

**RECORD OF SOCIETY OF ACTUARIES
1993 VOL. 19 NO. 4B**

NEW METHODS OF ACCOUNTING IN OTHER COUNTRIES

Moderator: SAM GUTTERMAN
Panelists: GUY V. BARKER
 DOUGLAS A. FRENCH
 FERNANDO J. TRONCOSO
Recorder: SAM GUTTERMAN

- United Kingdom
- Australia
- Mexico
- Accrual accounting and other methods

MR. SAM GUTTERMAN: I will begin with a brief overview of the most significant overall trends being addressed worldwide in the area of life insurance accounting. Mr. Douglas French, a principal of Tillinghast who previously was unit manager of the firm's Melbourne office, will address Australian trends. Mr. Guy Barker, the chief actuary for Jackson National Life Insurance Company, a subsidiary of the Prudential of the U.K., will focus on U.K. issues. Mr. Fernando Troncoso, a consulting actuary with the Wyatt Company, providing consulting services to life insurance and pension clients in Latin America, will provide an overview of the situation in Mexico.

Worldwide, this is a period of rapid change in accounting practices for life insurance companies. We in the U.S. and Canada have been faced with changes, including *Statement of Financial Accounting Standards Board (SFAS) 97*, fair-value and tax accounting, and risk-based capital (RBC) requirements. In some cases the changes have been radical, and others have been incremental. The European Community's (EC's) insurance accounting directives are scheduled for implementation in 1995. It seems that the accounting profession is continuously making at least incremental changes and refinements in its methods and standards. At least in part these are due to changes in the insurance products. But, in addition, there are changes being made as a result of external influences, including emphasis on solvency and related issues in banking and other industries. In some countries, the accounting profession attempts to treat life insurance companies as special cases; in others, they are lumped together with all others. The changes have involved accounting presentations for the insurance company regulator, policyholder, and investor, although much of the recent focus has been aimed at the investor.

The methods used are often complex and diverse, both among countries and within countries. At the same time, their use is becoming increasingly important. As multinational companies will desire to be listed in stock markets in several countries, they may have to undertake the task of preparing their accounts according to the standards of more than one country. This complicates internal accounting and actuarial activities. Possibly more important, management may have to operate under several different standards of performance measurement. Although there has been a great deal of effort at harmonizing accounting methods, or at least objectives in the EC, in my opinion, there is little hope to produce international harmonization in this area in the foreseeable future.

RECORD, VOLUME 19

As the company you work for may be owned or own other companies in foreign countries, I believe it will be important to understand the methods used in these countries. If you deal with foreign reinsurance companies, it may be valuable to recognize the relative degree of conservatism in their balance sheets. In addition, as our accounting methods in North America continue to be discussed, it will be valuable to understand the changes being made elsewhere and the reasons for these changes, to provide a perspective on our own practices and to contribute more effectively to decisionmaking here.

It will become clear that there is no perfect, single method to account for life insurance companies. There are not only different types of potential users of financial information, but the environment in which financial information will be presented is also significant. Different historical experiences, products, investment media, and relations among the different players have a stake in financial presentations of life insurance companies.

Although it is generally recognized that the basis for regulatory accounting should enable the regulator to evaluate the solvency of enterprises, and the basis for general accepted accounting should provide investors the basis of their evaluations of the fair value of those enterprises, there has been considerable debate about the merits of having two separate sets of books or, in some cases, more than two sets. In Canada, the solution has been to combine the two sets into one. Elsewhere, there has been an attempt, although in some cases limited, to at least better rationalize the difference. However, historically speaking, a significant reason for not changing regulatory accounting values and methods more has been the use of these values as a basis for tax-authority use.

In many areas, an increasing emphasis has been placed on more realistic values. Certainly this is the case in Europe. Hidden areas of conservatism have been or are being eliminated. I have observed that it has been quite difficult for some actuaries to respond to accounting standards calling for best-estimate assumptions, as fundamental actuarial training has prepared most of us to operate in the regulatory accounting environment, which calls for relatively conservative approaches or assumptions.

In many countries it has been common to value assets as well as liabilities in a conservative manner. There exists a movement toward more realistic measure of both of the areas. In some areas, there has been a periodic debate on the advisability of using current values as compared with smooth or historical values because of potential fluctuations in reported operating results. However, current trends indicate a movement to more realistic or current values. Due to a wide diversity of types of financial services entities under one umbrella organization, there has been an increased emphasis on consistency of accounting treatment among them; if not in specifics, at least in overall principles.

As a result of this move toward more realism, increased focus has been placed on capital adequacy. Part of this has also been as a result of the worldwide financial services emphasis on RBC requirements and reporting. In addition to the failure of several large insurance companies worldwide and a general increase in the competitive environment, increased concern about solvency has increased the general focus on capital adequacy.

NEW METHODS OF ACCOUNTING IN OTHER COUNTRIES

Concern about realism of methods and assumptions and about the adequacy of reserves and capital in the insurance industry has added to actuaries' responsibilities. Whether as part of the trend toward the assignment of appointed actuaries to evaluate reserves or surplus adequacy, new accounting methods have thrust upon us the responsibility of developing reasonable assessments of the future performance of insurance products. This, by its very nature, involves a whole range of assumptions not as objectively determined as most previously relied upon regulatory factors. In general, actuaries worldwide will have to accept an increased level of responsibility in assessing and measuring the financial condition of the insurance enterprise. In addition, there will be an increased level of oversight from other professionals.

MR. DOUGLAS A. FRENCH: I have been asked to give an update on the Australian life insurance accounting situation. Quite simply, insurance accounting in that country is undergoing fairly rapid change. Discussions for this change began in the late 1980s and now we are seeing details beginning to emerge. Parliament in that country will probably begin debating the changes in early 1994; full compliance could be as early as 1995 or 1996 for insurance companies. Even if you have no interest or no direct interest in Australia, I think you will find what is proposed to be fairly interesting from an actuarial perspective.

I want to talk about three specific items. I will review the current financial reporting regime in Australia to give you a flavor of where we are, then go into the proposed standards, and then finally discuss some implications for the future based on those proposed standards.

All life insurance business in Australia falls within the scope of the Federal Life Insurance Act of 1945. The act has mainly remained unchanged since it was first introduced. Similar to other countries, the emphasis of the act is on solvency and requires companies to maintain a strong financial position while allowing them to have a relatively free hand in running their businesses. The administration of the act is the responsibility of the Deputy Commissioner of Life Insurance who has three main tasks. He needs to (1) check statutory returns filed once a year by insurance companies, (2) examine their financial positions, and (3) investigate certain companies after examining their financial positions. These three tasks are quite obviously heavily actuarial and to date all deputy commissioners have been qualified actuaries in Australia.

The act requires three other items: (1) a yearly report must be produced and filed on the financial condition of the company, (2) all premium rates need to be approved, and (3) all distribution of surplus or profit to shareholders or bonuses to policyholders need to be approved. The appointed actuary in the company is responsible for all three of these items.

In Australia, similar to the U.K., the concept of the appointed actuary is used. The act has been written around that concept and recognizes the importance of actuarial advice in running a life insurance company. Australia follows the statutory-fund concept, which is similar to a trust fund in the U.S. Assets of the policyholders are held separate from the assets of the shareholders. Policyholders of the statutory fund have first charge on these assets. The act also provides for minimum cash-surrender values for the products that are listed in the act. The deputy commissioner may

suspend minimum cash-surrender-value payments if he deems the company is in trouble.

New products such as universal life, obviously, have no mention in the Federal Life Insurance Act. There is also no mention of how assets should be valued, although most people have moved to valuing their assets on a market-value basis. So clearly there is a need for change. There are new product types being sold in the market. Assets primarily have moved from fixed interest to equities or shares and property. Finally, there is no presentation of profit in a statutory statement in Australia. According to the act, in filing a statement you are only demonstrating that your company is solvent and that the distribution of surplus complies with the rules in the act.

As I mentioned before, the Federal Life Insurance Act is under review and new elements have begun to emerge. Similar to the Canadian model, the act will address both the calculation of profit primarily for external reporting purposes and solvency reserves for the protection of the policyholders. Profit will be calculated on a realistic basis, which has been called the margin-on-services method.

The Institute of Actuaries of Australia has formulated new professional standards, addressing both the issues of determining profit and solvency reserves. The proposed act also anticipates broadening the legislative responsibilities of directors, actuaries, and auditors. Each company will have an audit committee and a compliance committee in charge of internal controls, disclosure, and finally, consumer affairs. The appointed actuary's role will be expanded to cover transfers of money between statutory funds, unit pricing, apportionment of expenses between statutory funds and the shareholder account, and finally, cash-surrender values. Assets will now have to be held at market value and will be subject to admissibility rules.

To get an idea of how this is all going to work, I will show you what the liability side of the balance sheet is going to look like.

Assets	Liabilities & Reserves
<ul style="list-style-type: none">● Total net assets	<ul style="list-style-type: none">● Policy liabilities● Solvency reserve● Capital-adequacy reserve● Undistributed earnings and/or unallocated capital

We need to define some new terminology before we can proceed. The policy liability is the liability that will be calculated for external profit-reporting purposes under the margin-on-services method. The policy liability will allow for some smoothing of profit emergence and for deferral of acquisition costs. The solvency reserve will be added to the policy liability and will be calculated on a prescriptive basis. If an insurer lacks sufficient assets to meet the solvency reserve, the deputy commissioner will then be able to intervene in its business affairs. And, finally, the capital-adequacy reserve will be a reserve that has been added to the solvency reserve, defined as: "A reserve considered necessary to allow obligations to policyholders to be met under more

NEW METHODS OF ACCOUNTING IN OTHER COUNTRIES

adverse circumstances than those considered in determining the solvency reserve and to make adequate provision for policyholders' reasonable benefit expectations to be satisfied." It is a bit of mumbo jumbo, but in Australia, similar to the U.K., policyholder benefit expectations are taken fairly seriously. Baiting and switching is not tolerated in these countries; actuaries believe that providing for policyholders' reasonable benefit expectations is important. Finally, there are undistributed earnings and/or unallocated capital. In effect, the actuary will perform three valuations each year-end; some CEOs are calling this the actuarial full-employment act. Actuaries are going to be in demand and systems are going to need to be written.

Again, earnings or profits will be calculated on the margin-on-services method. Margin-on-services is an attempt to recognize profits on a life insurance contract as the services underlying that contract are performed. Briefly, services performed for life insurance contracts would include advice on sale, the initial administration of the policy, the insurance of mortality and/or morbidity, investment management, investment return, and ongoing administration. Profit may be taken on all of these but the first two; that is, profit will not be taken on advice on sale or on the initial administration services. Margin-on-services is an attempt to report profits on a basis that is consistent with accounting conventions regarding the matching of income and expenditure; that is, the cost of services. The intent, although some of the financial press points to the contrary, is not to artificially smooth profits. However, margin-on-services may produce smooth profits, depending on the pattern of income and expenditure in the contract.

Policy liabilities will be calculated by using best-estimate assumptions, which are revisited each year. They will be consistent with the valuation of assets. The method does not allow for the capitalization of profits on an assumption change, but does require capitalization of losses. Assets will be held at market value; there will be some profit volatility, because changes in market value will be passed through the revenue account or the income statement. This volatility will occur even though liabilities will be adjusted for this effect.

The policy liability has two components. It consists of a best-estimate liability and a value for future profit margins. The best-estimate liability is the amount expected to be required to meet future benefits and expenses for the business in force as of that valuation date. The calculation takes credit for future premiums and investment earnings and also makes allowances for future discontinuances and associated surrender payments.

The value of future profit margins is the present value under best-estimate assumptions of the assumed profit margins in the contract. Profit margins are initially determined by dividing the expected present value of profit at issue by the present value of the chosen profit carrier. The standard as it is written defines what a profit carrier is. It may be policy charges, maintenance expenses, investment returns, premiums, or claims. The profit carrier may be chosen by the appointed actuary. This will make things very interesting because, based on how you choose a profit carrier, the emergence of profit will be affected. If a company wants to conduct a particular business strategy, e.g., the senior management wants to raise capital, significant problems for the appointed actuary could arise if he or she is forced to

front-end profits. Again, unless the best-estimate assumptions change, assumed profit margins will remain unchanged during the life of the contract.

In practice, best-estimate assumptions will change from year to year, as will the assumed profit margins in the contract. New profit margins are determined by equating the policy liability at the time of review on the old and new assumptions, as shown in Table 1. If the policy liability at the end of the period is \$120, at the beginning of the period it needs to be \$120. If your assumptions have improved such that your best-estimate liability has moved to \$90, then when solving for the value of future expected profit, it would move from \$20 to \$30. This method will be used for all assumptions except for investment earnings. In this case, profit margins are left unchanged, effectively capitalizing the effect of the assumption change in the reported liability. This is necessary because assets are reported at market value and also reflect the impact of any change in expectations about future interest rates. Again, the method will not capitalize the effect of any assumption change except when future losses are anticipated; i.e., you have no more profit left in the contract. This noncapitalization is achieved via the procedure for resetting profit margins.

TABLE 1
Procedure for Change of Assumptions

	Old Assumptions	New Assumptions
Best estimate liability	\$100.00	\$90.00
Value of future expected profit	\$20.00	\$30.00
Assumed profit margin	10% of the value of future premiums	15% of the value of future premiums
Policy liability	\$120.00	\$120.00

Profit will be defined as the increase or decrease in assets, less the increase or decrease in policy liabilities. The change in market value of assets will go through the income statement or the revenue account along with the earnings on capital and surplus.

What I have tried to do in Table 2 is compare the proposed method with what is either proposed or used in the U.S., Canada, and the U.K. This should give you an idea of how the Australian method compares with other methods around the world. Profit recognized on sale is not allowed in Australia. It may or may not be in the U.S., depending on the contract. It is partially recognized in Canada and the U.K. The lock in of assumptions is not allowed in Australia; this is similar to the rest of the world except for *FAS 60* in the U.S. Capitalization of assumption changes are allowed in the other countries. There may be single or multiple profit carriers. You may choose more than one in Australia. The U.S. uses either premium or gross profit. You may have multiple ones in Canada or the U.K. Asset values will be at market in Australia. In the U.S., *FAS 115* seems to imply that some assets need to be held at market value, and others need to be held at book value. The Canadians use what is called the smooth book value and the smooth market value for accruals. There is no realistic reporting method in the world that recognizes a solvency reserve

NEW METHODS OF ACCOUNTING IN OTHER COUNTRIES

or distributable profits. We are currently trying to educate the analysts in the financial community in Australia on this particular phenomenon. Finally, the discount rate is the net earned rate for all countries except the U.S.

TABLE 2
Comparison With Other Realistic Reporting Methods

	Australia	United States		Canada	U.K.
		FAS 60	FAS 97		
Profit recognized at sale	No	Yes/no	Yes/no	Partially	Partially
Lock in of assumptions	No	Yes	No	No	No
Capitalization of assumption changes	No	N/A	Yes	Yes	Yes
Single or multiple profit carriers	Either	Single	Single	Multiple	Multiple
Asset values	Market	Book/ market value	Book/ market value	Smooth book value	Smooth market value
Allowance for solvency reserves and distributable profits	No	No	No	No	No
Discount rate	Net earned rate	Pretax-earned rate	Pretax-earned rate	Net earned rate	Net earned rate

The proposals call for a two-tiered approach to the demonstration of solvency. In the definitions, there is a solvency reserve and a capital-adequacy reserve. The Institute of Actuaries of Australia is still working on the details of exactly how these will be calculated. Remember these will be calculated by an appointed actuary. Solvency reserves will be calculated on the same basis as policy liabilities, but with a prudent margin added into the assumptions. The minimum value will be the greater of zero or the surrender value in the contract. Additions will need to be made for acquired immune deficiency syndrome (AIDS) and asset mismatching.

Now the reserve is going to be calculated from a prescriptive basis. It became fairly evident in the early days of debating the proposed Federal Life Insurance Act that the words, *Trust me, I'm an actuary*, were not going to work with politicians. There is going to be somewhat of a cookbook approach to develop solvency reserves to keep the politicians happy, which will also keep the public happy.

Companies that have insufficient assets to meet the statutory minimum will be subject to regulatory investigation and/or judicial management. The capital-adequacy

reserve will be higher than the statutory minimum. It will not be published or disclosed to the public, but it will be reported to the company's board and discussed in the financial condition report, which goes to the board and the regulators. You only have to calculate a capital-adequacy reserve for the in-force business. You do not have to take into account new business growth. Companies that do not meet their capital-adequacy reserves will be required to produce a plan to restore an adequate capital-adequacy position. You will not necessarily have your new business suspended. You will just have to have a little chat with the deputy commissioner to explain how you are going to rectify the situation. Shareholder dividends will be suspended if capital-adequacy reserve requirements are not met. And again, the calculation of this will depend on standards of the Institute of Actuaries of Australia.

Similar to policy liabilities and solvency reserves, discounting of future cash flows will be the technique that will be used to calculate the capital-adequacy reserves. We hope that by doing this, senior management will begin to understand exactly what is on the liability side of the balance sheet; i.e., how actuaries calculate reserves. Most of the work that has been done is on asset mismatch risk. Australian companies have a lot of business called capital guaranteed business, which in the U.S. is called book-value or general account business. For a single premium case, you put in \$1,000, you have interest credited to it, and it never goes below \$1,000 and the interest credited to it. Now that is fine, but in Australia this business is backed with equities and properties. It would not be out of the question to have a 40 (equities)/40 direct property/20 fixed interest backing these liabilities. This situation could lead to a problem with asset/liability mismatch. In addition, there is a huge potential for divergence of the stable liabilities and volatile asset values. The Australians have defined the insurer's ability to cope with this divergence as "resilience." The Institute has come up with several ways to enhance one's resilience. You may acquire stable assets, use derivatives to stabilize the assets, sell only variable or unit-linked business, use terminal bonuses or market-value adjustments, or hold additional assets to meet a specified level of divergence between the asset and liability values. The last method is the method the Institute is proposing.

The standard defines the basis under which the change in asset values would be determined for the resilience test. The basis rests on the presumption that if equity dividend or property rental yields are at low levels, market values are high and vice versa. The standard then specifies the asset/liability matching reserves that have to be set up to protect a company against an immediate fall in asset values arising from the following occurrences: a 2.5% increase in the equity dividend yield, 2.0% for property rental yields, and a 2.5% change in redemption yields on fixed-interest investments.

An offset is allowed for any corresponding change to policy liabilities. The appointed actuary is allowed to demonstrate that for certain lines of businesses these types of mismatch or resilience reserves are not needed. The rules were developed by using stochastic asset testing that included a generalized crediting strategy.

These tests now indicate that higher reserves are needed than under the current rules. This has created a lot of debate in the industry. One camp says that these capital-adequacy reserves will hurt profits and companies will have to raise money in the share market. Because of these capital-adequacy reserve requirements, life insurance

NEW METHODS OF ACCOUNTING IN OTHER COUNTRIES

companies will be less attractive to investors and people will limit their equity positions in them. The other side says that these reserves are still too low. They need to be increased to a level at which fundamental mismatching cannot be done anymore.

What is going to happen in the future? First, because profits have never been shown in a financial statement in Australia, an insurer will be under greater scrutiny. Australia's market share is controlled by two insurers, both mutual companies. They control 50% of the market. Sometimes they have not focused on profit. The concept is new to them. Also, the financial press likes to talk about insurance companies quite a bit. These large companies are going to have to deal with the prospect of losing billions of dollars in a year (which may be a plausible scenario). Since 1989, the downtown property market in Australia has decreased 45% in value. These large companies may have had billions of dollars of losses. Due to the property market downturn, we have to figure out a way of teaching the financial press what these numbers mean and then assure the public that this does not affect their reasonable benefit expectations.

Whenever you have increased capital requirements, you start looking at ways to adjust your product design. Probably there will be more terminal bonuses or market-value adjustments being included in Australian products. I think there will also be a big move to variable products, although variable products do sell quite well now.

Finally, the Australians do not use stochastic asset/liability tools like people in the U.S. do. I think, based on the work done so far, insurance companies are starting to realize that they really have to start investigating this issue. They have to start buying models and figuring out how to use them. They need to be able to assess their risk profile versus those of their competition. Therefore, I think in the next five years we will see a lot of work being done in the stochastic asset/liability area in Australia.

MR. GUY V. BARKER: My perspective is of a British trained actuary with American experience. I am going to work through the process of the new accounting method in the U.K. more or less from the point of view of a case study.

NEED FOR A NEW METHOD

I should like to identify first why there is a need for a new method. For some years in Britain it has been generally recognized that the statutory approach to profit reporting for long-term insurance business is too conservative. The traditional approach was based on the annual valuation of a life fund for solvency and policyholder dividend purposes. These rules were not designed for financial reporting and muddled profitability with regulatory requirements. Many years ago in the U.S., GAAP financial reporting diverged from statutory to reflect earning in a consistent, income-oriented way. In the U.K., there has been no GAAP.

A more recent trend in Britain has been to provide further information to the investment community that better reflects the true value of life assurance operations, particularly in relation to variable business. This trend has been given impetus by the growth of bank-owned life assurance companies, in which the proprietors are looking for an early justification for the establishment of the business, and the takeover of Pearl (a top-five company) by Australian Mutual Provident at a price that many

observers believed at the time was too low. Thus, in part at least, this method of accounting too owed its beginnings to Australia!

Initially, the major means used in the U.K. to provide this supplementary information was through the publication of embedded values. More recently, the Association of British Insurers (ABI) issued draft proposals on the accrual method and recommended that offices might wish to experiment with it for a period. Now almost all quoted life companies publish either embedded values (sometimes incorporating an embedded-value profit figure) or accrual profits. Thus the accrual method of accounting, which I will describe, is not as far developed as the one in Australia that was just described. It is experimental. It has been codified by the ABI, but it has been primarily promoted by a group of insurance company accountants with full involvement of the Institute of Actuaries. It is genuinely an actuarial and accountancy joint accounting method intended to reflect the profitability of a stock-owned company, without regulator or mutual company needs in mind.

The method was introduced over time and with other input; notably, the need to position the U.K. market in preparation for the EC account directives that will apply in a few years. In addition, the stock companies had to work with the industry. The stock market analysts and their investors had to come up with an accounting method that would reasonably reflect their true performance on a year-to-year basis and be reasonably consistent with the accounting principles used in manufacturing, industrial, and other finance sectors. The U.K. industry was at risk of being subject to overseas takeover.

DEVELOPMENT HISTORY

It is useful to look quickly at the development history of accrual reporting in the last 15 months, because a considerable pace and impetus have developed.

The final ABI draft proposals were issued in July 1992 with the recommendation that companies could use them for an experimental period. This final version of the draft proposals was, in fact, the third version to be published, following two earlier consultation periods and considerable mental (and political) activity in both the accounting and actuarial professions.

The first U.K. companies to publish were Prudential and Bureau of Apprenticeship and Training (BAT), which published their 1991 results restated on the new basis in November 1992. Both are big companies in Britain but also have notable American subsidiaries in Jackson National Life and the Farmer's Group, respectively. The worldwide first for the method, however, was achieved by Sovereign Life of New Zealand. It actually produced results prior to the publication of the final version of the ABI proposals.

Both Prudential and BAT also published their 1992 results on the accrual basis; in the case of BAT with its preliminary results, and in Prudential's case, some two months after the preliminary results. This year Prudential's accrual results will be included in the preliminary announcement.

As you can see, a great deal has happened since the ABI proposals were issued. The method is now becoming part of Prudential's mainstream financial reporting.

NEW METHODS OF ACCOUNTING IN OTHER COUNTRIES

METHODOLOGY

The details of the methodology and the results are very similar to what is occurring in Australia. However, its presentation is very different. The process examines each line of business to determine applicable profit margins and determine what part of these margins in the U.K. context should be reflected in the balance sheet at the reporting date as opposed to being allowed to emerge over time.

Use of a modeling process is necessary. There is no factor-based approach that can be used. There is no inspection of the statutory accounts or simple asset values or liability values that can be used in this approach.

The accrual method is based on a projection forward of cash flows, and in this respect is very similar to the embedded-value approach with which I assume you are already familiar. In practice, for most companies both methods require a robust model office to be in place, although a policy-by-policy calculation is theoretically feasible. We, like most companies, had been carrying out embedded-value calculations for the purposes of internal management for some years, and model offices were in place for all material operations. I should make clear here that I define an immaterial operation in the actuarial sense; that is to say much smaller than the accountants' equivalent!

Both the embedded-value and the accrual methods require choices to be made regarding a number of assumptions. Perhaps the most subjective are those relating to future investment returns and spreads.

Outside the U.S. these were determined for all the territories in which our parent operates by building up long-term returns from expected inflation rates and real returns on the various asset classes. It is, of course, essential to be able to rationalize differences in returns for different countries. Following on from these investment returns, they were able to set consistent rates of dividend, generally running down over a period of years from current levels to those supported at the assumed returns.

Within the U.S., a parallel review took place, focusing on the spreads expected to be available during the period of projection and taking a margin to anticipate the effect of C-3 variability. Considerable modeling was necessary beforehand, involving multiple scenarios, so that a simple, workable surrogate for C-3 could be incorporated in the spreads.

There was a need, as in any embedded-value process, to conduct sensitivity tests in cash-flow-valuation modeling to determine the assumptions. In embedded-value work, best-estimate assumptions are generally appropriate. In accrual work, this is not the case, and margins – prudent and planned – are explicitly built into the process.

Insurance accounts necessarily need to be prudent as well as realistic. Every factor that goes into the basis of the company's operation needs to have a margin set for prudence. This is particularly the case in modeling, for an interest-sensitive, single-premium deferred annuity and the spread assumption in particular. It would be imprudent to assume that the full current spread could be obtained forever in all circumstances. A margin needs to be set that reflects an offset for future adverse

circumstances; for example, for the occasional years when one needs to subsidize credited rates in order to not lose policies through additional lapses.

Prudent assumptions for the other projection parameters – expenses, mortality, morbidity, and persistency – are most naturally determined by using an average of experience over, say, the last three years. The treatment of exceptional expenses was a matter of some debate as was the appropriate level for persistency rates, given that these tend to vary with the economic cycle. A less optimistic approach to these two items was deemed appropriate for profit-reporting purposes as compared with internal embedded-value calculations.

In addition to these projection parameters, a number of other decisions had to be taken for profit-reporting purposes that would not apply to an internal embedded-value calculation. An asset-smoothing policy was deemed desirable for equity and property assets to reduce the otherwise extreme volatility in the results that fluctuations in investment returns would produce. In our company, this was considered necessary only to the extent that asset valuation reserve (AVR), investment management reserve (IMR) mapping is required.

Planned margins had to be set, and this is a requirement unique to accrual reporting in the U.K. (though there are some parallels with *FAS 60* recognition of acquisition costs under GAAP). Such margins are constructed to provide for appropriate profits to emerge, in the opinion of the company and as agreed to by its auditors, as being true and fair and reflecting the profit of the company's operation.

Our approach involved looking at new business profits, both with and without planned margins, and looking at the sensitivities of new business, the overall profits, and the shareholders' accrued interest to changes in these margins. In practice, the overall profits are relatively insensitive to small changes in planned margins, although this is not a balance sheet item for retained profits.

This still leaves a balance of margins to be taken and capitalized as a profit element. This is reflected in the balance sheet as an asset. There is, in fact, a balance sheet credit for that part of the future profits related to margins regarded as implicit in the operations of the business. Thus, a significant asset can appear on the balance sheet of a company under the accrual method, known as the shareholders' investment in the underlying policyholders' funds.

I have mentioned two types of margins. I also need to mention how new business is treated. A significant difference between U.K. accrual and U.S. GAAP is that credit may be taken at the time of sale for a portion of future profits; in fact, for all profits not required by either prudent or planned margins. Subject to the auditor's scrutiny, it is up to the company to determine the margins and, implicitly the proportional credit that is permitted for a policy to be recognized at the point of sale, as opposed to over the duration of the policy.

The current viewpoint of the U.K. market is that it is a very profitable insurance market and that it is not at all inappropriate that profit margins be shown as net profit at the time of sale. One of the major problems with British statutory accounting was that new business, implicitly highly profitable over the long term, appeared as loss

NEW METHODS OF ACCOUNTING IN OTHER COUNTRIES

making. One of the explicit intents of accrual methodology is to show profitable business as generating profits.

PROCESS

I should now like to turn to the management of the accrual process. Clearly, a major change in practice, such as the implementation of accruals reporting, requires a significant investment of time, most notably by the actuarial function but also by the finance function and by senior management. This work can divert resources from other activities, but if maximum benefit is to be obtained, there is no point in treating it purely as a compliance exercise that can be delegated to the long-suffering actuaries who can be relied on to grind out the numbers.

The process necessarily involves dual disciplines. Accountants and actuaries have to interact to a strong degree. Actuaries understand the mechanics of margin release and accountants the conventions of external financial reporting. The majority of the work involved in producing accrual results is actuarially based, but there is a need for the finance function to work closely with the actuaries. This would initially cover: (1) setting assumptions and planned margins and preparing detailed guidance notes; (2) ensuring that appropriate systems and reporting procedures be established; (3) deciding on appropriate asset recognition rules; and (4) reviewing the final output. In subsequent years there is also the need to consider the financial impact of changes in assumptions and whether changes are desirable in the light of the relevant experience.

The education process that has resulted from this interaction has been of benefit to both professions. The process has led to significant improvements in monitoring and reporting. A lot of knowledge has been gained. Those people who are familiar with GAAP will be aware of how the GAAP results can be used to give a more meaningful financial analysis of the company than statutory. You can appreciate how much more meaningful that analysis can be if you have actually reflected all policyholder and asset behavior that can vary and have margins on them. So there is an intense insight into the business in a microsense, which has come from preparing financial statements by using the accrual method.

OUTSIDE RECEPTION

Let me now turn to the outside reception of accrual reporting. I believe that our accrual results have been well received by the investor community. As a prime initiator of the new method, my parent company did go to some lengths to communicate the results to the investor audience. There was some confusion among individual shareholders, but this is not unexpected, given the complexity of the subject. There is, of course, the need to emphasize to shareholders the nondistributable nature of the additional earnings, because they otherwise might expect a large increase in the dividend as a result of the higher reported profits.

The press reaction was mixed, with some newspapers clearly seeing the increased profits as "creative accounting," rather than more meaningful reporting of our performance. This is perhaps unavoidable until the method becomes generally accepted and is used by more companies.

One interesting point is that the publication of accrual information does highlight the deficiencies of the statutory basis in reporting to shareholders. Under accrual we can

relate changes in reported profits to particular events and actions occurring during the year. On the other hand, by using the statutory basis for much of our business, there is very little one can add by way of commentary on profits that may largely reflect business performance from many years ago and the impact of the British dividend-smoothing policy.

The more favorable financial position shown on the accrual basis has been helpful in dealing with debt rating agencies in the U.K. and also in discussing with the London Stock Exchange how it can be used in the class tests that determine the procedures to be followed on major transactions. In this latter connection, life offices are currently disadvantaged compared to other types of companies, including composite insurers, because of the low ratio of reported shareholders' assets to market capitalization.

The reaction of stock market analysts has been very favorable. The figures appear to have been regarded as meaningful and helpful, and it is good to see that they have not attempted to find flaws in the method.

Naturally they welcome the additional information, but of course they are keen to get even more, particularly on underlying assumptions. The analysts have, of course, developed their own models and by using the new business figures announced in advance of the results, they attempt to estimate the profits. Changes in certain assumptions in the 1992 results upset a number of analysts, and there is clearly a need for more education in this area and perhaps for more employment of actuaries.

The entire U.K. industry agrees there is a need for change in the stock-reporting methods. There is strong opinion in favor of using embedded values, introduced as a supplement to many companies' accounts in recent years.

In considering differences between embedded value and accrual, we should bear in mind that the embedded-value methodology was developed for not for profit reporting and the assessment of business performance, but for premium rating and the valuation of life businesses. Such method is balance sheet oriented and the terminology is actuarially based.

The accrual method on the other hand was designed purely for profit reporting and intentionally uses conventional accounting principles and language. It is, therefore, more familiar to many business managers and to the investor community. It has been documented as a draft accounting standard.

The bases of calculation under the two methods reflect the differing purposes for which they were developed. The embedded-value method requires future cash flows to be discounted using a risk discount rate, an approach that has no parallels in U.K. financial reporting. On the other hand, accrual allows for risk systematically by building factors (known as planned margins) into the assumptions made for each item of future income and expenditure. Under accrual, risk factors can be more readily tailored to particular businesses or products. Having built these risk factors into the projections, the profits emerging under accrual can be expressed in terms of profits earned on risks borne and work done in the year.

NEW METHODS OF ACCOUNTING IN OTHER COUNTRIES

Under the embedded-value method, much of the profit emerging comprises the unwind of the risk discount rate. It is much more difficult to express this in terms of business performance during the year. Once familiarity has been established with the method; accrual gives both analysts and investors better information to monitor operating performance. The superiority of accrual in this respect is of significant benefit not only for internal monitoring of performance but also for internal and external communication of the results.

SUMMARY

In summary, I believe there is widespread acceptance of the need for change in financial reporting by listed life companies. The implementation of the Insurance Accounts Directive in 1995 presents an ideal opportunity to bring this about.

It is in the interests of these companies that a common approach to reporting be developed that measures current rather than past performance. This will improve internal monitoring of business performance and will assist in the communication of progress to the investment community. This will be essential in the tougher business environment that is now emerging.

Both embedded value and accrual reflect current performance. Within my parent group we have prepared both embedded values and accrual results. On balance I am convinced that accrual is the best way forward for profit reporting.

The method is however still experimental; other companies with other solutions for external reporting, notably embedded values, need to convert before there is widespread acceptance. It is possible that the process of weaning may lead to changes and compromise. I hope and believe that such changes will leave the accrual method close to what I have described.

MR. FERNANDO J. TRONCOSO: The Mexican insurance industry, as well as its economy, is going through significant changes. One of the most relevant facts to keep in mind is that the Mexican insurance market has been closed to foreign investment for many decades.

Those of you who have conducted business in Mexico have observed that, by and large, the Mexican business environment has many similarities to that of the U.S.; however, there are also many differences in the methods of conducting business.

Within the last 12 years, during the last two governments, we have observed tremendous changes in Mexico. A little more than 12 years ago, the banking institutions were nationalized. Recently, these same institutions were changed back to the private sector. This change, and in particular the short period of time in which it was accomplished, is remarkable.

I will discuss what is happening in Mexico both in the insurance and benefits area. One reason I will discuss the benefits area is because insurance companies are very much involved in pensions.

I would like to compare my presentation about the insurance industry in Mexico to a pot of boiling water. As the water begins to warm up, you see bubbles rising to the

top. Well, we are going to discuss those "bubbles" that have surfaced to the public. I have arranged my presentation on issues with respect to the assets, liabilities, and capital of insurance companies.

There is a lot of activity within the industry. What are the authorities, the actuaries, and the accountants doing on those issues mentioned earlier?

To begin, it would be useful to understand the regulatory structure in Mexico with respect to insurance. The National Commission of Insurance and Bonds, which oversees the insurance industry, reports to the Secretary of the Treasury. As an example of the changes occurring in government, in the past insurance companies intending to sell a new insurance product would have to file such product with the Commission and wait until the Commission approved the product.

This rule has now changed. Insurance companies only need to register the new product with the Commission. If within 30 days they do not hear from the Commission, the product is deemed approved. If the Commission were to require changes, the insurance company would just have to comply with the changes requested. This is indeed a big change from previous practice.

In Mexico, casualty and life insurance business can be written by the same insurance company. There are no monoline (life or casualty only) insurance companies. There may be companies that, even though they have the license to write both lines, may decide to concentrate only on life or casualty business. In Mexico there are only 39 insurance companies licensed. At one time there were 50 licenses. This decrease resulted from a number of mergers and acquisitions.

LIABILITIES

What are the current issues of interest on the liability side of the balance sheet? To begin, actuarial valuations have to be carried out on an annual basis. Currently, there is no such thing as an appointed actuary. If you are a qualified actuary, for which you have to fulfill several requirements, you can sign the annual statement, provided the insurance company hires you in the capacity either as an internal actuary or as a consultant.

Taxes are based on the statutory valuation. Currently, the statutory basis uses methods that are similar to those used in the U.S. or Canada. The concept used in Mexico is the Zillmer Method, which recognizes expenses up front. Several methods follow this concept, including, among others, the commissioners reserve valuation method (CRVM), full preliminary term, etc. A special method used for valuing endowment policies is called the Mexican modified valuation method.

Recently, there have been a few acquisitions of Mexican insurance companies by foreign companies, particularly from North America. With new owners, new concepts have arisen. One of those concepts is valuation under GAAP. This type of valuation, recently known only in theory to Mexican companies, has created a bit of interest. It currently remains more as a curiosity than something that will be carried out in the near future.

NEW METHODS OF ACCOUNTING IN OTHER COUNTRIES

I have had some conversations with people at Mexican insurance companies in which they have asked what GAAP is and wonder if ever it will be implemented in Mexico. There are many issues yet to be resolved in this area. We must keep in mind that Mexico may not simply copy U.S. GAAP, as the accountants will have a say in what the accounting principles will be in such a valuation. Thus, there is still a lot to be discussed before any GAAP valuations are made mandatory in Mexico.

One thing that is mandatory in Mexico is that the annual statutory actuarial valuation has to be audited by an independent, external actuary who cannot be an employee of the company. Another interesting item currently under analysis is the whole area of incurred but not reported (IBNR) reserves.

ASSETS

There are several issues for life insurance companies on the asset side. First, the annual valuation of assets is conducted by the financial officer. Investment companies provide information regarding the assets involved, such as investments and real estate. But the financial officer of the company is responsible for reporting the amounts to be shown on the annual statement.

The investment portfolio of a Mexican insurance company has to be valued monthly. Real estate and other fixed assets have to be valued once a year. Stocks, bonds, mortgages, and other types of investments that are traded on the market have to be valued every month. Both market and book value are used for valuation purposes, depending on the type of asset valued. Limited regulation exists that indicates how to value a particular asset. Currently, most of the assets in an annual statement are reported on a market-value basis.

As in the U.S., the actuary in Mexico has not yet been actively involved with the asset side of the balance sheet in an insurance company.

I have participated in discussions involving the American, Canadian, and Mexican actuarial organizations regarding the North American Free Trade Agreement (NAFTA) treaty. One of the things that became clear to the American and Canadian counterparts was that in Mexico, actuaries have been working for many years in many industries other than pensions and insurance. Many actuaries work in investment brokerage firms and elsewhere dealing with investments; however, as stated earlier, the Mexican actuary has not been involved with the valuation of assets of life insurance companies.

An audit must be performed annually by an external accountant. It has been reported that accountants have often made comments on the actuarial valuation. These comments have been directed at both the internal as well as the external actuarial valuation. Some insurance companies have raised the question of why the government requires an external actuarial audit if, on top of that, the insurance company is going to have to pay an accountant to review what has been done.

During the 1980s, Mexico suffered very high levels of inflation, sometimes above 100% per year. This is nothing compared with Brazil, Argentina, or Peru, which have experienced inflation of up to 17,000% in a particular year. When you have this type of problem, life insurance has only two options. Either it disappears, like in Brazil,

where there is only monthly renewable term, or you create a permanent product that is linked to inflation. In Mexico the latter happened. Many products with investment options were developed by insurance companies. The higher interest rates available in the financial markets made it possible for insurers to provide investment-linked options in traditional forms of life insurance.

The banking, insurance, and security investment authorities are three separate entities. Recently, they got together to discuss several issues of common interest. They are trying to create some general guidelines or rules regarding how assets should be valued and for whose interest. For example, if you are investing in stocks in Mexico, you may have to use a different method to value the stock, depending on whether you are an insurance company, a banking institution, or a security investment type of company. They are going to try to set some rules that may be common to the three government institutions.

CAPITAL AND SURPLUS

Regarding capital and surplus, currently the biggest issue is solvency margin requirements and what constitutes minimum required capital. Each line of business (life, health, automobile, fire, etc.) has to be tested quarterly to determine if it has the minimum level of capital needed to continue doing business. For example, the formula for minimum capital for life business requires you to consider the amount of insurance at risk, net of reinsurance, premium income, and reserves, in addition to certain other elements. If you also write automobile insurance, you then conduct a different test for automobile insurance, which is completely independent from the life test, and obtain another minimum capital amount. The summation of all the minimum capital amounts will give you the aggregate minimum capital at any quarter.

Until recently, there was a law in Mexico that practically prohibited any foreign investment in Mexican insurance companies. The law now has changed so that during 1993 a foreign corporation may own up to 49% of a Mexican insurance company. However, under the NAFTA agreement the practical percentage that has been used is 30%. A few foreign companies from the U.S. and Europe have purchased stock in Mexican companies as sole proprietors or in a joint venture.

Once NAFTA comes into effect, even more foreign ownership of insurance companies will be permitted. There is a schedule in which the 30% that is used as a limit will be raised gradually, ending in the year 2000 in which 100% foreign ownership of Mexican insurance companies will be permitted.

BENEFITS

I will now briefly describe pension accounting issues. Pension valuations are reported directly to the Secretary of the Treasury. An annual valuation for pension plans is mandatory. Different actuarial cost methods are often used by pension actuaries. The contributions are fully deductible for income tax purposes. Note that there is no full-funding limitation in Mexico.

The annual valuation of assets has to be done by a trustee at either market or book value. The funding vehicles can be a trust fund or a deposit administration contract. Book reserves still exist in Mexico.

NEW METHODS OF ACCOUNTING IN OTHER COUNTRIES

The Commission of Auditing and Procedures has developed guidance as to how to account for pension costs. This guidance has been published under Bulletin D-3 by the Institute of Accountants. This procedure will apply beginning January 1, 1993.

This publication determines the way in which pension plan liabilities will be established under Mexican accounting practices. The methodology of this publication is very similar to the one established by the FASB in its *Statement 87*.

MR. GUTTERMAN: It is clear that there is no one uniform track that all the countries in the world are following in life insurance accounting. However, the questions that are being asked are very similar. I hope we can learn from the experiences of others and improve our own methods by learning about those of others.

MR. ALLAN BRENDER: I would like to mention one item that may be of interest. This is the development in Canada of the cash-flow valuation method. Under this method, we ask, from basic principles, what is the policy liability? The textbook answer is that the policy liability is that collection of assets that, in addition to future premiums, you need to run off the business. We are planning to introduce this method for annuities in 1994. The method assumes you have segmented your assets so that you can say exactly which assets are available for the policy liability. You have to assume an investment policy for new cash flows and then project cash flows out to the time of the last payment under the policy, whenever that is. Actually, this is done on a portfolio basis and is not done for individual policies. Initial surplus is then adjusted so that the final surplus at the time of the last product cash flow is zero. You then have exactly the assets needed to run off that business. You must carry out this process for a variety of scenarios of future interest rates in order to put in a proper provision for adverse deviations. There are technical problems involved in deciding how to generate future scenarios and exactly what the extreme scenario is that must be covered. When you are done, you have a physical collection of assets. If you are doing market-value accounting, the policy liability is the market value of these assets. If you are doing book-value accounting, the reserve is the book value of these assets. What is important is that we have a portfolio reserve but no reserves for individual policies. I know of at least one company that is currently using this method to value all its life insurance and annuity business. I personally think cash-flow methods are the wave of the future and take you most of the way to dynamic solvency testing (DST).

FROM THE FLOOR: In Australia, are the assumptions revised annually or revisited annually?

MR. FRENCH: Revisited annually and revised if appropriate.

MR. ROBERT J. JOHANSEN: For an English insurance company, is 10% of earnings still permitted as the limit for profits to the company's shareholders?

MR. BARKER: Yes, in the core part of the business the profits that may go to the shareholders is 10% of the profits as defined on the statutory basis.

MR. JOHANSEN: I am the chairman of an SOA project oversight group on modeling. We are including in our survey of methods a look at econometric series and the

RECORD, VOLUME 19

relationships among them, including correlations, lag correlations, etc., with the hope that these can be applied to the modeling of the insurance company solvency.

MR. MARC SLUTZKY: I spent several years in Tokyo with a Japanese life insurance company that was owned by a U.S. company. Japanese standards tend to be very conservative. I was interested in your comments on the problems of a company in one country that is owned by a foreign company, such as a U.S. subsidiary of a U.K. company. What methods would the parent company look for the subsidiary to use?

MR. BARKER: Our parent looks at all its subsidiaries worldwide on a U.K. basis for financial reporting purposes. Local sovereignty reporting tends to reflect local statutory reporting. So it has a global and local element. The accrual method will be applied worldwide on a consolidated basis to be reported to the London Stock Exchange. It will thus trickle down to subsidiaries so they must report on a similar basis. BAT, also headquartered in the U.K. with worldwide interests, is adopting a similar approach. Adopt the financial reporting standards of the company in which your shareholders can buy into.

MR. GUTTERMAN: This practice may vary over time. For example, one company is planning to institute U.S. GAAP reporting worldwide even though the parent is not a U.S. corporation. It may turn out to be an interesting world, comparing results on alternative accounting bases.