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EFFECTIVE USE OF CAPITAL

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1. What is "capital?"
   a. In a stock company?
   b. In a mutual company?

2. How much capital and surplus should a life insurance company maintain? How is this amount determined? How should it vary by nature of risk, line of business, economic environment and other factors?

3. What alternatives exist for effectively deploying capital? Consider operations expansion, diversification, acquisition, or???

4. What return should a life company demand on invested capital? How would this return vary by:
   a. Type of company?
   b. Size and breadth of business?
   c. Life of business?
   d. Degree of perceived risk?
   e. Economic climate?

5. How much should a company "charge" for use of its capital? For example, surplus relief arrangements.

MR. OWEN A REED: The approach I would like to take is to deal with each question in turn. The first question in the program is, What is capital in a stock company and in a mutual company? As far as total investment capital is concerned, I would expect that most of us would agree there is little, if any, difference between a stock company and mutual company. Would you make any distinction Harry?

MR. HARRY S. SAUNDERS: To most of us that have looked at other industries, the traditional concept of "capital" in an enterprise is made up of the sum of three things:

- paid in equity raised through the issue of common and preferred shares.

- debt issues in the form of bonds and debentures.

- retained earnings.

The life insurance industry has at least three areas where it differs from the traditional concept.

The first, of course, is the mutual company with no shareholder equity.

The second is the absence of debt issues.

The third is the uncertainty as to what should be considered "retained earnings". Looking at the balance sheets of a cross section of life insurance companies, you will find a widely divergent definition of liabilities. If a company is "conservative" in its definition of liabilities, then it will have a lower level of retained earnings in its surplus account. A discussion on the appropriate place for contingency reserves, that is in the liability section or the surplus section of the balance sheet, can be found in the Report of the Committee on Valuation and Related Problems. We will hear more about this Committee report as the session progresses.

Some people would put a broader definition on capital, to go beyond the summation of balance sheet items. They might include such things as: the present value of business that is on the books, the value of the field force, the value of head office personnel, and perhaps the value of any plant and equipment above its carrying value.

From my own personal point of view, for today's discussion, I intend to limit "capital" to the amounts found in the surplus section of the balance sheet.

I do not envisage there being any difference in the definition of capital between a mutual and a stock company. A difference does emerge when you start to discuss ownership of the capital. In a mutual company the capital belongs to the participating policyholders, while in a stock company it belongs to the shareholders. In Canada, however, the capital of a stock company has a split ownership between shareholders and participating policyholders. This split is diligently recorded from one accounting period to the next, with the shareholders having very limited access, by law, to the earnings of the Participating Account.

MR. JOHN C. MAYNARD: I quite agree with what Harry has said. I think in the way you look at the matter of capital, you may come to somewhat different forms of expression. If you take a look at a life insurance company and assume for the moment that it is not going to write any more new business, then the excess money you would have after all the old business disappeared would be the capital. Another way of looking at it is that capital is the present value of the stream in of all the payments to be received in excess of all the payments that go out.

There is not a great distinction between a mutual and a stock company. The rights to what the capital earns is vested in shareholders in a stock company, but with that distinction, I don't see a great difference to the concept of capital in either of these two companies. Harry has mentioned who owns the capital in a mutual company, and I think legally, there is no question about his statement that it belongs to the policyholders. However, I think that those who run the company might think there is some distinction here in that the capital did not really come from the existing policyholders only. It came partially from previous policyholders. So, in that sense, I feel that the company has a moral responsibility to exercise the use of that capital for future policyholders as well as present policyholders. This is perhaps a fine point as to who owns the capital.

As to practical methods of measurement, the concept I have explained of running the company into the ground and seeing what's left over is all very well, but it is not a practical way of measuring capital. Another way that has been suggested is by looking at the annual statement and taking the excess of the assets over the liabilities. When you do that, I think you should be conscious

of the fact that there may be some margin for contingencies in either of the valuations of the assets or liabilities. To my mind you should think of a very realistic basis and of the contingency margins in whatever the valuation basis is also being added to capital.

MR. RICHARD K. KISCHUK: There is probably no one correct definition of the term "capital" even for a particular company. The most appropriate definition depends on the purpose that one has in mind. If solvency is the primary concern, then the correct basis for capital and surplus is statutory accounting. If analysis of earnings is the primary concern, then the proper basis for capital and surplus may be GAAP accounting, gross premium valuation, or some other basis that management believes to be appropriate. When analyzing a potential merger or acquisition, some form of adjusted statutory or book value is usually deemed appropriate. And when making comparisons of financial performance with competitors, one generally uses whatever basis is readily available on a consistent basis.

For example, at Lincoln National, we have at least two uses for capital and surplus figures in our financial planning and we use different, but consistent, definitions for each. First, in capital budgeting, we have a need to know how much capital and surplus is required in each of our companies, and within each company, how much capital and surplus is required to support each product line. In assessing the need for surplus by company, the primary concern is reducing the risk of insolvency to a sufficiently low level. Since statutory accounting is the basis used to judge the solvency of life insurance companies, that is the primary basis that we use for capital budgeting.

Formulas are used to determine surplus benchmarks for each company. The actual surplus position of each company can then be compared with the benchmark surplus. A very useful technique is to project both actual and benchmark surplus for several years into the future. For a mature company, this will allow management to determine the level of stockholder dividends that can be sustained in the future under a variety of possible scenarios and strategies. For a rapidly growing company, this will allow management to estimate the level of capital contributions that may be required in the future under different growth rate assumptions. In many cases, such projections will provide management with its first clue that the current direction of the company is not viable for the long run and that something fundamental must be changed.

The same surplus benchmark formulas can be used to assess surplus needs by product line with a company. And again, conclusions can be reached by comparing the projected surplus position of a product line with its projected surplus needs. In many cases, the surplus situation for a particular product line will hold the key to the management actions that will solve a particular problem for the company as a whole.

For assessing management performance, we use a different basis for capital and surplus; GAAP accounting. One of our primary indicators of management performance is GAAP return on equity. For this, we divide the GAAP operating income for the year by the mean GAAP capital and surplus. GAAP return on equity can then be compared with objectives, with historical performance, and with the performance of competing companies.

A similar analysis can be performed by product line within each company. For this purpose, it is necessary to determine the amount of GAAP capital and

surplus that is attributable to each product line. This is done by taking the statutory benchmark surplus for each product line and adding GAAP book value adjustments. The mean GAAP surplus can then be divided into GAAP earnings for the product line to determine the return on equity.

Taken together, these two processes, capital budgeting and evaluation of management performance, can paint an interesting picture for management. If all is right with the world, most of the additional capital and surplus available in a given year will be flowing into the product lines that provide the best returns. But that is not always the case, and management must be prepared to face the hard decisions that might be necessary in order to direct new investments of capital and surplus to the most productive uses.

The use of two different bases for capital in a single company has some obvious drawbacks. Not all managers in a company are financially oriented. For some managers, one definition of capital is one too many. To get around this problem, we often transform our capital budget figures to a GAAP basis. In this way, our capital budget is on the same basis as the yardsticks that are used for management performance. Ocassionally, there can be some problems with this approach, but usually they are minor. And explanations are simplified considerably.

Overall, our approach has been quite effective, and is being relied on more for decision-making as management gains confidence that the numbers depict what is really happening.

MR. REED: Thanks very much Richard. There we have the concept of going one step further and dividing capital by line of business. What we've heard is that although there isn't much difference between a mutual company and a stock company, the dollar amount will vary depending on the purpose.

My own view is similar to what you've heard from the panelists. If you want to take a look at your competitors it seems best to use statutory figures be they GAAP or, in the case of Canadian companies, Canadian statement figures which are the Canadian equivalent of GAAP.

The next question we are asked to deal with is, How much capital and surplus should a life insurance company maintain? How is this amount determined? How should it vary by nature of risk, line of business, economic environment and other factors? I think we are all interested in this type of question in this highly inflationary environment.

I would first like to call on Jack, who is a member of the Society's Committee on Valuation and Related Problems.

MR. MAYNARD: To get at this question of how much surplus is needed, having tried to define what capital surplus is, we should pause and ask ourselves what purpose it is needed for, and then, having got that in mind, try to look toward pinning down the amount. What I have done here is divided these items of capital and surplus, which we can perhaps safely call capital for this afternoon, into two parts which I would call contingency capital and development capital. Then I have put down some purposes that I think these two types of capital might serve.

Category		Purpose
A. Contingency Capital	(1)	A reserve for failure to receive expected payments of capital and investment income.
	(2)	A reserve for experience being unfavourable in relation to the provisions in premiums, including fluctuations.
	(3)	Reserves for the protection of the company in the event of interest rate changes. These include reduction in interest through refinancing when interest rates are low, and an excess of required interest over interest received, through mismatching.
B. Development Capital	(i)	A resource which can absorb severe adverse losses beyond the level of contingency capital.
	(ii)	Finance new developments and the introduction of new lines of business.
	(iii)	Finance changes in structure of old lines of business.
	(iv)	Provide for growth in contingency capital.

In putting down concepts for contingency capital I have been guided by the Society of Actuaries' Valuation Committee preliminary report which was presented at the April, 1979 meeting in the Record of the Society. In that report three main types of contingency reserve were defined. They related to the portion needed to protect against loss on assets, secondly the part needed to protect against experience going differently than you expected when the business was written, and thirdly an amount that protects you against changing interest rates which might hit your assets and liabilities differently.

To add a few more words to these three definitions for contingency capital, the first part is reserve for failure to receive expected payments of capital and investment income, the second portion is reserve for experience being unfavourable in relation to the provisions and premiums including fluctuations, and the third portion is reserve for the protection of the company in the event of interest rate changes (including interest through refinancing when interest rates are low) and an excess of required interest over interest received through mismatching.

Turning to development capital I put down four purposes; first of all the portion which can absorb severe adverse losses beyond the level provided for by contingency capital, secondly a portion to finance new developments and the introduction of new lines of business, thirdly a portion to finance changes in structure or lines of business, and fourthly to provide for growth and contingency capital. For this last one I am thinking of the development capital as a balance wheel. If a company feels that it's on sound ground to let one line of business grow ahead rapidly, then it can draw the contingency capital it needs from its development capital without trying to build this up from some other line of business and, therefore, interfere with its progress.

Those are the concepts which I would suggest. Turning now to amounts, it is very difficult to decide how much development capital is needed. I am not actually going to attempt that one, but I would say that it is clear in periods of rapid change that you need more development capital. Another thought about these two kinds of capital is how do you provide for them and keep them up to date in the balance sheet? I visualize a range of contingency capital with upper and lower limits, on either side of the desirable means, so that if you think forward in the future and ask yourself how you will maintain this, you can say that if you have good experience, you would expect the actual contingency capital should be at the upper level of the range, and if you have a bad experience, it will probably go down to a lower limit.

Having presented some ideas for the purpose of these types of capital, I will move on to some considerations to bear in mind when trying to arrive at some amounts.

The amount of capital that is desirable in a company obviously depends on valuation assets and liabilities, and if there are contingency provisions in either one of these, then the actual amount of contingency capital in the balance sheet can be more or less. The amount of capital will also depend on the possible variations which can be foreseen in future experience. It will depend on the proportion of your business having cash surrender options and guaranteed policy loan rate. It will depend on the periods for which premiums are fixed as between participating and non-participating business. There should be greater provision for premium insufficiency in that proportion of the contingency capital for non-participating business than for participating business and the experience in different lines may not be independent, e.g., if events turn out to affect mortality, then it may affect insurance and annuities in different ways; and therefore, when you look at the contingency capital for a company as a whole, it may not turn out to be a straight arithmetic addition of the contingency margin as needed line by line.

TABLE

Example of Formula for Contingency Capital
in a Canadian Mutual Life Insurance Company

	Purpose	Provision
(1)	Default in Capital and Interest	1½% of bonds and mortgages 3% of real estate 5% of common and preferred stocks
(2)	Premium Insufficiency	1% of insurance and annuity reserves 20% of annual Ordinary valuation cost of insurance 25% of annual Ordinary health premiums 20% of annual Group health premiums 15% of annual Group life premiums
(3)	Change in Interest Rates	7% of insurance and annuity reserves with guaranteed cash values 2% of insurance and annuity reserves without guaranteed cash values

The above table shows the contingency capital split into the three categories by purpose. This approach has been adopted by a mutual company with annual premium, participating life insurance, single premium life annuities, ordinary and group, group life insurance, group health insurance and ordinary health insurance non-cancellable.

Before going on you may wonder about the low figure of 5% for common stocks in the first group. I should have mentioned that this company is subject to the Canadian and British Insurance Companies Act, and its main statement is on the Canadian Insurance form. In that statement there is, I believe, quite a conservative way of valuing common stocks and that is borne in mind.

Obviously these figures are subjective, but they are one example of what one company has arrived at so far.

MR. REED: Thanks very much Jack. As you say, it takes a little courage to put some figures on paper. The second one on real estate interests me. From the yields we're getting these days I think I would have maybe tripled the figure of 3%.

MR. KISCHUK: The surplus benchmark formula that I referred to earlier was developed by our Actuarial Subcommittee, a committee which includes actuarial representatives from each of our product lines. This approach was necessary because in our decentralized organization structure and with our broad portfolio of products, no one person has the background necessary to assess the risks inherent in all of our product lines. Our first step was to compile a list of all of the risks that anyone could think of that might have a major financial impact on the company. We then set out to quantify those risks. In each case, we were looking at catastrophic events, rather than the normal type of experience fluctuations and cyclical patterns that one normally expects from one year to the next. We used a variety of approaches including computer modelling, historical research, and judgement to determine the factors in our formula.

The whole exercise was similar to the process that was just described by Jack Maynard.

It is important to emphasize that our formula is not static. It is necessary to review the benchmark formula periodically to reflect new products and changes in the external environment. As a specific example, when our original formula was developed, to the extent anyone was interested in interest rate risks, it was the risk of interest rates going down that they were worried about. But then, over the years, two things happened. First, liabilities became more interest rate sensitive and shorter term. And second, as the Federal Reserve changed its policy to emphasize stabilizing the money supply rather than stabilizing interest rates, rates of interest began fluctuating more on some days than they used to change in an entire year. It was clear that we had to change our surplus benchmarks to reflect the risks of high and volatile interest rates.

Our benchmark formula generates a basic surplus requirement of 2.5% of assets, reduced by the bond component of the MSVR. This is the surplus requirement that would prevail if all assets were bonds and mortgage loans, the maturities of assets and liabilities were perfectly matched, and the company did not accept any mortality or morbidity risk.

Clearly, this is not a real life situation, and so product lines receive debits and credits depending on the risks inherent in each product line. The surplus requirement is increased for investments in common stocks and other risky types of investments. Because we are a U.S. company our common stock factor is more on the order of 35 to 40% than the 5% that was just mentioned for a Canadian company. On the other hand, the surplus requirement is reduced for product lines that allow the company to pass through some or all of the investment risk. Products that present significant risks of disintermediation have correspondingly high surplus requirements to offset the risk. And mortality and morbidity risk is reflected by surplus components that vary as a percentage of tabular cost of mortality and health premiums, respectively. As a result, the statutory surplus requirement for a given product line can be anywhere from zero to 35% or more of assets.

MR. REED: Thank you, Richard. I know Harry has some interesting ideas to share with us, and would now like to call on him.

MR. SAUNDERS: To get to this general question of how much capital and surplus I thought there were two very distinct routes that can be taken. These can be characterised as the "top down" approach and the "bottom up" approach. Both Jack and Richard have talked about my so-called "bottom up" approach to some extent. In the "top down" approach the question is tackled from the point of view of the entire enterprise, and the answer is related to the overall perception of the company's size and risks. In the "bottom up" approach the question is tackled at a detailed level. Given the fact that capital and surplus is held to protect against risk, then each risk is evaluated for each element in the company's balance sheet. On the asset side of the balance sheet the risk inherent in each asset type should be considered. While on the liability side of the balance sheet each product type must be evaluated. The overall surplus of the company is then determined by combining the various detailed pieces in an appropriate fashion.

In order to come at the "top down" approach, I decided that the management of the various companies had undoubtedly thought through the question of appropriate surplus levels and were holding surplus accordingly. If this were true, then an analysis of the existing surplus of a cross section of companies would yield an answer to the question.

To do this I went to the Report of the Superintendent of Insurance for Canada for the year 1979. After choosing eleven Canadian companies including all of the largest ones, I extracted information on assets, risk premium, and capital and surplus. The reason that I chose to look at assets and risk premium stems from my view of the most logical bases for measuring appropriate surplus levels. For products that are of an "asset accumulation" nature, a logical way to look at surplus is as a % of assets. For products which are primarily involved in mortality or morbidity risks, a better measure of surplus is as a % of risk premium. A difficulty arises on products such as permanent life insurance which combines both asset accumulation and mortality risk.

I have taken the liberty to record some of these figures which I took from the Superintendent's Report. I've listed six Canadian companies and I will ask the people here from the U.S. to forgive me for that, but I am more familiar with them so I felt a little more secure in extracting this information. I am sure you can go home and do the same thing for a cross section of companies that you're familiar with.

Six Canadian Companies - 1979

($000,000's)	Assets	Risk Premium	Capital & Surplus
Canada Life	2,302	138	289
Great-West	3,932	597	513
London	3,405	186	382
Manufacturers	4,614	85	574
Mutual	2,605	124	298
Sun	6,176	238	1,350

The asset amounts extracted exclude segregated fund assets. The risk premium was not an available number in the report so had to be approximated. I am sure I will hear people comment on my method after this session. I then assumed that surplus might be expressed as a function of assets and risk premium by the formula:

Surplus = x% of Assets + y% of Risk Premium.

Then by a mathematical analysis and minimizing the variance between reported surplus and the formula surplus, a unique set of values for x and y were calculated. The result using all eleven companies was not meaningful. However, by eliminating the most divergent company, values of 11.6% and 10.8% for x and y respectively were developed. I found this result slightly surprising, since I had a preconceived idea that y would be perhaps double x and that would be borne out by the numbers that Jack showed us previously. If I had been correct, the x and y values would have been 10.6% and 21.2%.

In turning around now and applying the formula to the factors of the various companies I get the third column here, the Surplus by Formula, and you can see the fit that occurred which was very close except for the bottom company, which brings me to some conclusions:

Six Canadian Companies

1979 Surplus Levels

	Reported Surplus ($ millions)	as % of Assets	Surplus by Formula
Canada Life	289	13	282
Great-West	513	13	521
London	382	11	416
Manufacturers	574	12	545
Mutual	298	11	316
Sun	1,350	22	742

Surplus = 11.6% Assets + 10.8% Risk Premium

The conclusion that can be drawn from this is that it is not possible for an outside observer to practically evaluate the risks inherent in other companies' balance sheets. Or, you might conclude that some managements are more or less conservative than others. We have, however, through this process, given ourselves a first simplistic measuring stick of how much capital and surplus a (Canadian) company should maintain.

Turning now to the "bottom up" approach, there is a wide range of risks that should be evaluated. I previously referred to the Report of the Committee on Valuation and Related Problems. In that report, the Trowbridge Committee identified three categories of hazards which may impair the financial health of the insurance enterprise. Jack mentioned these and I'll just quickly run through them again to emphasize them. These contingencies were identified as:

C_1 - Contingency Reserve for Asset Depreciation

- default on indebtedness
- decrease in value of common stocks or real estate
- physical destruction of security behind a mortgage
- specifically excluded from C_1 is changes in market value of fixed income securities due solely to changes in the prevailing interest rates

C_2 - Contingency Reserve for Pricing Inadequacy

- claim fluctuations
- competition
- regulation
- guarantees
- inflation
- lack of knowledge as to risk characteristics

C_3 - Contingency Reserve for Interest Rate Change.

The risks involved in C_3 have been discussed at length recently under the general heading of "immunization" risk. The two general sides of this risk arise from rising or falling interest rates. When interest rates rise, the market value of fixed income securities goes down. If at the same time the company is exposed to product cash surrenders at book value, they will suffer capital losses. This process has become known as disintermediation. The other side of this risk is falling interest rates impacting a company which has guaranteed an accumulation of interest at a continuing high interest rate on an asset accumulation type product.

The report of the committee can be read by the members in Volume 5, Number 1 of the Record of the Society of Actuaries.

The evaluation of the various risks identified will be undertaken differently by different individuals. Much can be learned from happenings in the past. However, a very large degree of subjective judgement must be used regarding events which may occur in the future.

What historical events can we learn from?

In the area of C_1 type risks, the event which immediately comes to mind is the depression of the 1930's. There are numerous sources of statistics which illustrate the magnitude of asset defaults which occurred. For example, during the 1930's, 35% of all mortgage loans made by Canadian Life Companies between 1925-29 were foreclosed. During the decade of the 1930's, Canadian Life Companies wrote off approximately ¼% of all outstanding mortgages each year. For the 10 year period this amounted to approximately 2½% of outstanding mortgages. Some companies were hit harder than others of, course. Take Great-West Life for example. My company has its head office located in Winnipeg, on the prairies of Western Canada. The depression was aggrevated by severe drought on the prairies. Whereas the Canadian Life insurance industry had 10% of its mortgages in farm loans in 1930, Great-West Life had 40%. Over the 1930's decade, Great-West Life wrote off approximately 6% of outstanding mortgages.

Moving on to the area of C_2 type risks, that is, pricing inadequacies. The obvious risk here is claim fluctuations and historically you might want to consider the 1918 influenza epidemic. If you look at national statistics of influenza deaths in 1918, you will find that the death rate for the cause of death was several times higher than other years.

The effect was to produce an overall death rate in 1918 approximately 50% above normal. The hardest hit group was ages 20-40 where the death rates were more than double normal. Coming back closer to home. The Great-West Life experience in 1918 showed influenza deaths at 140% of other causes. This situation was compounded by War deaths in 1918 at 60% of other causes. The total result was that 1918 death claims were 300% of the expected level.

It can be seen from the preceding examples that history can provide some insight into the size of risks. Most of you, I am sure, have had exposure to the C_3 type risk of disintermediation over the last 18 months. With this risk knowledge in hand, the process of determining adequate surplus levels moves into the area of foreseeing what the future might bring and what degree of protection is desired.

Offsetting the risks which must be faced are several factors which have a buffering effect. The first of these which is available only on the participating side of our business is modification of the dividend scale. A second buffer when the risk is spread over several years is the foregone earnings over the same period. A third buffer is the income tax relief which occurs when losses are being taken.

The quantification of appropriate surplus levels will need to take all of the preceding factors into consideration. I am sure that this process will lead to as many possible answers as there are actuaries addressing the question.

MR. REED: Thanks very much Harry, and I think I agree with you on your last point.

The next question we have to address is, What alternatives exist for effectively deploying capital? It seems to me that in some instances there are different considerations for a mutual company than there are for a stock company. I would also be interested to hear views of our panelists on one or two problems which can arise following expansion or acquisition. Namely, what do you do if expansion is quite rapid, e.g., more rapid than expected, and if it looks like you are going to run out of surplus? Also in some circumstances presumably it is advantageous to sell off a subsidiary or a block of business.

MR. SAUNDERS: Prior to a decision on how to deploy capital, two preliminary questions should be addressed. The first of these questions has previously been discussed, that is, how much capital and surplus should be maintained for the existing position of the enterprise. The second question is further along in our program today relating to the return required on invested capital.

The level of surplus maintained by a company is most often in excess of the amount that has been calculated as required to protect against future risks. This is the development capital that Jack was mentioning. It is this excess surplus which the management of the company must plan for effective deployment. It is at this point that a decision must be made as to the rate of return desired on the excess surplus.

In the case of excess shareholders' surplus in a stock company, the directors of the company will consider the alternatives of:

- retaining the surplus to support future business expansion.

- using the surplus to enter new lines of business.

- using the surplus to acquire subsidiary operations.

- or paying out the excess surplus to the shareholders to allow them to invest in alternative enterprises.

In the case of excess participating policyholder surplus, the directors of the company have the same alternatives open to them except for the last one, which should be replaced by the alternative of paying out the excess surplus, to the participating policyholders, in an equitable fashion.

There is a significant difference in the influence that shareholders can bring to bear on the company directors as compared to the participating policyholders. In the situation of strong shareholders or majority shareholders, the rate of return on equity becomes critical. A decision on the deployment of surplus is likely to be highly influenced by the variations in the rate of return available between various lines of business, or between alternative business enterprises.

MR. MAYNARD: Deploying capital means, I think, recovering capital where it's earning at a low return and committing capital where the expected return is likely to be high. If a company really works at this and plans ahead well and if judgement is good, it should be able to grow and remain financially strong at the same time.

I've listed some of the decisions here for consideration. Someone might like to add one or two to the list. Running down the list it can be seen that the alternatives of expansion new/existing or transfer or merger/acquisition are available to either a mutual or a stock company. The stock company though has an advantage over a mutual company in that it has at least two options that a mutual company doesn't have. It can offer stock and, therefore, raise capital quickly without having to earn and let it grow, or, what is perhaps not in the control of the company, new interests in the company can purchase its stock and combine it effectively with other organizations.

Alternatives	Available to Mutual Company	Available to Stock Company
Expansion in selected lines	X	X
Enter new direct lines of business	X	X
Expand in lines requiring less capital	X	X
Transfer blocks of business	X	X
Acquire blocks of business	X	X
Merger	X	X
Stock offering		X
Purchase of stock by new interests		X

MR. REED: Thanks very much Jack. I think all of us know that Lincoln National has done quite a bit of work in the area of acquisition and self growth. I call on Richard to give us his views.

MR. KISCHUK: There is obviously an infinite variety of opportunities for deploying capital. These would include such alternatives as expansion of existing product lines, investment in new product lines, investment in entirely new business investment in operational improvements, expansion of existing marketing distribution systems, and investment in new types of distribution systems. In most cases, there are a number of variations within each theme such as lease vs. buy, buy vs. build, and joint venture opportunities.

The most important thing is that a given deployment of capital should be consistent with the strategic direction of the company. The second most important thing is that it meet the minimum investment return required by the company's owners. This is of secondary importance because if a venture is not consistent with the strategic direction of the firm, it will be a constant thorn in the side of management no matter how profitable.

On the question that Owen just raised, the company that is expanding very rapidly and appears to be running out of surplus; the first thing that management should do is to investigate and determine which product lines are using surplus and how much. The typical situation is that 20% of the product lines are using 80% of each year's addition to surplus. The next question is how consistent is the growth of these product lines with the strategic direction that the firm would like to follow? If these product lines do not fit well with the strategic direction of the firm, then management can begin to investigate alternatives for redeploying capital elsewhere. As Owen suggests, it may be advantageous in some cases to sell off a subsidiary or a block of business. This simultaneously eliminates a drain on capital and surplus and provides a one-shot infusion of capital which can be deployed elsewhere.

The next question, looking at the rapidly growing product lines, is how profitable are they? Does the return on investment meet the minimum requirement of the owners of the firm? If not, management should look for opportunities to redeploy capital in other more profitable ventures that are compatible with the strategic direction of the firm.

The most difficult situation is where growth is very rapid, the growth is taking place in areas that fit the strategic direction of the company, and return on investment is excellent. Before taking any drastic action, management should be sure that growth projections are realistic. No company or product line grows at 35% per year forever. Often, a company may be growing very rapidly because its products are in the early phase of the product life cycle or because it has entered a new market where there is not yet any significant competition. As the product line matures and competitors enter the marketplace, sales tend to flatten out.

If it appears that sales will continue to grow at rapid rates for a long time to come, then management may wish to investigate alternatives for tightening up the financial structure of the product line. For example, the surplus strain from sales might be reduced by adopting a different statutory valuation method. It might be possible to adopt a different pattern of commissions. It may be possible to reduce the statutory surplus requirement by adopting a different investment strategy. Or it might be feasible to redesign the product to pass more investment risk through to the policyholder.

Failing all of the above, management will have to look for sources of outside capital. A stock company might consider obtaining additional equity capital or gradually reducing the payout rate for stockholder dividends. If there is a holding company, it may be possible for the parent company to obtain debt capital. The company might consider reinsuring a percentage of its sales, with recapture beginning at a point when sales are projected to begin leveling off. Or the company could seek a merger or joint venture partner.

At any rate, given the problems that many companies are faced with today, this is a nice kind of problem to have.

MR. REED: Thanks very much Richard. The fourth question is an area that's been discussed by many panels before this one, and I guess a lot of companies are doing research in this area. Hopefully, we are coming to the point where actuaries are beginning to talk quantitatively, and it will be interesting to hear what our panelists have to offer in this regard.

MR. SAUNDERS: It was discussed previously that the shareholders of a company have the option, through the company board of directors, to withdraw any excess shareholder surplus from the enterprise. This immediately gives us an indication of the rate of return required on new business in order to justify leaving the surplus in the company. If a more satisfactory rate can be obtained elsewhere, then this will likely be done.

There is an absolute minimum rate of return which must be achieved and that is related to the after tax return that the shareholder could achieve by putting his capital into relatively risk free government bonds. Since this floor value is moving due to our economic climate, it seems logical that the expected rate of return on new business must also move in concert with economic climate.

What is the relationship between return on equity and inflation? Actually there are two other elements to this relationship. The first is the nominal or real rate of growth that the enterprise wants to achieve. The second is the proportion of the annual return on equity (or earnings) that is to be paid out as dividends to the shareholders.

The relationship that exists is:

Earnings = Dividend Payout + Retained Earnings

then, each of these items can be expressed as a % of surplus

Rate of Return on Surplus = Dividend Payout Rate + Retained Earnings Rate

where Retained Earnings as % of surplus represents Nominal Growth, and Nominal Growth = Real Growth + Inflation then,

Rate of Return = Dividend Payout Rate + Real Growth Rate + Inflation

Let us now look at what a changing rate of inflation does to this relationship.

Situation A: the rate of return is kept constant and the dividend payout is 1/3 of earnings.

		Dividend Payout		Nominal Rate of Growth		
Rate of Return		Rate		Real Growth		Inflation
12%	=	4%	+	2%	+	6%
12		4		-2		10
12		4		-6		14

In situation A the real growth declines drastically.

Situation B: the real growth is held constant at 2% and the dividend payout is 1/3 of earnings.

		Dividend Payout		Nominal Rate of Growth		
Rate of Return		Rate		Real Growth		Inflation
12%	=	4%	+	2%	+	6%
18		6		2		10
24		8		2		14

In situation B the rate of return must move up drastically.

Situation C: the real growth is held constant and dividend payout as a portion of earnings decreases.

		Dividend Payout		Nominal Rate of Growth		
Rate of Return		Rate		Real Growth		Inflation
12%	=	4%	+	2%	+	6%
16		4		2		10
20		4		2		14

In situation C the increase in rate of return is equal to increase in the inflation rate, but the dividend payout drops from 1/3 to 1/4 to 1/5, as a portion of earnings.

The preceding charts give some indication of the effect of inflation on the management of the shareholders' surplus in a stock company.

Although I have not given too much thought to the possibility, it seems to me that the same principles could be applied to the management of participating policyholders' surplus.

MR. KISCHUK: Consistent with what Harry just said, in setting a rate of return, one normally starts with the "risk-free" rate of return and adds a "risk premium". The risk-free rate of return is often measured by the rate of return on long-term government bonds. In the U.S., this rate has been running at about 13.5% in recent weeks. On this basis, management would probably seek at least a 15% rate of return for most purposes. This rate of return might apply to investment in relatively low risk ventures such as cost reduction programs or capital invested in sales of an established product with predictable patterns of profit.

As risk increases, the required rate of return should increase as well. In general, risk is greater as profits become more volatile or unpredictable. Uncertainty breeds risk. For example, a large-scale expansion of a product line or marketing distribution system might demand an 18% return. Here you are betting on sales estimates and possibly a date for completion of new administrative systems. On a new product introduction or an acquisition, the risks are still higher. Here you are betting on both estimates of sales volumes and estimates of profit margins that can be sustained in the marketplace. In many cases, these estimates are based on judgement with little or no supporting data. Clearly, there is a lot of opportunity for something to go wrong. In these cases, a return on capital of 20% to 25% would often not be out of line.

Of course, management will sometimes invest in projects having lower rates of return in order to meet government requirements or to satisfy the company's social responsibilities. Also, it is impossible to reduce all management decision-making to numbers alone. There must still be room for management to exercise judgement. For this reason, it is usually a good idea to shade the "hurdle rates" a little on the low side in order to avoid screening out projects that management may feel have promise in spite of what the numbers might seem to indicate. All quantitative techniques have their limitations.

MR. MAYNARD: If I understand the two previous speakers correctly, they were speaking mainly from a point of view of a stock company and mainly of the equity portion of the capital fund after the contingency portion has been taken care of. The mutual company, of course, probably does not look at it in that way. The mutual company is concerned to make sure that as it grows the contingency portion is maintained and enough development capital to give it the flexibility it needs without having to explain to shareholders whether dividends are growing fast enough or whether the value of the shareholders capital retained in the company is growing fast enough.

From a mutual company point of view, if the capital retained in the company is adequate at first, then the rate of growth of capital should equal the rate of growth of the liabilities if the product mix of the liabilities remains the

same. If this were not so, then the liabilities would be growing faster than the capital retained and the company would be weakening, or the capital would be growing faster than the liabilities and this would be unnecessary.

It certainly needs this growth of capital. However, it will not wish to achieve this by unnecessarily holding back dividends from participating policyholders. It needs the growth and contingency and to some extent development capital, but it wants to keep dividends going out to its policyholders. How does it manage it?

Let's look at a fund of a participating business consisting of assets equal to liabilities and contingency capital. It is convenient to think of the assets as dividend. There is one part covering liabilities and one part covering capital in the year by year analysis of earnings. The investment income on the first part is allocated to the liabilities and produces a part of earnings which we might call operating earnings, and the investment income on the second part goes directly to increase capital.

Required increase in retained capital (represented by some formula):

Mutual Company

Actual increase in capital = i x capital + operating earnings.

Stock Company

Actual increase in capital = i x capital + operating earnings
- dividends to shareholders
+ capital paid in.

The company will wish to have a definition of required increase in retained capital. It may be in the form of the kind of formula we were looking at earlier, or it may be defined in some other way, but I think that the company will want to have in mind what increase in retained capital it needs. Then it will wish to look at the rate of increase in capital which it is getting. A mutual company can think of this as investment income on the capital that is already there plus operating earnings, and a problem that a company has in managing this fund is to keep the two going along together.

We mentioned splitting the assets in the fund into two parts; the part that is associated with the liabilities and the other part going with the capital that is needed. The capital does not have to grow at exactly one rate so the company has more leeway in the investment policy that applies to that part of return on that part of the assets in the fund than from the assets that are covering the liabilities.

Now if you think of expressing an actual increase in capital as an actual rate of return by dividing it by the capital, on the right hand side of the equation (see above) you have the rate of return from the asset that covers the capital and finally operating earnings divided by capital. The company has to make that gain that it needs, and so in answer to the question, "What rate of return on capital is expected?", it is whatever it needs to grow at the rate that it wants to grow at. All of this assumes that there is no movement between funds; that is, some fund underperforming being balanced by another fund which is overperforming. So there may be injections back and forth

between funds, but the basic problem is the one we expressed; desired rate of return on capital is the rate of growth in the liabilities assuming no change in product mix.

It would appear to me that a stock company has a more complicated problem, because although this particular formula expressed in terms of gain in total capital includes the contingency portion, I think my two colleagues were talking about contingency portion having been taken care of and, therefore, about the gain in the shareholders' portion of capital. The actual increase in total capital is the same two items as for a mutual company. The investment gain on the capital that is there plus the operating earnings has to be greater, though, in total, because you have to allow for payment of dividends to shareholders and occasionally you may get an injection of capital through capital being raised in one of the securities markets which is the option that a mutual company does not have.

MR. REED: Thanks very much for your comments Jack. I think at this point it is fairly clear that a message is coming through on this question. In inflationary times the rate of return that you should be aiming for is not a negligible number. For a brand new product being introduced today when interest rates are high, you are talking about a number, judging from the figures presented to us, on the order of 15% to 20%, not 7½% as actuaries were using about 5 years ago. If actuaries have to carry any gospel to management these days, it is that in inflationary times they should expect to get a respectable return on invested surplus.

I thought I would use the financial reports of several Canadian companies to find out just what sort of returns they had been getting. The table applies to the year 1980 based on figures extracted from the annual reports to policyholders, and the "yields" are taken as the increase in invested capital, expressed as a fraction of the year-beginning invested capital. Annual reports were chosen in preference to annual statements since the former give some details concerning re-statement of surplus in the prior year, if this has been done.

"RATE OF RETURN" ON INVESTED CAPITAL

CANADIAN COMPANIES

BASIS 1: INVESTED CAPITAL = ASSETS - LIABILITIES
BASIS 2: INVESTED CAPITAL = ASSETS - LIABILITIES - APPROPRIATED SURPLUS

		BASIS 1	BASIS 2
STOCK	1.	16.7%	15.7%
	2.	16.5	13.7
	3.	12.9	11.8
	4.	11.7	13.2
	5.	4.2	4.2
MUTUAL	1.	21.0%	8.5%
	2.	14.7	11.0
	3.	12.9	21.1
	4.	12.2	12.6
	5.	10.2	17.3

As you can see, it does make a difference how you define invested capital. The simplest definition is Basis One definition: Assets - Liabilities, and that is not too bad a definition at the present in Canada, corresponding to the GAAP surplus in the United States. As you can see, the figures fluctuate somewhat by Basis One and Basis Two, and it is fairly evident that they also fluctuate from company to company.

The last question which we were asked to address was how much should a company "charge" for use of its capital? And my understanding is that this question is really addressed to surplus relief arrangements. Richard, would you like to address this question, please?

MR. KISCHUK: On the surface, the concepts involved in pricing these arrangements are not fundamentally different from what is involved in evaluating any other risk venture. One looks at the anticipated rate of return and the risks involved.

If the "risk premium" compensates the company fairly for the risks, it is assuming, then, the arrangement would tend to be viewed favorably.

In practice, these arrangements can be quite complex, and specialized skills are required to evaluate them. By definition, each one is tailored to a specific customer and so the risks have to be evaluated individually. And calculation of the rate of return inherent in each deal is not always straightforward. One complicated area is Federal Income Taxes. Depending on how the arrangement is structured, "tax leverage" may be available, and this should be factored into the calculation of the rate of return.

Another complicated area involves retrocessions. In some arrangements, a number of retrocessions may be involved. In that case, the companies to whom the business is being retroceded will evaluate the return on the retrocession based on their own circumstances. Depending upon the circumstances of each of the companies involved, it may be possible for the reinsurer to provide surplus on very attractive terms with each of the companies participating in the arrangement receiving good after-tax rates of return.

For all of these reasons, putting these arrangements together is really more of an art than a science. Because each deal is unique and stands on its own merits, it is very difficult to generalize.

MR. REED: Thanks Richard. I guess now is the time we ask for any questions from the floor; they can be addressed to any of the panelists.

MR. GERY J. BARRY: To what extent are competitors' surplus levels a factor in determining your own companies' levels of surplus standards?

MR. SAUNDERS: You may recall from the slides I showed, my suggestion was a "top down" approach to how much surplus other companies have. Certainly I have looked at the level other Canadian companies have, and I would be very shocked if I suddenly found myself at about half that level. I think you can vary to a certain degree, depending on how many risks you are willing to take or how many risks your shareholders are willing to take. The numbers that I showed in that one slide showed the Canadian companies with surplus in the range of 12% of assets. I think if you look at U.S. companies on a statutory basis, you will probably find that the surplus to liability ratio is ranged somewhere from 5% to 7% in large companies.

If any of you happen to have been at the Anaheim meeting where the same topic was discussed, that same kind of question came up and the answer that was given compared life insurance companies not only to other life insurance companies but to other industries, and in particular the banking industry. It was suggested that the large banks in the U.S. have surplus somewhere around the 2½% level, primarily to protect against asset risks and that the additional 3% that large U.S. life companies hold is for the insurance risks. That was the rationalization for the 5 to 7% range. But I think in looking at surplus from the detailed point of view of element by element as I said before every actuary will do it differently and come to a different total. After you get your total, then you start looking at other companies.

MR. DALE S. HAGSTROM: If I had a client who is surplus rich and could loan out surplus by doing reinsurance arrangements, say with a co and mod-co split, so there was not really too much cash involved (so you are just talking purely surplus not assets), would 4% get me any buyers? Either from the panel or anyone in the audience, 4% annually on that surplus?

MR. REED: Certainly it would not get me as a buyer. But who else would like to offer an opinion?

MR. KISCHUK: If I understand the question, you are talking about a surplus rich company and this company is going to loan surplus out for a return of 4%. Is that right? Speaking from a perspective of a stock company, one alternative that a stock company always has is to pay out surplus to stockholders as dividends, and presumably the stockholders will have a lot better alternatives that they could pursue with those dividends than if they were paid out at 4%. So I think my initial reaction would be at least for a stock company that a preferable alternative would be to pay those same funds out to stockholders ad dividends.

MR. HAGSTROM: Not cash, just surplus; paper transactions. Let us just suppose that you had a block of inforce life insurance business that was reasonably seasoned and not too risky and you ceded half to this company and they were going to give you a million dollars surplus relief and the reserves on the block of business was 2 million dollars. Then if they arrange the deal in such a way that there was 50% coinsurance, 50% mod-coinsurance, then in fact the commission that they would pay you for the block of business, the million dollars, would exactly offset the coinsurance transfer of a million dollars and the mod-co would not require any transfer at all. On your books you now would have a million dollars more surplus and arguably 2 million dollars less risk, if you want to measure it by reserves, because this other company now stands the lapse risks or whatever. So you would have that much more surplus, but the same amount of cash inhouse. It is purely a paper transaction. To the extent of however much surplus is still outstanding in a particular year, do I get any buyers at 4% on that?

MR. KISCHUK: I think again a lot depends, as I said, on the tax attributes of the transaction for that sort of thing. Presumably depending on the tax attributes and the types of retrocessions that you could obtain, it might be feasible to loan surplus out at 4% and have some retrocessions involved. In effect have all the parties involved in the transactions, as I said earlier, really come out with a much better rate of return than 4%. But borrowing something like that if you were really getting a 4% rate of return is a different case. I think we tend to view loaning out surplus on a paper transaction ties up surplus the same as a cash transaction so we tend to view the two as about the same.

MR. STEVEN R. LINNEY: I am trying to tie a little bit of what we have said here together, and that is trying to determine a rate of return almost by product line. Take individual life insurance, or whatever, and it seems to me what you want to try and do is opposed to saying that you want a higher rate of return if it is riskier. It is trying to equate everything to risk free rates, so you determine a certain amount of surplus, then we have a formula that we have developed by each of the lines to allocate so much surplus. Then we determine a given rate of return that is the same on all of those lines as opposed to just simply saying we need 20% on life insurance or 25% on annuities and this tries to tie it together.

The other two points I had were, firstly, I think it is easier said than done to vary the rate of return for inflation than we have implied here. I think it is very hard to do, but secondly, the term that has really been bothering me, and we skirted around that, is the difference between a GAAP return on equity compared to pricing on a statutory basis for a stock company. Could someone comment on the relationship between those two if there is one?

MR. KISCHUK: If I understand the first question, I think you are saying that if you determine the required surplus for the product lines correctly maybe you can make them equivalent more or less from a risk standpoint and you can apply the same rate of return to each one. We have seen a variety of different types of risk, and we have seen the surplus requirement more related to catastrophic type risks that might occur more along the lines of what was mentioned earlier; things like the great depression, and the 1917-18 influenza epidemic. These are things you hope will not happen within your lifetime, but you still have to retain some surplus to hedge against those kinds of risks. We are thinking more in terms of earnings, volatility and predictability of earnings. I think group health insurance would be a good example where we have a very cyclical pattern of earnings. You would probably require a higher rate of return for that line of business, because your earnings are more volatile and less predictable than for some other line of business like ordinary life insurance. So we would reflect that type of risk in the risk premium that we build into the rate of return.

So we are really looking at two different types of risk that are reflected in the surplus level vs. the risk premium that goes in the rate of return.

On the inflation premium I think you are absolutely correct. When you are looking at inflation rates bouncing around like they have over recent years, it is a real trick to try and get a hold of what the underlying inflation rate might be. Under the circumstances we are looking at today with the inflation rate going up and down, it is obviously not possible in setting rates of return to vary the rates of return that you are shooting for monthly, quarterly or whatever, so you have to try and determine what the underlying inflation rate might be in spite of the fluctuations and try to build that into the rate of return that you are looking for. That may mean at any particular point in time that the inflation premium that you have built into your rates of return might be less than the current inflation rate or it might be more than the current inflation rate.

On the GAAP return on equity vs. the statutory return on equity I have a hard time addressing that because we have not really looked at a statutory return on equity as such, although I think in pricing our products we do price on a more statutory basis and do use return on investment in that kind of pricing. The relationships can be a little complicated, but I think where we will come

out is that if you price 15% return on investment on a statutory basis and if you manage the company to achieve that rate of return, then you will see that rate of return come through on a GAAP basis.

MR. MAYNARD: The problem of comparing statutory and GAAP is different in Canada than it is in the United States, of course. But we still have it in Canada, and when we look at the matter, we tend to say that for lines of business work we should be looking at realistic GAAP. It is alright to say this for some lines of business and look at the results and understand them, but when you turn to ordinary insurance, even GAAP earnings are very hard to explain and understand. They require more analysis, and until the fund gets to be a good size, GAAP earnings on ordinary insurance are quite hard to understand.

What we have done in this case is try to split the earnings up into portions which are more understandable. We picked off those elements that affect earnings that are within the marketing field, which is the dynamic area where so many things are going on, and we set up a sort of subsidiary component of earnings for the marketing section of ordinary business. I was explaining this morning in another panel that we try to calculate the expense margins that are built into the new business for the total new business of an ordinary character that is coming into a particular section this year, and compare with its marketing expenses in the same year. In actuarial calculations we say if that is met, then the marketing section is doing its share in trying to maintain earnings in that fund and the return on investment that is already there if they meet this second test.

MR. REED: Actually, all of us know it is one thing to build into your pricing assumptions a certain rate of return, but it is quite another thing to find out what rate of return you are actually experiencing. In my own company we have only been successful in doing this in respect of certain lines of business for which we set up internal sub-funds. We inject a stipulated level of surplus in each case, and from the accounting system that we maintain, we are able to determine what the after-tax rate of return is.

Earlier on someone said that it is important to relate your level of surplus to what your competitors are doing. It is very true. In one of the cases I mentioned one of the main competitors was the trust companies, and we set the surplus levels in line with what they were doing. Also, we set the targeted after tax rates of return in line with what we perceived they were after.

MR. HAGSTROM: Let me just ask Mr. Kischuk to repeat an earlier part of his presentation on the two bases he was judging on. There was capital budgeting and there was a different basis for which you could assess management. I think I understood the second one, but was the first one more related to statutory as opposed to capital? What was the distinction between the first and the second?

MR. KISCHUK: Yes, the first one was more oriented toward capital budgeting and the thrust of that is to look at each company in the corporate group, to look at the amount of capitalization that that company should have. Then the next part of the problem is to project the surplus levels of those companies and also project the surplus needs based on sales projections and projections of business in force and so on to see if the company will be generating internally the amount of surplus it needs, or if it is going to need surplus injections from the holding company or whatever. Also in the

case of a more mature company, those companies might well be generating more surplus on an annual basis than the amount of surplus they need to support the growth of business. In that case, you can use that kind of analysis to develop a divided payout rate, i.e., the amount of dividend that is paid out as a percentage of earnings each year.