybody else.

Lincoln National's official corporate ROE target is 15 percent. Managing the universal life interest margin is crucial in maintaining any target ROE. In the marketplace, the major universal life writers compete most visibly with interest rates.

There are universal life writers using an investment-generation approach, as well as those sticking with the tried and true "pot" approach. The marketplace is extremely competitive, and all three internal groups, the valuation actuaries, the product actuaries, and the investment experts are learning the necessity of working together to manage the interest margin inherent in this extremely interest-sensitive

product. Universal life is an entirely different ballgame in terms of the on-going management compared with conventional life insurance.

On the horizon, we see variable universal life. The insurance company will be off the investment risk but into a transactional world of substantial dimensions. More and more, this interest-sensitive product is becoming a consumer-sensitive product. Variable universal life offers unique challenges in terms of equity required, statutory valuation, and target ROE.

Cooperation and interaction among the pricing actuary, valuation actuary, and the investment manager are crucial, not only in developing the initial interest-sensitive product but in managing the product's profitability in the years following the marketing of the product. As the emerging role of the valuation actuary becomes better understood, more accepted, and better developed, the matching of assets and liabilities will assume even more importance than it has today.

There are doubtless a number of contributing factors to the interaction among those groups of people. Some would ascribe this interaction mostly to the development of interest-sensitive products. Others would cite the economic and cash-flow upheavals of the past years and the inverted yield curves as the primary factors. Whatever the reasons may be, they have in combination resulted in bringing together the insurance and investment aspects of our business into a more cohesive approach to management of the business. These results benefit our policyholders, our agents, the owners of our business, and the regulators.

MR. DICKE: On some of these interest-sensitive products, such as universal life, certain states, from the beginning, required statements made by actuaries as to the adequacy of cash flows and so on. Did any of those requirements have any impact when going back to the pricing process?

MR. GLASS: In our particular case, they did not. Those requirements related much more to universal life writers who had an interest rate based on an index.

MR. POLLNOW: In financial reporting and use of financial data in managing a company, inconsistent or creative accounting that eliminates all credibility from the financial data is the last thing we need.

We need consistency between pricing of products and the reporting of financial results. If management performance is going to be measured on the basis of financial results, such as return on total capital, then the method of pricing and how it will effect these financial results must be understood.

The fact that stock insurance companies must report the results on two distinct bases is of particular importance. One basis is statutory accounting, which is generally conservative and oriented toward solvency. The other is GAAP accounting, which is primarily used for reporting earnings to stockholders and to the financial community. The

relationship between these two methods and a means of providing the consistency between pricing and reporting are discussed in a paper by Donald Sondergeld entitled "Profitability as a Return on Total Capital" (TSA XXXIV (1982) pp. 415-33). The techniques described in this paper are used daily at the Hartford. This paper shows how, with proper allocation, the pricing results, which must by necessity relate to statutory accounting, can be translated into GAAP results and into anticipated returns on total capital.

The proper allocation of investment income, expenses, taxes, and capital, is critical to allow management to make appropriate decisions and manage its business properly. One item is no more important than another, although there certainly may be some differences depending on a particular product. For instance, the allocation of investment income is critical for interest-sensitive products. It wouldn't make sense to use just an aggregate basis for allocating investment income between your lines of business and between your products when you're trying to compete in a marketplace that is sensitive to interest rates. If universal life is generating all your new cash flow, it is important to use some type of new-money approach, whether it be segmentation of each new-money bucket or just some national approach. If this is not done a line of business could appear to be earning 10 percent, when really it's earning 12 percent. As a results, management might decide to lower the credited interest rate to nine percent. Whether this is a right or wrong decision, of course, is a matter of opinion, but there is no question that the decision is based on erroneous information. With market sensitivities the way they are, a decision of this type could blow your right out of the market and result in severe disintermediation. Another possibility is that the company decides that the business is not profitable and, therefore, shouldn't sell this product because it simply cannot compete with interest rates.

Expenses must be allocated properly to the line of business and the product in order for you to make appropriate management decisions. In addition to allocating to the product, proper allocation must be made between acquisition and maintenance expense. If you have an improper allocation, the company may decide to change it distribution system because it's spending too much money on distribution, when in fact it could be maintenance that is causing the problem.

Taxes must be allocated properly. In the past, this was somewhat difficult because we had different tax phases, and one phase could be applicable to the company and another phase applicable to a given line of business. One example is the situation where a line of business had taxable investment income greatly in excess of its gain from operations. Now, if this line was in a company that was taxed on taxable investment income, the line would contribute significantly to the tax of the total corporation, when, in fact, if it were standing by itself, it would incur a much lower tax. If the allocation of this particular tax to each line of business was based on a comparison of the company's tax with and without the line included, you could have situations where the tax could be 100 percent of the gain or even 500 percent of the gain. How do you price for that?

Now we have a problem of an inconsistency between tax and statutory reserves. We also have a question of how to allocate mutual company equity tax to product and to line of business.

MR. DICKE: The subject of equity tax allocation basically falls into two categories of approaches.

One approach is if you have some way that surplus is allocated with which you feel comfortable using as a basis, then you can allocate the equity tax marginally to the lines that have the surplus. If you follow historical statutory accumulations of surplus, you might have a group health line that gets a big tax credit, and you might have in return a large tax attributed to your in-force business that could lead you into a lot of problems.

A better approach is available if you have some concept of required surplus. You could base the equity tax allocations to each line on its required surplus. Now is you follow this approach, you are going to end up with a certain amount of the tax not covered. In effect, you are saying that the surplus you haven't managed to get invested in products is going to be eaten alive by that tax. In fact, it reduces the rate of return on unused surplus to around four percent. So you can't afford to leave too much surplus unused.

This approach probably results in the appropriate response to the tax law, but other people feel differently. The second approach is to total up the entire tax bill and reallocate the equity tax part proportionately to the taxes that have been based on the operating gain.

The equity tax is based on earning rates of various mutuals and stock companies. You have no real idea what the rate is going to be in the future; consequently, it's rather risky to use the current rate on an estimate for all future years, although I have no better answer.

Probably the only thing that stocks and mutual agree on in this equity tax issue is that stock companies don't particularly want to spend a lot of time gathering financial information to put in a tax return that only affects the taxes of their mutual competitors. We mutuals would just as soon that they let us select those numbers of them.

MR. POLLNOW: At the Hartford, we have tried to develop a system which provides consistency between our pricing and our financial reporting. This is done by allocating the required benchmark surplus to each line of business and then adjusting this benchmark monthly. Thus at the beginning of every month, the surplus is always consistent with the pricing assumptions, resulting in a proper allocation of investment income to the given line of business. This proper allocation is particularly important when reviewing the return on total capital for a line of business because GAAP capital is defined as benchmark surplus plus GAAP adjustments. Thus, in order to get the proper return on total capital, both the proper amount of benchmark surplus and the investment income on that surplus must be allocated to the line.

MR. DICKE: Then does the allocation of benchmark surplus greatly affect the pricing of the product?

MR. POLLNOW: Definitely.

MR. DICKE: Which products would be affected the most?

MR. POLLNOW: Group product, for instance. You have little drain on group products, so most of the investment is probably the benchmark surplus.

MR. DICKE: So from that point of view, you already have a situation where you might get into a few arguments.

MR. POLLNOW: Yes, and also if you had a product with a book-value cash out versus this market-value cash out, you are going to have a much different risk.

MR. GLASS: At Lincoln National, we used to allocate expenses by line of business more or less from a centralized point of view. We had a rather elaborate system for doing that. We moved away from that to a system where the internal budgeting process within the company, that is to say, the expense management reports that come out monthly, contain, for a given strategic business unit, the direct expenses of that unit with respect to the organizational structure. So, for example, all the department unit expenses are contained in that expense management report. The expense management report also contains all of the expenses related to the internal chargeback system additions.

Internally, the company has two types of charges which the strategic business unit (SBU) incurs. One is the case, which we refer to as chargeback, where the SBU uses services such as from the Data Center for data processing (DP) purposes. The Data Center is housed in it own departmental structure, so the divisions pay a fee based upon their use of the Data Center. The DP people calculate a rate per hour of processing based upon a rather detailed approach to accounting units and so forth. From an SBU standpoint, we don't have any control over how that rate is set exactly because the DP people are part of the company. Their expenses go up when the salary pool is established right along with everybody else's. The only hope we have is that they are trying to do as good a job of managing their overhead function as the lines of business are attempting to do in the line.

The other kind of a charge that the SBUs incur is one called a service charge as opposed to a chargeback. It simply represents a monthly amount that the SBU agrees to pay to an overhead function such as the human resources function. That tends to be allocated out depending upon the number of people in the SBU. Consequently, if you are a division head and you're trying to watch your expenses, you not only have expenses incurred in your own division and in your own department sections and units, but also those incurred as part of the corporate organization.

Once those expenses come into the SBU, the process of allocating them by line of business takes place. That process is done, at least in our division, using the time-study technique. Although it is a lot more abbreviated than it every used to be before, we still get information by function. So, for example, we know what we are spending on selling, on selection and issue, on premium collection, on death claims, and so forth.

These functional costs then are massaged to make sure that everything is included that the pricing actuaries need. The pricing actuaries take the functional cost and build them into the pricing structure. To round out this process, from a high productivity standpoint, we manage the functional cost.

We need to understand as a life insurance company that those functional costs have both a fixed and a variable component because up to now a lot of life insurance companies have been treating everything as variable. Some costs are fixed, some are variable, and we need to know when we are or aren't breaking even. We need to pick up some of the direct and indirect concepts that are used in manufacturing.

If we can run our business using the functional cost, we have good control. We can measure our productivity on that cost; we can put it in the pricing structure; we can make sure that next year's expense budget (if we can functionalize it) falls in line with the unit cost presupposed in the pricing structure (particularly if it contains some kind of an inflation factor on maintenance expenses). All of those things used in that fashion, give us more management control of our business.

MR. DICKE: There is an interaction with the pricing process because either you use something that is the variable cost plus some portion of the fixed cost, (based on what you think your sales of that product or all products are going to be), or you develop profitability based on the variable expenses and then compare the overall line profits to the overall fixed costs. Which approach do you use?

MR. GLASS: We are still pretty much on a full absorption method, but we want to change.

MR. DICKE: One of the biggest problems with trying to change to the variable cost approach is to get a reconcilation of your fixed expenses to the overall line profits. In the pricing process, you're dealing not only with this year's fixed expenses but also with fixed expenses throughout the future, and you have to decide how you are going to account for these in the pricing of products sold this year.

It get's to be very tricky to set the fixed expense "goal" that is to be reconciled with the marginal profits. In our company, it was necessary to set the goal on different bases in each line of business. The appropriate way of approaching fixed expenses was different in the pension area, for example, then it was in the individual life area, because of the different nature of the contracts. And the group health area was different from both. Also, different lines may have been

permitted to account for future improvements in expenses, or larger premium flow, and so on.

MR. GLASS: The pressure to cut those expenses, comes right from the top many times, and when you have a target ROE that you're shooting for and you think about the elements of the pricing, what are the things that you can make any change in that will have an impact? You can't do much about mortality assumptions. In the case of products such as universal life which are brand new, your persistency assumptions have no history to go on. The first thing that comes to mind is that if we can improve our productivity, we can reduce our expenses. Sometimes those things get built in providing some way to do what we said we're going to do.

MR. DICKE: In a much smaller company environment the studies that Mr. Glass was talking about sound like they would be out of reach. Do you have any different ways of approaching these types of things?

MR. RYDER: Because we are small, we focused on the valuation system as a source of information. For example, we haven't done what I would consider to be an expense study in the history of the company. However, we have done some quick and dirty calculations that produce factors which year to year seem to predict total company expenses. The bottom line is that we tend to do things in a more quick and dirty fashion because we don't have the manpower and cannot devote the resources.

MR. DICKE: Are you saying that you take the factors that you get by the quick and dirty method and check if they gross up to cover company expenses?

MR. RYDER: That is correct.

MR. POLLNOW: Sometimes might not it be easier for the smaller company to get its arms around that kind of a problem because there isn't quite as much esoteric information hiding out there somewhere? Maybe it can react more quickly than a larger company can.

MR. RYDER: One of the things that we have going for us is we don't have a lot of headaches with allocations. We don't have lines.

MR. GLASS: All of use are familiar with the basic factors that enter the pricing process. We must have information on expected investment returns, mortality, termination rates, expenses, and so forth. We also can use the financial reporting system as a source of information necessary to change the premium rates.

For example, within the universal life structure, we can raise our cost of insurance charges, although these are limited, so mortality wouldn't do it. Universal life is different in that we always have the problem of pricing products. Things change all the time. What might be an intersting example to cause a change in premium for universal life as a fairly new product?

A change in the persistency could cause this. The pricing process assumes a certain persistency or pattern of premiums -- that is to say, a relationship in our case -- between the first year premiums and renewal premiums -- both of those related to the minimum premium on the policy required in the first policy years. So the pricing structure is set up that way with an assumption. Additionally, the pricing process assumes the persistency of the in-force business in the traditional lapse-rate sense.

In the initial pricing of universal life, there is no history of persistency to go by. Now that several years have gone by, we are beginning to see there may be a need to look at persistency figures. This might be a factor that would cause us to change our pricing. Presumably, the information that we need is coming from one of the operating systems involved in universal life. This system would be able to provide us the information on either the premium persistency or the in-force persistency, which we need. Interestingly enough, in our case, several problems have cropped up with respect to determination of premium persistency. One of these has to do with the classification of premiums received just prior to the policy anniversary. We found that our system classified premiums received just prior to the second policy anniversary as first-policy-year premiums, when in reality they were the schedule premiums for the second policy anniversary. That left unattended would give a completely wrong impression of what was going on the first policy year versus the second. Those are the kinds of things that you need to straighten out. To a certain extent, they are a function of the fact that universal life is unique and the operating systems available to manage it are fairly new, and perhaps all the bugs haven't been worked out.

With respect to the normal termination information, it became necessary for us to run some report writers against the operating system and try to get an idea of what was going on with the persistency as normally defined. Although we haven't done this yet, we hope to link up data that we're getting off the operating system with the regular lapse-rate system in the company. We have a system that calculates termination rates and is set up on traditional business with a certain report format and a certain input format. We need to start feeding in the information on that.

Another aspect of persistency is what the effect might be for the universal life writers because of internal roll overs and outside lump sums. You need to ascertain what effect those might have on the premium patterns, which you've assumed in the pricing structure, and on the basic persistency of the business. Will these roll-overs continue? What might be the outlook for lump sums in the future compared with today?

Certainly, we don't have any industry data on terminations of universal life. Unlike mortality statistics, which might be gathered from intercompany studies, universal life termination rates, particularly early on, are probably going to be uniquely a function of each of the writers. There is no reason to suppose that lapse rates will be typical on this product. So much depends upon the distribution method used

by the individual company, the ability of the company to manages its interest margin competitively, and other factors which relate to the after-market management of the product.

For universal life, we see the need for continued management of the profitability of the product after it has been brought to market. We must carefully track the major factors affecting profitability on a more proactive basis than would be required with conventional business. The profitability depends much on how we actively manage it after it's issued.

The interest margin is key to manage after universal life has been brought to market. The interest margin has such a substantial effect on the overall profitability of universal life; it's probably number one in terms of the magnitude of its effect. It's the most visible part of the competitive pressure, and some companies are using investment-generation methods on universal life, which means that they are quoting a new-money rate with some kind of asset generation such that they can balance off in a prior period. Other companies are using a pot approach under which the same amount of investment income of the same yield rate is credited to the entire amount of the cash values.

It's important then to think about maintaining the interest margin because if the interest margin slips, so does your return on equity which is built into the product directly. You don't want that margin to slip on any kind of a long-term basis. You're in a volatile market. The ideal approach is to do the classic determination of the cash flow required on the liability side; let that be the driving force with respect to setting investment policy on the asset side. Try to match things in such a way as to minimize the C-3 risk required in the product. The management of the interest margin, while it's important, might not necessaryly lead to any change in the premium rates, but it has a lot to do with survival and maintenance of profitability.

MR. DICKE: How does this impact the MGA product or SPDAs in general?

MR. POLLNOW: If you look at the MGA's the most important thing is to review the cash-flow matching of your assets and liabilities. You are not going to be able to change the rates on the product, because you've guaranteed them, but you can monitor and make adjustments to your portfolio that will give you your most profitable end result. You probably also are going to want to monitor your market-value-adjustment formula to see if it is, in fact, adjusting the cash-surrender value consistently with the changes in the value of your assets. If it isn't, maybe you can examine the assets and see if some other type of investment strategy might be necessary. If it appears the investment strategy is correct, then it may be necessary to adjust the formula, which of course you can't do for your current products, but you could do for future products. A segmented portfolio is also going to help considerably in reviewing this proper matching of assets and liabilities.

MR. DICKE: I would have thought that with a market-value adjustment, you had less need to worry about the matching. You could invest long, and if your formula was set up to take account of it, you would be able to recover the losses. The investment risk would be put onto the policyholder instead of on the insurance company.

MR. POLLNOW: That's true, but you want to take that block of assets and get it away from the rest of your business. It's easier to make sure the block is doing what you want it to do. You could say that you made perfect investments, and you don't have to worry about monitoring. I don't think that would be a good approach. You also are going to want to monitor your expense and tax levels to see if your pricing assumptions are being met. If they're not, you are going to want to change your pricing as soon as possible. You might have some nonguaranteed expenses built into your product. I mean fees like a maintenance fee. Maybe you guaranteed a $50 maintenance fee, but you're only charging $25. As you review your expenses, you find out that they've gone up, and so you raise your current fee from $25 to $30.

MR. DICKE: Are these formulas dynamic in that they react to the degree of risk that the investment strategy takes on? If you're intentionally investing longer than your liability cash flow would warrant for complete matching, is that reflected in the formula? Are you able to make a trade-off in pricing the products? If the line management chooses a more risk investment strategy, does it have to hold more surplus?

MR. POLLNOW: Mr. Glass's company is a lot more responsive to that than ours is at this point. We have had simple formulas and we just look at what we intend to do. Mr. Glass published a paper which showed that his company actually has the benchmark levels which change depending on the length of your assets.

MR. DICKE: Are C-3 risks reflected dynamically in the reserves held in Canada?

MR. RYDER: It's safe to say that those companies, which are considering the C-3 risk in their valuations and appropriations of surplus, are looking at it in a relatively dynamic way, but it's a trade-off of the amount of work you need to do to get there versus the amount of time you have to do it.

MR. GLASS: If management performance is to be measured on the basis of financial results, such as the return on total capital, then the method of pricing and how it will affect the financial results must be understood.

One of the functions performed somewhat by my people is to monitor the pricing process and to provide feedback. If the product actuaries don't put air in the basketball, the GAAP actuaries can't make it bounce. From a GAAP point of view and from a valuation point of view, we would not have any expectation that the return on investment which is produced by the pricing people in pricing the product would

result in a GAAP return on equity which was materially different than that. So the onus is on the pricing people to make sure that happens. Since we are graded on our performance on return on stockholder equity, this is the measure which makes sense and must be built into the pricing process.

When the financial projection models are built using GAAP factors, they essentially are built using the pricing assumptions with margins for adverse deviation built in. These margins are removed from the financial projection model for testing purposes which then should leave the model in the position of essentially feeding back the ROE which is built into the product.

Such a financial projection model often makes for an easier job of projecting. The financial projection model so constructed can be used to produce essentially a bottom line projection of earnings. This is particularly true when profits are emerging as a percent of premium or as a percent of assets, things which are rather readily predictable. The models can later be expanded to provide more detailed information and to firm up the line by line components of the profit and loss statement. If the financial projection models are properly structured, then it would be possible to secure a GAAP earnings projection, a statutory earnings projection and a projection of cash flow from the models. If the balance sheets can be produced from the models, so much the better.

In a typical situation on universal life, for example, the GAAP model could be structured to follow the pricing assumptions. As time goes by, gradually the GAAP model would need to be changed to reflect any drift which has taken place between actual experience and the assumptions made in the model. In this regard, it is important to understand the interplay among the different profit factors. Profits are the result of the combination of all of the profit factors at work. Therefore, if one of the profit components appears to be deteriorating, it is necessary to determine whether or not this distorts the result of the model in total. If several profit factors tend to work in opposite directions, perhaps changing the model would not be necessary. In this case, it would be appropriate to agree that several components of the projection model could disagree with the real world because the bottom line effect was nil. At the time, however, when the actual experience on the major profit factors tends to disagree in total from the pricing assumptions, it is red flag time. The valuation actuary is the one who throws in the towel.

At this point the valuation actuary has the attention of the product actuary and also the investment analyst. It is hoped things do not go that far. Adjustments should be made in the pricing or the management of the product in time to avoid the need for any loss recognition. However, if the actual GAAP factors upon which the model is based are allowed to drift from reality for any protracted period, it may be necessary to recognize the inadequacy of GAAP reserves by a charge to income. This should be avoided at all costs. The most crucial aspect in managing universal life profitability is the management of the interest margin.

Under the composite method of accounting, which was recommended by the American Academy of Actuaries for universal life, part of this interest margin may emerge as a percentage of premium, part as a percentage of assets, and so forth. Whatever portion of the interest margin is being released through the GAAP reserving system must be achieved therefore, at practically every point on the time line. Should it fail to be achieved for any protracted period, especially over a year-end, then the issue of loss recognition rears its ugly head.

As with all financial projection models, the results reflect a combination of old and new business. It is particularly important to pay attention to the assumptions on both, given the coming of universal life as the most important new life product in recent years in tandem with the internal roll overs which the universal life product often fosters. In making financial projections for the future, a company may observe that the old business is going off the books at a faster rate than was contemplated in the original pricing structure and that the new business is persisting on a better basis then assumed in the pricing structure.

Under these circumstances, it is particularly important that the GAAP accounting on both the old and the new business be at least as conservative as may be required by the ultimate Financial Accounting Standards Board (FASB) pronouncement on universal life accounting. Should the composite method be adopted, this would be put into place along with the transfer of the old acquisition asset on the rolled business into the universal life line. The method of GAAP accounting, therefore, has a distinct influence on the financial projection model.

Thus, consistency between pricing and financial projection models is vital. This assures feedback to the product actuaries with respect to the assumptions made in the original pricing and assures that the financial projection model produces ROE results consistent with the ROE which is being used by the financial markets in grading the performance of the company.

MR. RYDER: Reserving and the nonforfeiture value basis have an impact on product development. I will review the impact of these influences in Canada and use our Term to 100 product as a case study.

Our dynamic reserving approach for statutory purposes gives an opportunity for an integrated pricing and valuation philosophy. It allows for predictable results, and if done right, there should be no tears. The most material statutory reserving effect is the creation of deficiency reserves which clearly should be priced. The Canadian environment should support product innovation and be responsive to environmental change, but if the opportunity is missed, all sorts of things can go wrong.

Tax reserves are another matter. The tax reserve basis in Canada is a full preliminary term calculation using pricing assumptions for interest and mortality. Expenses and losses are ignored, and there is no gross premium limit on the valuation premium, meaning that deficiency reserves do not arise. The differences between statutory and tax reserves encourage product designs, which minimize deficiency reserves

or which maximize, within reasonable limit, first-year cash strain or in which lapsation results in a gain.

There are no minimum cash or nonforfeiture value requirements in Canada. This is a good news/bad news situation. Product innovation is not hampered by inflexible rules. On the other hand, some extremely dangerous product designs are possible, which would have otherwise been impossible.

The economy was going crazy in the 1970s. Inflation and interest rates bounced all over. The disintermediation, which resulted from the sale of guaranteed-cash-value whole like with fixed loan rates and high interest rates, gave the industry a severe case of financial indigestion.

Four or five years ago, someone took the whole life, took out the cash values, left the paid-up values in, called it Term to 100, and aimed it at the brokerage market in Canada. The result was a product where the nonforfeiture value was unchanged, but the distintermediation risk was virtually eliminated. The pricing reflected the reduced risks and the subsequently higher investment earnings potential. The introduction of this product was also influenced by the squeezing of commission checks caused by term insurance rate wars in Canada. The product was a big hit, and soon everybody was on the bandwagon.

Another effect of the term wars was poor persistency experience. While Canadian experience was better than in the United States, it was still bad enough to burn some insurers. It was not long before smart product developers noticed that a high lapse environment might be harnessed for gain. Poor persistency presented an opportunity for gain on Term to 100 contracts where the nonforfeiture values were less than the asset share. Tax considerations also supported a product where the company gained on lapse. Pretty soon everybody was plugging renewable term type lapse assumptions into their asset share calculations, stripping out more of the values and dropping premiums by astronomical amounts.

As companies began to see the risks associated with the no-value product, some sanity prevailed, or perhaps it was fear. Clearly there were substantial risks here, but it was also a fear that the regulators were likely to step in and impose values on these products. The next variation was a product where the values were close to the asset share, but only after a period of time where lapses still implied gains. The most common version of this product is Term to 100 paid-up at age sixty-five where cash values commence at age sixty-five.

The competition has been fierce in this product sector. Wide variations in lapse assumptions used have led to wide ranges of premiums. I have heard of opinions expressed on the ultimate expected lapse rate ranging from ten to one percent.

Some problems with this product are:

1. There is extreme assumption sensitivity. Both lapse and interest rate changes yield different pricing and valuation results. The

pricing and valuation gap on loss assumptions of even one percentage point leads to large deficiency reserves.

2. Pricing is taking place without considering the valuation issues raised or the cost of providing for the surplus strain associated with deficiency reserves. Marketing pressure forced products onto the market without a thorough enough review of the valuation implications.

3. There is no historical data for the lapse assumption. The most optimistic way of looking at this is that it leaves the actuarial profession with a formidable challenge.

4. The lack of guidelines for the development of margins for adverse deviations have left each valuation actuary more or less on his own.

5. The wide variation in valuation actuaries' approaches has led to a significant Federal Department of Insurance concern.

The present valuation environment should have slowed this product down. Recognition that there is no historical data on which to base lapse assumptions and the lack of a concensus among actuaries should have encouraged valuation actuaries to be more conservative in the selection of their margins. The profession in Canada has learned something from this process, and I hope we can plug the leaks in the system.

There is currently a committee of the CIA to deal with the concerns expressed by the Department of Insurance over the valuation of this product. This committee is likely to recommend maximum lapse rate structures for the various type of products now being sold. They should find it within their power to deal with the more fundamental issue of the selection of margins for adverse deviations under highly uncertain circumstances.

The industry is likely to have to swallow large increases in deficiency reserves as the CIA and the Department of Insurance wrestle with this problem. Companies are now more likely to identify and budget for the deficiency reserves required, however. This product began its life as a good idea; problems resulted from some companies failing to do their homework on the volatility of the lapse assumption and failing to consider reserving requirements in the design phase of product development.

I hope we can avoid repeating our mistakes, but in order to avoid the strain associated with deficiency reserves, many companies are already turning to nonguaranteed versions of this product. The problem with this design is that high persistency will lead to either higher rates, or if the lapse assumption is effectively guaranteed, surprisingly high deficiency reserves at future recalculation points. Plans, which guarantee the cash value, but not the premium rate and which have a limited premium payment period, are even more likely to kick up large

deficiency reserves in the future. Companies are not facing the problem; they seem to be deferring it.

MR. DICKE: I understand that many Canadian companies did face the problem by laying-off these products on U.S. reinsurers. Is that true?

MR. RYDER: To some degree that is true. The relatively poorer lapse experience on term insurance in the U.S. had led U.S. reinsurers to use relatively higher lapse assumptions in products than the Canadian reinsurers would use.

MR. DICKE: With regard to the MGA product, what is the impact of the reserve basis and nonforfeiture basis?

MR. POLLNOW: The differential between statutory and tax reserves is connected with the reserving. There is a good possibility that the minimum reserves required by the tax law may not be appropriate for the particular product in question. An example is the use of an 11.25 percent interest rate for all durations on an immediate annuity. Many companies are selling structured settlements that could run for a period of sixty, eighty, or maybe even one hundred years. For tax purposes, the interest rate for immediate annuities is 11.25 percent, and this must be used for all durations. How many valuation actuaries would be comfortable using 11.25 percent for sixty years? Have you ever seen an investment that guarantees that kind of interest with no call provision?

As a result, we have chosen to calculate our reserves using graded interest rates. This means that you are not going to get a tax deduction for all of the statutory reserves that you set up. The degree of difference between these two is going to have a significant impact on the competitiveness of your product. It may even create some interesting dialogue between your product and valuation actuaries. This is where you want to get some support from your investment department.

The MGA product cannot be offered under current individual life and annuity nonforfeiture laws, because this requires the payment of book values, even for early voluntary withdrawals. These current laws are a boon for the policyholder because he can get his money at book, but they are a direct threat to the solvency of life insurance companies.

If guaranteed cash values are "suicidal," how much of a difference will the use of market value adjustment formulas make in pricing life insurance or annuities? A contention is that if it doesn't make much difference under a normal yield curve, then the products being sold today are grossly underpriced for the risk that is being taken by the insurance company.

We can, of course, operate under the nonforfeiture law by simply investing short-term assets so that there is little market value risk. Of course, this approach doesn't necessarily provide the best return for the customer. It doesn't allow for long-term guarantees, and it is not going to allow you to provide interest rates that are competitive with

other types of investment products. We want to be able to provide these guarantees to the policyholder without putting the solvency of the company on the line.

MR. DICKE: These products often do provide long-term guarantees. In particular, some of the products that are being invested short might have a 4.5 percent guarantee. That looks meaningless to us now, but within my lifetime, the interest rates have been down to 2.25 percent. We find ourselves not only offering options, but offering straddles.

MR. HENRY B. RAMSEY, JR.: I have a question on monitoring interest margins on universal life. If you are monitoring under an interest rate situation like today, and your assets are somewhat longer than your liabilities, you look good on a current monitoring basis. You have invested at somewhat higher rates than in the past, and you still have those investments, but your rates being credited on your products have not dropped. So there is a risk that the business manager, or the monitor looks at that and thinks everything is great. Whereas you know the way interest rates move that there will be periods when this will be true balanced by periods when this will not be true. How do you handle a monitoring situation in which you can keep perspective on that?

MR. GLASS: I don't have a good answer, which is no doubt why you're posing this question.

MR. RAMSEY: It is fairly dangerous because you've got a lot of unknown risks and uncertainties. The business managers are anxious to do well and to show their performance. They have been given a hard time about their margins, so here is a period when things look pretty good.

MR. POLLNOW: There is more to monitoring than just looking at the interest liftoff. You also have to look at that asset and liability matching. You mention that your assets were going to be longer than your liabilities. Of course, part of the problem with the universal life product is that we don't know how long those liabilities are going to be. They could turn around at any time since they have that voluntary withdrawal provision. That's why we need the MGA in life insurance.

MR. DICKE: One approach that definitely works is to absorb the higher margins at first and later release them during periods of lower margins.

One of the biggest problems in trying to do this is that all the margins flow into one another. If you are trying to monitor a product, and you have lapse rates lower than you expected, you don't want to project that good result out forever. This makes it particularly hard to find out what has really happened to your product with regard to one particular margin, such as the interest rate margin. In other words, you may be lucky at the moment because the product is yours, and nobody is taking any money out. The fact that you haven't suffered any losses even though you've invested long and interest rates have, in

fact, gone up, may result from the good lapse experience, which is not expected to continue. It is hard to unwind the different parts of the product in universal life. It's a little easier with the annuity products, and it's a lot easier with something like a GIC.

MR. HENRY N. WINSLOW: I'd like to augment the list of factors that the valuation actuary or anyone performing that generic function and the pricing actuary have to consider from a group pension point of view:

1. Marketing assumptions -- you've got to see the customers that are expected, their size, and so on.

2. Underwriting procedures -- you've got to be sure you've got the right assumptions.

3. Regulatory matters.

4. Customer communication -- you want to be sure that the customers are buying what they think they are buying.

These all can potentially affect the financial results that we are concerned about as well.

MR. THOMAS F. EASON: Any time you have a situation where available net surrender values are less than asset shares, there is a possible benefit to the company if the policy terminates. The Society's Special Committee on Nonforfeiture Value in the early 1970s reaffirmed the Guertin Committee's view that this is inappropriate.

Back-loaded universal life insurance products are not by themselves bad, neither are deposit term policies. However, there are back-loaded products with surrender charges so high that lapses inappropriately benefit the company. Continued premiums can result in reduced margins; then the company will be forced to reduce interest credits or handle the business in such a way as try to encourage policies to terminate.

MR. RYDER: The problem I have with variable Term to 100 is essentially that you can manage the product to induce lapses.

MR. DICKE: Mr. Pollnow and Mr. Glass, your companies both have back-loaded universal life products. Would you like to comment on whether they may be managed in this way and what the impact is from the valuation actuary's point of view?

MR. POLLNOW: You can have that type of situation. I don't believe that we have that particular situation in our products today. We ought to let competition take care of that type of problem. You could argue that it is unethical, and in that case, maybe you could argue the valuation actuary should be involved. But I think the whole actuarial profession should be involved. The product actuaries have standards as well.

MR. DICKE: If a product were developed on that kind of basis, is there an impact on either a statutory or GAAP result? If there is something wrong, should the valuation actuary, at least, be alerting his company to any potential problems this could cause?

MR. POLLNOW: I would certainly think so.

MR. GLASS: Yes, I would think so.

MR. DICKE: It seems to me that with a product whose profitability depends on lapses occurring, you have to question whether the company will be able to manage the lapses as assumed.

MR. GLASS: For the valuation actuary to be able to do that, there has to be full disclosure on the part of the product people as to what is in the pricing assumptions. Would there be a situation where there would be a deliberate nondisclosure of that kind of an anticipated effect if it were known by the pricing people? I suppose it could happen. It also would behoove the valuation actuary to make sure that he or she understands those ramifications. Sometimes there are things that don't look deep, but turn out to be, when more than a superficial examination is given.

MR. DICKE: This points at the possibility that for certain assumptions, adverse deviations may be in the opposite direction from usual. That is something that we don't often think about. It could be even more important for actuaries who are valuing companies than for valuation actuaries.