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**PROFIT STANDARDS AND ANALYSIS OF EARNINGS FOR
INSURANCE COMPANIES**

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- . What profitability measuring rods are used? How do they vary by line of business?
- . How are reported earnings for each profit center (statutory, GAAP or other basis) analyzed? How often is the analysis made?
 - By source? For example, is actual mortality or are actual expenses compared with that expected on the rate provision basis, or the basis budgeted for the year, or on some other basis?
 - By block of business (e.g., calendar year of issue or other)? What are the problems and solutions relating to the allocation of Federal Income Taxes and investment income in this analysis?
 - By comparison with other companies (on what basis)?
- . What techniques are used to determine the amount of statutory surplus needed to support a line of business or a product? How is the relationship between risk and profitability quantified?

MR. DONALD R. SONDERGELD: We have three major topics: Profitability Measuring Rods, Analysis of Earnings, and Surplus Needs. Each of our panelists will discuss all three topics. Bob Shapiro, our first speaker, is a Consulting Actuary with TPF&C. Bob has been quite active in Society committees and is currently a Vice President of the Society. Our second speaker will be Rick Kischuk, Vice President of Lincoln National, a stock life insurance company. He is active in Society affairs and is currently Chairman of the Council of the newly formed Financial Reporting Section of the Society. Our third speaker is Robin Leckie, Senior Vice President and Chief Actuary of Manufacturers Life, a mutual insurance company. Robin is a past President of the Canadian Institute of Actuaries and the penultimate President of the Society of Actuaries.

MR. ROBERT D. SHAPIRO: There are a number of different perspectives of profit. The economist looks at profit from the standpoint of a return on the money being invested, a return on capital. The actuary often looks at profit as compensation for risks that have been undertaken by the life insurance company. The entrepreneur looks at profit as a reward for creativity and enterprise. Throughout the evolution of profit measuring rods there has been a mixture of these different perspectives.

The form of profitability measuring rods is changing. Historically life companies have used some combination of the following approaches as the basis of their profit standards (varying by plan of insurance):

The marketing profit standards vary by distribution approach and are related to the established pricing "margins for marketing." A comparable approach is followed for the administrative performance area. The investment standard is a defined spread while the risk-taking standard is a defined percentage of "risk premium". Both the investment and the risk-taking standards vary by the type of coverage and the anticipated related risk.

Life company executives can no longer "build-in" a traditional profit margin and wait for events to unfold. The unbundling process coupled with current assumption pricing has changed the game completely. Each business and performance area of the company must be skillfully managed to develop its required contribution to the bottom line. In the last twenty years our investment performance and mortality performance have often masked less fortunate operations in the marketing and administrative areas. That can't be allowed to continue in the future because the margins for error in each area have been reduced considerably.

ANALYSIS OF EARNINGS

The evolution from "build-in profit and wait" to "manage for required profit" demands a sensitive performance analysis and management system. Such a system must facilitate evaluation of actual performance in terms of the established standards, and provide a mechanism for identifying problems on a timely basis.

Management often finds that normal statutory and/or GAAP figures do not provide an adequate basis for effectively managing a changing organization. Intensive self assessment processes may be undertaken with a redefinition of mission as a mutual company, seeking to create superior performance ("make a lot of money") and determining to share the superior performance results appropriately between:

- . policyholders (who "contribute" the required capital and take the risks),
- . agents (who create the new premium income), and
- . management and employees (who contribute the needed strategic direction and administrative efforts).

Clear definition of the financial performance management system is critical to effectively priming and modifying the organizational culture to the desired strategic change. The principles for one such system might include the following:

- . Technical confusion should be reduced and ultimately eliminated. Unless the unclear and misunderstood reserve, expense and other "allocations" are eliminated, key managers will not have the needed understanding or sense of control over their operation's results.
- . Where allocations are necessary (e.g., expenses and investment income) the allocation basis as well as the target plan amounts should be negotiated in advance.
- . The design of the system should help to create a management environment comparable to that found in a proprietary organization.

- Strategic change should be planned for and evaluated within a venture perspective, utilizing the concept of value as the key performance standard.
- Reports should be developed on building-block principles, with the final summary clearly developed from the supporting reports of each defined business and performance unit.

After substantial team effort, a management information system can be developed with the following characteristics:

1. Key company-wide financial results are summarized within each segment of the business unit/performance unit matrix. Generally these results are actual-to-expected profit comparisons, with less understood items separately identified.
2. Key related indices and strategic change activity measures (e.g., new premium, distribution outlet, asset and capital figures) are included with the key financial result summary.
3. A report of each defined performance module with its key financial results, is developed in a manner that builds clearly and consistently to the total company summary.
4. A report of each defined business area with its key financial results reflecting the profit contribution from each performance module, is developed in a manner that builds clearly and consistently to the total company summary.
5. Management reports are prepared clearly linking the performance standards with the individual performance module/business module manager performance assessment and reward procedures, as well as the company's pricing mechanism.
6. All reports are intentionally biased to clearly reflect the company mission; specifically the changes required by the mission.

The reporting should be done monthly at most levels, with an extensive analysis implemented on a quarterly basis. The company should develop the reports on a timely basis after the end of the measuring period.

The end result of such an effort is significant organizational and "cultural" change, greater market orientation and a redefinition of strategic business units. For example, at first the company may define their key business areas in terms of product. At the completion of this process those would be re-defined largely in terms of the market and distribution system.

Surplus Needs

Many companies have, in recent years, used surplus standards that are developed by applying assumed factors to different categories of assets and liabilities. These factors hopefully reflect the degree of risk associated with each item, as well as the company's financial plans and management approaches.

Two ways in which such surplus standards are often used are:

1. Relative surplus: Formulas are fit to the "average" statutory surplus of a group of life companies, with the goal being to identify and manage relative statutory surplus levels.
2. Required surplus: The objective is to define the level of surplus required, by major line of business, to support the writing and management of the business.

The kinds of questions raised by this type of analysis are:

- . How much risk really exists in each item?
- . How much surplus is needed to cover that risk?
- . When the results are aggregated, how should the sum be reduced for interdependence of the different items?

One simple example might clarify the dilemma we face. If one looks at surplus, profit, and return on surplus, there is a formula that defines expected return on surplus as the expected profit return divided by the assumed required surplus. By changing that formula around one can solve for surplus, which equals the expected profit return divided by the target return on surplus.

In reality, an absolute level of required surplus cannot be established with certainty. It depends on a large number of factors including lines of business, character of business within each line, financial management philosophies, and various long term actuarial assumptions, as well as management plans and capabilities, line interdependence, statutory requirements and emerging theoretical research results.

Therefore, there is a substantial risk in rigidly managing by a formula-determined surplus basis. Its primary value is as a relative guide. Projection analyses of possible future surplus investment alternatives and surplus changes expand the usefulness of the guide.

MR. RICHARD K. KISCHUK: Before launching into my presentation, I would like to give you some perspective for my remarks. I am responsible for both the strategic and financial planning processes at the holding company level for Lincoln National. The fact that I am involved in both strategic and financial planning, and the fact that my work is at the corporate level, rather than at the business unit level, cause me to look at this topic a little differently than others might.

During the first part of each year, our planning process is mostly strategic. We focus on several corporate issues which would have a broad impact across the entire corporation. At this point in the planning process, we try to use as few numbers as possible. Here, we want to talk about actions that must be taken in the real world, rather than talk about projections and assumptions. We find that if we get bogged down in projections and assumptions at too early a point in the planning process then we may not discuss real actions.

Later in the year, we quantify our strategic plans in the form of financial objectives. Even here, it is important not to put the cart before the horse. Profits are not an end in themselves. They are the reward that accrues to those who do the best job of satisfying the needs of the marketplace. Financial objectives are worthless unless there are definite, and sustainable, strategies in place which will lead to achieving those results.

Similarly, if financial results fall short of the objectives, it is important to treat the disease, rather than the symptoms. Often, a financial quick fix may make the symptoms disappear for a while. But when they recur, they are often worse, and the underlying problem is still there. In analyzing financial results, it is critically important to look below the surface, and diagnose the marketing or management problem that is causing the earnings shortfall.

It is important for us to have a common set of financial performance measures which can be applied to all strategic business units (SBU's). This includes SBU's in a variety of businesses: individual life and health, reinsurance, group life and health, pensions, property-casualty insurance and title insurance.

Under our planning approach, each business unit is responsible for developing its own strategic plan, including financial objectives. With a common set of performance measures for all SBU's, we are able to combine the financial objectives from all of the strategic plans that are submitted and develop a corporate financial plan and objectives. We are then in a position to assess the impact of each SBU's strategic and financial plan on total corporate results, and to suggest changes to the extent these might be indicated.

Other features of our performance measurement system are:

1. We limit ourselves to a few measures to avoid confusion and conflicts among financial objectives;
2. The same measures are used to compare our performance with competitors;
3. We use the same measures in our system of financial rewards and incentives; and
4. Business units are free to develop other performance measures for their own purposes, but these are not used in developing the corporate level plans.

The primary performance measures that we use for corporate-level financial planning are:

- GAAP operating income
- GAAP equity employed
- GAAP return on equity
- operating cash flow
- statutory earnings

GAAP operating income and GAAP return on equity are our principal profitability measures. GAAP equity employed is also monitored by SBU, as part of our corporate capital budgeting system. In recent years, most of us have learned how important it is to monitor cash flow. Finally, statutory earnings are important to us because they determine the amount of dividends we can afford to pay to our shareholders.

Secondary performance measures include:

- GAAP revenue
- GAAP profit margin
- GAAP expense ratio
- GAAP revenue per employee

We monitor GAAP revenue as a measure of overall growth of business in force

of all types. Each of our business units typically has another measure that they prefer, such as amount of pension assets, or amount of life insurance in force, or property casualty premiums. But at the corporate level we need something that we can apply to every business unit, add up and look at from a corporate perspective, GAAP revenue is the one that we use. "GAAP profit margin" is simply the ratio of operating income to revenue. This is a good indicator of whether profits are keeping up with overall growth. "GAAP expense ratio" is calculated by dividing revenue into operating and administrative expenses. This is a good overall productivity measure. Finally, growth in GAAP revenue per employee is compared with the inflation rate. This provides a good overall indicator of labor productivity.

Analysis of Earnings

For us, a basic perspective is that financial information is useless unless it is compared with something. We compare each performance measure with plan, with the same period last year, and with the performance of competitors.

Until recently, performance had been measured and analyzed quarterly. Starting in April of this year, we have gone to a monthly system of financial reporting for management purposes. Performance is now measured and analyzed monthly, for every strategic business unit.

With today's volatile financial markets, it is important for us to have monthly financial information available. As our product mix has shifted toward interest rate sensitive products, it has become critical to be able to react to changes in the financial markets as rapidly as possible.

Financial performance is measured for each strategic business unit. Within strategic business units, performance measures are followed for major product lines. For example, within the Individual Products area, performance would be looked at separately for par individual life, nonpar individual life, universal life, individual health, and distribution.

We have been eliminating our allocation procedures over the past several years in order to simplify the financial reporting process. I think that is the black box issue that Bob Shapiro was getting at. It is really an effort to demystify the whole process. We tried to move toward more of a decentralized approach with operating managers managing their profit centers in an entrepreneurial way. We started to find that the operating managers really didn't understand how overhead expenses, investment income, federal income tax and other things were being allocated to the product line. Because they didn't understand it, the managers tended to consider these things to be elements beyond their control. We at the corporate level, on the other hand, wanted them to understand those aspects of their financial results and we felt that in managing their product lines they could have a major impact in these areas. That motivated us to move to make a number of changes to try to demystify the process and eliminate the black box. For example, we have dismantled our functional cost allocation system, and expenses are now charged out to the operating areas as part of the budgeting system, through a system of chargebacks and service charges. That means their operating managers don't get big surprises at the ends of quarters or years when large overhead expenses are allocated to them. They

see the expenses as they are incurred, talk to the areas that are charging those expenses to them, and, as appropriate, negotiate different service charges and chargebacks.

Investment income is no longer allocated, but is generated by our accounting system as a result of our decision to segment our invested assets by product line. Investment income is generally available in the required breakdowns, since we have segmented our invested assets into about 70 portfolios corporate-wide, including separate accounts. You might wonder about the large number. Many of those portfolios are breakdowns of the general asset accounts and pension lines. Also, for example, each of our companies is writing universal life, and has a separate universal life portfolio to enable us to keep track of those assets and make sure that they are managed appropriately.

Federal income taxes are calculated by each product line by applying the company's marginal tax rates to the key tax variables. Both current and deferred federal income taxes are calculated in this way.

We do not have a formal requirement that strategic business units analyze their earnings by source. However, we do expect each product line to explain differences from objectives and last year's results by quantifying the impact of mortality, morbidity, persistency, productivity, federal income taxes, etc. Each business unit is free to develop its own techniques for making this analysis. Some are quite sophisticated; others use many approximations.

Surplus Needs

In looking at the allocation of surplus by business unit, we use a "minimum surplus formula" first developed by us in the mid-70's that we've been in the process of refining ever since. It is important that you consider the development of this type of formula a dynamic process, and that it be reviewed every year. There are new products introduced every year, and we continue to get new research results from the Society that need to be built into a formula like that. For example, our formula is being looked at in light of our increased understanding of some of the risks that have been discussed in recent years, such as the "C-3 risk", the risk of loss due to changes in interest rates.

The formula applies a specified factor to each type of invested asset, with short-term investments considered least risky and common stocks considered most risky. The formula considers the degree to which assets and liabilities are matched for any given product line. It also includes measures of mortality and morbidity risk, as well as a factor for general contingencies.

The formula is constructed so it can be applied on a product-by-product basis. This allows us to allocate statutory surplus based on the amount needed to support each product line. Adjusting the required statutory surplus to a GAAP basis, we are then able to determine the GAAP return on equity for each product line.

As a result, we can look at the rate at which surplus is being utilized by each product line and the return on investment that we are achieving. This

enables us to evaluate the risk-reward trade-offs for each product line, and to target surplus toward the most attractive areas. By monitoring the areas into which surplus is flowing we can compare that with our strategic objectives and look for consistency with our strategic planning process.

The minimum surplus formula is in a form that we can also use for pricing purposes. This allows product line managers to set objectives for return on investment, and then price toward that return.

We are in the process of making further refinements to our formula. The main aspects of the formula needing change are those related to investment risk and the risk of loss due to changes in interest rates. This is an outgrowth of our decision to segment our investments into about 70 different portfolios. Each portfolio has its own investment policy, strategy and objectives. As a result, different product lines will be pursuing investment policies which involve different levels of risk, and it will be important that these levels of risk be reflected in the allocation of surplus.

It will also be important to reflect, for each product line, the risks and rewards from the use of financial futures and options. We're considering the use of those in a number of different areas. These futures and options have their different risks and rewards for different product lines. We need to be sure that we're allocating surplus consistent with any increased risk that might be involved in the use of those types of financial vehicles. At the same time, if a product line is able to reduce risk through hedging techniques then we need to be sure that we allocate less surplus to those product lines. In addition, the formula should be more sensitive to the match or mismatch between assets and liabilities for each product line. Thus, a strategy which achieves a closer match between assets and liabilities will often cause a reduction in the amount of earnings. But this should also reduce the amount of surplus needed to support the product line, and may increase the return on investment in many cases.

In summary, our goal has been to develop a financial management system which integrates with our strategic planning system. We have also designed our system in support of a decentralized or entrepreneurial management system. Finally, the financial management system reflects a type of corporate culture which we wish to encourage. This kind of consistency is very important, and makes it unlikely that any two companies will have exactly the same financial management system. The system that I have outlined today is the one that we consider to be most appropriate for Lincoln National.

MR. ROBIN B. LECKIE: Each company should choose profitability measures which are compatible with its form of organization and consistent with its established objectives. The measures should then be an integral part of the company's approach to financial planning and to management rewards. My company is a reasonably sized Canadian Mutual, writing both par and nonpar and organized primarily on geographical lines; that is, Canada, United States, United Kingdom, and South East Asia. Reinsurance is considered a separate corporate line.

Having no stockholders, our profit measures are primarily for the use of management. Profit indicators such as expense ratios, lapse ratios, loan utilization, mortality, etc. are reported monthly by territory and line of business. The measures which are critical to management performance are analyzed in considerable detail. For example, unit expenses are available for each branch and for each home-office department.

The company's primary profitability measure has been its internally derived profit and loss statement. This is done annually in very considerable detail by territory, line of business and functional source. The internal profit and loss is based on cash values for life insurance, and pricing assumptions for annuities—that is all statutory margins are stripped out. Investment income includes amortization of both realized and unrealized stock gains, a requirement for statutory reporting in Canada, and amortization of real estate gains which is not generally included in statutory statements in Canada.

Mutual companies are not required to report earnings on a quarterly basis. We have done some work in developing quarterly statutory and P&L statements, but I am not convinced they are worth the time or trouble to obtain. It is essential, though, to obtain the source of earnings.

Our company writes a proportionately large volume of annuity and pension business. Almost all of this business is nonpar and priced at new money rates. We have internal funds for new money products for each of Canada and the United States. We do not otherwise segment because we do not wish to lose the benefit of a flexible, constantly re-evaluated investment policy. The funds are analyzed quarterly to assess the relationship of assets to liabilities on a flow of funds basis, to calculate the surplus in the fund, and to consider the risk involved in not being fully immunized. Calculations are done quarterly from which we can calculate the increase in the present value of future pricing profits, the gain or loss during the quarter because of a non-immunized position, and the gain or loss from investment transactions during the quarter.

Table I is an illustration of the second half of 1982. We began in a reasonably immunized position at the end of June, and moved to an extremely non-immunized position at the end of the year. As a result of the transactions during those six months, we increased our present value of pricing profits by \$2 1/2 million. Other sources of increased surplus include \$6 million from what lack of immunization existed at the end of June, plus another \$26 million as a result of investment transactions during the last half of the year. We calculate the amount of surplus on a variety of interest rates as illustrated on the bottom of the table.

In summary, our company's prime profitability measuring rod up to the present time has been our internal profit and loss statement supplemented by detailed financial indicators. Currently, however, we are moving to a new, more comprehensive financial planning and reporting system built around the use of Return on Investment and Return on Total Capital. Our purpose is:

- (1) To focus on a more meaningful and understood result;

- (2) To establish internal priorities between competing uses of capital; and
- (3) To assess our effectiveness in managing the existing book of business.

Table II has some definitions for ROI with which I'm sure you are all familiar. These are used in our pricing analysis and in the assessment of entering into any new line of business.

We define total capital as the sum of surplus plus the value of business in force plus the written-off value of major new ventures. The total capital is not dependent on your definition of reserves since the value of the business in force is equal to the reserves minus your gross premium valuation. Any change in your definition of reserves will automatically, on a one-to-one basis, change the value of surplus. Your total capital is independent of your valuation basis. It is dependent, of course, on the assumptions in your gross premium valuation.

Surplus can be based on Canadian statutory reserves, which for those of you not familiar with our system is derived from a valuation considered appropriate for the circumstances of the company, i.e. somewhat equivalent to GAAP. Alternatively, surplus can be defined on the Internal P&L basis described before. For our company, the P&L basis increases surplus by approximately 70% of statutory surplus, or \$600 million, but decreases the value of business in force by a similar amount. We find ROI is a very useful pricing and planning discipline. And ROTC is a more reflective measure of the overall return for the company taking into consideration our rate of growth and our ability to retain existing business on the books.

Table IV, which is illustrative only, is intended to be a total company illustration. You could have a similar illustration for a territory, a line of business or a product. Essentially it shows the value at the top, consisting of the surplus value however you may define it, and the value of your business in force. The total should be fixed. The difference between surplus and the value of the in force will depend on the definition of reserves. In this case I've used Canadian statutory reserves. The regular bottom line is the next line, and that's your earnings. In this case, it is intended to be approximately a statutory result. The value added is the increase in the value of your business in force. Of course your in force decreases in value but your new business increases. Adding the two together produces a return on total capital, a portion of your capital being surplus and a portion being your previous business in force and your new business. In this case that made the value added and new business equal to the earnings, and therefore an ROTC equal to the ROI, which was, for this particular illustration, assumed to be 10%. If you want to do a similar calculation in your own company, I think you would find that the value of your in force and the return on your in force is miserable. The more you replace your business, the more miserable it gets. If we really do look at total return on capital, I don't know that many of us are going to be all that happy.

Analysis of Earnings

We analyze reported earnings in detail on an annual basis. The analysis

for each profit centre, that is each territory, line of business and product, is done on our internal P&L basis which, as noted, is a form of GAAP but stripped of almost all statutory margins.

Corporate surplus is a separate profit centre, with surplus earning not only its own interest, but also receiving surplus contributions from each line. Some charges are also made for a portion of overhead, some development costs, and income tax.

Earnings are reported for each product with major analysis based on the underlying indicators and gains by source. Indicators include the investment rate assigned to the product, the required investment rate, the functional cost index (which is the ratio of actual expenses to those assumed in the pricing), the mortality index, the lapse index (which is the ratio of actual lapses or surrenders to those assumed in the pricing), and the loan utilization rate. In addition, the sales volume, the amount in force, and the size of the reserve are shown. Gains by source are shown for interest, expense, mortality (standard and sub-standard), lapses, and other.

In calculating these gains, our expected is based on the current pricing assumption or the current dividend assumption in the case of par. Much of the gain from other sources is the difference between assumptions on prior manuals and the assumptions on current manuals.

Separately we also study gains or losses with expected based on current budgeted plans. This develops any planned departure from pricing assumptions. It will show to what extent the company plans to outperform its pricing assumptions, or in the case of 1982, and now projected for 1983 and 1984, how much we are subsidizing current pricing while we bring our operational plans into line.

The very large volumes of individual annuity business written in the last few years by our Company have resulted in sufficient losses on a tax revenue basis to zero out our income taxes. In the internal P&L, taxes are charged on a pricing basis and deferred taxes are set up for the annuity lines. Any difference with actual taxes is charged or credited to the surplus account.

Our company makes comparisons with selected peer companies in Canada and the United States on an annual basis. Detailed comparisons are made from government statements with the emphasis primarily on growth by line.

In addition, and also from the Canadian government statements, we do an analysis of the financial strength of each of our major peer companies and how their financial position has progressed from year to year. This involves adjusting each company's balance sheet and income figures to a comparable basis, producing results which are often quite different from those reported.

Table V is an illustration of this type of analysis. On the lefthand side of the table are reported surplus ratios, the ratio of surplus to liabilities. (I have adjusted the figures slightly so that the companies can not be identified). The adjusted ratios reflect, for example, different approaches to the amortization of initial expenses and variations

in the handling of cash value floors, currency rates, and special reserves. We do not otherwise adjust for differences in actuarial reserve bases; first, because we assume the valuation is appropriate to the circumstances of the company and therefore requires no adjustment; and second, because it is impossible to make a calculation with any degree of validity. The adjustments that are made result in higher or lower surpluses than those reported. We relate these to the adjusted liabilities to produce adjusted surplus ratios. We increase or reduce the surplus by the difference between the market and book value of assets, and relate that to the adjusted liabilities to produce market value ratios.

The table shows these ratios vary considerably by company. One has to be cautious on how to interpret this kind of information, but it does give you some sense of what may be happening in some of the companies. There are companies, for example, that will sell off real estate that has a profit in order to convert a hidden asset item into surplus. Others will not. I think this happens in the United States where too frequently we sell off gains in order to produce surplus. We are kidding ourselves. We also determine market value surplus ratios. Finally, we look at the change in surplus ratios from one year to the next, adjusted for differences in growth rates. The right hand column of the table gives a sense of the relative performance by company from one year to the next. It excludes the market value relationship, but it gives you a sense of what's happening from one year to another.

My understanding is that most Canadian companies make a comparison of this type for their internal information. None of us share it with each other since the assumptions we are forced to employ are very judgmental and would not meet any test of actuarial rigor.

Surplus Needs

Statutory assets minus statutory liabilities equals statutory surplus. How this is allocated to a particular line of business is clearly a matter of judgement, although it will be heavily influenced by the "appropriateness" of the basis used for calculating the liabilities. In other words, one must consider the total surplus needs based on realistic evaluation of risk.

I have trouble determining minimum surplus requirements. I have discussed the problem with companies which have sophisticated deterministic models and other companies with sophisticated stochastic models. I question whether most of the models are worth the money put into them, and I am not satisfied that management understands the significance of the results derived from the models.

In fact, I prefer minimum surplus requirements more or less as defined by Don Sondergeld in his recent paper, Profitability As A Return On Total Capital, published in the Transactions. Don defines required surplus, or what he calls "benchmark surplus", as the amount needed to satisfy management's comfort level. It may not be scientific or elegant but it is certainly something management understands. And it suits me, particularly if management will allow me to suggest to them the required surplus with which I feel they should be comfortable.

In my company, we start with Statutory (Ottawa) reserves, which are

supposed to be appropriate, but will in fact include some degree of conservatism.

We then examine the risks inherent in each major product line, and allocate required surplus by an appropriate highly simplistic formula.

For example, we have an investment reserve charge of 1 1/2%, an asset default reserve, a charge for the policy loan provision, the mortality risk, an expense risk, and a C-3 risk. We use an additive formula although we appreciate this may overstate the required surplus. I do wish to point out that as the Society further develops a more sophisticated understanding of contingency risks we will incorporate the techniques and the results into our statutory valuation and our calculation of required surplus.

The formula we use at present allocates approximately one half of the company's total statutory surplus. The balance, which we call free surplus, is available for the general protection of the company, development projects, rapid expansion, excess investment flexibility, undefined risks, etc.

How do we tie risk and profitability together? We intend to allocate required surplus to each territory and product line. The riskier the product, the larger the amount of required surplus, and this will dampen the fluctuations in return on capital (including the required surplus) since the results depend increasingly on the earnings on surplus rather than on the operating earnings.

Of course, we can also vary our ROI Objectives by product line (or risk). As a general rule, we aim for an ROI equal to our average portfolio rate for traditional par products, and ROI equal to new money interest rates for nonpar single premium products, adjusted for any special risk involved.

TABLE I

NEW MONEY FUND* - JUNE TO DECEMBER 1982

	<u>AMOUNT</u>	<u>MEAN TERM</u>
<u>December 31, 1982</u>		
Statement Book Assets	\$1,151,000,000	
P.V. Asset Cash Flow 11.75%	1,072,000,000	8.31 yrs.
P.V. Liability Cash Flow 11.75%	992,000,000	6.36 yrs.
Surplus @ 11.75%	80,000,000	
<u>June 30, 1982</u>		
Statement Book Assets	N.A.	
P.V. Asset Cash Flow 15.6%	750,000,000	5.34 yrs.
P.V. Liability Cash Flow 15.6%	705,000,000	5.63 yrs.
Surplus @ 15.6%	45,000,000	
<u>Source of Surplus Increase</u>		
Increase P.V. of Future Pricing Margins	2,500,000	
Profits from Mis-Matching	6,000,000	
Profit from Investment Transactions	26,500,000	
<u>Immunitization Risk (December 1982)</u>		
Surplus @ 18%	- 4,000,000	
Surplus @ 14	37,000,000	
Surplus @ 10	129,000,000	

*This fund represents the assets standing behind products which, at issue, were priced on a then current new money interest rate (i.e. primarily annuities and pension).

TABLE II

Return On Investment (ROI)

NEW BUSINESS TOOL - Investment Objective
 - Test Sensitivity of Assumptions

DEFINITION - ROI is the interest rate for which the present value of profits at issue equals zero.

N.B. INVESTMENT - Insurance - Reserve + Required Surplus
 + Negative Cash Flow

Annuities - Reserve + Required Surplus
 - Positive Cash Flow

PRICING CONSISTENCY - Allocation of expenses and other assumptions should lead to pricing with reasonably consistent ROI's

Table III

TOTAL CAPITAL

Total Capital = Surplus + (Reserves - Gross Premium Valuation)

Total Capital = Surplus + Value of In Force

Increase in Total Capital = Earnings + Increase in Value of In Force

Total Capital = Free Corporate Surplus + Sum of the Division's Total Capital

PANEL DISCUSSION

TABLE IV
CORPORATE PROFIT PLAN
 (HYPOTHETICAL)

	<u>SURPLUS</u>	<u>VALUE OF IN-FORCE</u>	<u>VALUE OF NEW BUSINESS</u>	<u>TOTAL</u>
Value 1/1	830	1,318	0	2,148
Earnings	100	120	-140	80
Value Added	0	-50	140	90
TOTAL	100	70	0	170
ROTC	12.0%	5.3%	10.0%	7.9%
Additions	80	90		170
Value 31/12	910	1,408		2,318

Surplus - Reported Surplus

Value of In Force - Derived from a gross premium valuation which may or may not be based on models. The above table assumes no change in assumptions during the year.

Value of New Business - The illustration is based on an assumed pricing ROI of 10%. Had the actual result exceeded 10% the "value added" would have exceeded the "earnings" (or negative cash flow).

TABLE V

RATIO OF SURPLUS TO LIABILITIES

<u>COMPANY (1)</u>	<u>REPORTED RATIO (2)</u>	<u>ADJUSTED RATIO</u>	<u>MARKET VALUE RATIO</u>	<u>INCREASE IN ADJUSTED RATIO (3)</u>
A	13%	12%	4.5%	.90%
B	12.5	14	24	1.78
C	14	13	11.5	1.12
D	12	11	12	.19
E	15.5	14	15.5	.39
F	14	12	14	1.46
G	12	10	4	.93
H	12	10	21	1.74
I	14	9	2	.82

NOTE (1) - The companies with the best and the worst Adjusted Ratios are excluded from the table.

NOTE (2) - Reported Ratios have been modified slightly in order to obscure identification.

NOTE (3) - The increase in the Adjusted Ratio from one year to the next takes into consideration growth during the period.

MR. SONDERGELD: At this time we can open up to a question and comment period.

MR. LECKIE: I'd like to throw out a question to either of the other panelists of something we ought to be concerned about as we develop these strategic business units or divisions within our company. How do we avoid suboptimizing? That is, how do we avoid decisions being made at the business level which are appropriate and reasonable for the profit to emerge in that particular business unit but which suboptimizes the performance of the company?

MR. KISCHUK: That's a difficult question, and I'm not sure there's an answer to it. You pretty much have to tailor that process to each particular company. In our case we have a well developed corporate strategic and financial planning process, and then each of our business units has their own planning process, both strategic and financial. The role of the corporate planning people at Lincoln National is to look at all the plans that are developed by the business units and then develop the corporate plan. Anything that is coming out of the various business unit plans that is either not consistent with the overall corporate plan or that would tend to suboptimize is something to be redflagged. It would then be discussed by corporate management and business unit management.

Suboptimizing is the risk that you get into in a very decentralized process. The case in point might be our segmentation into about seventy portfolios versus Manufacturers Life's two. There's no right or wrong answer for a particular company. Two portfolios can be the right answer for one company, seventy can be the right answer for another, and something in between might be the right answer for other companies. In our case, part of what we examined was management's judgment that the benefits of segmenting into seventy portfolios outweighed the disadvantages of doing it. For one thing, we felt that, for the time being anyway, we had a bigger problem with mismatching of assets and liabilities than suboptimizing. Therefore we were willing to live with some suboptimizing to try to get a better match between assets and liabilities.

Probably an even bigger factor for us is that we are decentralized into many different companies. Even within companies we have product lines that are managed almost like separate companies. We want to give the people who are managing those businesses the feel that they are actually running a business. One thing that contributes to that feeling is that managers can have their own portfolio, and can see their list of investments. They have investment strategy objectives, and actually buy and sell investments within the overall corporate investment policies.

We do have some concerns about this decentralization. If you have operating managers who are trying to maximize short term results, then for example, they may not want to buy common stocks or real estate. However we may think that in the long run the total aftertax return from those types of investments will exceed returns on types of investments that may give you a higher current return, such as bonds and mortgages. At the same time, because we're trying to encourage an entrepreneurial approach at the corporate level we don't want to dictate and tell a manager that he has to go out and invest X percent of his money in real estate. Therefore, the job we have is to try to educate those managers to the benefits of

investing in those kinds of investments, and to make sure that our financial incentive system doesn't create incentives to do otherwise.

MR. SHAPIRO: The key is for managers to understand what they are responsible for, and to be able to influence these results. If one looked at a spectrum from 0-10, 10 years ago we were managing our industry at a 1. Today we've started to break our companies down and manage by performance and business module. We may be operating at an 8. We will work up to a 10 as we get better at developing cooperation at the planning levels in the companies. That cooperation depends on effective leadership and planning techniques. I am certain we are better off losing a little cooperative perfection and winding up at 8, rather than continuing to do what we were doing 10 years ago.

MR. SONDERGELD: I have a response to Robin's question also. At my company, The Hartford Life Insurance Company, we have a number of lines of business, one of which is a corporate line of business. It is possible that something that is in the corporate good may not be what individual lines of business may want to do. In that case, there can be an adjustment that zeros out. That is, the line of business is not hurt by doing what it doesn't want to do and the corporate line of business is allocated the difference. For example: In a non-life company, if a line of business would prefer to invest in tax exempt bonds, but there are reasons why the corporation would like to invest in taxables, an adjustment can be made between the corporate line and the operating line of business for doing something that is for the good of the corporation.

MR. DANIEL A. ANDERSON: Bob Shapiro discussed the process of applying percentages to assets and liabilities to quantify risk surplus, adding up results by line of business. His comment suggested that it's a technique that is fairly out-of-date and not very practical today.

We use, or have used, a similar technique and the comments from the other two panelists led me to believe that they were currently using that type of technique. I would like you to explore that further.

MR. SHAPIRO: The old formulas were derived from fairly limited research, and certainly do not reflect the change that we are going through today. Hence, they need to be applied very carefully.

MR. KISCHUK: We probably found something that all the panelists can agree on. I am also a fan of the comfort level approach rather than letting the formula dictate management decisions. You have to do that because, as Bob says, if you blindly proceed based on the formula it can lead to some bad management decisions. I agree entirely with Robin, Don and Bob that you can use those kinds of formulas as guidelines, but if the formula seems to be pointing you in a particular direction you have to stand back and ask yourself if you really believe it. Let's look at, for example, investment. As Bob was pointing out, that is a ratio of the profit margin divided by the amount of surplus. If your profit standard is a 15% return on investment and you are looking at a product that looks like it is going to return 10%, then you have to look at both the numerator and the denominator and decide whether you believe both of those. For example, the profit margin may be increased by better operational management or by better product design, and you may be overlooking some things there. On

the other hand, if you think you are getting the best profit margin that you can by comparing what you're doing with what competitors are doing, then you may be allocating more surplus to that product line than your competitors. In that case, you have to look at it and ask if you really think this product line is riskier than your competitors think it is, and you really have to think that through. You may decide that in the end you really do, and the decision will be to not participate in that product line. But I think you have to sit down and think about those things, and not let the formula dictate the management decision.

MR. FORREST A. RICHEN: My company is a small to medium size mutual company. With the description that we've heard of what seemed to be rather elaborate recording systems and monitoring systems, I'm concerned about the overhead costs of establishing and maintaining those systems. Could you comment on small organizations doing this?

MR. SHAPIRO: There is a tendency to describe these things from a level of detail that often isn't necessary in practice. In the smaller companies that have used this technique it's been largely a reflection of the planning for change process.

MR. LECKIE: Often the more information you have the worse the management decisions, and the more likely you are to suboptimize. Thus the smaller the company the more you want to look at what you need for the chief executive to manage it. That is, some kind of system that filters down into the organization to do the right thing. One thing that I've noticed, and that is certainly a direction we're taking in our company, is far more towards planned results. What's going to happen if our current assumptions are realized, and how is it going to be affected by some shift in performance from those assumptions. Rather than looking back at how we did last year, it is far more important to be able to figure out what you will do next year. It's the future that you can affect; the past is history.

MR. KISCHUK: The question raised is a good one. Even though our system sounds pretty elaborate, in reality it probably will cost us less than the old system for a couple of reasons. I start out by saying that even though we are a large company I'm a big fan of keeping things as simple as possible. The operating managers don't have the time to understand a very complex system. If something is too complicated than they'll tend to ignore it because they have better things to do. I think we have substantially reduced our expenses by eliminating the black box that we talked about earlier. Our system of using service charges and chargebacks to allocate expenses is far less expensive to operate than our old functional cost allocation system. Similarly, the system of keeping track of various portfolios is somewhat more costly than our old investment income allocation systems, but it is certainly more understandable, which is beneficial.

As far as going to monthly reporting rather than quarterly reporting, we're definitely experiencing some trauma and probably some additional expenses as we get into that system. However, in the long run it may be less costly. For one thing, if you have the right system operating it may not be much more costly to run monthly as opposed to quarterly. Also, if you are only running the system quarterly there can be inefficiencies and glitches in the system. Because you only run it quarterly no one has the

incentive to fix it. They get through the quarter, and don't worry about it until the next quarter. If you have a monthly reporting system there's an incentive to get rid of those inefficiencies. We think we will probably have a more efficient system running monthly. The result may be it won't cost us much more for monthly reporting.

MR. GARY CORBETT: There seems to be a move towards integrating the investment area into each profit center, whether it's through 70 different accounts, through nominal accounting, through the need to just integrate, or through matching our assets to liabilities. I wonder whether we get into the problem of suboptimization that Robin brought up, not only in not optimizing profits, but also not optimizing immunization. Immunization can perhaps be accomplished across lines rather than within each line.

Also, if you tag the individual profit centers with the actual results of the associated investments it leads them towards investments that reflect profit in the shorter term. The question was raised that you may not invest in real estate unless you have an internal accounting system that provides for bringing in capital gains over the life of products, or something like that. I wonder whether there are any companies that are using more of an index approach to assigning earnings to profit centers. The index may follow the market for a certain risk type of bond, an A bond for example. This approach sets the investment department up essentially as a profit center to take risks if they choose, and to invest in ways that are not necessarily desirable for the profit results of that profit center. This is opposed to trying to carve up all the investment results and narrowly segment them into each profit center.

MR. LECKIE: We do that. We establish a basis for pricing of annuity and pension products which is based on a determined portfolio. Usually a portfolio consisting of double A bonds with some combination of mortgages is used depending on the kind of immunization necessary. But we don't expect to invest in it. For example, we might use a 50% mortgage component. However, we don't require the investment department to actually get the mortgages. They could get anything else they want, and they can trade off what they have. We analyze it from time to time, but the result for pricing is the rate that was negotiated in the first place.

I might just mention that you can get a real problem in negotiation between marketing areas and investment areas. Some companies, for example, negotiate required return with the investment area, with the investment area measured from the negotiated rate. The area that has the ultimate upperhand on the negotiated rate is the one that is going to be in control. Quite obviously the marketing area wants a very high rate that will maximize their performance, whereas the investment area wants a very low negotiated rate. If the control rests with the investment area then you are non-competitive, and if it is with the marketing area then the investment area is going to lose money. This is a problem I see in many companies. Usually the control is in the investment area, and those are the companies that aren't selling annuity business.

We're developing a system right now whereby we would be determining the surplus level in our new money fund. The extent to which we exceed it is folded back into future pricing assumptions. In this way, past trading gains and investment performance can be used to increase the interest rate

permitted for pricing purposes in the marketing area. As the performance goes down that provision would not be available. Therefore, it would be up to a marketing actuary to use excess past profit judiciously to hit the market at the best time, when you can get the biggest profit for the future.

MR. KISCHUK: There are many offsets to this suboptimizing. One of the most exciting things about our process is what is set loose on the people side. In the past the investment people did their thing, and the product people did their thing, and they hardly ever talked to each other. We had many problems that Robin mentioned. We probably will run into some problems as a result of being decentralized, but right now much of what we are seeing is pretty exciting. The wall that we historically had between the investment and the product people seems to have been broken down. We have a product person in each product line who is responsible for working with the investment people regarding the portfolio, and then each portfolio has a portfolio manager assigned to that portfolio. We're headed toward a system of incentives where the portfolio managers are compensated based on the results of those portfolios. We are finding that the product line people have learned something about investments, and the investment people have learned something about the product lines that they are working with. They're sitting down and coming up with some pretty innovative ideas about investment strategies. Lately, and even more exciting, the marketing people have now gotten into the act with the product line managers and the investment people, and they are looking at product design and innovative investment approaches. Another thing that is encouraging is that they are now talking about investment strategy at the time the product is developed. Therefore, when the product is developed and starts to be sold we already have the investment strategy thought out. Some of the investment strategies can be pretty innovative. Of course, some are pretty innovative but not very practical. But that's the kind of thing that we want to encourage. If you try to rule out too many things, then you are not going to get much innovation.

MR. ANDERSON : I want to pursue Robin's comment about the surplus that's accumulated from prior investment actions. He said the pricing area has the leeway to draw from that in setting their prices. If you run into losses on the investment side is there an onus on the pricing area to fold that into their pricing?

MR. LECKIE: You are asking whether, if performance is really bad, we would have a negative charge. As I say, we aren't using this basis yet. We are just looking at this approach towards getting ourselves back into a basis where we can in fact compete with the other company's pricing. Generally we would amortize the surplus levels in such a way that I don't believe that is likely to ever happen. But we wouldn't in fact do it. We would just not use losses to force a lower level pricing assumption as a result. It would be self-defeating. If your formula would have otherwise forced you into lowering your pricing then I would say lets eat it and find some way of amortizing that risk over a whole set of products.

MR. ANDERSON: You are getting into an interesting situation if only surpluses can be used. I understand that that's the most viable thing to do from a competitive point of view. For ongoing profitability however, if you use the profits to establish lower prices than the current environment would justify but are not prepared to pick up the negatives

when they come you get into an awkward position over time, given that you are going to have gains sometimes and losses sometimes.

MR. LECKIE: But we do not permit much of those past gains to come into pricing subsidization.

MR. WILLIAM C. HSIAO: How is the different nature of a mutual company versus a stock company getting reflected into the profit standards? It seems to me that stock companies have to be accountable to the stockholders and to the constraints of the stockmarket. The mutual companies can be looked upon as a consumer cooperative. There are fewer external constraints operating on that kind of organization, and different regulations that apply to these two different organizations. Therefore, I'm interested in how you reflect those different external environments in the profit standards.

MR. LECKIE: Don Sondergeld referred to a corporate line to handle some elements that didn't appropriately enter into a profit line. Most mutual companies are moving towards managing their companies as though they were stock companies. Most of the people within the company are profit oriented to produce maximum optimized results. Only a small court, if you will, within the company is left to reflect the mutual character of the company, and the flow of those earnings back through dividends, and how the dividends and the general pricing and the moves to new businesses can be reflected in the surplus levels that are necessary within the company. I liken it to the way in which general agencies and branch management companies came together. General agencies started to develop contracts that looked very much like branch managerial contracts and vice versa. To me there is very little distinction now between stock and mutual companies in terms of what they do and how they manage themselves. Ten or fifteen years from now there may not even be a distinction.

MR. SHAPIRO: Unless mutual companies organize and manage themselves like stock companies, and create incentives and do all the other things that we have talked about, there is a real question as to whether or not those mutual companies can survive. I believe the mutuals, in general, are trying to operate like stocks, as Robin Leckie has indicated.

MR. SONDERGELD: In both stock and mutual companies there is not an unlimited supply of capital and surplus. This means that the various lines of business need to compete with one another for the use of the company's capital and surplus. It is not healthy, on average, to have a line of business that has an atypically low return on the use of that capital. It's healthy to grow the company, and to finance that growth you want to get a good return on your capital. Therefore, it would seem to me that stock and mutual companies in the future, if not today, will be operated more and more like one another. A major difference that I see between stock and mutual companies, or really between par and nonpar, is in the individual life area. The mutual company with the participating product has a higher gross premium and less of a C-1 risk, and therefore there is probably less surplus tied up in that product.

