COST OF CAPITAL FOR MUTUAL COMPANIES

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Panelists: DONALD L. GAUER
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o   Methods of deriving cost of capital for enterprise
o   Application to mutuals
o   Empirical values of capital cost for stocks and mutuals in recent years

MR. KENNETH A. LASORELLA: We're going to talk about cost of capital for mutual companies. We have quite a distinguished panel -- two of three are Canadians, which is appropriate, and one also has some Canadian friends. So that is close enough.

We are going to take a unique approach to this I think. We have three speakers: Ed Jarrett is going to present the theoretical framework. Another speaker, Al Greenberg, is going to talk about the practical applications, actually how you go ahead and get the capital. Then we have Don Gauer, who's more or less the rich uncle, who's going to talk about supplying capital from the other side.

Ed Jarrett worked for Transamerica for quite a while and then decided to become a consultant; he worked for Tillinghast and then became the cofounder in 1986 of Actuarial Resources Corp. He's also the editor of the *Financial Reporter*, which is the publication of the Financial Reporting Section.

MR. EDWARD C. JARRETT: As Ken said, the focus of my comments is primarily concerned with the theoretical concepts behind the cost of capital. This boils down to putting a value on -- pricing or valuation -- a particular stream of future cash flows when those cash flows are uncertain; uncertain because of the interest rate environment, uncertain because of our actuarial assumptions, etc. Our primary goal is to better understand how we put a value on a future stream of cash flows when they are uncertain.

In talking with actuaries working in investment areas of life insurance companies and actuaries working in other financial institutions, it has become clear that the actuarial profession excels in two particular areas. First, we excel in the practical application of the theory of interest in analyzing certain cash flows. We get this from our educational training primarily through the *Theory of Interest* book by Kellison and it permeates all of our actuarial training and day-to-day practice. The second area in which we excel as actuaries is in the application of expected value. I qualify expected value as *the application of expected value when there is common agreement among us on the probabilities to be used in calculating that expected value. So that brings us to the area where I believe we, as actuaries, need to improve our knowledge. That is in valuing cash flows when there is no agreement or little agreement as to the appropriate probabilities to use.

My comments are going to focus on three topics. First, I am going to cover the general cost of capital formula included in most finance textbooks. Secondly, I am going to reinforce the use of cash flows in valuing or pricing business. And thirdly, I am going to cover some of the current techniques used in determining a value of a stream of uncertain cash flows.

WEIGHTED AVERAGE COST OF CAPITAL

$$\text{WACC} = k = k_d \cdot (1 - T_c) \cdot \frac{D}{V} + k_e \cdot \frac{E}{V}$$

k_d: Cost of debt. For life insurance companies (LICs), debt is usually in a holding company.
k_e: Cost of equity.

T_c: Corporate tax rate
D: Market value of debt.
E: Market value of equity.
V: Market value of firm.

This weighted average cost of capital formula is the traditional formula found in most finance textbooks. As you can see, this example includes debt and equity. It is important to point out that the cost of capital is tax adjusted, and the market values are used in calculating the weightings for each source of capital.

In terms of a general formula, we simply take the sum of the cost of capital from a particular source times the proportion of capital coming from that source to get an overall weighted cost of capital from all sources. It is a simple and intuitive formula.

However, it should be remembered that the weighted average cost of capital formula is only a guideline, and thus, it should be used only for guideline return objectives and not specific return objectives. One reason is that the cost of capital will vary over time. For example, the actual weighted average cost of capital can be calculated at a particular point in time, but since the proportion of capital and the actual cost of capital from a given source will change over time, the weighted cost of capital will also change over time. Another reason that the overall cost of capital should be used only as a guideline is that, in theory, the appropriate cost of capital will depend on the riskiness of the particular project or set of cash flows being valued, whether the cash flows are for a particular product, line of business, block of business, or an entire company.

In terms of an intuitive understanding of the formula, it simply says that the overall return that we use in valuing a product, block of business, line of business, or an entire company must be sufficient to provide the creditors and the owners with their expected risk-adjusted rates of return.

Cost of Funds
Now let's try to define what we mean by the expected risk-adjusted rate of return. There are many factors which influence the return required for particular investors and creditors. However, for our purposes we will assume the overall return required by the market for a particular source of capital is the sum of 1) the expected real interest rate, 2) the expected inflation, 3) the expected liquidity premium, and 4) the expected risk premium.

The first three factors are reflected in the term structure of interest rates (i.e., the current yield curve) and are constant between different sources of capital such as debt and equity. That is, when a value is placed on a cash flow stream, it should reflect the knowledge available on the current term structure of interest rates. If the yield curve is normal (i.e., positive sloping), the value of the cash flow stream should take that into consideration. If the yield curve is inverted, that should also be reflected.

The fourth factor, the expected risk premium, varies between different sources of capital and can be either positive or negative. Generally, the risk premium will be a function of the particular cash flow being valued. When valuing costs such as benefits and expenses the risk premium will generally be negative. When valuing cash inflows such as premiums and investment income the risk premium will be positive.

CASH FLOW BASED VALUATION AND PRICING
There is a definite trend within the actuarial profession towards the use of cash flows in financial analyses of products, blocks of business, and lines of business. Hopefully, I can support and reinforce that trend.

Actuaries have always been willing to hold spirited discussions on the appropriate method to use in valuing or pricing a block of business. Do we base our analysis on statutory profits, GAAP profits, profits based on an internal accounting scheme, or cash flows?

For life insurance companies, the traditional argument for using statutory earnings in determining the value of a block of business is that dividends can be paid only out of statutory earnings. Therefore, the value of a block of business equals the present value at some risk-adjusted discount rate of future statutory earnings expected to be generated from the business. How many

companies are you aware of that have ever paid a dividend in terms of units of statutory earnings? Dividends are paid in cash, either to the shareholder owners or policyholder owners. In the case of dividend additions, instead of paying a cash dividend, future cash benefit payments are increased.

Some companies approximate net cash flow with the statutory gain less the increase in statutory required surplus or with the GAAP gain less the increase in GAAP required surplus. The obvious danger of using adjustments to accounting information is the possibility of improperly reflecting the actual underlying cash flows. Two graphic examples where the accounting treatment masks the actual underlying cash flows are policy loans and deep discount bonds.

1. Policy Loans: Under statutory accounting, a policy loan has no direct and immediate impact on the income statement. There is simply a balance sheet adjustment which decreases the cash asset and increases the policy loan asset. However, in terms of valuing the transaction from a cash flow standpoint, a policy loan results in a direct cash outflow (or a reduction in premiums to the extent premiums are paid through a policy loan) and generally, a decrease in future cash death benefits and surrender benefits. If the term structure of interest rates is reflected, then there is a definite difference in value.

2. Zero Coupon Bonds: Another example where accounting rules do not accurately reflect the underlying cash flows is the use of amortized value for bonds. Let's take, for example, a deep discount zero coupon bond. Due to the amortized value accounting treatment, investment income will be shown throughout the lifetime of the bond when, in fact, there is only one future cash flow, at maturity. Thus, the increase in the bond's book value is not available for paying a cash dividend. In reality, the accounting treatment results in restrictions in the ability to pay out a cash dividend.

This leads us to the question of what is an appropriate way to reflect reserve and surplus requirements in valuing a block of business or line of business? I view statutory reserve requirements, GAAP reserve requirements, and surplus requirements as simply restrictions on our ability to pay out cash to our shareholder owners or policyholder owners. Required surplus requirements are, in the absence of actual statutory requirements, simply an internal capital rationing mechanism intended to help manage blocks of business and lines of business.

Book Value Principle
This leads to the rule-of-thumb I use in determining the appropriateness of a particular accounting treatment in valuing blocks of business. I call it the Book Value Principle. Whenever the book value of a stream of future cash flows is used and the book value at any point in time does not equal the market value, then caution should be used.

Put simply, value is based on future cash flows, and the use of book values for certain items can result in incorrect conclusions and decisions. If the book value always equals the market value, then, in theory, the future cash flow stream can be sold and the cash realized.

VALUATION OF CASH FLOWS
The last area which I am going to cover is five different techniques of valuing an uncertain cash flow stream to better understand the treatment of uncertainty.

Risk-Adjusted Discount Rate Approach

$$NPV_j = \sum_{t=0}^{N} \frac{E(NCF_{j,t})}{[1 + E(R_j)]^t},$$

NPV_j: Net present value of cash flow stream from project j.

$E(NCF_{j,t})$: Expected net cash flow from project j at time t.

$E(R_j)$: Risk-adjusted required rate of return for a cash flow from project j -- frequently called the weighted average cost of capital. Using the Capital Asset Pricing Model,

$$E(R_j) = r_f + [E(R_m) - r_f] \cdot \beta_j$$

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r_f: Risk-free rate of return.

$E(R_m)$:   Expected return on the market.

B_j: Systematic risk of project j.

The net present value equals the expected future net cash flows discounted to the present with a risk-adjusted discount rate. It should be pointed out that in the numerator, the expected net cash flow of an uncertain stream is used. Thus, the cash flow distribution at each point in time is replaced with its expected value and risk-adjusted by using a discount rate greater than would normally be used (to the extent the cash flows are positive). The risk-adjusted required rate of return is used as the discount rate and is frequently called the weighted average cost of capital.

In these examples, I am assuming an all equity capital structure. If the capital comes from several sources, a weighted discount rate would be used.

There are several models used in finance to estimate the risk-adjusted discount rate. The most common model is the Capital Asset Pricing Model (CAPM). The CAPM says that the expected risk-adjusted discount rate equals the risk-free rate plus a risk premium. The risk premium equals the expected return from the market portfolio of assets less the risk-free rate times a beta value. The beta value represents the systematic risk of the particular set of cash flows being valued, and thus, will vary depending on the variability of those cash flows in relation to the variability of the market in general.

Another theory used is the Arbitrage Pricing Theory (APT) which probably would be more appropriate for our use. The APT says that the risk-adjusted discount rate equals the risk-free rate plus the sum of the risk premium charges for several different components of risk. These components could include C-1, C-2, C-3, and C-4 risks as well as any other risks that have been identified.

Certain Equivalent Approach

$$NPV_j = \sum_{t=0}^{N} \frac{E(NCF_{j,t}) \cdot h_{j,t}}{(1 + r_{f,t})^t},$$

NPV_j: Net present value of cash flow stream from project j.

$E(NCF_{j,t})$: Expected net cash flow from project j at time t.

$h_{j,t}$:   Certain equivalent factor for expected cash flow at time t from project j.

$r_{f,t}$:   Risk-free rate of return for cash flow at time t.

The certain equivalent approach is consistent with the risk-adjusted discount approach except that uncertainty is reflected in a different manner. At each point in time, the distribution of cash flows is replaced with the expected cash flow times a certain equivalent factor. The certain equivalent factor is some number that makes the valuer indifferent to a certain cash flow at that time or the distribution of uncertain cash flows at that time.

Actuaries use the certain equivalent approach, either implicitly or explicitly, frequently. Most commonly, we use it in loading our mortality assumption. Future mortality is set somewhat higher than past trends would indicate. We also include margins in other assumptions such as lapse rates and inflation rates. Many times we use a combination of the risk-adjusted discount rate approach and the certain equivalent approach in that we discount with a rate exceeding the risk-free rate, but still include margins in the assumptions used.

The certain equivalent approach better illustrates the fact that when adjusting a particular cash flow, the adjustment should be a function of the cash flow. When using the risk-adjusted discount rate approach it is very common to use a single discount rate applied to the net cash flow which includes positive and negative items. Recasting the risk-adjusted discount rate approach into the

certain equivalent approach, helps to identify situations in which the risk-adjusted discount rate approach may be inappropriate.

Insurance products generally have a cash flow stream that is negative in the first year, positive for many years, and negative thereafter. When the net cash flow is negative, the risk adjustment technique should act to make it more negative, not less negative. Thus, if a risk-adjusted discount rate is used, the discount rate should be greater than the corresponding risk-free rate when the cash flow is positive and less than the corresponding risk-free rate when the cash flow is negative.

Multi-Scenario Approach

$$E(NPV_j) = \sum_{\omega} p_\omega \cdot NPV_{j,\omega}$$

$$= \sum_{\omega} \sum_{t=0}^{N} \frac{p_\omega \cdot NCF_{j,\omega,t}}{(1+r_{j,t})^t},$$

$E(NPV_j)$: Expected net present value of cash flow streams from project j.

p_w: Subjective probability of scenario w.

$NCF_{j,w,t}$: Net cash flow from project j at time t under scenario w.

$r_{j,t}$: Rate of return for cash flow from project j at time t.

Under the multi-scenario approach, uncertainty is reflected through the use of many scenarios. In calculating the present value, the expected cash flow at a particular time is replaced with the actual cash flow for the given scenario. The scenario probabilities are, obviously, subjective. That is, you and I may come up with completely different probabilities for a given scenario.

One of the major criticisms of this approach is that it doesn't explicitly reflect the risk preferences. That is, most people would prefer a certain $10 ten years from now as opposed to an expected $10 ten years from now. Thus, the multi-scenario approach is inconsistent with both the risk-adjusted discount rate and certain equivalent approaches in that both those approaches recognize risk aversion on the part of the valuer.

One way to overcome this problem is to determine the scenario probabilities by solving for the probabilities which would equate the current market values of several financial instruments in which the price is market driven (e.g., bonds, risk-free treasuries, etc.) with the price determined by the multi-scenario approach. For example, with 30 scenarios you could value a stream of 30 different risk-free bonds to come up with scenario probabilities consistent with the current marketplace. That is, if you valued those assets given your scenarios, the market value would be reproduced. In this case, the scenario probabilities reflect not only the market's belief of a given scenario occurring but also some implied risk aversion which is built into the market.

Simulation (Stochastic) Technique

$$NPV_{j,\omega} = \sum_{t=0}^{N} \frac{NCF_{j,\omega,t}}{(1+r_{f,t})^t}$$

$$E(NPV_j) = \sum_{\omega} p_\omega \cdot NPV_{j,\omega,t}$$

$$V(NPV_j) = \sum_{\omega} p_\omega \cdot [NPV_{j,\omega,t} - E(NPV_j)]^2$$

NPV_j: Net present value of cash flow stream from project j.

$E(NPV_j)$: Expected net present value from project j.

$V(NPV_j)$: Variance of net present value from project j.

$r_{f,t}$: Risk-free rate of return for cash flow at time t.

PANEL DISCUSSION

The fourth technique is simply called a simulation or stochastic technique. Under this technique, present values are calculated for each scenario by discounting at the risk-free rate, and then, given the scenario probabilities, the expected value and variance is determined.

Expected Utility Approach

$$E[u(NPV_j)] = \sum_{\omega} p_\omega \cdot u(NPV_{j,\omega})$$

$$= \sum_{\omega} p_\omega \cdot u\left[\sum_{t=0}^{N} \frac{NCF_{j,\omega,t}}{(1+r_{j,t})^t}\right],$$

$u(\cdot)$:   Utility function on the present value of cash flows.

$E[u(NPV_j)]$:   Expected utility of the net present value of cash flow streams from project j.

p_w: Subjective probability of scenario w.

$NCF_{j,w,t}$:   Net cash flow from project j at time t under scenario w.

$r_{j,t}$:   Rate of return for cash flow from project j at time t.

The expected utility approach explicitly reflects the risk aversion of the valuer by use of a utility function. The expected utility equals the sum over the different scenarios of the utility of the net present value for each scenario. Here again, the scenario probabilities are subjective. If the scenarios are assumed to reflect all significant uncertainty, then a risk-free discount rate would be used to determine the present values.

The major difficulty with this approach is determining an agreed upon utility function because risk preferences are unique to the particular valuer. However, most decision theory textbooks which use utility functions also document procedures for determining appropriate functions.

One advantage of using utility functions is that they require us to isolate, analyze, and better understand our risk preferences. In addition, separating the risk preference aspect of the valuation technique helps us to be more consistent in handling uncertainty in valuing cash flows from time to time, product to product, and project to project.

MR. LASORELLA: Our next speaker is from the University of Manitoba. Al Greenberg worked at Prudential in Toronto and Newark for about 8 years. He had been in consulting for 5 years prior to joining Jahaffe Capital Group. He was a chief actuary there for about 7 years and then he started Greenberg and Fickes, Ltd. (consulting firm).

MR. ALLAN D. GREENBERG: When I was asked by Ken to speak on this panel, I had a problem, because I didn't know anything about the subject. Now those who have heard me speak before realize that this has not been a handicap in the past. What I've usually done is asked knowledgeable people what to do. In reinsurance and taxes, some of the issues are so self-explanatory that once they've told me I can stand here and speak about them. So I went to some of the big mutual companies to find out the cost of capital. I tried to get some idea of what it is and they started talking about multi-scenario approaches, etc. I couldn't even pronounce them let alone understand them. I didn't know what to do. How do I find out what the cost of capital is for mutual companies. I went to 5 or 6 friends from large stock companies and I asked, "Could you explain to me what the cost of capital is for a mutual company?" And they said, "It is very easy, based on mutual company pricing, it must be free." I'm going to talk, really in practical terms, of what some of the sources of capital are. I am going to try to stay away from specifics as to cost but try to give relative ideas of what the cost is.

First, here are some of the common ways mutual life insurance companies can acquire capital. The most significant way today, at least based on interest and attention of the SOA members who are part of mutual companies or in the insurance industry at all, is securitization of assets. There are several techniques, some of which have been used for some period of time and some which have recently broken upon the scene and are having a major impact on the insurance industry. A traditional way of utilizing securitization for raising capital (and this is not restricted to mutual companies at all, it is very common among stock companies) is to turn a not-admitted asset into an

admitted asset. The most common is using Agents' Balances. Depending on the company, if the Agents' Balances is a fairly stable and predictable number with a predictable percentage of eventual default on the part of the agents who are being terminated or have been terminated, there is a low cost of capital (and I don't want to confuse you or myself as well, too, with the difference between cost of money and the cost of capital, for in some cases they are somewhat interchangeable and generally the lower the cost of money the lower the cost of capital). Because of the nature of certain nonadmitted assets and the ability of banks to get very comfortable with the securitization involved, surplus has been made available to insurance companies at fairly low cost. And where I have seen this most often is not so much in mutual companies; I've seen it more often in stock companies that need additional cash flow and capital (sometimes to pay dividends or at least to free up their surplus).

Something that has burst upon the scene in the last year or two is securitization of loadings on policy premiums. This is an extremely controversial subject right now in the insurance industry. There are several issues that have to be addressed. Let me deal with probably the two main issues. The first and most obvious is that because we are currently so much beloved by Congress as an industry, unfortunately we have become tax driven in much of what we do. The insurance industry may be the industry most disfavored by Washington. Congress gives us opportunities every year, it seems, to pay more and more taxes. Some of the larger banks that are involved in securitization programs involving loadings on premiums have obtained professional opinions relative to tax. My understanding is that two very respected Big 8 accounting firms have issued opinion letters discussing the fact that these securitizations not only do produce surplus but essentially do not produce taxable income. And for a mutual insurance company which has other difficult tax issues to worry about, not having to pay the income tax on this surplus is, of course, a tremendous benefit. It should be mentioned, however, that the feeling regarding the nontaxability is not as unanimous as it first appeared. There are some suggestions from various sources that the issues are not as clear-cut as originally thought. But nonetheless one of the more important factors that has made this such a cottage industry relative to insurance companies has been the assumed favorable tax treatment.

The second issue that is extremely important is the statutory consequences. When we first discussed source of capital at various industry meetings, and banking people were present, the biggest problem with respect to securitizing loadings that many of my colleagues felt existed was the fact that if the insurer was not earning any money and therefore had to meet obligations to its policyholders out of its surplus, then (the way these deals were originally being structured) the loadings nonetheless had to be paid to the bank. These payments might have to come from surplus!

I have discussed this with several banks but particularly with Chase Manhattan, which is one of the leaders in this particular field. The people there indicate that they have designed transactions whereby the payments to the bank are mitigated in the absence of insurer earnings. When repayment can only come from insurer earnings, it removes any concerns that I would have if I were a regulator. Building surplus this way results, in fact, in real surplus because there is an obligation that really cannot be charged to surplus but can be paid only from earnings.

However, what I would think is reasonable and what the New York State Insurance Department would think is reasonable are two different things. The department has essentially used a very broad brush approach and indicated that as far as New York is concerned these transactions do not produce surplus and that when an insurer develops the cash from securitizing its loadings, etc., it must also set up an offsetting liability to the bank. I think other regulators have given the opinion that they don't feel this should be uniformly true although in some circumstances it definitely will be true. Transactions should be judged on a case-by-case basis. However, New York has such a highly visible state insurance department that a lot of companies are certainly thinking twice about doing this because of what the consequences might be relative to their statutory surplus. In effect they may get no statutory surplus from such a transaction.

And finally in the area of securitizations -- I'd like to talk about something that is different from what we all have been talking about in terms of capital, because the transaction tends to reduce capital, and that is the securitization of policy loans. Thus far the only such securitization that I am aware of involves the Prudential. I understand that it was something in excess of $.5 billion of policy loans that were securitized with various instruments. There are several reasons to do this transaction. For mutual companies with sufficient surplus there is ancillary tax benefit. In fact,

the policy loans on the books are really overstated in their true value (on a liquidation basis). Therefore by securitizing them what you have done is put your balance sheet perhaps more on a current asset value basis (market value asset basis) and you have then reduced your surplus which in the case of a mutual company would reduce its equity tax. Also important is that this could be a very useful opportunity for companies in times of rising interest rates. Although this would consequently make their securitization less attractive from a bottom line point of view, nonetheless it would solve their cash flow problem and may be a cheaper way for them to raise cash and provide cash flow for policyholders who are increasing their policy loans because of the high interest rates relative to the existing policy loan interest rate. And I would like to thank personally Mike Shante for helping me understand policy loan securitization. He was able to convince me that, despite my feeling that you would be in a more unfavorable position for loan securitization in times of rising interest, in fact it may be much more cost effective for you to do that than to borrow money to finance your policy loan outlays. For stock companies with sufficient surplus but unfavorable rates of return on equity, it may be, from a public relations point of view, useful to use this device in order to improve their rate of return on equity. And even though the book value of their stock would be diminished, their future increased rates of return on equity might have a more than offsetting beneficial impact on their stock.

A most obvious way for a mutual company to increase its surplus and at a very limited cost is simply to retain more than it is earning. Unfortunately because of our current tax law, and I don't think that I am a mouthpiece for the mutual life insurance companies, this can be unappealing. I do believe that there are differences between stocks and mutuals and perhaps a tax differential is very appropriate. But unfortunately, the methodology used today makes it very difficult for a mutual company to increase its capital by reducing its dividend, because not only is it taxed on its additional earnings but also for every dollar of dividends it reduces it pays equity tax on the increased surplus. If there were a tax maybe more related to the dividend itself, such as a proxy tax on part of the dividend (in lieu of a tax to the policy owner as "stockholder" of the mutual company), earnings might become a very useful way and favored way for mutual life insurance companies to increase their capital.

A long-standing traditional way for insurance companies of all types to raise capital is reinsurance. For a mutual company there are a couple of ways to accomplish this. One is through the reinsurance of new business. This has two impacts, one of which historically has been less important to most mutual companies because of their large amount of surplus, and that is to reduce or eliminate surplus strains on new issues. This, of course, gives them additional capital and surplus but tends to be very expensive. However, if the amount of strain eliminated is fairly small these costs can be somewhat minimized. It produces an additional impact which can be very helpful to a lot of mutuals today that have undergone some substantial growth recently in that it mitigates their leveraging. Mutual companies are more and more concerned about the amount of leveraging that exists relative to their surplus. Reinsurance often can transfer the leveraging to reinsurance companies and mitigate the need of mutual companies for additional surplus.

The other familiar way to attain surplus in a mutual company is through a traditional surplus relief agreement. And a lot has been spoken about that recently; you've all heard from my friends at Chase Manhattan as well as other banks that this is a very cost inefficient way to do it. Although there is perhaps something in what they say, the advantage of a traditional surplus reinsurance agreement is that, if care is utilized and attention is paid to the structure, companies can in advance have a pretty good idea of what the cost of surplus as well as the statutory impact of the surplus relief are going to be on their company for many years into the future. Securitization provided a certain degree of certainty until New York State made its recent promulgation. I think securitization of assets does have a lot of these positive factors although I don't think there is the same level of comfort. I think now some companies are considering traditional surplus relief because of that.

In addition there are some companies that may have almost unique opportunities to obtain very special surplus relief reinsurance agreements. Whereas the cost generally for traditional surplus relief might be around 3% (for the very best of companies it may be down to 2.5% and for most it's more than 3%), there are certain special ways for certain unique companies to achieve rates that might be 2% or in some cases even less than 1%. Steve Fickes, who is my partner, and I have worked with a few insurance companies, and we think we have identified all the ones who would be able to utilize our approach (so please don't call us). We have approached these companies and there are a few who are going to be doing a few things that will allow them to perhaps obtain

surplus relief at something substantially less than 2% a year. This tends to make it somewhat more competitive with banks, since when all is said and done the bank cost is in the area of 1.5%.

Another thing that I would like to talk about is very important with today's complicated corporate structures, many of which are being utilized by mutual life insurance companies maybe for a maximum of the last 25 years and in particular during the last 5 to 10 years. It is the use of downstream companies to raise capital and it certainly has been a benefit to many insurance companies. Many of the giant mutuals might not be able to be in the great variety of businesses they are in today if it were not for the utilization of downstream holding companies. However, that ugly word I mentioned earlier, leverage, is now becoming a very important factor. Companies that you would think would have no capital problems because their statutory surplus is in 10 figures have to be very careful about what they do because of the problems of leveraging. Not being a technical person myself I try to avoid technical issues, but the amount of goodwill relative to an acquisition is definitely limited by statutory requirements. Therefore, if a company say like the Prudential has an opportunity to acquire Exxon or Ford at a very good price, presuming of course there would still have to be a premium to make the acquisition, the premium might make it impossible for the company to do the acquisition although on an economic basis it would be very sound. The impact on its statutory surplus upstream could be extremely adverse. The acquisition of a big enough company, like IBM, could even bankrupt a company like Prudential or Metropolitan because of statutory rules.

One of the areas that I have enjoyed working on recently is joint ventures. Maybe I could give you a simple example (and this is sort of a grey area). Let us say that a company, in order to improve its surplus position, thinks its best strategy is to level its agents' commissions. One of the ways it could do it is to set up a downstream holding company and borrow money, i.e., set up a relationship with a bank for the downstream company to borrow money from the bank to pay high front-ended commissions to the agents. The bank would then have the cash flow of the level commission that the insurance company would pay to this downstream company as its source of revenue to be able to pay back the loans it has made to the downstream company. The possible problem in doing this however, in setting up downstreams, is that there is a risk that you are doing too much leveraging. Nobody that looks at insurance companies believes that any large mutual company would walk away from a subsidiary. Also, if the loans that are capitalized in this subsidiary are deemed to be goodwill that you are carrying downstream, the loans would actually be charged (after a certain amount is exceeded) to your surplus upstream. This could be potentially devastating.

The best thing about a joint venture is that essentially you have an independent party owning a downstream company but there is a contractual arrangement to accomplish what you want to do as an insurance company with that company. You could utilize a marketing company where you don't have to worry about the goodwill because in fact it is never owned by you. You are just setting up a contractual relationship. In fact you could certainly walk away from an agreement when the contractual agreement was such that it allowed you to walk away. However if a mutual company bought the company outright no one would believe (and I think it would be correct) that a mutual company would walk away from an obligation to a subsidiary that carried its name either directly or by inference.

MR. LASORELLA: Don Gauer is a senior vice president and chief actuary of Sun Life of Canada. He is also from the University of Manitoba and has been with Sun Life for approximately 25 years.

MR. DONALD L. GAUER: The moderator has asked me to discuss the management of capital from the point of view of the chief actuary of a large mutual, in this case, Sun Life of Canada. I should probably acknowledge in advance that this means looking at the subject from an atypical point of view. You might even say weird. Since the nature of the company has a major impact on my perception of the subject, I'd better define where I'm coming from.

Sun Life is the largest of the Canadian companies in terms of business in force, in terms of surplus, and the strongest in terms of surplus ratio. At the end of last year, we had accumulated surplus of $2.3 billion in Canadian dollars and a ratio of surplus to liabilities of exactly 16%.

To put this in context, the next two Canadian peer companies measured, on the same basis, had surplus ratios of about 12%, and the next four ranged from 10% down to 8%. While we

customarily measure strength in terms of this ratio of surplus to liabilities, it seems customary in the trade press in the U.S., and I'm thinking here of *Best's* or *Standard and Poor's*, to measure strength by the reciprocal; namely, the multiple of liabilities to capital. A recent article by *Standard and Poor's* commented on the increase or deterioration in this so-called operating leverage multiple to 14.2 times from 12.6 times in 1983. Its study goes up only to the end of 1987. It considers that a very aggressive operating leverage for an individual life company is about 20-1. The least aggressive it marks at 10-1. Sun Life's ratios work out to 6.25-1. So you can guess that this is not going to be an aggressive presentation; opinionated maybe, but not aggressive.

To round out the identification of the Sun Life, I should say that it is heavily weighted towards participating insurance, both numerically and philosophically. This has not kept us from becoming a complex multi-national, however, in seven different territories and in seven major lines of business.

It is much easier to discuss the cost of capital from the point of view of a stock company, where the capital is provided by equity or from equity plus debt. We all know, on the other hand, that a mutual company is one of the strangest hybrids around where the capital belongs to the customers. One of the reasons why mutuals exist is because they traditionally did not have any difficulty whatsoever in raising capital. Years back, all that was needed was to go to the marketplace and offer to sell a promise to pay something in the future and people would line up to give you money, subject to a few minor conditions, that is. People would line up to buy annuities if one had a relatively decent rate and a good enough reputation for stability, solvency and probity. Another condition was to fulfill the hidden agenda of the intermediary; that is, the commission had to be high enough.

A slightly more difficult way to raise capital was to sell permanent participating life insurance. In the old days, I think it was easier, given the absence of other vehicles, and given the social custom of large families, single-wage earners, and more ready acceptance of personal responsibility. The product, as it was sold then, promised security to the dependents and possibly an excellent return for the survivors. This was on the basis of rates, compensation and values, which would permit break-even by year two or three. In the old days you could raise capital through your marketing activities, particularly with conservative pricing assumptions and an aggressive investment posture. An analogy to a milk cow might be suitable.

As time passed, however, this existence has been spoiled by modern times, or rather modern competition. The cow gives more milk, but feeding and tending the cow are much more costly.

Competition has become a problem, not from the consumer's point of view, since most consumers cannot easily distinguish between an excellent and a terrible price, let alone good versus bad. But competition has created a veritable monster due to the development of extremely powerful distribution systems that are still needed as intermediaries between the manufacturers and the consumers. The hidden agendas, which I mentioned earlier, are now the most important part of the structure. It does not strike modern sales people as unreasonable to require the highest compensation, the highest level of service, and the lowest price in the market for a product. That this would need a miraculous extraterritorial source of funds to balance the account is of minimal concern.

In a stock company, one can occasionally find the miraculous external source in the form of shareholders. Some stock insurance company shareholders seem prepared to accept ridiculously inadequate returns on their capital for the benefit of their company's clients. This lower return appears as low dividends, or low share value enhancement, or both. But at least it is calculable and enjoys a market mechanism, that is, the stock market, to enable the suppliers of capital to get in or out as they see fit.

Meanwhile, back in the mutual company, neither the shareholder nor any other mysterious long-term provider of capital exists. The mutual company is owned by the par policyholder, for better or worse. The par policyholder is the ultimate supplier of capital, for better or worse, and the capital equals the surplus.

Now let's drop the historical aspect and look at a modern big mutual -- a dreadnought that plows through the oceans oblivious to most changes in climate around it. The dreadnought undergoes changes in crew membership from time to time, who usually recognize their collective

responsibility to leave the beast in as good condition as they found it. One of the measures of the condition is the surplus.

The surplus of a mutual is basically available for utilization in one of three ways, or more precisely, the earnings on the surplus are available for three uses. Without necessarily ranking them in importance, they are 1) distribution to the par policyholders, 2) investment of new business, and 3) as retained earnings.

Let's assume that there is no arguing the premise that investment of new business is vital to maintain the well-being and momentum of the company. This doesn't simply mean investment in the same lines of business as a decade earlier; it may mean investment in related financial services or whatever else might be necessary to maintain the company as a viable long-term entity. Our business, which consists in part of executing written promises to pay benefits some 50 years hence to today's contract holders, practically involves a promise to exist in perpetuity. How's that for a commitment?

The troublesome part is in realizing that par policyholders hold par policies only, not shares. Instead of a share which reflects, in financial terms, a perception of how well the entity is doing and what future returns are expected to be, the policyholder holds just the policy. He is almost totally at the mercy of a distant management to serve his interests well. This management group leads, or is led by, a more distant board of directors. These directors are appointed by the par policyholders, or so the literature would have you believe. This is the same as saying that the farmer is appointed by the milk cows.

Fortunately, in the middle of this confused situation, we have room for a benevolent dictator called the chief actuary. He may have another title and may be helped by a valuation actuary, or a dividend actuary, if they are not all the same person. But the job is usually patently obvious. The job is to lead management to the decisions which will achieve perfect balance in an imperfect world. Balance of what? Of the three things I mentioned earlier: First, the level of distributable surplus; second, the level of retained earnings which are to be invested in new business; and third, the level of retained earnings which are not to be invested in new business, but instead just sit like a lump on the balance sheet -- the difference between assets and liabilities.

Within this context, there is a bad fact of life to be observed. With my usual humility, I will call this "Gauer's second law." Gauer's second law is "money cannot be created or destroyed." Law number two normally travels with a number of caveats but, in essence, it means that if you invest too much in new business, the amount available for either distribution or retention is reduced. But the dividend actuary breathing over your shoulder then points out that this course of action will create unacceptable intergenerational inequity. Remember, he's the one who's been telling you that these owners of the company only have fixed-value policies, not variable value shares. He's also told you that they can't cash out and walk away without self-injury.

So back to law number two. If one must, in equity, maintain dividend scales of the appropriate level and still wish to invest a ton or so in new business, the visible addition to surplus must suffer.

Now this may be okay as a policy if you are blessed with a 16.0% surplus ratio. But if the Sun Life experience is any guide, few people in a large 120-year-old institution have great tolerance of severe discontinuity in this measure. A modest downward trend is acceptable, particularly if it matches that of the industry. This is what has happened in Canada over this decade. The surplus ratio for the Sun Life has reduced from more than 20% to 16%, while the dividend scales have been enhanced and a fair increase in new business has been brought into force. In other words, a balance has been struck between the three uses of surplus.

Our surplus ratio has not been declining faster than that of our peer companies, per company policy. There must, one presumes, be a lower limit, but our peer companies will probably hit it before we do, unless they are prepared to constrain either new business or their dividend payouts.

More often than not, it is dividend scales which suffer in these circumstances. Perhaps some company managements believe that the policyholder should be willing to forego some degree of current reward in exchange for augmented future returns. This is all very well for those who survive, but it doesn't do much for those who die or must leave the company.

PANEL DISCUSSION

In a perfect world, such imbalances would all be self-correcting. Let me describe the perfect corrective mechanism. Company "A" chooses to invest heavily in some activity which involves a low and/or delayed return on investment. This could be any one of a number of activities, new business, new subsidiary, or another financial service. Let's also say that company "A" chooses to retain adequate earnings to keep its ratings strong. This, however, means it must cut dividends. This, in turn, leads to inferior long-term net costs. This results in an inferior market perception which, in turn, cuts back new business, which restores a better equilibrium. So much for the perfect world that doesn't exist. Sun Life has an excellent dividend scale, courtesy of its high surplus, good investment return, and regulated growth. We also think that we have fairly strong distribution systems, but this has not led to a flood of new business. An example of the imperfect world at work.

There have been some signs in the past two years of a return to reason in parts of the market. In group pensions, for example, the growing demands for capital, whether absolute or proportionate in relation to supply, have reduced the number of players and permitted a better return to those still prepared to supply the market. It would be nice to think that this might spread to all products.

This does, however, reinforce the absolute necessity to measure the return on investment by product and give the owners of the company the best return available. This is particularly relevant where participating policyholder funds are being invested in non-participating products. Poor returns should trigger immediate remedial actions, including dramatically reduced volume or withdrawal from the line if inadequate prices cannot be obtained. When capital is limited, you feed the winners and starve the losers.

At Sun Life, we now have the company subdivided into 85 finite segments, which combine into 28 business units, and measure performance quarterly on both statutory and realistic bases. I would like to say that we ruthlessly rectify underachievement, but, in reality, we are rather more kind and gentle. But wait till next year!

In the Canadian press, Sun Life is from time to time referred to as the sleeping giant. This is a nice catchy handle, and the noun fits, but the adjective doesn't. It has not been a particular objective to try to generate a lot of publicity, but we do take seriously what we perceive to be our responsibilities. First and foremost, these are to the par policyholder. It includes the necessity of sustaining the company as a vital entity. This permits forays into broadened financial services, if appropriate, but growth, as an ego trip, is not a priority. We will grow at whatever dull rate is appropriate to maintain the balance between old policyholders, new policyholders, and retained earnings.