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### GENERALLY ACCEPTED ACCOUNTING PRINCIPLES (GAAP) MARGINS FOR ADVERSE DEVIATION

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- o Review applicable American Academy of Actuaries financial reporting recommendations
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- o GAAP earnings impact of various methods for establishing margins for adverse deviation
- o Special considerations for interest-sensitive and lapsesensitive products

MR. DOUGLAS A. ECKLEY: The American Academy of Actuaries provides some formal guidance in Financial Reporting Recommendation 1 which covers GAAP methods and assumptions. Primarily, no profit should be recognized in proportion to premium unless the risk of adverse deviation is duly provided for meaning that margins for adverse deviation come first. But once they are set, it is appropriate to recognize some profit in proportion to premium. That has never been questioned for traditional products, but it is now coming under question with respect to excess interest products, namely universal life and annuities, and possibly variable life and variable universal life.

The American Academy of Actuaries then specifies various premium possibilities. (This all applies to traditional products only.) The most common situation is where the gross premium results in "normal profitability." In that case, the actuary can put in the full margin for adverse deviation, and the GAAP premium will come out below the gross premium. So, the normal case is to have a gross premium resulting in normal profitability and a full margin GAAP premium.

The next best case is to have a "Type-3" gross premium (Academy terminology." This exists if full margins are put into the GAAP premium, which then exceeds the gross premium. To resolve the situation, the actuary has to reduce the margins for adverse deviation

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until gross equals GAAP net. So then the gross premium and GAAP premium are equal but below "normal profitability" and "Type 3." The worst case is where the gross premium, in fact, results in a loss using best estimate assumptions, which would be used for GAAP. Below that is the actual gross premium, which results in a loss on the product. Those are the premium types, and those are the situations in which each premium is used.

Interpretation 1A to Recommendation 1 covers GAAP theory. It specifies three profit sources. First is the release of margins for adverse deviation. Second is the difference between actual and best estimate expected assumptions. And third is profit emerging in proportion to premium.

The Academy goes on to discipline the actuary in four ways. First, he must use an explicit approach to setting the assumptions, including the margins for adverse deviation. That is, he must look at each different assumption separately. Second, a reasonable balance between the margins for adverse deviation must be maintained. He cannot load up just the interest assumption and leave the others as best estimates. Third, the provisions for margin must be included first, and only if some gross premium remains can earnings be recognized in proportion to premium. Finally, losses cannot be deferred so that when the gross premium is less than the best estimate premium, a loss results at issue equal to the present value of the difference. These disciplines can be applied either by line of business or to each block within a line (which may leave some choice with respect to excess interest products). Taking universal life as an example of a block within the ordinary line of business, it would be up to the actuary whether to look at that by itself or in conjunction with the rest of the line of business. Again, Recommendation 1 doesn't really apply to excess interest products, so be your own judge.

Other interpretations provide some guidance in setting margins for adverse deviation. In Interpretation 1B, the Academy defines conservatism by describing what it is not. Margins which are added for adverse deviation should not result in a decrease in the net premium. Reserves should never be less than they would be if no margins were added in.

So, there are the two restrictions on adding margins for adverse deviation. The idea is to be conservative, so you cannot decrease the valuation premium, and reserves cannot be less than they would be otherwise. Other interpretations provide general but not specific guidance. For example, mortality and morbidity need not cover catastrophic risks. Lapse rates may need to be reduced instead of increased to meet the restrictions concerning reserves by duration. The interest margin should increase by duration, meaning the interest assumption probably decreases by duration. With guaranteed renewable business, lower margins are appropriate because of possibly increasing gross premiums.

In conclusion, the Academy provides general guidance but not specific instructions for setting margins for adverse deviation. Is this good or

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bad? Well, it results in more work and probably more responsibility for the actuary, but at least it is an interesting contrast to the situation in statutory reserving.

MR. NORMAN E. HILL: The concept of margin for adverse deviations had its origin in 1971 when the first draft of the audit guide was prepared by the accounting profession and distributed to the industry. There were at least two groups in the insurance industry which were strongly opposed to the audit guide. One group was opposed to it because it thought there were insufficient brakes on the liberality of actuarial assumptions for reserves. In other words, assumptions were supposed to be realistic; realistic meant less conservative than statutory. People said there were no controls on any managements that might tend to abuse assumptions or make assumptions unduly liberal to overstate earnings. There was another group in the industry which hoped to see GAAP come to an end and didn't want GAAP in any form. Both of these groups had some friendly ears at the Securities and Exchange Commission (SEC). So as a result, the accounting profession went back to the drawing board and came up with a revised draft of the audit guide. This revised draft contained requirements for margins for adverse deviations. They have been with us ever since the final version of the audit guide in 1973. But one of the problems is that the exact meaning of margins for adverse deviations may not have been as clearly defined as we would all like.

In my opinion, the basic question is whether margins should or must be quantified. In other words, must there be additional margins on top of a base set of actuarial assumptions for reserves? Given the historical background and the original concern, it is possible that margins for adverse deviation really represent a statement of a required attitude on the part of actuaries -- an attitude of reasonable conservatism when they set their assumptions for long-term contracts (which predominate in the insurance industry).

There is also the question of whether the actuary can use gross premium assumptions when he sets his reserves. Are gross premium pricing assumptions likely to provide these margins for adverse deviation? Of course, this depends on what the assumptions are. Actuarial pronouncements since then have made it clear that you don't have to have the same assumptions for reserves as you do for gross premiums. It is likely that gross premium assumptions are not going to have any margins for adverse deviation, or at least less likely to have them. Gross premium assumptions are more likely to be the most realistic; maybe in some cases even more aggressive than that. So, probably gross premium assumptions should not always be considered the place to look when you are trying to come up with margins.

If your approach is to quantify margins for adverse deviations, the place to start would be to establish a most likely set of assumptions for reserves. To say what is the most likely is hard to define. I would argue that the most likely means it is based on what the actuary knows today; what he thinks is most likely to be the long-term trend in the future if current trends continue and if nothing too adverse takes place relative to the basic or underlying forward trend. So with the most

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likely set of assumptions serving as your base, the next step would be to determine a likely range for these assumptions. For example, a range such that the actuary is 75 percent or more certain that actual future emerging experience will fall within that range. In 1981, the Society published a monograph on margins for adverse deviations. The monograph contained the statement that to be 80 percent or more certain that the emerging experience will fall within the range is a goal to shoot for. The main point is that, whether it is 75 percent or 80 percent or some related percentage, it is not necessary for the actuary to shoot for being 95 percent or 99 percent certain that he is going to be right. He doesn't have to be absolutely certain, but he should be quite certain.

If the actuary is 75 percent or so certain that interest rates will not vary from his base more than, say, 2 percentage points, and he thinks 10 percent is most likely, this would mean a range of 8-12 percent. The 1981 monograph gave some guidance that indicated an 11 percent variation might be appropriate. If that is the case and that is what the actuary believes, then the range would be 11 to 9 percent around the 10 percent, as opposed to 12 or 8 percent.

Once the actuary decides on this range, the next step is to take a look at the return on assets that the company is likely to earn over the next few years. To what extent is it locked in? Are they locked into 10 percent today, and if so, for how long? Even if you are locked in for a considerable period, the actuary has to be concerned about reinvestment. There are going to be new premiums coming in and new cash flow that has to be invested. If he can measure, even approximately, what part of his total required interest on reserves comes from the locked-in part and what part is going to have to be derived from future reinvestments, and he can derive the mix of those two sources each year for a number of years, it might be appropriate to reduce the next duration assumption, say, by .1 percent. This would mean that the second duration assumption might be 9.9 percent instead of 10 percent. If you take it one step further to duration three and look at the required interest portion for reinvestment versus what's already locked-in, that might call for an interest assumption of 9.8 percent; that is a reduction of .2 percent. The tendency would be to increase your margins for adverse deviation at later durations more so than earlier durations.

Generally, margins should be greater for later durations than current durations. It is harder to make projections ten or twenty years from now than it is one or two years from now. There are always exceptions to a general rule. You may have a completely new product -- revertible term, for example. Completely new products may have the potential for extreme volatility over the short term. But, in general, margins for conservatism ought to be greater far down the road than they are in the next couple of durations.

On setting margins for adverse deviations and other assumptions such as mortality, lapses and so on, you can follow similar approaches. It is true that by its nature, mortality experience can fluctuate up or down over short periods. This is due strictly to statistical fluctuation. The

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argument could be made that your percentage margins for mortality would be greater than for other assumptions. But I think you can argue against that statement also, because we are talking about margins for adverse deviation, not margins for adverse fluctuation. Margins for adverse deviation seem to cover the case where there is some basic deterioration in the underlying experience base not just change fluctuations over quarters or over one-year periods. As a matter of fact, the 1981 monograph providing this guidance suggested 1.5 percent adverse deviation for mortality. In other words, less of a percentage deviation than for the interest assumption. The base case mortality assumptions would be multiplied by either 1.015 or 0.985, at least based on the guidance of the monograph.

You cannot set margins in a vacuum; you have to consider the total picture. You don't want to use your margins and set them up in early durations in a way that serves to increase your earnings in early durations rather than deferring them. In the early durations of a block of business, your deferred acquisition costs (DACs) will normally exceed your reserves. So, if your margins are set in such a way that you increase the absolute value of net reserves, you may be in the unfortunate situation of overstating your early duration net assets and earnings, which, of course, is contrary to the spirit of adverse deviations in the first place. You want to be cautious in setting margins for adverse deviations in lapse assumptions because they are trickier than mortality or interest. You don't want to set margins for some durations without taking due account of other durations. Setting margins in some cases may reduce your reserves when you want to increase them.

I do not believe that all margins for adverse deviation have to be quantified. In other words, they do not absolutely have to be specified deltas. Today, there are widely used techniques in the industry that effectively provide margins for adverse deviation. Maybe they weren't set on as scientific a basis as they should have been set, but to some extent they provide protection. Most companies provide some grading downward of long-term interest assumptions on blocks of business. Today you see combinations of 11 percent graded to 7 percent, or 10 percent graded to 8 percent. And six to eight years ago, 7 percent graded to 4.5 percent was more common. But the idea of grading is still there. Not as many companies also provide inflation in future unit maintenance costs, which can also provide effective margins for adverse deviations. In other words, if you have \$35 to \$40 per policy initial costs per unit, and then they increase in your formulas by  $x$  percent per year; that effectively can also provide some margin.

Another widely used approach in the industry, which provides the same type of margin for adverse deviation, is in your amortization approach to DACs. Probably the majority of companies either use the factor method for writing off their acquisition expense, or they use some type of dynamic method for adjusting worksheet results to actual persistency each year. In either method, effectively you are saying that your assumptions have a certain pattern of lapse each year, but you are going to adjust that by some type of actual-to-expected ratio (actual lapses divided by expected lapses). It is true that if that ratio is more

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than 100 percent, in other words, if you have good lapse experience, you may be writing off acquisition expense more slowly than you had originally intended. But in terms of the experience over the last ten or twelve years that GAAP has been with us and especially the way our economy has become so difficult to predict, I think the result of including these factor methods or dynamic methods, by and large, has been that acquisition costs have been written off faster than originally had been intended. This probably has been good.

Of course, the degree of any margins for adverse deviation, whether they are implicit or explicit, is going to vary by the type of business in question. Participating business needs less margin for adverse deviations than nonparticipating business because the company has the right to vary dividends in the event of adverse experience. Similarly, indeterminate premium policies need less margin because the company can change premiums. It may be difficult to do so because of competitive pressures, but it still can happen. Guaranteed renewable health policies can have their premiums changed in the event of adverse morbidity experience. And, of course, there are policies that are mass-cancelable, which can either have premiums change or can be written off entirely if experience gets that bad.

So, in conclusion, however you view the technique for computing margins for adverse deviation, it is good that those margins are a part of the audit guide. Maybe they should have been defined more precisely, but they serve a useful function. They are a constant reminder to the actuary of his long-term responsibility, the fact that he is dealing with long-term contracts and that on our profession, more than any other profession, falls the responsibility for making sure that we have some degree of soundness in the financial results which we are putting together.

MR. KRISS CLONINGER III: Provisions for adverse deviation should do two things. First, these provisions should increase valuation net premiums over the amount that they would be if they were determined on the basis of most likely assumptions. Second, they should produce a GAAP net liability higher than the net liability calculated using most likely assumptions. So, unless an adjustment to your most likely assumptions satisfies both of those conditions, that adjustment is not a provision for adverse deviation. GAAP net liability means the excess benefit reserve over the unamortized DAC.

Sometimes it is possible for an assumption change to result in an increased benefit reserve, and you think that is a provision for adverse deviation. But on the other side of the balance sheet, you have also affected the DAC. You have increased it so that the net balance is decreased. Again, that is not a provision for adverse deviation. You can measure the provision for adverse deviation contained in the GAAP net liability by looking at the difference in the GAAP net liability based on most likely assumptions and the one you use based on adjusted assumptions. How should that difference in the reserve that contains provisions for adverse deviation and the one that does not progress over time? That question has not received much attention in the literature, but at least on a level premium policy, that provision should

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gradually increase over time and then decrease to zero at the end of the contract period. When you are done, you don't want any residual reserve.

Why should the change in the reserve for adverse deviation be gradual? Precipitous changes in GAAP earnings are seldom interpreted as being realistic. For example, suppose that sometime ago, I believed the scientists who predicted a great California earthquake would occur in 1984, and I loaded up my mortality assumptions to provide for that. The earthquake didn't happen. Earnings were great because I released a lot of provision for the adverse deviation, but now the company president has invited me for lunch with the stock analyst next week. You can get the picture as to what will happen on that.

Before I comment on the effect of specific assumptions, let me restate two caveats. First, it is probably not necessary that each particular assumption adjustment result in an increased net liability. The requirement that the net liability increase is probably one that can be satisfied in the aggregate. Next, the provisions for adverse deviation that you make in the aggregate should not be so large that they cause your valuation net premium to exceed your gross.

For traditional products with guaranteed cash values, the risk of adverse deviation was generally provided for by grading down interest rates. Since interest rates have not decreased over time (not at least since the audit guide was implemented), most companies were realizing significant GAAP profits from the releases of those margins before they started their internal replacement programs and their interest-sensitive products.

For the newer interest-sensitive products, there are two factors we need to consider with respect to interest other than C-3 risk. First, there is the risk that account values will not always grow with current credited rates. Some might consider this a hope rather than a risk, but it's still something that needs to be considered as you go into the future. Second, there is also the risk that the spread between your earned interest and credited interest rate may diminish as the world becomes even more competitive. Thus, it seems appropriate that on interest-sensitive products, you might need to grade down both the growth of funds rate and the spread between earned credit rate. Obviously providing for these risks in that fashion will decrease the amount of reported profit as premiums are collected and will increase those provisions that will be released later on.

Lapse assumptions can be tricky. You definitely have to watch the net liability. You may end up with an increase in the benefit reserves by increasing lapses, but it is just as likely that you are going to increase DAC even more in the early years. That is not the right answer if it ends up decreasing the net liability. Typically, it has been common practice to provide for lower than expected lapse rates in the early years, say on cash-value products, and perhaps higher than expected lapse rates in later years. That might work for cash-value insurance, but you have to watch that kind of a pattern on term or health insurance where there is not a significant cash value involved. Higher

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than expected lapse assumptions may not work on those types of products.

To provide for adverse deviation in mortality or morbidity costs, it seems like the standard industry practice continues to be the percentage load. This results in increasing the net value premium and also the reserve. Of course, that reallocates the profit recognition from premium to the release of the provision for adverse deviation. Some companies try to sell us the flat extra type of provisions or loadings in mortality costs for adverse deviation because they increase the net valuation premium. But, since the flat extra provision has little effect on the net liability, usually it is not deemed an appropriate provision for adverse deviation. For nontraditional products, it may be appropriate to anticipate that we will have decreases in future mortality charges that may exceed the projected improvement in experience mortality rates. I haven't yet seen a company do this, but I think it is something that companies ought to be thinking about.

With respect to future expense rates, it is appropriate to maintain reasonable internal consistency between the assumptions as to future earned rates and future inflation rates. But one of my pet peeves is seeing maintenance expenses that end up being \$800 per \$1,000 of coverage. The Academy recommendations say that we are allowed to exercise some judgment and to consider the effect of future new business as well as a net inflation rate in determining what our maintenance expense provision is going to be. Some of those provisions are excessive and unreasonable.

Nontraditional products may present some other special challenges in making reasonable provisions for adverse deviation. Of particular concern to me are provisions, as on vanishing premium policies, that are so substantial that you cause premiums to reappear. Another scenario is an interest-sensitive product, such as universal life, where provisions are so large that we end up assuming the policy is going to terminate prior to the normal maturity period and force the amortization of the DAC to conform to that period. Those are questions that I have not developed any answers to, but they are issues that those of us, who write these types of products, are going to have to face.

My comments on internal replacement programs and appropriate margins under those programs are related to internal replacement programs for universal-life-type policies -- the family of interest-sensitive products that have newly emerged. Internal replacement programs also occur in health insurance where policies are upgraded to plans with higher premiums and benefits. These programs also have been seen in the annuity market where contract holders find it economically beneficial to roll an existing contract to one that provides a higher credited rate, even though they have to pay the surrender charge.

To address appropriate margins, you need to focus on what's going on in the accounting literature, because the audit guide model is no longer or is unlikely to be deemed entirely appropriate in accounting for universal-life-type products. The Academy proposed and the American Institute of Certified Public Accountants (AICPA) has considered two



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alternative accounting models. One is called the deposit approach, and the other is called the composite approach. Both approaches require that larger than normal provisions for adverse deviation be included in the valuation assumptions with the objective of reducing the amount of profit that is reported relative to the premium collection function. These organizations want more of the profits to emerge as the risk of adverse deviation is released.

Under the deposit approach, the provisions would be large enough to produce a valuation net premium that is equal to the gross. Consequently, you would have no profit associated with the premium collection process.

Under the composite approach, profits are to be recognized in proportion to the company's risks and functions under the contract. Of course, risks and functions are the typical investment, mortality, policy terminations, expenses, and premium collection items rolled off the meter wheel. Under the composite method, you first make your normal provisions for adverse deviation in all your assumptions. Then you make additional provisions in each assumption that will allow the profits emerging when those additional provisions are released to be recognized "in proportion to the relative significance of those risks and functions under the contract." Any profit that remains after those extra provisions are incorporated in the valuation assumptions will emerge, of course, in proportion to premium revenues. Anything you didn't load up in your assumptions, represented by the excess of gross premium over the net premium, will be recognized in relation to premium.

However, "in the absence of evidence to the contrary, it should be presumed that premium collection is not a significant function under the contract." The portion of the total profit that should be recognized in relation to premium is presumably less than those proportions that would be recognized related to the other risks and functions.

There is also a provision, in the Issues paper that has been submitted to the Financial Accounting Standards Board (FASB), that indicates actual emerging experience should be considered in evaluating the continued reasonableness of assumptions, and that prospective adjustments to assumptions should be made as necessary to maintain a consistent and reasonable pattern of profit recognition. Since a significant portion of the total profit will emerge as provisions for adverse deviation are released, if you have a prospective revision to assumptions, the revision will have to reflect provisions for adverse deviations that are reasonably consistent with those incorporated in the original assumption in order to satisfy that requirement. In other words, if you decide you are going to prospectively recalculate, you could change everything and end up with a profit pattern that is going to report profits significantly earlier under the revised assumptions than it would have under the original composite assumptions. That result would be deemed inappropriate under the Issues paper.

Another principle that impacts the provision for adverse deviation on internal replacement contracts is the one pertaining to profit recognition on lump-sum premiums. The expected profits that can be recognized on

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lump-sum premiums are supposed to be limited to those that would be recognized if level premiums were paid for twenty years for the guaranteed death benefits under the contract and the balance of the profits which were supposed to be recognized as the provisions for adverse deviation were released.

What are the special characteristics of policies written under internal replacement programs that might cause us to make different assumptions than we would for a regular new issue of a universal-life-type product? First and foremost, policies written under internal replacement programs have some prior experience associated with them. There is some history as to mortality and persistency experience on those contracts and the investment yield rates on assets supporting the reserves on those policies. That experience should at least be considered when setting valuation assumptions and establishing provisions for adverse deviation.

Another special characteristic of an internal replacement block is that there is usually a residual cost associated with a replaced policy, that is, an unamortized DAC from the old policy adjusted for certain other items. That net cost can be carried forward so no gain or loss is associated with the replacement transaction, unless you get yourself into a loss recognition situation. In my experience, a residual cost, which is being carried forward combined with additional acquisition costs incurred in conjunction with the replacement transaction, is frequently as large as the acquisition cost incurred on a new issue. Thus, it appears that the additional provisions for adverse deviation, which you would have to build into the valuation assumptions for internal replacements, might be less than those for a new issue. You don't want your valuation premium to exceed your gross. If you have more deferrable costs to recover, you need to store away less in the form of future adverse deviations in your valuation assumptions. That is just another way of saying that future expected profits might be lower on internal replacement business because some view the additional provisions for adverse deviation as simply deferred expected profits. Let me emphasize that I'm talking about financial statement profits rather than economic profits as represented by the future cash flows under the products. In many cases, the economic profits of retaining business by internally replacing previously written business may be greater than those for pure new business.

The investment yield assumption should be influenced by the fact that the internal replacement block generated significant amounts of existing invested assets that have determinable yields. If those yields are less than new money rates, which they frequently are in today's environment, the assumed earned rate needs to reflect that situation. And, that would be true whether or not the company considers actual investment yields in determining credited interest rates for that block. The good news is that the yield rates on assets allocated to the internal replacement block may not be as low as the portfolio average because, typically, policy loans are paid off and the overall weighted average yield may increase in conjunction with the internal replacement.

The investment yield assumption may also be influenced by the fact that, at least to some extent, existing cash values may be rolled into

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the new contracts. In many situations, less new money will be received in the future. Thus, the need to provide for future potential declines in new-money interest rates may have less effect on internal replacement contracts than on regular new issues. Also, receiving more premium up-front will insulate you from the need to provide for adverse deviation in future premium patterns. You have more of your money up front, so you don't have to worry about them paying you in the future.

Mortality and persistency assumptions should also be influenced by actual prior experience to some extent. Because the block is "seasoned," depending on the average issue age of the rolled policy, the effective underwriting selection will have diminished unless new evidence is obtained on increased net amounts of risk. The future persistency rates on the internal replacement block are likely to be at least as high as those realized on the traditional block from which the internal replacements were generated. This assertion may not prove true if the tax treatment of the inside buildups of the cash values change, but I haven't seen any companies factoring that into the picture at this point.

Up to now, I have been talking as if assumptions would be set separately for internally replaced policies and pure new business. Clearly, that's not the case in practice. Most companies are developing blended assumptions that reflect the expectations on a blended basis both for the internal replacement business and the pure new business. Using blended assumptions represents a mix of the two blocks. You need to monitor the mix that you are actually getting and consider prospective adjustments if that mix substantially changes in the future; i.e., after the early years of the new product, when most of the internal replacements are going to occur.

I find the emphasis on characterizing profits as releases for the provision of adverse deviation somewhat distasteful. I can just see an internal replacement life insurance company issuing a press release that says "earnings set a new record because the release of provisions for adverse deviation were at an all time high." In my judgment, an accounting model that uses fund balances as benefit reserves and amortizes costs against a different revenue stream of emerging margins would be far more rational in most cases, at least for nonactuaries. This type of model that relies on the measurement of sources of earnings may produce results that are reasonably consistent with either the deposit methodology or the composite methodology depending on how you net expense loads in the contract and recognize surrender gains and the like.

MR. ECKLEY: The AICPA and the Academy have taken a stand on accounting for excess interest products (annuities and universal life), and that stand is embodied in an Issues paper now before the FASB. Also, that stand results in a deferral of profit relative to the normal incidence for traditional business. So, we should all try to understand and evaluate the recommendation before the FASB.

The AICPA audit guide contains reasoning which applies to traditional products; that is what we are departing from. Writers of the audit

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guide considered three revenue recognition possibilities: at completion of contract; at sale; and during the life of a contract. They chose during the life of a contract meaning profits are recognized during the life of the contract. Having decided that, the AICPA considered five possible functions or services which profits might be recognized in proportion to: (1) in proportion to premium collections, which would result in level profits for most traditional contracts; (2) in proportion to costs incurred, which due to the heavy start up costs inherent in life insurance, would result in most profits emerging right up front at sale; (3) in proportion to invested funds, which would normally result in increasing profits; (4) in proportion to net amount at risk (either multiplying by the cost of insurance or not), which might result in decreasing profits; and (5) in proportion to the amount of insurance in force, which with most products, would be a level profit recognition.

The AICPA decided that none of those were predominant and, therefore, defaulted to recognizing profits as a level percentage of premium. However, there was one function or service which they did not consider in these five. It was so important that it was considered all by itself, and it was also so important that it had to be allowed for fully before any of the other profit recognition could occur. This was the function of assuming risks of adverse deviation.

So, that is how the AICPA arrived at the conclusion that the margins for adverse deviation should be included in reserving. Once those margins are included, profits are realized as actual experience develops favorably to assumed experience, where assumed includes the margins for adverse deviation. In other words, profits are realized as the risks are released.

If all of the gross premium is not used up, the rest of the profit comes out as a level percentage of the gross premium. The AICPA went through all of this reasoning and then backed up a little and said that the remaining part of the premium emerging as profit rewards the selling effort. That is the real justification for having some profit emerge as a proportion of premium. Selling and premium collection are not the predominant service to the policyholder. The AICPA never said that. But, selling and premium collection are a predominant function from the point of view of the insurance enterprise. If we cannot collect premiums, we go out of existence. That point is forgotten in most of the GAAP discussions for excess interest products. The idea of having profit emerge in proportion to premium reflects selling effort. Universal life is a great product but it doesn't sell itself. As long as it has to be sold, and for that matter underwritten and delivered, some profit should be recognized as a proportion of premium.

The overriding consideration for excess interest products is that the reserving method must reflect the dynamics of the product. For universal life, factors applying to face amounts of insurance are out the window because there is no way they will ever reflect the fund values actually accumulating. There has to be some sort of dynamic recognition of the fund value. An approach where the reserves are equal to percentages of the fund accumulation suggests itself, at least to me.

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In the AICPA Issues paper now before the FASB, some other special considerations are pointed out. First is the guaranteed nature of excess interest products. The AICPA suggests that different accounting practices are called for because of the nonguaranteed nature. Second, premiums are flexible, at least for universal life. This suggests to the AICPA that profits in proportion to premiums are not called for. Third, again probably with universal life in mind, there is ongoing underwriting and investment management service.

Some simple accounting problems become paradoxical. How much income should be recognized in proportion to premium? With traditional products, after so many years of practice, this is probably not a hard question to answer. With excess interest products, it is very difficult. The AICPA suggests that not a significant amount should be recognized in proportion to premium. In fact, there is an explicit limit on the amount for lump-sum premiums. But if you stop and think, you might consider that the sales effort is even more important with excess interest products since there is not premium obligation. Maybe I should limit that to universal life. There is no obligation for the policyholder to pay premiums until he is on the point of lapse. To me, that means a sales effort is even more important. The policyholder has to be convinced that it is such a good product that he should willingly put money in it when he doesn't have to. That suggests that maybe even more profit should emerge in proportion to premium.

Which function or service predominates? The AICPA suggests that in absence of evidence to the contrary, the investment function predominates, and that also in the absence of evidence to the contrary, premium collection is not a significant function. The contrary view is that less risk is assumed with an excess interest product because if interest rates change, the crediting interest rate changes correspondingly, perhaps ignoring competitive considerations. The main selling point for universal life probably still is protection. People buy universal life insurance because it is life insurance, not because it is an investment vehicle. Someone could argue with that, so there are two sides to the question.

What level of margin for adverse deviation is appropriate? The AICPA concludes that a higher level of margin is called for since the main service is assumption of risk. The contrary view is that a lower level is called for because this is a nonguaranteed premium product. Whether it is an annuity or universal life, the interest rate can be changed. With universal life, the expense loads can be changed, and so on.

How should DACs be amortized? I include that because I have noticed recently that if, on universal life, reserves equal to the fund value are held, negative asset amortization is often called for in the earlier years. This means that the assets should increase; otherwise the company will experience losses early on. It may be that not all companies have considered that.

A reserving approach for universal life and also for flexible premium annuities, which might respond to these special considerations, would

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start with a profit run done on the actuary's best estimates of future premiums, future mortality, interest spreads, and so on. That profit run would assume that reserves equal full fund values. The next step would be to add margins for adverse deviation, just like the actuary would do with a traditional product, meaning similar levels of margins for adverse deviation to traditional products. Then the profit test would be rerun obtaining a new and lower percentage of premium profit margin. That would be leveled over all durations by adjusting the reserves, so they no longer equal the fund accumulation but equal some other number, at each duration. That other number would become a ratio with the fund accumulation, and those ratios year by year would become reserve factors.

The result of using these ratios, which would not be applied to amount of insurance but would be applied to the fund accumulation, would be level profits as a percentage of premium as long as experience conforms to the assumed. That approach would not be in conformance with the AICPA recommendation. It is a little hard to make it conform, but it can be done. I'll go through it again, this time making it conform to the AICPA recommendation. Start out with the best estimate profit run. Add margins for adverse deviation according to traditional product levels. Rerun the profit test, and instead of calculating reserves, add more margins to the interest spread. In the absence of evidence to the contrary, the interest spread is the one that should get the additional margins for adverse deviation according to the Issues paper. Rerun the profit test again and keep adjusting the interest spread until the product just breaks even. At that point, there is full margin for adverse deviation being provided for and the resulting zero gains and losses can be leveled so that, not only is the present value zero, but every duration has a zero book profit. Then, the reserves can be calculated as ratios of the "zero profit" reserves to the fund values.

One possible problem is that there is no analogy to the net valuation premium. There are probably other problems with it, but I am just suggesting this approach perhaps for discussion purposes.

MR. HILL: In the area of interest-sensitive products, I'm tempted to engage in a polemic. It is unfortunate that the AICPA in the issued recommendations to the FASB, are covering all interest-sensitive products from the gamut of annuities all the way to universal life, including fixed-premium universal life. To some extent, this was a "knee-jerk" reaction to the fact that the SEC had taken the accounting profession to task over a situation in regard to annuities alone. At least two prominent annuity writers were taking advantage of a loophole in the audit guide to engage in earning practices which were unrelated to the question of margins for adverse deviations.

I have some other comments on possible approaches for margins for adverse deviations consistent with the wording or lack of wording used in the latest AICPA proposal to the FASB. I would recommend that any actuary whose company has any interest-sensitive products, or intends to get into that market, read over that proposal carefully. The point was made that the composite method seems to call for a double dose of

## GAAP MARGINS FOR ADVERSE DEVIATION

margins for adverse deviation. What does that mean? One possibility might be that the company, which writes off its DAC on either the factor method or the dynamic method, is using some type of ratio of actual-to-expected in-force business at each duration to adjust its amortization schedule. You might take that one step further and adjust your amortization schedule by the ratio of actual-to-expected premium collections or actual-to-expected revenues. A problem is that universal life policies, for example, being shown as in force does not necessarily mean that those policies are paying anywhere near the originally expected level of premiums. So, if you could bring in some type of actual-to-expected ratio of premiums collected, that might be used to satisfy this requirement for additional margins for adverse deviations. And, you can refine what I just said. Your actual premium collections might be stated as moving average over several years or might just plain exclude any type of pour-ins or any large amounts of premiums collected. You might have a procedure where any collections in excess of a target premium, which was established at issue, might be excluded from this actual-to-expected ratio.

The proposal has a statement in it that premium collection by itself is not a significant function, or words to that effect. You might make a counter argument if the policyholder pays premiums somewhat in accordance with the original target. In other words, forget the pour-ins, but if the policyholder pays around 10 percent up or down of the target premiums originally set, his adherence to the target is in itself a significant release from the original risk that was inherent in the policy undertaken by the company. So, again we cannot come up with any hard and fast rules or approaches to cope with the whole question of margins for adverse deviations, but I hope we as actuaries can do two things: keep in mind that our long-term responsibility is for assumptions and that GAAP is supposed to represent a measure of management performance. So, we can fulfill both ends of the spectrum and perform both of these tasks.

There is also a mention in the AICPA proposal that profits should not emerge, on a universal life policy, in excess of the rate at which they would emerge if there was a twenty-payment premium computed as opposed to an ordinary life premium. The question of what is revenue has been blurred somewhat. When you compute a twenty-payment life premium, you may compute twenty premiums in your stream. You could argue that you could also compute into your revenue stream some type of excess interest earned on reserves. Maybe this excess interest would start to take place after the twenty years, or maybe it would start to take place during the first twenty years. In any event, there is some flexibility, and it is worth testing for different possible levels of this twenty-payment life premium in case this part of the proposal should ever be approved by the FASB.

