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### **Session 17PD GAAPs Around the World**

Track: International/Financial Reporting

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Panelists: KEN JOYCE  
ALAIN BELAND  
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*Summary: As financial institutions become increasingly global, actuaries are interacting with financial professionals from different countries. The different regulator, market, and educational situations make finding a common understanding difficult. Adding to the confusion is the presence of different GAAPs around the world.*

*For firms currently operating or desiring to operate internationally, it is important to be able to speak the financial language of the countries they are investigating.*

MR. KEN JOYCE: We have three countries represented: the United Kingdom, Australia, and Japan. The first speaker, Greg Smith, will talk about GAAP in the U.K. Greg first served as an Air Force officer in several different places. He then started his actuarial career at CIGNA in Hartford. He worked in various roles, such as managed care pricing, reinsurance financial reporting, and corporate-owned life insurance pricing. He is currently a consultant at Tillinghast-Towers Perrin in Hartford. He was recently appointed to the position of national director for Tillinghast Actuarial Software (TAS). Some of the projects that he has been involved in include U.S. GAAP conversions in Switzerland, Australia, the U.K., and Germany, demutualizations of three U.S. life insurers, statutory historic GAAP, purchase GAAP, and financial modeling for companies in the U.S. and Canada.

Our second speaker, Alain Beland, will talk about Australian GAAP. Alain is a member of the Canadian Institute of Actuaries, the Australian Institute of Actuaries, and the Society of Actuaries. He spent nine years in Paris as a corporate actuary working on various actuarial projects. He spent five years

in Melbourne working as a valuation actuary and has worked in other corporate functions as well. In the last six years he has been in Montreal as a consultant on pension plans, group pricing, and group insurance. During the last year, he has been vice-president and treasurer of the Optimum Group, a financial services organization, with life reinsurance in North America.

I will talk about GAAP in Japan. I'm a member of the Society of Actuaries. I started my career at Travelers Insurance in Hartford and have worked in various rotations in life valuations, long-term-care pricing, and disability management. I managed a closed block of disability where I got hands-on experience in claims and litigation. I also worked in reinsurance and experience monitoring. I'm currently at Milliman U.S.A. in Seattle, Washington, and I've spend the last four years working on various merger and acquisition (M&A) type projects in Japan and Korea. I've recently been working quite a bit on purchase GAAP financial reporting modeling.

MR. GREG SMITH: I'm going to cover generally accepted accounting principles used in investor reporting in three countries: the United Kingdom, Australia, and Japan. I'll start by presenting some economic and insurance market statistics for each of our subject countries. After that, we'll briefly discuss the prevailing products

sold in the U.K., and then I'll present highlights of U.K. GAAP and of the achieved profits method. I'll conclude with a couple of comments about the International Accounting Standards Committee's view of the achieved profits method.

Table 1

Economic Conditions and Demographic Data — UK, Australia, Japan\*

	<i>UK</i>	<i>Australia</i>	<i>Japan</i>
GDP (BN \$US)	1,324.4	463.7	3,104.7
GDP per capita (\$US)	22,300	24,400	24,500
Savings (as % of GDP)	7.7%	4.3%	14.9%
Inflation forecast for 2001 (CPI)	2.0%	3.6%	-0.4%
Interest rates (10-yr gov't bond)	5.05%	6.00%	1.22%
Unemployment rate	6.3%	7.9%	4.1%
Population (millions)	59.2	18.8	126.5
Male life expectancy	74.3	75.6	77.2
Female life expectancy	79.5	81.3	83.8

\* All data with the exception of the inflation forecast and interest rates are taken from *OECD in Figures* - 2000 edition. Inflation and interest rate data are from *The Economist*, June 6, 2000.

Tables 1 and 2 show comparative data for the three countries we'll be covering. Table 1 shows the economic conditions and demographic data. The data in this table show the 1999 gross domestic product on an absolute dollar basis in billions of U.S. dollars and on a per capita basis, again in U.S. dollars. The savings data for the U.K. and Australia are from 1998, and are stated as a percentage of gross domestic product (GDP). The savings rate for Japan is from 1997, and, as we can see, shows the Japanese propensity to save. The consumer price inflation forecast is based on a poll of economists as reported in *The Economist* magazine on June 6, 2001. The forecast shown in Table 1 indicates that both the U.K. and Australia will see a modest Consumer Price Index (CPI) inflation in 2001 while the Japanese economy is expected to show a very modest deflation. The interest rates shown are for 10-year government bonds as reported in the same edition of *The Economist*. Next, the unemployment and population data are both based on 1998 data while the life expectancy at birth statistics are from 1997. As noted in the footnote, with the exception of the items attributed to *The Economist*, all the data in Table 1 is taken from the Organization for Economic Cooperation and Development's (OECD) publication *OECD 2000 Edition*. The OECD makes this publication available on the Web.

Table 2

## Significance of Insurance Sector — UK, Australia, Japan\*

	<b>UK</b>	<b>Australia</b>	<b>Japan</b>
Life ins premiums (Bn \$US)	148.5	25.3	392.9
Life ins premiums per capita (\$US)	2,502.8	1,333.6	3,103.4
Life ins premiums as % of GDP	10.3%	6.4%	8.9%
World market share (life ins)	10.5%	1.8%	27.8%
Total ins premiums (Bn \$US)	204.9	38.7	494.9
Total ins premiums per capita (\$US)	3,244.3	2,037.4	3,908.9
Total ins premiums as % of GDP	13.4%	9.8%	11.2%
World market share (total ins)	8.8%	1.7%	21.3%
Ins company assets as % of GDP	102.0%	39.2%	38.0%

\* Premium data for 1999 are taken from *Sigma*, No. 9/2000, a Swiss Re Publications. Data on life and non-life insurance company assets is taken from *OECD in Figures - 2000 Edition*.

Table 2 shows the significance of the life insurance sector. It shows 1999 data for life insurance and total insurance premiums in the U.K., Australia, and Japan. While this table shows point-in-time comparative data, the global picture in 1999 was one of expanding global insurance premiums. On a global average basis, total worldwide insurance premiums amounted to 7.5% of GDP. Breaking this growth down, it's

noted that non-life premiums expanded only slightly while life insurance premiums, especially in Western Europe where premium volumes expanded by 16%, drove the overall growth. Although both North America and Europe saw healthy premium growth, Japan saw insurance premium volume grow by 5.4% in 1999. It's also interesting to note that the Japanese spent the most on life insurance per capita in 1999 at \$3,103 U.S. dollars, while the Swiss spent the most on non-life insurance at \$1,729.

Finally, the last line in Table 2 shows insurance company assets as a percentage of GDP. The data comes from 1998 and does not include pension assets in the respective countries. Clearly, the large mutual insurers in the U.K. preside over a mountain of assets with total assets of 102% of the U.K. GDP relative to 39%, and 38% for Australia and Japan, respectively. With the exception of the data on insurance company assets, which comes from the *OECD in figures-2000 Edition*, all of the other data on this table is taken from *Sigma*, available on the Web from Swiss Re.

#### INSURANCE MARKET CONDITIONS

The life insurance industry in the United Kingdom accounts for 73% of the total insurance premiums. Furthermore, total premiums on a per capita basis are number three in the world. Finally, as a percentage of GDP, total insurance premiums are the largest of any country in the industrialized world, amounting to approximately 13.3% of GDP in 1999. While some of the data on this table might be distorted by the activities of the London reinsurance market, it's still safe to say the demand for U.K. life insurance is strong.

#### U.K. DOMESTIC INSURANCE PRODUCTS

As for U.K. insurance products, both stock and mutual companies have historically sold with-profits business. These are participating policies sold as non-linked traditional products—as whole life and endowment policies. These policies typically provide reversionary bonuses (we would call them dividends) that are used to purchase additional coverage and also provide terminal bonuses. Those are bonuses paid at maturity or upon claim and sometimes even at surrender. In addition to with-profits business, the market also provides unitized with-profits business and unit-linked business. These products are similar to variable products offered in the U.S. market, and while these policies are directly linked to the performance of an underlying block of assets, the assets themselves are not required to be held in a legal trust as is the case in U.S. separate account business. In respect of both with-profits and unit-linked products, the trend in recent years has been to move away from heavily front-end loaded products toward products with level charges. The deferred annuity market in the U.K. is very active with both tax-qualified business (being offered for personal pensions) and non-tax qualified products.

Interestingly, these products might provide the policyholder with the right to switch between a with-profits and a unit-linked basis. The investments in these contracts

are generally in equities with excess insurance credits, with the unrealized capital gains or losses being held for payment to the contract holder as a terminal bonus. Other non-participating products offered in this market include term life insurance, group life, and endowment policies. An example would be endowments to cover the balloon payment on a mortgage. In addition, insurers provide immediate annuities, disability income coverages (called PHI plans), and some health coverages. In general, because of the market valuation of assets, guarantees are rare in U.K. life and annuity products. While this general comment can be made, this has changed in recent years as guarantees have started to appear due to the consumerist movement. Finally, the term "general insurance" in the U.K. is used to describe non-life insurance, including coverages that we would normally call property and casualty.

There are requirements for statutory accounts. The names given to some U.K. accounting conventions can initially be a bit confusing. The reporting done to demonstrate solvency is called the supervisory returns. These returns are available to the public and are submitted to the Financial Services Authority, an agency operating under Her Majesty's Treasury. On the other hand, general purpose reporting, including reporting to investors, is provided in the statutory accounts. The accounting rules for U.K. GAAP are specified in a combination of practice guidelines and regulations, including the Companies Act of 1985 regulations (also called the accounting regulations), the Statement of Recommended Practice of the Association of British Insurers, and various pronouncements of the Accounting Standards Board. The statutory accounts are primarily for the benefit of shareholders in proprietary stock companies and for with-profits policyholders in a mutual office.

In addition to the statutory accounts, most companies also publish supplementary information on a codified embedded value approach known as the achieved profits basis. U.K. insurance regulation is consistent with, and some British actuaries would say constrained by, all of the European Commission's life directives. The first EC life directive was in 1979, and it established minimum solvency standards. The second directive in 1991 directs the format of statutory accounts and includes the requirement that these accounts provide a true and fair view. Finally, the third EC life directive in 1992 directs the valuation of assets and liabilities in the supervisory return.

#### PROFIT AND LOSS ACCOUNT

The insurance company structure in the U.K. is a group structure where a single group usually provides both life and general insurance. For this reason, the profit and loss (P&L) account is split into three sections: the long-term technical account reporting results for life insurance, the general insurance technical account for non-life insurance, and the non-life technical account reporting results for all non-insurance operations. Among other things, the non-technical account includes investment returns on any shareholder assets not backing the insurance business.

In addition to standard P&L accounting provisions and conventions, the accounting regulations make provisions for a fund for future appropriations. This facility is supposed to report the movement of those funds whose allocation to either policyholders or shareholders have not been determined at the balance sheet date. The Association of British Insurers' (ABI) Statement of Recommended Practice also references this fund but states that its use is inappropriate in any situation where there is reasonable certainty that the funds in question can be attributed to shareholders. That said, this fund is used universally by companies reporting business results of with-profits business, as it provides a ready mechanism to support the payment of bonuses. The fund of future appropriations is rarely used to report the results of non-participating business. While we won't have time to consider every nuance of this, it is clear that U.K. accounting practices draw a bright line between ownership rights of with-profits policyholders versus those of shareholders.

#### FUND FOR FUTURE APPROPRIATIONS

Before we go any further, I need to mention that the operational long-term insurance in the U.K. is based on a long-term fund—a pool of assets which is legally hypothecated to the long-term business. Please note that the long-term fund includes both with-profits and non-participating business. Because the use of the word 'fund' can get confusing, I'll try to be very clear in distinguishing between the long-term fund and the fund for future appropriations. In the case of with-profits business, the fund for future appropriations holds most of the accounting in asset value differences between the supervisory returns and the statutory account. One exception to this statement will arise in situations where shareholder capital has, with the agreement of the Supervisory Authority, been identified in a long-term fund. In this case, the assets in the long-term fund representing this capital will be recognized on the shareholder balance sheet, and the investment return on these assets will be reported in the non-technical account. In the case of non-participating business, differences in accounting conventions will result in differences between the after-tax profits and the transfer from the long-term fund. That's not the case in with-profits business.

#### ASSET VALUES

The accounting regulations specify that equities and property, including real estate holdings and mortgages, will be valued on a fair-value basis. This basis is somewhat different from the basis used in supervisory returns where admissibility requirements exist for solvency purposes, and where allowances are made for the deduction of selling expenses. All non-callable fixed interest securities, and those callable fixed interest assets used to back unit-linked liabilities, should be valued at market value. In the case of other callable assets not used to back unit-linked liabilities, the ABI Statement of Recommended Practice permits the use of an amortized cost basis in cases where these securities are expected to be held to maturity. Some companies use this option mainly for tax purposes. Because many U.K. insurers have substantial real estate holdings, the asset valuation differences between U.K. GAAP and U.S. GAAP (where real estate is carried at depreciated

cost) are a shock for those companies when attempting to prepare statements under U.S. GAAP.

The long-term technical account reports all investment returns including realized and unrealized capital gains for those assets backing long-term business. The P&L volatility that this introduces is mitigated by the following: the movement of unit-linked liabilities, which also move at market value, any equivalent changes in the long-term provision, and the flow of capital gains and losses into the fund for future appropriations.

#### LONG-TERM PROVISION

It is the liability set on the statutory accounts for non-unit-linked business. The existence of the fund for future appropriations makes it possible to strip off and hold the unrealized results in anticipation of terminal bonuses to be paid on the with-profits business. In addition, other aspects of the bonus process can be managed quite neatly within the fund for future appropriations permitting a smoothing of bonuses when results might otherwise call for more extreme dividend adjustments.

#### INVESTMENT GAINS

The Statement of Recommended Practice gives the option of reporting capital appreciation or depreciation on shareholder-attributed assets in two pieces. First, the portion of the return equal to the long-term investment gain is reported in the long-term technical account. The balance of the total return, that is, the excess above or below the long-term investment return, is shown in the non-technical account. The result is that companies are able to report smooth operating profits on their long-term insurance business with volatile elements being carried as "below-the-line," non-technical results. Operating profits for insurance operations are generally disclosed separately. Most publicly traded companies are using this approach.

The accounting regulations require that a Deferred Acquisition Cost (DAC) asset be established, but the detailed rules for this asset are contained in the ABI's Statement of Recommended Practice. The statement requires that all acquisition costs that will be recovered from future margins be deferred. This includes both direct and indirect expenses. The amortization of these costs through the technical account is left largely to the company. As such, the following general rules also apply: cost should be deferred at a rate commensurate with the emergence of policy margins and only net cost should be deferred (i.e. costs recovered from policy loading should not be deferred). If recovery of the DAC asset is uncertain, then the asset should be written down. Recoverability testing of the DAC asset is required at each balance sheet date and should be reviewed at an aggregate and category business level. Companies in the U.K. use a variety of practices in amortizing deferred acquisition costs. However, the pace of amortization impacts shareholder profits only in respect of business written outside the with-profits fund.

For participating business, the impact of amortization is taken in the fund for future appropriations.

Let's discuss the value of policyholder liabilities. Actuarial liabilities in the statutory account are split between the technical provision for unit-linked liabilities and a long-term business provision. The provision for unit-linked liabilities matches the liability carried in the supervisory returns and must be matched by an asset of equal value. While the directors of the company are ultimately responsible for the long-term provision, the accounting regulations require that the provision itself be calculated by an actuary.

Let's get behind the rules on the long-term business provision. In its Statement of Recommended Practice, the ABI has dubbed the whole of the U.K. GAAP as modified statutory. The rules pertaining to the long-term business provision include the following. First, liabilities should be valued on a basis consistent with the valuation of the assets, and this implies an active valuation basis with regard to market yields on those assets held. Second, no policy can be carried with a negative reserve or a reserve below any guaranteed surrender value. When setting a long-term business provision, U.K. actuaries also consider the impact of policyholders' reasonable expectations regarding future reversionary bonuses. No provision is included in the liability for terminal bonuses, which are not guaranteed prior to the date of claim or maturity. Reserves are calculated on a net premium method, and the assumptions include prudent margins for adverse deviation as appropriate to the territory where the business is written. Prudent allowances are often made for improvements in annuitant mortality, and these are permitted by the statements.

I have a final thought on the long-term business provision. The Statement of Recommended Practice states that it is acceptable to calculate the long-term business provision on the same basis as the mathematical reserves shown on the supervisory returns. When this is done, the following adjustments are required for U.K. GAAP reporting. First, if the underlying bonds are at amortized cost, any interest-sensitive liability supported by those assets should be revalued using a rate of interest consistent with the amortized value of the bonds. Second, certain items included in the mathematical reserves must be removed. These include the resilience reserve. This reserve is calculated using a deterministic asset/liability mismatching test required for solvency reporting. Next, remove the reserve to cover general contingencies and remove any reserves set up to cover expenses associated with the closure to new business. This has an unusual sound to it, but for solvency reporting, there's a requirement that the mathematical reserves include prudent assumptions for the total expenses likely to be incurred in fulfilling business obligations if the company were to close for new business 12 months after the valuation date. In addition to these adjustments, any Zillmer adjustment in the mathematical reserves must be removed since the DAC asset already covers the recoverable acquisition cost. For reporting purposes, the long-term business provision is shown gross of reinsurance with the ceded reserve appearing as an asset on the balance sheet. The accounting regulations require that the principal



assumptions used in calculating the long-term business provision be disclosed in the notes of the statutory accounts.

The Statement of Recommended Practice contains rules on acquisition accounting, and these include a requirement that a special asset be recognized on the purchase GAAP balance sheet for the present value of acquired in-force business (PVIF). This asset is set equal to the embedded value at the date of acquisition of the acquired portfolio less the shareholder's assets calculated on a modified statutory, that is, U.K. GAAP basis. Once set, the PVIF is amortized over the anticipated lifetime of the portfolio on a systematic basis. The PVIF does accrue interest at the discount rate used in the initial calculation and is also subjected to an annual impairment test. While the Statement of Recommended Practice does not provide guidance on goodwill associated with an acquisition, the general U.K. practice is that goodwill is carried as an intangible asset and amortized over a suitable period.

#### ACHIEVED PROFITS REPORTING

As I mentioned earlier, the European Commission's second life directive called for the accounts to present a true and fair value. While the basic requirements of U.K. GAAP legally comply with this requirement, the ABI has authorized proprietary insurance groups (stock insurance companies) to present supplementary material on an alternative basis—the achieved profits method. In fact, many British actuaries believe that this method provides the best information on the current trading position of an insurer. The reporting method itself has been codified by the ABI and it was hoped that this method would be adopted as the primary reporting method used in the group account. However, a 1999 study by the Accounting Standards Board found that the achieved profits method was inconsistent with U.K. GAAP. Notwithstanding this ruling, the achieved profits method has been widely adopted by stock companies, and while the data published on this basis varies widely, the method is consistently applied thanks to a guidance note from the ABI. The objective of the achieved profit method is to recognize profit as it is earned from contracts of long-term insurance business. The achieved profit of an enterprise is calculated after tax and is equal to the increase in the embedded value of in-force business during the accounting period, after allowing for shareholder dividends paid and capital infusions.

#### DETERMINING THE EMBEDDED VALUE

On the achieved profits method, the embedded value is calculated based on a projection of future cash flows to shareholders at a risk discount rate. This projection includes cash flows from new business written during the accounting period. The risk discount rate is based on the after-tax risk-free rate of return from the yield on government bonds together with a risk margin. This risk margin is based on the margin a third party operating in a similar tax and regulatory environment would require in order to assume the liabilities and supporting assets of a block of in-force policies. The risk discount rate should be consistent with the rate used in internal profit testing. The guidance goes further to state that future experience should be based on best-estimate assumptions, and since the risk margin in the discount rate is intended to account for the risk in the future, care

should be exercised when assuming future improvements in experience assumptions in order to avoid double counting.

Bonuses on with-profits business should be calculated on a basis that is consistent with economic assumptions, with the company's bonus policy, and with any restrictions on shareholder transfers included in the company's articles of association. Any free assets remaining at the end of the projection for with-profits business should be exhausted in the payment of a terminal bonus. The ABI's draft guidance note (issued in March 1999) has an explicit requirement that non-bancassurers allow for solvency capital in the projection. Most companies do allow for the minimum level of solvency capital in their EV projections for in-force business. Notably, there is not the same degree of consistency when it comes to the capital backing projections for new business written during the year.

#### A PRESENTATION OF ACHIEVED PROFIT RESULTS

The ABI guidance note calls for the following items to be disclosed when supplementary information is published on this basis. First, the projection basis must be disclosed with special emphasis given to the economic assumptions and risk discount rates used. Next, the components of profit are shown. While practice varies widely in respect of the details shown, most companies include information on the value added or destroyed by new business written during the year, the impact of significant assumption changes, and the impact of variances between actual and expected results. Often, the variance analysis includes commentary in the footnotes. In presenting total achieved profits, most groups break this down into an operating profit component and balancing amount which is permitted by the ABI guidance notes. The operating profit will exclude the impact of achieved investment returns above or below the assumed long-term level of investment return and/or exclude the impact of any changes in economic assumptions or risk discount rates that are driven by external market forces. What's left is a balancing item, and it's the remaining volatility associated with the total achieved profits. The emphasis of any commentary on profits will invariably focus on operating profit, as this is of keen interest to investors and analysts.

#### INTERNATIONAL ACCOUNTING DEVELOPMENTS

Most U.K. practitioners have very strong feelings about the achieved profits method. In fact, they tend to believe that this method is a fair-value method. The International Accounting Standards Committee (IASC) included consideration of the achieved profits method—called the embedded value method—in their issues paper released in November 1999. The issues paper concluded provisionally that the embedded value method could not be considered a fair-value method. Their reasoning for this included, first, that the use of an embedded value asset to compensate for the overstatement of liabilities is theoretically unsound. You'll recall that the projections underlying the achieved profits operate using conservative mathematical reserves. Second, the fact that the embedded value method has the potential to "up-front" profits at the time of sale might be unacceptable. While they haven't "slammed the door" on embedded value, the IASC seems distinctly lukewarm to embracing this method in its current form. A couple of additional

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notable comments were made on policy liabilities in the issue paper. First, the IASC said that policy liabilities should be realistic; second, in a seemingly contradictory statement, the IASC also suggested that realistic policy liabilities should be floored at surrender value.

### CONCLUSION

I tried to present the highlights place them in the context of the rest of the world. While I've had some practical experience with U.K. accounting, I'm far from an expert. In addition to the publications I referenced earlier, I'm indebted to a Tillinghast colleague in the London office, Peter Wright, for his invaluable support as I prepared this presentation. In addition, I borrowed material from a bullet paper by Dan Kunesh, which was part of a 1999 report published by the Academy's International Valuation Task Force.

MR. ALAIN BELAND: We will now discuss Australian GAAP, which is something that is quite recent. It started in 1995. I worked in Australia between 1995 and 2000, so I was heavily involved in the implementation of the changes. I will give an overview of the Australian GAAP for life insurance, which is often called margins on services or MOS. I will also make a comparison with U.S. GAAP. I am assuming that you have a basic knowledge of U.S. GAAP. I will also discuss some elements regarding the disclosure of financial information, which is now prevalent in Australia.

### AUSTRALIAN PRODUCTS

There are so-called risk products, which include death coverage or income protection (long-term and short-term disability as it is called here) and are often offered on a yearly renewable basis.

There is conventional participating business, which is quite similar to what exists in the U.K. The participation is given in the form of add-ons to the guarantees. There are regular bonuses as well as terminal bonuses at the end of the policy.

The savings products are grouped between what is called investment accounts and investment-linked business. In the case of investment account business, there's a guarantee that the crediting rate in a given year can't be negative. Apart from that, the crediting policy can be quite flexible and, in fact, the crediting of the actual investment income can be deferred over many years, thus making some transfer between generations. The investment-linked business is closer to what is called variable annuities. It is by far the biggest category.

Immediate annuities are becoming more common as well. The assets backing these products are quite varied in that there are significant amounts of real estate, as well as shares backing these products (on top of bonds), and there is a reasonably good matching of assets and liabilities, not only for immediate annuities, but also for other categories.

### AUSTRALIAN GAAP

Coming to the Australian GAAP environment, the margin on services (MOS) methodology was developed early in the 1990s, came into place in 1995, and was specifically developed for life insurance business. There was no attempt to be consistent with other savings products—mutual funds and things like that. However, in practice it was quite similar. It is useful GAAP reporting, but it is also used to determine the split of profits between policyholders and shareholders in the case of participating business.

### EXISTING MEASURES

Some solvency measurements were introduced at the same time as MOS. There was a so-called solvency standard and a so-called capital adequacy standard. These measures are quite different from the GAAP measurement. The solvency measures the position of the company in a runoff situation where no new business would be written. The capital adequacy is a measure of the business in an ongoing situation. In the first case, if the capital is too low, the insurance department can intervene in the management of the company. For capital adequacy, it's just a matter of shareholder dividends that can't be paid. In each case, the best-estimate assumptions are used to determine the liability, which is based on the gross premium valuation. Provisions for adverse deviation are prescribed, and the actuary's judgment is also needed.

These developments have led to quite a few demutualizations in Australia, a few years ahead of what happened in Canada. That was followed by a lot of M&A activity in the insurance industry. The development of additional information, such as embedded values and appraisal value, as Greg mentioned before, is now quite common in Australia, and as you will see later, it can create interesting situations.

### MOS

MOS was designed specifically for insurance companies, but it provides similar profit patterns when compared to other businesses that are similar in nature. For the capital and solvency requirements however, the rules are more stringent. The major premises of this methodology include assets being marked to market, which will sometimes bring volatility, as you will see later on. The liabilities have been designed to match the assets to a large extent. It is consistent with the type of products that can be seen, because in situations like investment account or investment-linked business, the policyholders participate in 100% of the investment returns.

Another feature of the approach is to derive the best-estimate liability. As you will see later on, the actuaries are putting themselves under the spotlight by providing the best-estimate liability regarding the future benefits and expenses of the company.

Finally, there's a discretionary component in all of this. This approach was developed by actuaries and it is heavily actuarial in the techniques used, with a high level of discretion involved. It brings some difficulties when presenting the methodology in the market to get the financial analysts to agree and follow all the aspects of the business.

#### ASSET VALUES

On the asset side, as I said before, the market value is used for all assets for the MOS approach, whereas in U.S. GAAP, valuation of assets will vary according to asset type. Some assets, according to the classification, will be "available for sale" or "held to maturity" so that in U.S. GAAP, in the P & L, the assets are largely at book value while they are usually shown at market on the balance sheet.

#### PROFIT DRIVERS

The profit drivers in MOS are explicitly selected as part of the calculation process. The profit needs to be recognized as the services underlying the products are performed. Usually one driver is used per product. Typically, for risk products like disability or term life, the claims or expected claims would be used, and for immediate annuities, the expected future payments would be used. For the savings products, projection of assets under management would be used, and for traditional par business, the projected premiums are commonly used. In that respect, it is not fundamentally different from U.S. GAAP where premiums are used for Financial Accounting Standard (FAS) 60 products. Gross margins are used for FAS 97 or FAS 120. One interesting aspect of MOS is that the calculations are done at a so-called related product group level. The definition of a related product group is an area where actuarial judgment might have an impact. In some companies, the groups will be bigger; in other ones, the groups will be smaller, which might bring more or less volatility of the results. There's a level of discretion in grouping together policy years.

#### MOS LIABILITIES

The MOS liability is the best-estimate liability plus the present value of future profit margins. The best-estimate liability is simply a gross premium valuation reserve where the present value of benefits, plus expenses, and minus the present value of gross premium is calculated. This is done with the best-estimate assumptions. A retrospective approach can be used, but it has to be demonstrated that it is not materially different from the prospective approach.

For the second component, the present value of future profit margins is determined at policy inception where an equation is done so that the premiums cover the future benefits, expenses, and profit margins. It means that when the policy is written, there is no profit on the first day, but instead the profits will be spread over the life of the policy. The value of the driver is also calculated. For example, for a savings product, the value of the projected assets under management will be discounted, and a "K" factor, a percentage of the value of the margins compared to the value of the driver, would be calculated. It's a bit like what is done for the DAC

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amortization under U.S. GAAP. Then, the value of profit margin would evolve in time according to the value of this profit driver

There is no DAC component. It's not an explicit item, but because of the way the liabilities are calculated, the gross premiums are used and they include the recovery of the acquisition costs. Effectively, negative liabilities are obtained in some cases, especially for risk products. In the Australian standards, there are no minimum liabilities to be maintained. The income is really the focus of the GAAP approach.

### US GAAP LIABILITIES

For U.S. GAAP, the liability valuation will vary by product type, where FAS 60 and FAS 120 have a net premium level reserve. FAS 97 has the account value or the account balance. As you know, for U.S. GAAP, DAC is an explicit component. The variable expenses are amortized over the life of the product, which is different from the Australian approach.

### MOS ASSUMPTIONS

When it comes to assumptions, the best-estimate assumptions are used. There are no provisions for adverse deviation involved. The assumptions are reviewed at each valuation date. The change in assumptions will impact the reserve differently depending on their type. The change in assumptions from market conditions, like variations of the stock market, will impact the liabilities and are meant to mirror the movement in the assets, assuming that there is a proper matching of assets and liabilities. All the other assumptions will not impact the MOS reserve unless the product is loss making. I will come back to that point later.

The change in assumptions is quite frequent. They are frequent for investments, of course, because the market conditions need to be factored in. They are also frequent for expenses where total expenses, including overheads, are used. There is need for consistency between the assumptions used and the actual total expenses of the company. In fact, the expenses need to be between the actual level for the valuation year and the expected level for the budget. There is sometimes quite a narrow range and the expenses are updated regularly. Other assumptions like surrenders, mortality, and morbidity are also updated from time to time.

Two calculations need to be done at the given valuation date. In Step 1, reserves are calculated using the old assumptions. All assumptions at the previous valuation date are used, except for market conditions for the current investment yields on the various asset categories. This would not include a change in asset mix resulting from a change in the investment policy. An example would be if the company decides to use different proportions of real estate, shares, and bonds. That would be part of Step 2 where a second calculation of reserve is done using all current best-estimate assumptions. The difference between the second reserve and the first one will not impact the total reserve, but it will impact the best estimate liability. The difference will go in the value of future profit margins.

I have prepared an illustration (Chart 1). The first part of the graph has a bar that is called old assumptions. This is not a required calculation for MOS; it is there to show what the liabilities would have been without any change in assumptions from the previous year. Let's say the total liability is 70, which is made of two parts—the light part of the bar, which is the best estimate liability, and the dark part of the bar which is the present value of the future profit margins.

When it comes to Step 1, the best estimate liability is recalculated using the current market conditions or the current asset yields. In this example, the best-estimate liability goes up by 10, which means that the market conditions are better, and the interest rates are lower. This is meant to mirror the movements on the assets backing the business.

In the second step, all the changes in assumptions for other reasons (expenses, lapses and mortality) are factored in. A second best-estimate liability is then calculated, which is the most up to date. In Chart 1, Step 2, the liability is at 40. But then the total liability doesn't change, and the difference goes in the present value of future profit margins. It means that there's no immediate profit impact in the year that the assumptions are changed. In a circumstance where assumptions do change, the present value of the driver is recalculated, as well as the "K" factor, and the new factor is used to amortize or spread the profits in the future. Unlike U.S. GAAP where a similar situation sometimes arises with DAC, there is no retroactive adjustment in that there is no need to go back to the beginning of the policies, but only to make a change for the future. The enhanced profitability is recognized in the future only.

### US GAAP ASSUMPTIONS

For U.S. GAAP, as you probably know, the assumptions for FAS 60 products are locked in and include a provision for adverse deviation. For FAS 97 and FAS 120 products, assumptions are used for DAC amortization where best-estimate assumptions are used and are not locked in. For FAS 120 the reserve is more or less prescribed. Best-estimate assumptions are also used for loss recognition and premium deficiency.

### EXPENSES

There are specific rules about the expenses for MOS methodology in that the best-estimate assumptions for expenses do not allow for improvements in the future beyond the first year for the budget, and fully allocated expenses are used in that it includes the allocation of overhead expenses. For U.S. GAAP, best-estimate assumptions can include improvement in the future if it's appropriate, and assumptions exclude the overhead expenses.

Not all acquisition costs are deferrable in U.S. GAAP, which is not the case with MOS. There's no need for MOS to split between variable and fixed costs. In addition, documentation requirements exist for special accruals or capitalization in

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U.S. GAAP, which is not the case with MOS. Because no profit usually emerges at inception of a policy, the allocation of expenses between “acquisition” and “maintenance” is critical in that the more expenses that are allocated to the “acquisition” category, the better the profit because the recognition of these expenses is effectively deferred.

#### MOS CAPITALIZED LOSSES

A specific situation that I haven’t spoken about yet is the capitalized losses situation where there are no future profits for the product. It can occur at the inception or during the life of the policy. If it happens at the inception, it means that the premiums are not sufficient to cover the value of the benefits and the future expenses to be paid. In that case, the MOS reserve needs to be the best estimate liability, which means that there will be capitalized losses at the inception date. If during the life of the policy the assumptions are worsening, the present value of profit cannot become negative or more negative if there were already losses in the past. So, if it occurs, the total reserve of the policy will increase because of the worsening of assumptions, and, of course, an impact on the profits in the current year will occur.

However, these losses can be “reversed.” If there are losses at inception or on further worsening of assumptions, the amount of losses is kept on record so that if, in the future, there are some improvements in assumptions, they are not used to create a value of future profit first. Instead, the best-estimate liability will decrease, and the full benefit would be recognized immediately. So there will be a positive impact profit, often called reversal of capitalized losses. When the profits are increased by an amount equal to the capitalized losses that were initially recorded, further improvements in the assumptions will need to be part of the reserve (value of future profit margins) and spread over the remaining life of the policy, as a normal policy.

#### MOS PROFIT ANALYSIS

For the analysis of MOS profit, the first component is the planned profit margin, which is simply the release for the year of the value of the future profit margins times the “K” factor, which represents the component for the year of the profits to be released. There is the experience profit that emerges where experience is different from expectations for mortality, expenses, and investment income. There is also the impact of new capitalized losses. This is when a new business is written at a loss or if a product becomes loss-making because of a deterioration of assumptions. New capitalized losses will be created and will impact the bottom line. On the reverse, if there are improvements in assumptions for loss-making products, the impact will be recognized immediately in the year it occurs so there will be a positive impact on the profit. Finally, the earnings on the excess assets or the shareholder capital can be isolated.

#### US GAAP PROFIT ANALYSIS

For U.S. GAAP the pattern is quite different. It will vary depending on the type of products. Generally speaking, for FAS 60 and FAS 120 products, the profit will be



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the difference between the gross and the net premiums, plus the release of the provision for adverse deviation less the overhead expenses plus the earnings on excess assets or shareholder capital, and any experience profit during the year. For FAS 97 products, it's basically the various spreads on investment, cost of insurance, expense and surrender, less overhead expenses, and DAC amortization plus, of course, the earnings on capital or shareholder capital.

### MOS PROFIT PATTERNS

In summary, it is a break-even situation at issue when the business is expected to be profitable. When the policy is issued there's no profit or loss. The profits are spread according to the profit driver emergence. The change in assumptions usually has no immediate impact. It increases or decreases the value of profit margins, which are released over time. The current year of experience mostly impacts current-year profits. For unprofitable business, there is a strain at issue because future negative profits cannot be expected, so there will essentially be a loss at issue and no profit thereafter. Future changes in assumptions will potentially have a large immediate impact on the profits, which makes the situation very volatile in terms of profit reporting.

### US GAAP PROFIT PATTERNS

For U.S. GAAP, the earnings patterns will vary by accounting model and product design. Essentially, non-deferrable acquisition expenses generally cause a loss or reduction in profit at issue, and the future losses, excluding overhead, are usually recognized immediately. To give some illustration of the differences between the two approaches, let's look at a one issue year (Chart 2). We can see that, especially in U.S. GAAP, there might be a loss in the first year corresponding to non-deferrable acquisition expenses. In MOS there is no profit at issue, but for the remainder of the year, there will be some profit emergence. However, if the product is clearly unprofitable, the loss can be more important for MOS because overhead expenses are also capitalized. We can see lower profits in the following few years for U.S. GAAP. There is a turnaround so that overall, the profits over the term of the policy are the same.

Chart 3 shows a similar situation, but five years of the policies are grouped together. In that case, the profits are higher so the difference is proportionately smaller, but again, U.S. GAAP starts slowly, and then after a while it's greater than MOS where the profit was bigger at the beginning. The difference tends to decrease over time. In the final graph, Chart 4, it is the same situation, but with new business added on. In that case, the U.S. GAAP profit only catches up when the new business strain corresponds to the extra margins generated by the runoff of the business. The two profit bases don't catch up until new business reduces or stops.

### BEYOND THE GRAPHS

These graphs are fairly simple in that they represent the situation where everything goes as expected. In practice, there are differences where current experience goes straight to the bottom line in MOS most of the time, whereas in U.S. GAAP, there is

an impact of the current experience on the DAC amortization. There are different impacts in terms of change in assumptions. For MOS, the assumptions don't impact the current year profit for a profitable product, but immediately impact the bottom line for loss-making products. For U.S. GAAP, it will depend on the type of product.

The management actions can be very different and have a very different impact. For example, expense reductions on business with capitalized losses will have a huge immediate impact on the MOS bottom line of the company. Also, the management of non-deferrable acquisition expenses in U.S. GAAP will have a direct impact on the bottom line while it will be spread and deferred in the Australian method. In addition, because the market value is used for the assets, there is no concept of a realized gain in MOS. There is no profit resulting from the trading of assets.

An interesting situation is the opening balance sheet. Because the MOS calculations are quite complicated (annual calculations from the inception year of the policies in force would be necessary), alternative values are used as a starting point, like the cash surrender value. Another interesting feature is that, at a time, even if two actuaries agree on the best-estimate assumptions, the MOS liabilities are not necessarily the same. It is because they will also depend on their views of business in the past. If one actuary had been more optimistic in the past, more profits would have then been released and, hence, the value of profit margins would now be lower.

### DISCLOSURES

The profit analysis, as you saw before, is disclosed and well regarded by the analysts. Also, since the reserves are broken down between the best estimate liability and the value of profit margins, analysts are very keen to understand what stands behind the various profit margins and how they evolve from year to year. For example, if there are significant surrenders in the business, it won't necessarily impact the current year profit, but the value future of profit margins can change dramatically. So, there is a need to explain differences in impact.

Solvency and capital adequacy standards that I referred to at the beginning are often part of the disclosures. The disclosure of solvency standards is mandatory. It's not the case for capital adequacy, but in practice, some companies do. Again, the variations will be different from what we can see for the MOS profit or the value of future profit margins, and it all needs to tie together.

In addition, the embedded value and the appraisal value (which is the embedded value with new business) are now common measures used in Australia. They are used as a reference point for the value of the business. It is again another measure that might behave differently for the others. An interesting situation there is that, in Australia, in most cases, the embedded value is certified by an independent actuary. Because the embedded value needs to use best-estimate assumptions, and best-estimate assumptions are used as well for MOS, two actuaries might be involved

and would have to agree on best-estimate assumptions. It can be quite an interesting exercise.

Finally, in my case, I was working for an insurance company, but the parent company, a holding company, was the entity listed on the stock market. It doesn't need to follow all these rules for its published accounts. The profit disclosed was the MOS profit, but in the balance sheet, the appraisal value was used so that the difference between the two was put straight in the balance sheet.

### SUMMARY

Experience shows that the analysts favor all of this information and are working hard to understand the mechanics of insurance companies. In their attempts to attract capital, insurance companies have to compete with other industries on the stock market, which are probably more simple, and hence, more attractive, other things being equal.

MOS is quite an elegant approach. I think it pictures the insurance business and this long-term nature very well. It integrates the fair-value concept. On the other hand, it is heavily actuarial, highly technical, and it is quite complex to understand. It puts the insurers at a little bit of a disadvantage on that side.

MR. KEN JOYCE: I'm going to talk to you about GAAP in Japan. Before I start, I want to read a quick excerpt from the *Wall Street Journal* from June 15, 2001.

Japan Central Bank is pushed to ease credit. Japan Central Bank is coming under intense pressure to ease credit further as politicians demand support for a rapidly deteriorating economy. The yield on the benchmark Japanese government bond fell to 1.165%. That's down from 1.6% the beginning of the year. The Nikkei stock average is down 12% from its recent high in May.

Not a passive article. I hope that you will know more about Japanese GAAP historically and as it is today. I also hope to pass on some insights into certain comparisons of Japanese GAAP to U.S. GAAP so that you will appreciate the key accounting changes that are going on, and understand that Japanese GAAP is really evolving. I'll focus on some discussion of assets, liabilities, solvency, and the changes that are in progress. The thrust will be to present a highlight of these changes. Some of them are very complex, and some are very straightforward. I'll do my best to hit the key points.

So what does GAAP really mean in Japan? I've chosen four areas to discuss. Asset valuations have been inconsistent among companies, and a couple of examples might be related to how bad debt is recognized and how real estate is valued. That's going to vary by strong companies, weak companies, small companies, and large companies. There are reserve methods similar to U.S. statutory with some variations. They use a Zillmer reserve with expense allowances. We'll get into that a little more. Minimum capital is defined by a formula but, as of today, full consistency

among companies is not yet achieved. We'll talk a little bit about the surplus elements that go into that and the risk-based capital amount that's used. Finally, the accounting rules that have been underway since 1998 are changing how GAAP is evolving. Some of the changes include market-value accounting. Some of them are slow to change. A goal is to make the financials transparent. Another goal is to help move Japan closer to world standards.

### JAPANESE LIFE INSURANCE PRODUCTS

Let me take a minute on some of the Japanese life insurance products that I've worked with. The first is protection products. These are traditional, whole life, endowment, and term products. The whole life and the endowment products have, in some cases, very high guaranteed rates. When the government bond is at 1.16%, you can tell that's a problem. Term products are also widely sold and fairly profitable. As for accident and health (A&H), supplemental coverage is sold as riders. Some base policies are packaged with whole life and endowment. Again, they have some wide-ranging profit margins in them that vary by age and product. Deferred annuity/family income policies are a mix of the deferred annuity and annuities that are payout annuities. They also have some high guaranteed rates and a minimum amount of risk in some of the deferred periods. There are some complicated benefits as you try to model those in the payout phase. Group life and group pensions are fairly significant. I was able to get some statistics on the group pensions that are more like deposit funds. They're about 25-30% of total policy reserves in Japan. Variable life is really not too significant. I have not worked much with it in Japan, but some companies are looking at it. The work that we've done or have been involved in with GAAP has mainly focused on comparing FAS 60 or limited pay FAS 97. Investment contract methods exist as well.

Let's talk a little bit about asset valuation and historical standards applied in Japan. I've tried to simplify this a bit, and obviously there are many more details that go into the assets and how you value them. I've broken it down into financial instruments, cash, policy loans, and real estate. Market-value accounting is underway in Japan. Some companies have the option to do it or not to do it right now. Some of the companies have moved to market-value accounting. The bonds are held either at market value or amortized cost, and they are now categorized into one of three categories. You can think of it as trading held to maturity or other. Those are fairly comparable to U.S. GAAP. Equities are at market value, but, historically, subsidiaries have been at cost. For cash and policy loans, outstanding amounts, and real estate, there has been no change with the new rules, but they are held at cost or cost less depreciation. Recognize the difference between the sale price and cost through the income statement. There's discussion that's ongoing right now related to real estate and how you can recognize that or value that a little bit more realistically, but there is nothing specific that I can share with you.

The bond categories under U.S. GAAP are trading, available for sale, held to maturity (or held at market value or amortized cost), equities at market value, cash

policy loans, and amounts outstanding. Real estate varies by transaction, but if it's for the company's operation or investment, it can be held at depreciated cost. Some of them can get a little tricky. The market-value accounting or the option to use market-value accounting exists in Japan today where it doesn't in U.S. GAAP.

### RESERVE METHODOLOGIES

Table 3 simplifies this and shows the assumptions along the first column. The second column is Commissioners Reserve Valuation Method (CRVM). Following are Japan and U.S. GAAP. The Japan reserves are skewed closer to CRVM than they are to U.S. GAAP. As you can see, the interest is now defined by law. A few years ago, the practice was to make valuation interest pricing interest. Mortality is defined by law. Lapses aren't used in the reserves. Acquisition expense is formula driven similar to CRVM, but it is a little bit different. They use a Zillmer approach. Acquisition expense loading is related to the loading used in the gross premium, and that will be amortized over either five or 10 years. You can think of CRVM on a whole life policy as the age plus one net level reserve. In Japan, they do allow for a provision for maintenance expenses both in the premium pay period and the paid-up period. That is not done under CRVM. In U.S. GAAP, at best, estimates are used with a provision for adverse deviation (PAD) on interest and mortality. You may or may not use the PAD on lapse that will differ by product or situation. Acquisition expenses are included under DAC, and maintenance expenses are also included.

Table 3

## Comparison of Reserve Methodologies

Assumption	CRVM	Japan	U.S. GAAP
Interest	Law	Law	Best estimate w/PAD
Mortality	Law	Law	Best estimate w/PAD
Lapse	None	None	Best estimate
Acquisition Exp.	Formula	Formula	Yes
Maintenance Exp.	No	Yes	Yes

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I've set up an illustrative graph in Chart 5. It reflects a male, age 45, for a whole life policy. I really just wanted to show how there's so little difference among the lines. In the beginning the 10-Zillmer Reserve stands out, but it is negative. For financial reporting purposes, they will hold mid-terminal reserves plus unearned premium reserves, and they will interpolate that. They'll flow that at zero either before or

after they interpolate for the mid-terminal reserve. Under the 10-Zillmer Reserve line, at the end at the end of 10 years, it is equal to the net level reserve. Think of it as a net level reserve less an acquisition loading that is amortized over 10 years. It's equal to the net level. The same thing happens to the 5-Zillmer Reserve. That comes together right around the five-year point. The net GAAP reserve is starting out close to zero and grading up smoothly, slightly under the net level reserve after 10 years. This is fairly illustrative, but I hope it gives you a better picture.

### JAPANESE SOLVENCY MARGINS

The solvency margin ratio is defined similarly to U.S. risk-based capital (RBC) ratios. You have an adjusted capital and surplus in the numerator. You have a risk-based capital amount in the denominator. The risk-based capital amount includes provisions for interest, insurance, asset, and management risks. The capital and surplus amounts vary. There is some inconsistency there in how companies are including them or putting a value on them. Capital and surplus might include amounts of questionable value. There have been various practices that have gone on in the past. We'll discuss the restrictions that are coming into play. One example would be there are some non-cash items that can be included in the solvency (the numerator). One would be the reserve less surrender value. Another might be subordinate debt that you can think of as borrowed money. If it's truly subordinate to policyholder claims, it can be included as a credit. The risk-based capital formula might not be inclusive of all risk, again, just because of the variations in the way balance sheets were set up.

When you relate some of these practices to those of the U.S., you would think that these ratios are a little less restrictive, or have historically been a little less restrictive. Effective in March 2000, regulators introduced some changes that are aimed at reducing these solvency margin ratios. These are some restrictions we'll talk about later. The M&A activity results in solvency ratios at around 600-800%. That's very similar to the U.S. in that you have the formula, and then you hold 200% of that. If you equate that to U.S. practices under RBC, it would be about 200-300% for some of the stronger companies.

### PROFIT DRIVERS

Typical profit drivers that are in Japan, versus some of the U.S. GAAP, are expense, mortality, and morbidity loadings. They will vary by age and by product. Sometimes they vary quite a bit. The interest margins are negative for some of these older products, as you can imagine, given current interest rates. There are 4-6% guaranteed rates in your reserve and 2% on your earnings rates. The products that are priced today are being priced somewhere in the neighborhood of 1.50-1.75% interest. Margins should be a little more reasonable going forward. Under U.S. GAAP you have your profit drivers of your premium loading, release of provisions for adverse deviation (PADs), DAC, some experience margins, and your non-deferrable expenses that are going to hit your bottom line. One of the walkaways here is that profit testing in Japan is really non-existent. That's changing as we move forward

and recognition of profit testing is rising. The products are typically not priced the way that they are in the U.S.

Chart 6 shows some patterns that might come about in the early years where there's some variation under the net level profits. There is obviously a loss in just setting up reserves. Under the net GAAP profits there is a little bit of fluctuation in the beginning, but they are moving smoothly over the future years. Under your Zillmer approaches, there is a little bit of profit release in the early years. However, you can see that it takes a little bit of a dip when having to set up more reserves to get to that net level piece at the end of year five or year 10, depending on which method you use. I'm sure if I put in a whole block of business, we'd see somewhat different patterns.

I want to move into some interesting areas to talk about the ongoing change or the future evolution of Japanese GAAP. There's quite a bit going on here, and quite a few good things. The asset valuation of financial instruments is moving closer to international standards. The requirement for net level reserves was set a few years ago by the Financial Supervisory Agency (FSA). At that time they didn't require it, but now there is a standard to move to net level reserves. They've recently expanded that to most life products and have recently asked all the companies to submit a plan to move from Zillmer reserves up to net level. Recognition of underfunded pension liabilities is an area that is getting more exposure. These are employer-funded pension plans, and there is more disclosure that's coming about. There are also strengthened solvency margins. There are restrictions that have been imposed to help make these margins more realistic. Tax effect accounting reflects timing differences. Prior to fiscal 2000, there was no recognition of timing differences, but now there are. This gets fairly complex, so we're going to leave that one.

#### ASSET-VALUE CHANGES

We have consolidated financials. Effective in fiscal year 1999, subsidiaries are no longer valued at cost. Prior to this you had some situations or practices that might arise if a parent had a subsidiary and they had an asset that had a market value less than a book. They might transfer that asset to the subsidiary since that subsidiary was not consolidated into the parent's balance sheet. The parent would set up a loan, which would be an asset, and the subsidiary would then have those assets. Because there was no consolidation, the loss is never shown. That will no longer occur. The loss does have to be shown, and I think that's a very good step as we move forward. The range of subsidiaries that can be consolidated has also expanded.

The regulators have some defined rules that state if you have the majority interest, or you have more than 40% voting rights, then you need to consolidate that subsidiary. They've also left open the ability for them to look at a parent/subsidiary relationship, and if they feel there's a strong operational dependence, that subsidiary or the parent might have to consolidate that subsidiary. Again, this is a good step moving forward to help make financials transparent.

Next, we move on to consolidated financials. There was annual reporting prior to fiscal year 2000. They will now move to semi-annual reporting. The solvency margin will now be disclosed. This is another good step in helping companies disclose what they're doing and helping regulators see that. There's a net asset test that the regulators require. It's a capital and surplus measure. It must be positive. They have to disclose that as well.

Finally, the revised accounting for financial instruments is a rather key change. This went into effect in fiscal year 2000. There was more in 2001. As I mentioned earlier, there is an option to delay moving to market-value accounting, and some of your stronger companies have already moved to that. Some of your weaker companies haven't. The invested assets are now categorized into one of three categories, similar to U.S. GAAP, and I think the big debate going on regarding the showing of market value of assets without a corresponding market value on the liabilities is a key area. What will happen if interest rates rise in Japan? The market value of your assets might decline.

The flip side is what if interest rates stay where they are? Under GAAP or purchase GAAP, your liabilities on a market-value basis are going to go up. Under U.S. GAAP they usually go down a little. There are some areas in which there's some good debate going on. Just as early as the fall of 1998, the long-term government bond was less than one percent. Rates haven't really risen that much for the last few years. I think the issue comes back to the interest gap. You have high guaranteed rates on your products. You have some low earnings rates. It's still an issue. However, the goal is to improve transparency of financials, and people in Japan and the regulators are recognizing it.

I mentioned the standard reserve a little earlier. They defined this as the net level. It was several years ago. The reserve interest rate will now be tied to the long-term government bond. Prior to this, it was tied to pricing. There'll be a difference. All the companies are required now to submit a plan, and the result of this could be increased capital requirements or contributions because of net level reserves. New operations might have some difficulty.

Then there are the pension benefits. They've historically been under-funded by most companies. They now must be reflected as a liability in the balance sheet. The income statement must show an expense for the pension accrual. Another key part is the disclosure of the plan benefits and the calculations. Again, companies are having to disclose what they're doing. Disclosure will go in the footnotes. One area that's real interesting is that the discount rates will now be tied to market fixed-income rates. Prior historical practices were to discount at 5.5%. There'll be some impact.

Now on to solvency margin improvements. Limits on subordinate debt included in the margin are that the subordinate debt must actually be to a policyholder claim.

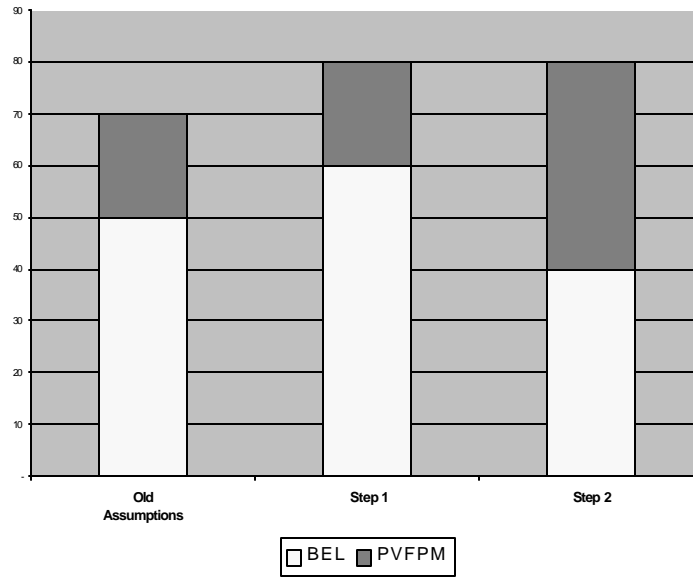


There were cases where instruments or measures would be defined as subordinate debt, and which they weren't truly subordinate to policyholder claims. So this can no longer be a credit in the solvency market. There's an elimination of life and non-life activities that have inflated capital in both organizations. An example would be how some life and non-life entities would share some stocks. There might be some sub debt between the two. These are no longer allowed. There is also the prohibition of using derivatives in calculating solvency margins. An example would be how they might enter into a contract at the end of a fiscal year. Fiscal years span April 1 to March 31. Early in the next year you could possibly reverse that activity so that it would result in a higher solvency margin ratio. Finally, there's some increased required capital related to asset/liability mismatch.

In conclusion, I think we're seeing some positive steps going on in Japan. There's a strengthening of the asset and liability valuations in the standards, and they are in progress. There's increased attention on capital management. More than anything, the life insurance accounting is changing to move closer to the international standards in order to be more competitive.

Chart 1

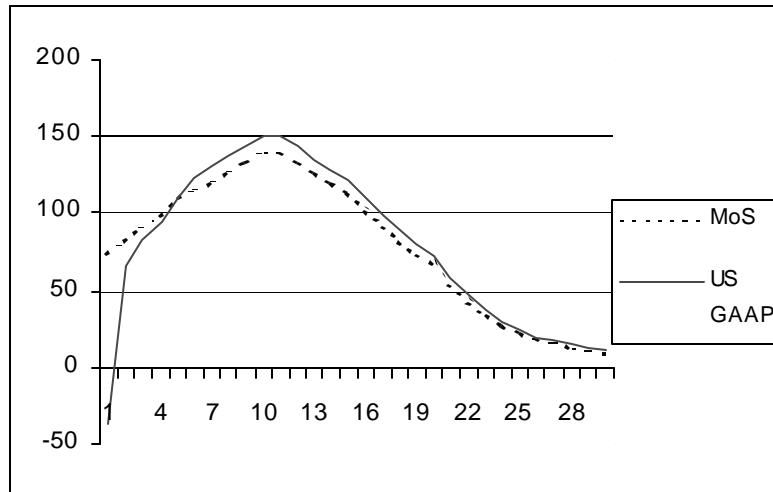
**Assumptions changes - MOS Reserves**



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Chart 2

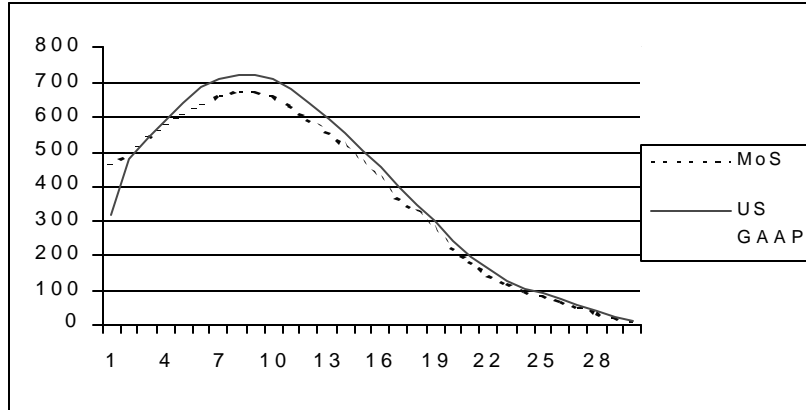
**Graphical Earnings Patterns**  
1 Year Issue (Illustrative)



21

Chart 3

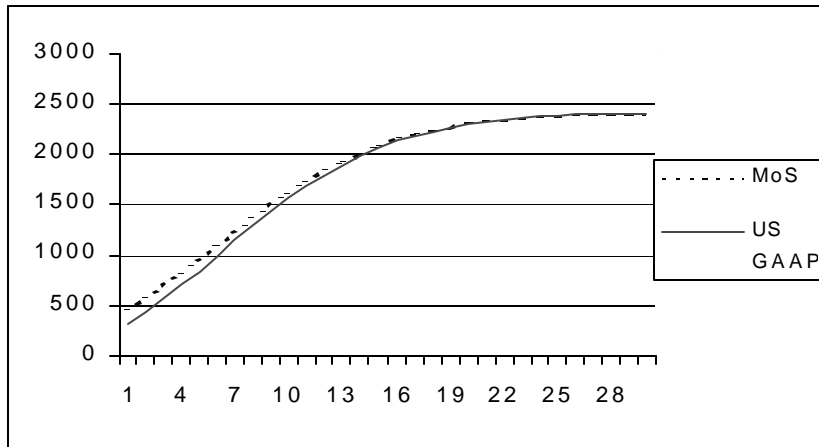
### Graphical Earnings Patterns 5 Years Inforce (Illustrative)



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Chart 4

### Graphical Earnings Patterns 5 Years Inforce + New Business (Illustrative)



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Chart 5

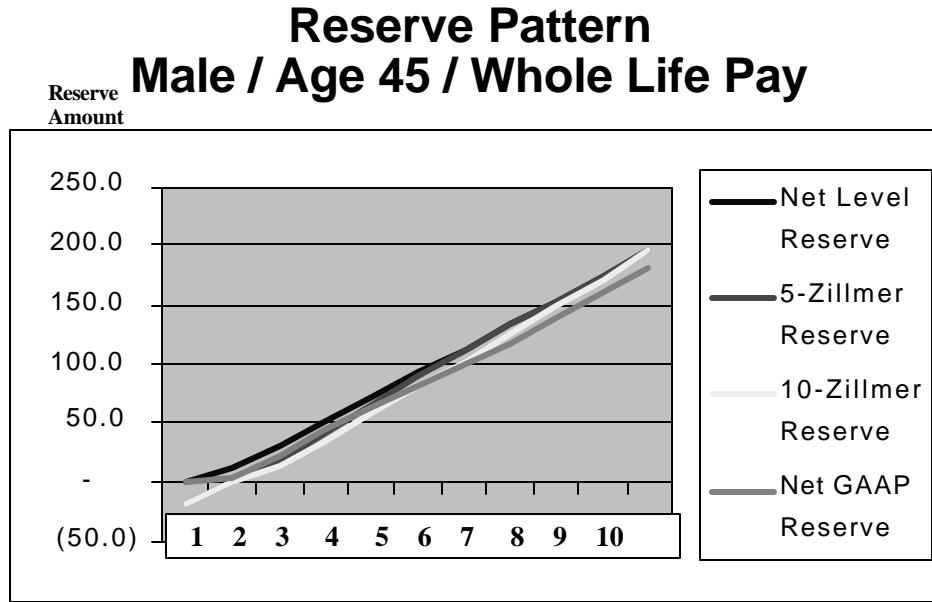


Chart 6

### Comparison of Earnings Patterns Male / Age 45 / Whole Life Pay

