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**SURPLUS STANDARDS--UNITED STATES,  
CANADA, UNITED KINGDOM**

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MR. PAUL WINOKUR: Virtually every Society of Actuaries meeting held in recent years has had sessions on financial reporting, the role of the valuation actuary, profitability and matching of assets and liabilities. In fact, one of the sessions preceding this one was on the role of the valuation actuary in the same three countries we are talking about today. This session will be more specific as to surplus standards. To many of us, the discussion will present new material.

First, let's quickly review some recent developments. About a year ago, the final report of the Society of Actuaries' and American Academy of Actuaries' Joint Committee on the Role of the Valuation Actuary in the United States was released. One of the major recommendations was that a statement of actuarial opinion would be required from a qualified, designated valuation actuary. That opinion would speak to whether or not: 1) the reserves, established together with the related anticipated policy and investment cash-flows, makes a good and sufficient provision for all future obligations on a basis sufficient to cover future reasonable fluctuations from expected assumptions, and 2) such reserves plus additional internally designated surplus, together with the related anticipated policy and investment cash-flows, make a good and sufficient provision for all future obligations on a basis sufficient to cover future plausible fluctuations from expected assumptions.

Another development has been the ongoing discussion concerning C-1, C-2, C-3 and C-4 risks. The National Association of Insurance Commissioners (NAIC) Blanks Task Force in the United States (U.S.) is now considering new concepts, or reworded concepts, such as "risk surplus" and "venture surplus." The Canadian Department of Insurance is contemplating minimum capital and surplus requirements for life companies, and is considering describing various degrees of solvency by such terms as "vitality surplus," "run-off surplus," and "wind-up surplus." In this context, some companies are attempting to use stochastic models in their product pricing and actuarial reserving. Very recently, the Canadian Institute of Actuaries (CIA) has set up a

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committee on the broadened role of the valuation actuary and will also be setting up a committee on solvency standards.

Now, I would like to just briefly introduce to you the three panelists. Mr. Richard Squires, who has come the farthest and will speak to us first, is the Director and Appointed Actuary of the Save and Prosper Group, Limited, in London, England. He is a member of the Society of Actuaries. He joined the Save and Prosper Group, Ltd., in 1969, having had previous experience in Canada. He was in attendance at the founding meeting of the CIA in 1965, so we're most pleased to have him here. He has a strong background in unit-linked insurance and has written several papers on the topic. His presentation will cover valuation requirements and surplus standards in the United Kingdom (U.K.) and Europe.

Mr. Richard Robertson is President-Elect of the Society of Actuaries (SOA) and he is Senior Vice-President of the Lincoln National Corporation. He has served as the Chairman of the Financial Reporting Committee of the American Council of Life Insurance and is a member of the Task Force on Insurance Accounting for the Financial Accounting Standards Board. He has coauthored a paper about managing life insurance company surplus on a formula basis. That paper is used as a SOA study note and will be available as a handout at the end of this session. Mr. Robertson will discuss factors which influence appropriate surplus levels in the U.S. He'll focus on the management of surplus, including different approaches between stock and mutual companies.

Dr. Allen Brender is Professor of Actuarial Science at the University of Waterloo, in Waterloo, Ontario. He serves on the SOA's Committee on Risk, and is currently on the CIA Financial Reporting Subcommittee Concerning Adverse Deviations. He's an author of a recent paper, on required surplus for group insurance, which I believe will be published in the 1985 Transactions. Finally, and most importantly, he has authored a special study for the Canadian Federal Department of Insurance in Ottawa, titled "Minimum Capital and Surplus Requirements for Life Insurance Companies."

MR. RICHARD J. SQUIRES: Government supervision of insurance in the U.K. started back in 1870, following the failure of a company. The fundamental structure of supervision was established then by legislation. That structure required a company to cause an investigation of its financial affairs to be made at least once in every five years, including a valuation of its liabilities by an actuary. At that time, assets weren't mentioned. But, the legislation went on to provide that a report on that valuation must be filed with the Board of Trade, which was the predecessor of the Department of Trade and Industry (D.T.I.). That latter provision established the principle of freedom with publicity; that is, that the actuary was free to choose his valuation basis, but he must publish details of it. Thus, it would be open to criticism by his fellow professionals.

Generally, it was felt that the strength of the profession was such that this would be adequate control of the operation of companies. Now, one has to see that against the background of the conventional British

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company. For example, it is not usual for British companies to guarantee surrender values nor to give guaranteed annuity options. And, the most common former policy, up until about twenty years ago, was a with-profits policy, the profits being distributed to the policyholders by means of a reversionary bonus. For this, there was usually a control in that the company would have established a practice that, for example, 90 percent of its profits went to policyholders and 10 percent went to shareholders. That, in itself, is a useful control on the way the company is operated, and on the way the surplus is allowed to emerge through the choice of valuation bases.

I said that assets weren't considered to be the responsibility of the actuary; that has changed. But, in any case, the importance of the assets relative to the form of the liabilities has always been recognized, and I think that British actuaries would all say that matching is indeed a concept of prime importance. Indeed, although we did have some insurance company failures in the early 1970s, I think we can say that, in every case, the failures were due to problems on the asset side of operations rather than the liabilities side. So, at least to that extent, the concept of freedom with publicity stood the test of time.

Unit-linked business has been particularly successful in the U.K. New companies have been formed, and all these things have resulted in more pressure being brought to bear on the actuary to weaken his valuation bases, perhaps to allow surplus to emerge more quickly, perhaps simply to limit the need for additional capital to finance expansion. Whatever the reason, there is no doubt that, in recent years, actuaries in the U.K. have had to stand firmer against the commercial representation on their boards of directors.

Back in the early 1970s, various people, not directly associated with the business, became concerned about the success of linked business. A committee was set up under the supervision of Sir Hillary Scott to consider linked business specifically, and other forms of life insurance as well, and to report whether any further action was needed. That committee duly reported a list of nearly a hundred recommendations, despite the fact that, in general, it gave unit-linked business a clean bill of health. These recommendations resulted in the 1974 Insurance Companies Act which gave the D.T.I. the power to make regulations regarding insurance companies over a whole range of areas.

The legislators no doubt expected that these regulations would appear within six to twelve months after passing the act, because there was nothing very difficult about them. However, ten years later, the insurance industry is still waiting for some of the rules to emerge from D.T.I. personnel, who have found some of the concepts of equity difficult to draft into firm wording. Some concepts have been completely abandoned during the ten years, having been found to be totally unworkable. Nevertheless, that act has played an important part in the development of British valuation procedures over the last ten years, and has a marked influence on the way business is conducted today.

Also during the early 1970s, as a result of the public outcry over insurance company failures (that of one company in particular), the

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Policyholder's Protection Act was passed. This legislation guaranteed that no one would get less than 90 percent of contracted benefits, even though the company might become insolvent. The cost of benefits, up to that 90 percent level, is met through a levy assessed on the whole industry. Now, in fact, on only one occasion has it been necessary to apply that levy and it amounted to 1/4 of 1 percent on the companies' annual premium income. So, it hasn't been too onerous and, hopefully, other measures taken since will avoid the necessity for such a levy in the future.

The dual subjects of valuation standards and solvency testing have been developing for some time. One of the earliest sets of principles are due to Mr. Frank Redington, who laid down two purposes for the actuarial valuation. The first purpose, he said, is to insure that the company is solvent, and that is the main topic today. The second purpose is to allow the surplus to emerge in a manner that is both equitable and suited to the bonus system. Again, this is in the context of the conventional U.K. contract with reversionary bonuses. If those principles are followed by a company that writes a large amount of with-profit business, where the with-profit policyholders are sharing in the risk and rewards from the writing of nonparticipating business, then one might almost say that is all that's needed in the way of principles. But, inevitably, we have found it necessary to go further.

Mr. Ronald Skerman took the next step by establishing five, more detailed principles for choosing an actuarial valuation basis. Those are

1. that a net premium method of valuation, or some other basis which gives rise to a stronger reserving basis, should be used. (Again, this was in the context of conventional business.)
2. that a Zillmer adjustment should be allowed in the valuation basis. For those of you not familiar with this, it is an adjustment for initial expenses as you might have in the Illinois Standard or in the Canadian Modified Method.
3. that the net premium, which is being valued, must be such as to allow an adequate expense margin between that net premium and the gross premium being charged.
4. that mortality tables or disability tables being used for the valuation should be recognized, published tables.
5. that there should be a margin between the interest rate used for the valuation and the yield on the portfolio, based on whatever value is being used for the asset side of the balance sheet. In other words, if assets are at book value, then yield is judged relative to the book value; if assets are at market value, then one must pay attention to that and, of course, also pay attention (where premiums are going to be received in the future) to the long-term rate of interest on investments.

Subsequently, a sixth principle has been added,

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6. that where surrender values are guaranteed, the reserves resulting from the valuation bases should be at least as large as the guaranteed surrender values.

With unit-linked business becoming more important, and because these principles do not translate precisely, the Institute of Actuaries set up a working committee to consider the valuation of linked business. I was a member of that committee. We reported, in a paper to the Institute, a broad endorsement of those principles with the major exception of the first, in that we recommended that the net premium method is not suitable for linked business. What is required is a gross premium cash-flow method. As a result, the Institute and the Faculty of Actuaries promulgated specific guidelines to appointed actuaries which follow these principles, but establish them in more detail. And, I think it would be fair to say that, having reached that point, it is the opinion of most actuaries in the U.K. that nothing more is needed to insure the solvency of U.K. companies.

However, in 1979, the Council of the European Economic Community (E.E.C.) issued a directive on life insurance business. It was an instruction to each of the member governments that they must enact specific proposals. The purpose of this directive was to promote consistent standards throughout Europe and, in particular, to establish explicit solvency margins. Well, there is a more fundamental problem in that the supervision of insurance is not consistent through Europe.

In the Republic of Ireland, the regulatory situation is very much as it is in the U.K. The situation in Holland is not very different; there is a little more regulation but not much. But in France and Germany, for example, precise valuation bases are laid down by government insurance supervisors. In fact, in France, it is my understanding that the premium rates are fixed by the supervisors. Companies cannot compete on premium rates; all companies issuing a twenty-year with-profit policy charge the same premium rate, and all they can compete on is service and bonuses. So this is a very different operating environment, and these solvency margins were developed by a supervisor with a continental background.

Another operating area where there are major differences between the U.K. and the rest of Europe is common stock investment. U.K. companies invest quite heavily in common stock and in real property, either because they have a substantial amount of with-profits business or because they're issuing specific linked products. But this is much less common on the continent. In fact, it's much more difficult to buy common stocks; those tend to be owned by the banks. If one wishes to buy common stocks, one gets them from the banks. Stock exchanges exist on the continent, but they are not important as financial institutions.

So, the 1979 E.E.C. directive found its way into U.K. law. At the time it was going through, it was envisaged that U.K. companies would still be left fairly free to choose their valuation bases. But, eventually, they got valuation regulations. On the one hand, there are asset regulations saying a company must value assets at market value.

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On the other hand, there are regulations on the value of liabilities which impose various margins. Those follow, generally, the Skerman principles, but include explicit margins. For example, a company must take a 7 1/2 percent margin between the earned rate on the fund and the valuation rate. In other words, if a company is earning 10 percent on the assets, it can't value at more than 9 1/4 percent (92 1/2 percent of 10 percent). The other restriction is on the long-term rate of interest: the actuary may not assume a before-tax long-term rate of interest of more than 7.2 percent per annum, which is equivalent to a net rate on insurance funds of 4 1/2 percent. That can, in some cases, be quite restrictive. So, really I think the situation is now one of belt and braces. Significant margins are built into valuation bases, and explicit solvency requirements are on top of those.

Let's look at the solvency margins. The basic structure says that the required solvency margins consist of two parts, requiring two separate calculations. The first calculation has reference to the reserves -- basically, 4 percent of the mathematical reserves, which broadly equate to valuation liabilities. "Mathematical reserves" is a phrase imported from Germany by translation, and none of us know precisely what it means in English. The U.K. Department of Trade and Industry have said they're going to interpret it as valuation reserves. That calculation has to be taken on the gross business, including reinsurance. The result is then reduced by a reinsurance factor, which we will look at in a minute.

The second calculation has reference to the sums at risk, and is .3 percent of the capital sum at risk, again taken on a gross basis, and that result reduced by a reinsurance factor. There are exceptions in the case of term insurances written for short periods: if the term insurance is to run for less than three years, that figure is .1 percent; if the term is between three years and five years, the figure is .15 percent.

There are special rules for linked business. First of all, if a linked contract is structured so that all the investment risk is passed on to the customer, and there is no form of minimum benefit guarantee, then the 4 percent in the first calculation is reduced to 1 percent. That is, if the company bears no investment risk, if the term of the contract exceeds five years and if there is an upper limit on the expense charge applicable for more than five years. If, in addition to passing over all the investment risk, a company also manages to pass over the expense risk (in other words, the company has the right to increase the annual charge on the fund in the future, should this be necessary), then it is agreed that no solvency margin is required, as far as the part based on the first calculation is concerned. The part based on the second calculation will still be required, if there is a death risk. This is particularly important for those companies writing pension business in special segregated funds where the intention is simply to provide an investment service.

The reinsurance factor in the first calculation is the net reserves over the gross reserves, but not less than 85 percent. In other words, one may not take a credit of more than 15 percent for reinsurance on the

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reserves part of the calculation. On the risk part of the second calculation, there is a similar restriction, one may not take a credit of more than 50 percent for reinsurance. If a company is strictly a reinsurer, the limit of 85 percent on the first reinsurance factor is reduced to 50 percent, and the factor for the second calculation is reduced to .1 percent in all cases. Now, the reason for this restriction is that, in Europe direct companies are strictly regulated while reinsurance companies are not regulated at all. So, the regulators are not going to allow anyone to get through the hole by reinsuring a large proportion of their business. In the U.K., reinsurance companies are regulated in exactly the same way as direct-writing companies. So this kind of restriction would be very onerous for them, making it difficult for them to compete internationally. Therefore, there has been some modification of the position.

The actual U.K. solvency margin has two parts: explicit items and implicit items. The first of the explicit items is the share capital. This has to be adjusted if the company owns a subsidiary. It's common in the U.K. for a life company to have a life company subsidiary. In that case, the share capital of the subsidiary is replaced in that calculation by its excess surplus solvency margin. In other words, the actual required solvency margins are calculated for the subsidiary company and only the excess is carried up to the top company, and then only to the extent that it is not surplus reserved for policyholders. In the calculation of the company's own solvency margin, surplus reserved for policyholders counts towards the solvency margin. But surplus reserved for policyholders in a subsidiary company cannot be brought up and counted in the holding company's calculation. In addition, the holding company has the balance in the profit and loss account, and any surplus carried forward in the life fund.

If the result is an insufficient amount, one can then apply to the D.T.I. to take credit for implicit items. The most important of those is 50 percent of the future profits. The calculation is, in fact, laid down in the European directive. It's the average profit over the last five years multiplied by an average factor representing the future term of the business. But, on top of that, the D.T.I. requires the appointed actuary to make sure that the figure used for that purpose be one that he believes is reasonable. So, that is an additional control. A second item that may be taken into account is hidden reserves, basically on the asset side. A company may, having valued its assets at market value, write them down to book value for the purpose of valuation. It must still calculate the yield on the market value, but then, to the extent that it has written the assets down, it may bring that into account for the solvency margin. Finally, if the valuation basis allows for less than a 3 1/2 percent Zillmer adjustment, any difference may be brought into the solvency calculation.

Now, most companies, I would suspect, would hope not to have to rely on those implicit items. Although the D.T.I. has said it will make it as easy as possible to use them, the fact remains that it just isn't easy to do. There are a lot of complicated procedures to go through, and the very fact of going to the D.T.I. and explaining the desire to use

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implicit items invites it to pay more attention to the company's affairs than might be wished.

The actual calculated solvency margin is set out in the returns to the D.T.I., following the annual actuarial valuation, as is the required solvency margin. These items demonstrate that the company had the required degree of solvency at the date of the valuation. There is, however, an implied responsibility placed on the appointed actuary to inform the D.T.I. if this should cease to be the case at any time.

The last thing I want to mention briefly is something called the guarantee fund. The guarantee fund is defined as the larger of one-third of the required solvency margin and a specified sum. For most companies, that specified sum is 800,000 European Units of Account, which at the moment is on the order of half a million pounds. And, at least 50 percent of the guarantee fund must be covered by explicit items. Now, the guarantee fund has no existence apart from that definition. Whether at some earlier stage it was intended that it would be used for some other purpose, I don't know, but if so it has vanished. In fact, one now directly calculates one-sixth of the required solvency margin, compares it with the absolute level and must check that the guarantee fund explicit items are at least that amount.

The Secretary of State has, in any case, the power to intervene in the affairs of the company at any time he believes this to be necessary. In particular, he has power to intervene if he considers this to be desirable for protecting policyholders, or potential policyholders, against the risk that the company may be unable to meet its liabilities, or to fulfill their reasonable expectations. The question as to the extent the expectations of policyholders may be considered to be reasonable, will be a fruitful area for debate for many years to come.

It will be clear that the required solvency margins, combined with greater restriction on valuation bases, rapid growth in new markets, and unstable economic conditions, place serious constraints on insurance managements. Corporate planning has become more important than ever, as has the need to explain to directors and shareholders why the statutory profits are not emerging at the same rate as the business is expanding. Companies in the U.K. do not use G.A.A.P. reporting, or anything closely equivalent to it, but it is beginning to be more common for companies to adopt devices to tackle the problem. One is to establish a new business account showing, as an intangible asset in the shareholders' account, the value of amounts transferred to the life fund to cover new business valuation strain. This is then amortized by transfer back from the margins on existing business. It has no value for solvency margin purposes.

An alternative, increasingly used by those life companies that are part of a larger group, is for the holding company to show in its accounts an appraisal value of the life company. Such an appraisal value might reflect only the future margins from existing business, or it might include a valuation of the future production of a sales force or agency division.



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Now, I want to put that in context with regard to the other financial institutions in the U.K. There is considerable diversity in the way financial institutions are controlled, despite the fact that, as here, they're all actually fighting for the same savings dollar. The banks, for example, are controlled by the Bank of England and are required by it to have a banking license, or to be a licensed deposit taker (which is one stage down), to have a specific capital to deposits ratio, liquid assets ratio and risk assets ratio. Building societies, which are the main source of borrowing for house purchases in the U.K., are regulated entirely separately. They have their own registrar who controls what they may and may not do, and they are seeking to have wider powers to compete with the banks directly. Unit trusts, which are the equivalent of mutual funds over here, are again controlled entirely separately; their funds have to be held by a trustee who is entirely separate from the manager. That is the unit-holders' protection against the manager flying off to Buenos Aires with the funds. The manager can only give instructions as to how the funds are to be invested but they're actually held by a trustee corporation.

So it's all very diverse and, in fact, recently a report was made on investor protection. This was drafted by a committee set up by government to consider the need for statutory protection for investors. As a result of this report, two regulatory bodies are being contemplated. The first is a Securities and Investments Board (S.I.B.) which will control the stock exchange and firms actually in the investment business. The second is a Marketing of Investments Board (M.I.B.) which will control the distribution of investments. There is discussion at the moment as to whether those will continue to be two separate bodies or whether they will be brought together. The M.I.B. proposals are now being considered by a committee called M.I.B.O.C., in short, the organizing committee. Those of you who have visited London may know that, in the Guild Hall, there are two giants called Gog and Magog who protect London. Insurance companies are now waiting to see what M.I.B. and M.I.B.O.C. are going to do to protect the investors.

DR. ALLEN BRENDER: As was mentioned, the subject of capital and surplus standards for life insurance companies is currently receiving considerable attention in Canada. There are probably three factors giving rise to this. One is the fact that we Canadians have experienced a number of failures of financial institutions. Fortunately, none of them were federally regulated life insurance companies, although one in the last number of years was regulated by a provincial government. We've also seen the introduction of a number of new, particularly new-money, insurance products with considerably reduced pricing margins; a general trend towards leaner pricing. And we've seen a trend towards diversification of financial institutions, towards different types of institutions offering similar products and services.

I'd like to mention two documents which have recently been published by the Canadian Federal Government and which serve as a focus for my remarks. The first of these is a Green Paper titled "The Regulation of Canadian Financial Institutions: Proposals for Discussion," released in April 1985, by the Minister of State for Finance. A technical paper accompanying this, which will provide a better idea of what

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the Department of Finance has in mind, is promised to appear in the next week or two. The second document is a report titled "Minimum Capital and Surplus Requirements for Life Insurance Companies," which I authored for the Department of Insurance last year, and which it released in March 1985, to the industry and to the CIA for comment.

Let's first consider the Green Paper. We often hear that life insurance companies are classified as one of the four pillars among the major financial institutions of Canada; the four pillars being: chartered banks, combined trust and loan companies, life insurance companies and investment firms. Of course, there are lots of other financial institutions: pension funds, credit unions, mutual funds, property and casualty companies and so on, but I'll restrict comments to these four categories. Let's briefly summarize the situation of these institutions.

Chartered banks in Canada number about seventy. The great majority of them are relatively small, wholly-owned subsidiaries of foreign banks. These are known as Schedule B banks, and their market shares are limited by regulation. There are ten or eleven, large Schedule A chartered banks. The five largest of these tend to dominate the national financial scene. The smallest of those five has assets in excess of \$50 billion. They are large national institutions having on the order of a thousand branches each. All banks are regulated at the federal level by the office of the Inspector General of Banks in Ottawa.

Canadian loan companies are quite similar to savings and loan institutions in the U.S. They may have federal charters and be regulated by the Department of Insurance in Ottawa, or they may have a provincial charter and be regulated by provincial authorities. Being federally or provincially chartered doesn't restrict having operations in more than one province. My discussion concentrates on the federal regulations, but there's a considerable degree of similarity between federal and provincial regulation, although not always necessarily a similarity of effect.

Trust companies are essentially loan companies with additional trust powers. In Canada, these powers belong to loan-type institutions and not to banks, as is the case in some other countries. Here, banks are specifically prohibited from having trust powers.

Life insurance companies in Canada may be federally or provincially chartered. All foreign insurers operating in Canada are regulated federally. Most life insurance companies tend to be federally chartered. In addition, certain provinces have subcontracted the regulation of their chartered companies to the federal office.

Investment firms are under the sole jurisdiction of the provinces. The authors of the Green Paper, essentially exclude them in their recommendations. I'll probably do similarly in this discussion, although it should be noted that excluding them doesn't mean that they are not to be considered significant.

In particular, if we are talking about diversification, we're really concerned about the notion of deposit takers. And I think as Merrill

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Lynch, initially with the cash-management account, and other brokerage firms have shown, brokers can take in considerable deposits. Although in Canada, one may speculate that because banks tend to be national and so large, some of the advantages of the cash-management account might not be so apparent; perhaps that type of fund might not take off to the same extent that it has in the U.S.

Now, with respect to capital requirements, the Bank Act provides that the Minister of Finance (normally acting through the Inspector General of Banks) may impose capital requirements. The legislation only authorizes this, and there is nothing in the legislation to specify the form of the requirements. These tend to be left to regulations. Usually, the requirements are expressed in terms of what is called the borrowing ratio, the maximum permissible ratio of total assets to total equity. Several years ago, particularly in the late 1970s, this ratio had values, for the largest banks, somewhere between 30 and 33--they could have total assets of roughly 30 to 33 times the total equity. With the difficulties in the financial environment here in the 1980s, it was perceived, both by the banks and the Inspector General, that this ratio was perhaps too high. There's been a systematic attempt to bring this ratio down and, I think, today the largest of the banks would have a ratio of somewhere around 25. A smaller ratio would apply to smaller banks.

The borrowing ratio for trust and loan companies is defined slightly differently. It's the ratio of the sum of amounts borrowed, deposits taken and guaranteed trust monies held by these institutions to the excess of assets over liabilities, or surplus. Legislation at the moment says that any loan company, upon licensing, is automatically given a borrowing ratio of four. Trust companies automatically have a borrowing ratio of at least 12.5. The Trust Act and the Loans Company Act (there's an attempt to bring both these acts together) both provide that the Minister, usually represented by the Superintendent of Insurance, can have the discretion to raise these limits. The limits, in fact, are set by the department essentially in recognition of the management of the company and its performance. In recent years there has been an amendment to these acts, limiting the ministerial discretion. If a company is to be given a borrowing ratio exceeding 20, several tests in the Act have to be met. These are tests regarding the quality of assets, liquidity, cash-flow--which essentially means some sort of short-term asset/liability matching--and earnings. At present, the largest of the trust companies has a ratio of 25. I don't believe that the federally regulated companies have ever gotten a ratio higher than 25, however, one province (Ontario) has seen fit to allow a very large company that it regulates a ratio of 27.

Life insurance companies, on the other hand, at the moment, have no legislated capital and surplus requirements beyond those governing initial funds upon first receiving a license or first being registered to conduct business. That requirement, as currently stated, is that a concern needs at least \$1.5 million, or any other such amount as the superintendent shall recommend. My understanding is that the superintendent won't recommend licensing any company with less than about \$6 million for a life company, and about \$5 million for a property and

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casualty (P&C) company. But there are no continuing capital requirements such as the other institutions have.

With respect to P&C companies, there is a requirement to have a surplus of 15 percent of reserves, which are not of a specific type. Reserves which are excluded are essentially those on the noncancellable accident and sickness policies and those for benefits which are payable in installments. For those reserves, a valuation actuarial statement is required. For other P&C reserves, there is no specific requirement for an actuarial valuation opinion, although there's a lot of talk about such a statement being required. It would seem that the 15 percent requirement, the so-called Section 103 test, is in fact the requirement in lieu of an actuarial valuation, or required certificate.

With respect to consistency, it should be noted that with the exception of chartered banks, all financial institutions which are regulated federally in this country are regulated by the Department of Insurance, and have been for quite a few years. In fact, the regulators have been living with this need for consistency far longer than the industry, which has only begun to see that need as the barriers have broken down between various types of institutions. It's something which has definitely been on the minds of the members of the Department of Insurance.

Now, what about the level playing field, is it level? With respect to solvency requirements, at the present time, I contend that it's not and I'll offer one example. Trust companies in Canada take an awful lot of medium-term deposits called guaranteed investment certificates, or GICs, in which interest rates are guaranteed for terms of one to five years. On these, the borrowing ratio requirements must be satisfied, so that even the largest institutions have to put up some sort of equity or surplus, roughly 4 percent. Smaller institutions have higher surplus requirements. Life insurance companies have begun taking deposits and calling them deferred annuities. There is absolutely no requirement on life insurers, and by that, trust companies are somewhat at a disadvantage. There is no level playing field in that respect, I believe.

Now, if we admit that this is an inconsistency, the question then comes to us: How are we going to resolve it? The inconsistency arises at the present time because there are different types of institutions operating under different regulatory acts, conducting essentially the same sort of business. One can try to resolve the inconsistency by either changing the regulation to cover the activity, deposit-taking, and not regulate the institutions, or by regulating the institutions, preserving the structure of the various acts, the Bank Act, the Insurance Companies Act, the Trust and Loan Act, and so on, providing consistent, if not necessarily identical, requirements within each. The federal Green Paper comes down quite strongly on the side of regulating the institutions.

To be specific, with respect to insolvencies, since 1981 four federally registered P&C companies and eleven federal trust and loan companies have failed; in addition, one small bank among the ten Schedule A

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banks has had to be supported by a government assistance program, essentially rescued. One provincial life insurance company has also failed, and is being run off. Several provincial trust and loan companies failed, causing considerable discomfort and agitation. Solvency is a very real problem, and it's no wonder that mandatory minimum capital and surplus standards are being re-examined and considered for life insurance companies, as well as other financial institutions.

Now, before we can talk about surplus, it seems to me we have to realize that surplus is what is left over, assets minus liabilities. We have a fairly standard procedure for the valuation of assets, and, it seems to be that before we can talk about surplus standards, we really have to take rules for the valuation of liabilities into consideration along with what sort of margins are contained in those liabilities. Any surplus requirement must then be consistent with the valuation procedures.

Let me remind you of a few facts about revised Canadian reporting since 1978. First of all, there are no mandated actuarial assumptions in Canada. Each company appoints a valuation actuary who calculates policy reserves using assumptions which are appropriate--this is an extremely important word, appropriate--to the policies and to the circumstances of the company. Circumstances of the company, for example, include the degree of asset/liability match or mismatch. In fact, valuation assumptions can be and often are quite close to pricing assumptions. The assumptions can be changed if the valuation actuary considers that the change is warranted. The intention, in introducing this approach, was to provide for a single reporting system which could be used both for solvency testing and for traditional income reporting. The law specifies, in particular, that only one set of reserves can be publicly reported. The statement reserves are the only reserves that a company can put in any public financial statements. So, essentially, Canada is on a system where we're looking at fairly realistic reserves.

Solvency adjustments are essentially done below the liabilities line, and there's a large element of appropriation of surplus. For example, you may have negative reserves but, in certain circumstances, you may not have to add a cash-value floor in the reserves. However, if these things show up, then you have to make up for them by appropriations of surplus. It is up to the actuary to choose to put these things in the reserves, or as an appropriation. And, it is this notion that really brings traditional financial reporting, or normal income reporting, to a solvency basis. It should be pointed out here that the regulators are quite concerned about the reasonableness of the income statement; low income is at least as good an indication of trouble as any problems having to do with the balance sheet. If you find problems only when you're looking at the balance sheet, you've probably waited too long.

As an actuary, I am quite pleased that the Canadian regulatory system places great trust in the valuation actuary, in the integrity of the profession. On the other hand, I think we have to recognize that, as far as the regulators are concerned, this can create some problems. In particular, since the compulsory valuation standards have been taken away, I think there has been a gradual weakening of the reserves margins, a weakening which was to be expected. But the problem is

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that the regulator, right now, can't be sure exactly what margins there are for any particular company. Now the CIA has financial reporting guidelines which are binding on valuation actuaries and certainly make reference to the provision of adequate margins. But, in fact, these are not specific as to what sort of margins should be provided. I am very pleased that the CIA now has established a subcommittee of its Financial Reporting Committee to develop some recommendations. But that subcommittee had its first meeting only two days ago and the task, I think is rather involved. It could be some while before acceptable methods or guidelines are in effect.

It seems to me, then, that to get to a proper solvency basis, we need something like a minimum capital and surplus requirement. Now, one thing should be noted. If there is a minimum capital and surplus requirement and if a company is pressed, then clearly margins will be released from the reserves to the extent that the valuation actuary feels that he or she can do that and still satisfy the minimum capital and surplus requirement. It seems to me, and I think to a number of people, that this is acceptable as consistent with the basic philosophy of Canadian financial reporting at the moment. Solvency testing will rest on the combination of reserves and surplus. And if it is a question of providing adequate margins, and if the margins are contained on specifically designated surplus, the solvency can be quite acceptable.

One other reason for introducing a minimum capital and surplus requirement has to do with the rapid shift towards term insurance. The fact is that face amounts of term insurance are growing rather rapidly. Premium volume is not growing nearly as rapidly as the face amounts. And reserves, I think in my companies' projections, are shrinking. The risk is increasing and assets are not keeping up. The reserves are not providing any protection for these types of risk. Clearly, some other way must be found.

The trend to new-money products has reduced interest margins. Moreover, it has created a much greater need for asset/liability matching and a much greater need for sophistication in performing this task. And it began to be recognized that insurers who offer these products are subject to large risks, risks which might not have been appreciated in the past, and which are not always provided for simply by a change in a valuation assumption. I'm far from convinced that one can account for a mismatch by reducing the interest rate a quarter of a percent, or a half of a percent, or whatever particular number. I don't believe that the mismatch is easily measured that way.

Other new types of risk can also be significant. Included here are the disintermediation risks, both with respect to liabilities and with respect to assets. New terminology for these risks has emerged, namely, C-1, C-2 and C-3. C-1 is the asset-default risk. C-2 is what used to be called the pricing risk, essentially the risk at premium inadequacy. C-3 is the interest-rate risk. There's also a C-4 risk which is supposed to be "everything else." The one comment I'll make about C-4 is that it's not clear that numbers can account for "everything else." The classic study of the things I'm talking about here was done by the Faculty of Actuaries in Scotland and there's a great line with

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respect to C-4, although they don't call it that, which is that "no amount of surplus will protect you against rogues and fools."

Suppose we decided we should have a statutory, continuing surplus standard. How do we specify it? I suggest first that there are three types of surplus standards, and we have to choose between them: the liquidation, the run-off and the vitality standard. The liquidation standard means an amount of surplus which would insure that if there was a business failure, the funds available would be adequate to settle all current policyholder claims and to cover the costs of liquidation of the company. The run-off standard would insure that funds were adequate to be able to run-off, or mature, the current closed block of in-force business. The vitality standard requires that funds are adequate to support continuing operations of the company, including the financing of new business and a provision for growth of the company.

It's clear that management of any company can be concerned only with vitality, as a minimum. From a regulatory point of view, the liquidation type of standard might be considered adequate for a P&C company--most of the business is rather short-term and the main concern is paying off the current claim. For life insurance companies, there is another problem. Liabilities tend to be longer term. For those people who do have policies, if the company arrives at a financial settlement with them, there will still be problems of coverage replacement, insurability and so on. It seems difficult to imagine that the liquidation standard or the vitality standard would be appropriate as a regulatory requirement. It's not clear that regulators should force a company to survive, or to continue in business. The general approach that seems most appropriate is a run-off standard.

Now, how are we going to construct a requirement if we've assumed that we're going to have some sort of run-off standard? I thought about this and there are a number of approaches, but I really would offer you two basic ones. First is a formula approach to come up with a set of factors which would apply to all companies. A second approach is modeling. Each company would model itself, reflecting its own mix of business, its own underwriting policies, its own expense pattern and, most important, its own investment policy. The form of the model would be specified by the regulators as would the underlying assumptions and the tests which a company would have to satisfy by means of the model. The beauty of this approach is that the resulting surplus requirement calculated for a particular company would be appropriate for that company, would be tailored to its circumstances. The drawbacks, unfortunately, are that it would require a great deal of technical expertise both on the part of company actuaries and regulators. And, from the point of view of regulators, it would be extremely difficult to administer since they would also have to check the construction of the model. Also, academic finance people do not necessarily have good models of economic scenarios one might wish to assume. Therefore, we're often limited to arbitrary choices of scenarios, as you might see in some of the work of the SOA C-3 Task Force in the U.S.

My personal preference is for a modeling approach. I believe that surplus requirements should fit the circumstances of the company. But

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I also think that it is next to impossible to expect this to happen in the near future. And, I see little alternative to having, at least initially, some sort of formula approach. By a formula approach, I mean factors and numerical constants which would be applied to various measures of risk that a company assumes.

I've opted for the use of a formula, in my recommendations to the Canadian Department of Insurance. Before discussing actual numbers, I want to make a few comments about how formulas are currently used. Mr. Richard Squires has told us that the E.E.C. has adopted a formula approach, and I find it very disconcerting that the E.E.C. formulas are totally inconsistent with reserving practices in many countries. In the U.S., Wisconsin has adopted precisely that type of formula; that is, Wisconsin Insurance Law gives the Supervisor of Insurance the authority to impose the requirement of using a formula and, interestingly, the law identifies particular risks that should be considered in this requirement. It's then up to the commissioner to figure out what the numbers are. One commissioner, at one point, decided that since the authority was there, it was probably prudent to add such a requirement. I've been in contact with the Wisconsin people. Their numbers are rather arbitrary, although quite similar to the European numbers. Utah has a proposal to do exactly the same sort of thing and, since I've seen memoranda, I can tell you that its numbers are also rather arbitrary.

The one interesting and different approach to capital requirements, I think, is an approach used in Finland. In Finland, a company is required to perform theoretic ruin model calculation. That exercise produces a minimum value for the amount of surplus needed to guarantee that the company doesn't go broke. Then the company holds something called an equalization reserve, which you could think of as a contingency reserve. The important thing about it is it's held above the line in the liabilities. Now, there is also a maximum value for this reserve because, as it happens, increases in this reserve are tax deductible.

Now, regarding my figures, the numbers appear to look very similar to some of the E.E.C. numbers and some of the Wisconsin numbers for insurance products, particularly for the mortality risk.

For the life insurance mortality risk,

- (1) the following factors are to be applied to the net amount at risk determined in (2) below, the term being the original term or period for which premium rates are guaranteed:

<u>Term</u>	<u>Rate</u>
one year or less	0.0005
more than one and less than five years	0.0010
five or more years and whole life	0.0020

where



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- (2) the net amount at risk is the total face amount of insurance less policy reserves, but decreased by 25 percent of the corresponding amount for all business which is reinsured.

For the financial risk, the factors are

<u>Type of insurance</u>	<u>Factor to be applied to policy reserves</u>
Participating	0.02
Nonparticipating	0.04

By the financial risk, I mean something like the C-3 risk. The Canadian federal regulators decided that it would be reasonable to distinguish between par business and nonpar business on the assumption that par, in fact, really does have some margins available and, given this fact, can be cut. There are some problems with that. One really has to be sure that par is not a label but a fact; there are policies in Canada which are in the par fund, but are not really paying dividends and weren't intended to pay dividends. There are occasionally nonpar products which have par characteristics.

Regarding the determination of these numbers, the mortality risk calculation was based upon a ruin risk model of portfolios of several companies of varying sizes, from some of the very largest to some of the very smallest. Now, it became apparent that it was almost impossible to come up with a single factor which would apply uniformly to companies of all sizes. The smaller companies needed considerably more surplus, even on the retained business considered alone. The limitation, as far as the reinsurance, is not intended to have anything to do with the solvency of reinsurers. It's just an effort to say that the small companies need more surplus, and they also tend to purchase more reinsurance. A simple way to build that sort of requirement into a formula is to base the surplus of the total amount of insurance, then limit the allowance that one gives for reinsurance. But it's not a comment on the solvency of reinsurers at all. It's not at all the problem that, for example, the E.E.C. or the U.K. have to address.

As mentioned, the financial risk is basically a C-3 type risk. For these calculations, I had complete data on one representative set of policies from one Canadian insurer--a set of whole life policies which came in par and nonpar versions, had very similar pricing and valuation assumptions. I was able to construct a model very much of the kind that you see the SOA C-3 Task Force do. I'll just say with respect to that, that the results are considerably different from what they would be if reported on the Reports of the Society of Actuaries for the C-3 Task Force because Canada has flexible valuation standards. In Canada, valuation assumptions can be modified as necessary and, if interest rates change, these assumptions might well be modified.

For the mortality risk on vested annuities, the figure is 1 percent of statement reserves. For the financial risk in deferred and vested annuities, the figure is 4 percent of statement reserves.

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The mortality risk, again, was calculated from a ruin risk model. I have been told by some people that 1 percent of reserves is a little bit low, and a 4 percent financial risk is where we will see some problems. However, the problem with constructing a model is that one has to specify an investment policy. On the other hand, most of the financial risk arises from asset/liability mismatch and the investment policy. In choosing a model, and an investment policy, the model would probably act to understate the risk. In this particular case, it seems to me that the overriding consideration is consistency with other financial institutions which are conducting a similar kind of business. It therefore seems to me that this 4 percent is a number that was about right, after taking trust company requirements into account.

The figures for the accident and sickness business are

Extended Health and Dental Insurance

15 percent of gross annual premium

Disability Income Insurance

15 percent of gross annual premium

5 percent of long-term disability (LTD) claim reserves

Accidental Death and Dismemberment Insurance

<u>Term</u>	<u>Factor applied to risk amounts</u>
five or more years	0.004
more than one, less than five years	0.002
one year or less	0.001

All Accident and Sickness Benefits

The Section 103 requirement of 15 percent of incurred but unpaid claims should be retained.

These figures are derived from studies of group business. You'll find them described in a paper I authored, and which will appear in the Transactions.

I want to mention two additional items of note. First, the investment valuation reserve should be retained. The risk of asset default is not covered by the C-3 risk, and was not provided for in any of the factors I have discussed here. Second, there is a need for a second-layer surplus requirement in addition to the formula calculation I've described. The preceding figures were calculated so as to let a closed block of business be successfully run off. However, if a company were in trouble, it would take time for regulators to recognize this, and still more time until the company could be put into a wind-up

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situation. During this period, we could expect surplus to erode. Therefore, the additional layer is necessary to allow for this erosion.

Finally, surplus is intended, in large part, to protect policyholders and depositors. That can't be accomplished just by guaranteeing the statutory solvency of the company, because there's still the potential of company failure. Something that goes hand-in-hand with capital requirements, in all other financial institutions, is the notion of deposit insurance. The question of deposit insurance and guarantee funds appears in the Green Paper and the Canadian Department of Insurance, I think, has been communicating with the industry for quite some time about this provision. The Canadian Life and Health Insurance Association has a committee studying the problem, and we must not forget that capital and surplus requirements alone are not the whole story. There are too many other technical details and the subject is clearly a very active one. However, everything is on the table and open for discussion. Any comments at anytime are most welcome.

MR. RICHARD S. ROBERTSON: I first distributed a paper on the subject of surplus standards about a year ago. In it, I described the system installed at Lincoln National for managing surplus. I also described our standards, how they're used and some of the considerations underlying those standards. I think I'm not going to talk a great deal about what is in that paper; I think it stands fairly well on its own. Rather, as I prepared for this presentation, I became increasingly concerned about the concepts being developed for regulatory standards. I think the standards that were developed in Europe are just awful, and I don't think much of the standards being proposed in Canada. There are a lot of problems here. Maybe I'm being influenced by the fact that if I were to take these standards and apply them to my company, I'm not sure it could pass. I think it depends upon how you interpret some of the nuances of the formula. Now, Dr. Brender reminded me that I've got to take into consideration that different valuation standards have been put in place between Canada and the U.S. And I think that once that is taken into consideration, at least the particular concern on being able to pass the test would vanish. But it's still a very high standard.

After all, if there is a minimum regulatory standard, it defines the surplus to be maintained. Prudent managers will set objectives well above that, so that the kinds of things that surplus is designed to protect against would not throw the company into a situation where it will be subject to the regulatory procedures of having inadequate surplus. And I think, even if the valuation basis is addressed, my company's level of surplus would cause a problem with respect to the proposed standard. This may suggest that we managers are unnecessarily taking risks with policyholders' money, and maybe that's the case, but I think we're in the main stream of most actuarial thought in the U.S. I have talked to people at a lot of companies and I don't think anyone has criticized us for having unduly liberal standards. But my concern is about overstressing the importance of magnitude. If surplus requirements were just a matter of magnitude, we could examine the models that have been developed under all of these standards. We

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could criticize those aspects that we think may be unduly conservative and work out some kind of a program that would be appropriate.

The problem is, I believe, that the adoption of any formula of this type is inappropriate. After all, surplus is not free. In the final analysis, it's paid for by the policyholders. And one has to evaluate whether they are truly better off with a higher level of security and higher cost, or with a lower level of security that may still be ample and adequate, but perhaps not quite as much as might be called for by more strict standards, and, in turn, a lower cost of insurance. It's my contention that establishing a formula, of the likes that have been adopted and proposed, is a very inefficient way to trade-off security and cost. We're getting only a little bit more security at an inappropriate additional cost.

Let me talk a little more about some of these observations. First of all, no single formula can apply to all companies. I think we'll all agree that a great many considerations underlay the theoretical surplus standard a particular company should have. That is why Dr. Brender prefers the modeling approach rather than the formula approach. And, to the extent formulas are developed for internal purposes, those formulas should vary considerably from company to company, in recognition of the different ways of conducting business, the size of the company and a lot of things. I sense that the formula that Dr. Brender is proposing to the Canadian Department of Insurance is gauged primarily for medium-sized companies. As such, it is probably unnecessarily high for large companies. Now, politically, it is very difficult to have a standard that varies inversely by the size of the company but if, in fact, there are efficiencies in larger companies with respect to utilization of surplus, why should policyholders have to pay as though it were otherwise? Why should they not achieve the benefit of these efficiencies in the larger companies?

I might turn this around and say that if those of us in larger companies have to maintain surplus standards that are appropriate for smaller companies, let's require them to build into their organizational structure the type of inefficiency, bureaucracy, lack of creativity and so on that we in the large companies are very often accused of having. If you want to have a level playing field, let's have it level. But realistically, it's more than just size, it's the kind of business we are in, the risk, the investment policy, the kind of financial reporting system, the ability to see signs of impending problems before too late. These are things you can't build into a formula, but they're very important in trying to design the type of security our policyholders need.

There are also problems over time. The perceived risk changes over time. If we were talking five to ten years ago, I think we would focus primarily on the C-1 and C-2 risks, that is, the asset-default and the insurance risks, and not pay a great deal of attention to the matching of assets and liabilities. Yet that's the biggest problem we've faced over the last decade. The standards that are now being developed well recognize this. I'm not sure we're smart enough to identify the biggest problem that is going to be experienced in the next decade, but it is important that we have surplus standards that can adapt as rapidly as

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we can to what does happen. Furthermore, products change and needs change.

I'm also concerned about the incentives formulas of this kind present. A good surplus standard should create incentives for companies to minimize risk. That is, if companies conduct their affairs so as to limit the risk, that should be recognized in a lower requirement. That takes place only to a limited extent in the legislative standards and one of the practical results of adopting standards such as those proposed would be, once the standard is fixed, to allow the risk to rise to meet the standard. Then there'd be no more security than with a lower standard. That's certainly what I would advise my company to do; before having it maintain surplus to protect against these risks, run them.

Well, having gone through my list of concerns on this, I guess it's up to me to propose what I think ought to be done. I'm not going to pretend it's an easy problem to solve. I think the main thrust should come in two areas.

One involves the valuation actuary. I think the actuary has got to step up and play a much more significant role, not just in reserving but also in evaluating the kinds of surplus that a company is required to hold. This is the heart of the valuation actuary issue in the U.S. This was discussed extensively at the actuarial meeting that was held two weeks ago in St. Louis, and I was surprised, maybe a little disappointed, that many actuaries were shying away from this responsibility. It is awesome; it calls for an actuary stepping up, putting his job and his reputation on the line and saying to his management, "No, you can't do this." But I think that that kind of action is going to be necessary if we're going to provide the kind of protection to the public that is needed. I think it is important that we go forward and try to develop the professional strength we need to meet our responsibilities here. It's also true that we need to spend a lot of time developing the tools that the actuary needs to appropriately evaluate surplus, and that's why sessions like this and papers like Dr. Brender's, mine and others' have been developed; that is, to give us an opportunity to identify and discuss the issues. And we need to continue to do this.

Another thing that I think needs much more attention is the rating agencies. In the U.S. the rating agency is, well I'll be honest, about forty years from being ready for the twenty-first century. I haven't tried to correlate their ability to identify failing companies a year in advance, but I doubt the correlation between their ratings and failures of companies is very strong and may even be negative. Typically, the rating process goes something like this: the annual statement is mailed to them. The staff there examines it, applies certain statistical tests and certain other judgmental tests and then comes forward with the rating. The insurance company will typically have a short period of time in which to comment, to see if it can call their attention to things they might have overlooked. And, based on discussions, they may or may not be willing to take into consideration any additional factor that the company may put before them. Then the thing is kind of put to bed for a while until the next annual cycle. They're making some steps to improve this, but progress is very slow.

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Now, contrast this to what happens when we go to borrow money. Before we go to the public debt market, the president, the treasurer and the chief financial officer get on a plane for New York. We sit down to talk with Moody's and with Standard & Poor's. Afterward, we go to Chicago and do the same thing with, in our case, Duff and Phelps. We lay before them not only the publicly available information, but our own internal plans and projections as well, the factors underlying those and where we see the problems. We get a rather hard grilling from their experts, they weigh what is said and, at this point, they issue their debt rating. Then they constantly review it. We have to go back there regularly and talk to them. They have a thing they call a credit-watch list, where immediately upon learning there may be an adverse development with respect to our activities, they'll call us in for one more evaluation. The system isn't perfect, but it does work a lot better than the kind of rating system that operates in the insurance industry. There is a real need for that kind of service now, and I think we're going to see it. I don't know whether it is going to come from the debt-rating agencies, expanding the scope of their activity, or whether perhaps existing rating agencies reform their procedures, or maybe the industry will have some new entrants. But that's the kind of thing that's really needed, and I think, if it were in place, it would let the market make a healthy evaluation of how much security is enough.

I could talk more about the subject of how we manage surplus at Lincoln National. It's something I've spent a lot of working time on, and right now it's a very hot topic. Since I published last year, I've talked to a large number of managers of other insurance companies, both stock and mutual, and it's clear that practically every company is weighing the same issue: How much surplus is really needed? And perhaps even more importantly: How does management set, and place in operation, the kind of systems to manage to work a level of surplus? How is surplus to be allocated among operating units? And what kind of incentive should be created to try to enable the operating units to make the most efficient use of that surplus? These are the kinds of concerns that I've written about in the paper. Our solutions at Lincoln National seem to be working pretty well and, perhaps even more importantly, I observe a parallel process going on in many other companies. They are coming to somewhat the same conclusions, independently or semi-independently. It suggests that we are all on the right track. The numbers are different: Lincoln National may use so much per thousand, some other company uses half that or maybe their figure is derived on a percentage of assets. But I think we're converging on something that represents a reasonable approach to what ought to be done, and I am very encouraged.

MR. OSCAR ZIMMERMAN: I have two questions for Mr. Robertson. First, where you have to top up surplus, not related to risk but probably with the deficiency reserves or something like that, do you charge the profit centers with risk-related return or with a reinsurance pricing type return? Second, when you have your 1 1/2 percent for asset-default risk on bonds and mortgages, do you ignore policy loans in that particular calculation?

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MR. ROBERTSON: The answer to the second question is that I believe that's correct. I believe policy loans are, in essence, treated as a deduction to reserves, but I can't promise you that. In answer to the first question, on what we charge our operating lines for the surplus they use, we actually evaluate them on rate of return. So, in a sense, we're not charging them, but rather we expect to meet corporate standards with respect to their returns. The standard we are currently using, and I think has been tested many ways, is 15 percent. So then, if a business unit is not earning its 15 percent (and that's after taxes) there's something wrong.

MR. ZIMMERMAN: In that situation, wouldn't your profit centers be encouraged to reinsure, get surplus relief for anything that's really not risk related? To get that excess amount down to zero?

MR. ROBERTSON: There are some incentives for reinsurance in the system. If reinsurers are willing to accept a lower rate of return than we are, then we can examine whether that's the appropriate way to leverage our company. The problem is that you've got to very carefully examine exactly what risks the reinsurer is assuming. If, in fact, the reinsurance does not transfer any risk, we probably have not accomplished anything by buying it, in terms of increasing the security of the company. I make an exception if there is an inappropriate statutory requirement that we can, in essence, get rid of in the process; then maybe that would be appropriate. But I think that if the reinsurer is assuming a parallel risk, that may be a very useful tool to help us manage our surplus.

MR. ZIMMERMAN: If you want to charge me 15 percent, I'm going to go to a reinsurer and I'm just not sure whether the corporate standard should change to meet the reinsurance market, so we don't do the reinsurance. All we do is just put it on their balance sheet as surplus instead of on our balance sheet, but there is really no risk transfer. Would you suggest that the corporate requirements be modified to reflect that, and not go to the costs of a reinsurance arrangement just to manipulate the game?

MR. ROBERTSON: Well, the issue described is not a simple one. One of the rules in this process is if you do something, don't do it just because the financial system calls for you to do it. And, in fact, if it is not, from the corporate perspective, the right thing to do (to buy that reinsurance), then we would look for some way to adjust the management reporting system to reflect that, or at least adjust the incentive for those involved. On the other hand, there are a number of ways where purchasing reinsurance to transfer the surplus costs can be used effectively, and we do use them. So I really can't answer more specifically without knowing more about the situation. But I think the answer may be that we may well buy the reinsurance under those circumstances.

MR. ROBERT F. DAVIS: It seems to me, from what I've heard here today, that to evaluate any company you have to look separately at the assets and the liabilities. I don't believe you could look at the surplus alone and determine how strong a company is. Amounts of surplus can

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easily be manipulated by the reserve levels, and even by the valuation of assets. And, if you're talking about ratings, I think it should be easier to develop rating formulas for assets and for liabilities than it is to develop surplus formulas by themselves. One of the things that would concern me as an investor, especially one with money to invest in a savings and loan is whether the company has any large and disproportionate investment in a single enterprise. That's what caused most of the failures of savings and loans in the U.S. They over invested in a single enterprise that went sour.

MR. GARY CORBETT: Dr. Brender, I have one question specifically with regard to your proposal. This is about the problem of setting a standard of 4 percent in the financial risk area, where we know that the primary risk today is C-3, and that is very much dependent on the mismatch of assets and liabilities. Would you personally support something more like the New York system where one is required to hold certain levels of reserves unless a certain degree of match can be demonstrated.

DR. BRENDER: If I understand the New York requirements, usually you have to show, by some sort of simulation, that your reserves can hold up under all kinds of economic assumptions. Well, the only problem that I would have is that that assumes you also have to show what your investment policy is. That's part of the modeling approach in some sense.

MR. GENE DZIADYK: My question is for Dr. Brender. I very much agree with the comments from Mr. Robertson. It seems to me that you're trying to come to an objective solution with these stochastic models, where ultimately you have to make simplifying assumptions and, thus the models are only as good in the end as what you put into them, even though they look really fancy. So it seems to me that techniques such as this have a value only to the extent that they set the bounds of the problem. Somewhere along the line you've got to start thinking about the people that are running the company, the strategic plans they have. They're forecasting the future as well. Somehow I can't believe that the ongoing solvency of the company is not foremost in their minds.

DR. BRENDER: In some sense, we're talking to the good guys. And everybody here is a good guy. The fact is that companies have gone under. And it is fact that the companies that have gone under, have gone under because of manipulation. I can recite all the trust companies that went under. And that is something that can happen to insurance companies as well. The phrase "rogues and fools" is really quite applicable.

MR. DZIADYK: But surplus isn't free.

DR. BRENDER: Well that's not clear. If, in the trust company situation, the borrowing ratio had been maintained, there would have been more surplus. In fact the borrowing ratios, in some cases, were totally ignored. There are rogues and fools around. The regulators have to put in some minimum. Now the problem is that, perhaps, these



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numbers turn out to be higher than most companies are comfortable with. It seems to me that you need some kind of regulation, and that is going to bother a few companies. You've got to bother people who are close to the line. Perhaps you're not going to bother most, and I agree you shouldn't. I agree with most of these criticisms in that sense. It's just that I think, from a practical point of view, there's a necessity for some type of requirement. I think that is consistent with the Canadian style of financial reporting, which says you use something fairly realistic for reserves and then you use it for surplus. There's a need for that kind of surplus, and I don't know the best possible way to specify it. This is a first approach. There has to be something, and it's got to be something simple.

