

PREMIUMS AND DIVIDENDS FOR INDIVIDUAL  
ORDINARY INSURANCE

1. What philosophy and techniques govern the determination of modern participating and nonparticipating premium rates and dividend scales?

MR. SAMUEL P. ADAMS: I am going to limit my part to the nonpar aspects of topic 1, at least for the moment.

Over the years actuaries have developed and described a number of techniques which can be used for the determination of nonpar rates. We can refer to the classical methods of Cammack, Jenkins, and Hoskins, which were further developed by C. O. and Bruce E. Shepherd, and the more recent methods of modern authors, such as Rosser, Anderson, Stein, and now Mr. Bragg. All these methods are based one way or another on the ancient truth that the present value of benefits, expenses, and margins must equal the present value of premiums.

Mr. Cammack disregarded lapses, whereas Mr. Jenkins took them into account. Mr. Hoskins took them into account for an initial period and disregarded them thereafter, using a method of calculation different from those of the two earlier authors. There was a long period of silence in the literature; then Mr. Rosser reopened the subject with a different calculation method with some very helpful by-products. Mr. Anderson introduced the concept of a rate of return on surplus invested in new business different from the rate earned on assets and expressed indirect expenses as a percentage of the present value of agent's commissions. He also used a rate of return on investment in agency plant different from the rate earned on assets and took specific account of the cost of reinsurance. Mr. Stein brought in further ideas concerning the cost of reinsurance with considerable emphasis on average policy size. He then developed another method of calculation with valuable by-products. Mr. Bragg now develops the idea of determining a premium rate which for total business issued would produce a maximum margin to be split into first-year commissions and profit for the company.

All of these present a variety of techniques and facilities for implementing a variety of philosophies. Indeed, it seems that Mr. Anderson's method and Mr. Bragg's method have been created primarily for the purpose of bringing in particular philosophies on how margins should be established.

Obviously, one of the goals of a stock company should be to make a profit; it is important to adopt a rate-making philosophy which recognizes

the profit motive. This is true whether one adopts a relatively sophisticated philosophy, such as those propounded by Mr. Anderson and Mr. Bragg, or one of the simpler methods of building in a profit factor.

Another sensible philosophy in the development of nonpar premiums is that under which premiums are set as low as will safely provide for the death and maturity benefits, expenses, and a reasonable profit and under which cash values are as close as legally and practically possible to the natural reserves which those premiums will accumulate after profit. This is contrary to a philosophy which would call for cash values inflated for net cost purposes and premiums that are necessarily inflated to provide for the artificially high cash values.

Another philosophical question is the period over which excess initial expenses should be amortized, for example, the life of the policy, the premium-paying period, or some shorter period. The shorter the better, it seems to me, particularly under those policies with higher-than-average termination rates. My company generally amortizes the excess initial expense over the shorter of the premium-paying period or the first twenty policy years.

The actuary can take his choice of one of these methods and philosophies, or he can concoct his own to suit the rate-making problem that he faces. However, choice of philosophy and methods is only part of the problem, possibly the easier part. Just as crucial and perhaps more difficult is the choice of the factors to be used in the premium formula that he adopts.

When one considers the interest assumption, it must be remembered that rates are presently very high but may be showing signs of leveling off. It seems inconceivable in view of the past that interest rates will stay at their present levels for a long period of time. If the interest assumption in the early policy years is taken as the rate on new investments, the actuary should allow for the possibility of a reduction after the first few policy years and provide for a more conservative rate at the later policy durations.

We have seen considerable mortality improvement in the past, but recent industry experience suggests a leveling-off of this rate of improvement. In fact, mortality rates recently experienced in the early policy years show signs of increasing. This may be due to greater competitive pressures on our underwriters or perhaps to the rising proportion of non-medical business. The latter has the effect of raising the over-all mortality on which we should base our premiums, since current nonmedical limits seem unrelated to the savings in expense versus the additional mortality. They have gone far beyond that. A reasonable approach would

be to determine premiums on the basis of current mortality at best and to project no improvement therein.

Lapse rates are also worthy of careful study. In our company, we have found considerable variation not only in the first-year but in renewal-year lapse rates by issue age, policy size, and especially by plan.

High lapse rates seem to be associated with young ages, small policies, low premium insurance, and the combinations of these things in particular. Term plans show renewal-year lapse rates two or three times as large as those under higher premium plans. The losses on lapse of term plans are considerable, even after the very early policy years; it seems clear that underestimation of lapse rates can have severe consequences.

In today's highly competitive atmosphere, I believe that careful analysis of term conversion experience will prove interesting and worthwhile. The study of conversion mortality experience for your own company will undoubtedly show that the conversion privilege is a substantial benefit, even after offsetting expense savings. Term conversion rates have to be studied along with the conversion mortality. In combining term plans that differ only by the length of the term, we found it helpful to determine the conversion rates not by policy year measured from date of issue but the reverse, policy year measured backward from the expiry of the conversion period. Conversion rates on level term were quite a bit higher than those for decreasing term and combine with per thousand conversion costs to produce a larger numerator in the premium formula and a smaller denominator (i.e., the present premium value of \$1 of annual premium). The combined effect is rather appreciable.

The expense question is probably the most difficult of all to answer with any satisfaction. Our company is fortunate in that we participate in the LOMA functional cost study program each year and produce a mass of functional cost data, which is very helpful in rate making, but there are still some problem areas, such as service, overhead, and selling expense. The service and overhead items do not seem to be particularly related to the number of policies or to the amount of insurance or of premium, and we are probably taking the easy way out when we spread these across the costs of the other functions. We have found it even more difficult to settle on the method of assessing selling expense, and, on a per policy basis, this is the largest item of all. If premiums are graded by size, the method of handling selling expense may have quite an effect on the difference between per thousand premiums for large and small policies. For example, in a policy fee structure, the assessment of selling expense on the per policy basis will produce a policy fee and basic premiums (for large and small policies) which are considerably higher and lower, re-

spectively, than those produced by assessment of it on the per thousand basis. For purposes of current rate calculations and profit studies, we finally decided to assess selling expense on the basis of first-year commissions, to which it seems to have some relation.

MR. RUSSELL E. MUNRO: My company is active only in Canada and thus subject to legislative and supervisory circumstances that differ from those applicable to the companies with which most of the audience here is associated. However, I expect the competitive situation is just as keen. Ours is a stock company which writes both participating and non-participating business and operates with a branch-office marketing organization.

Our participating ordinary business is conducted along the traditional lines, but we also operate it in the district pay or debit system of premium collection and services.

We do not sell nonpar ordinary business on a debit basis and are quite active in group life, group health, and group annuities. About 80 per cent of our field staff form our district sales or debit division.

In recent years, about 95 per cent of our new issues on permanent plans has been in the participating field; for term insurance, however, some 75 or 80 per cent of our new issues has been in the nonparticipating field. Excluding term insurance additions, such as family-income types, permanent plans represent about 70 per cent of our total new insurance.

Naturally, our philosophy calls for profitable operation, a stock company must.

If we have a philosophy on premium rates, it is that, in the long run, participating policies will provide our policyowners with better net payments and net costs. Further, what is good for our policyholders is also good for our field force and also for our company.

A very large proportion—50 per cent of our new business—comes from our present policyholders, so that results must not favor either the old or new groups. We seek a steadily increasing sales volume which is well balanced between permanent and term insurance plans. We seek a good average premium, a good distribution of risks between juvenile and adult ages and between males and females, and a minimum drain on surplus.

There is competition between our own par and nonpar rates. As mentioned, only a very small proportion of our permanent insurance is written on a nonpar basis, and most of this is on the whole life plan. However, this nonpar plan is used to compare costs among companies, so it must be competitive; under our philosophy, the corresponding participating rate must produce even better net payments and net costs.

Our participating rate structure has been in effect now for some twelve years, so that it is perhaps only semimodern. Nonparticipating rates have been revised several times, more or less, but not always concurrently with changes in our dividend scale.

We use the band system of grading premiums by amount, and this is applicable to both types. We do not grade dividends by amount and do not use termination dividends.

In nonparticipating rates, our philosophy is one of conservatism. We assume mortality rates slightly higher than those currently being experienced. We use a double interest rate, with the earlier rate relatively conservative in comparison with the current new-money rates. Actual expenses come from our own studies. Contingency and profit margins are not specifically included in view of the conservative assumptions for the other factors. We plan to use withdrawal rates in some future premium scale; we currently use them in our asset shares.

Cash values for nonparticipating policies assume a higher interest rate than for our participating business. In either case, cash values are checked against the asset share calculations for representative plans and ages. Cash values are the same for all amount classes in either par or nonpar.

Our dividend scale is developed to produce a first-year dividend, even though by tradition we have always valued on a net-level premium basis. The participating premium less the dividend is usually less than the nonparticipating rate after about six or seven years, and the sum of the participating net premiums will be less than the sum of the corresponding nonpar premiums after about fourteen years.

Our dividend scale is classed as a steep scale, and this benefits the persisting policyholder and enables the company to distribute its divisible surplus to better advantage.

**MR. ROBERT E. HUNSTAD:** The comments that I will make relate both to the philosophy and techniques used in our particular mutual life insurance organization. Our basic approach to the pricing of individual insurance is centered on the use of asset shares. We have developed a rather sophisticated computer program to generate prospective asset shares for various combinations of ages and plans. The program is designed with sufficient flexibility that results can be adjusted by simple manual calculation rather than by rerunning the asset shares under different assumptions.

Our basic philosophy in pricing is to use current levels of mortality, expense, and interest. These levels would essentially reflect the experience we anticipate under our current dividend scale.

The really vital element in our pricing process is the contribution to surplus generated by each policy. This contribution has two main purposes: (1) To protect our current dividend scale against adverse fluctuations in asset values, mortality risks, or any of a number of contingencies to which life insurance operations are subject. This surplus would allow us to maintain a dividend scale until we had a sufficient opportunity to change it. (2) The surplus is used to protect the company when dividends can no longer be reduced (that is, dividends are not currently being paid).

One of the most important modern developments in pricing in the mutual companies has been attempts to scientifically determine the amount of surplus necessary. Mr. Trowbridge's paper presented last year provides an excellent base for such investigations. One practical problem of meeting surplus objectives is the application to individual plans of insurance or individual age groups. Is it proper for a mutual company to accept a lower surplus contribution for a certain plan or a certain age in comparison with the surplus contribution of other plans and ages? It would seem to me that this is proper if the total objective of the company is still met and if the point in question still contributed to surplus.

MR. ROBERT W. VOSE: I have a comment to make and a question for Mr. Adams.

The first concerns what might be an area of future consideration in setting premiums, that is, some way to measure the risk involved in the various products that you are pricing. We have done some work using Anderson's method, incorporating, in addition to the yield on surplus, a margin per \$1,000. The difference in margins under realistic and pessimistic assumptions gives some indication of the relative risk in various products.

My question is in the area of nonmedical. Your comments seem to imply that you feel that, if you priced your products on the basis of your medical business only, lower margins would result than those a non-medical basis would produce. I think the traditional technique is to price policies as if they were medical; when it comes to the question of non-medical limits, the impact of the mortality less the expense savings is the determining factor. I gather from your comments that you feel there is a loss on nonmedical business and that it is assessed across the board to the medical.

MR. ADAMS: Yes, that is essentially what I was trying to say. The last time we raised our nonmedical limits, I think we went too far—\$30,000 up through age thirty on a nonmedical basis. I simply cannot see how it can be justified on the basis of expense saved versus current nonmedical

mortality. So my feeling is that we should base our premiums on medical and nonmedical mortality experience combined and, similarly, on expense factors related to medical and nonmedical business combined.

MR. VOSE: We did some very crude tests recently and set our non-medical limits at about the level you are talking about. Perhaps we are blessed with a very high average size on our medical business, making it very expensive to underwrite. In any event, our limited tests and the level of our nonmedical mortality indicate that we can live with a price structure different from that you have described.

MR. RICHARD H. FITZPATRICK: I think there are two ways of considering the question of nonmedical limits.

One way is to consider, for each age group, nonmedical as a class versus medical as a class. On this basis, the expense savings associated with a large number of nonmedically underwritten policies for relatively small amounts will more than offset the additional claim costs on a relatively few large policies. This is particularly true at the younger issue ages and leads to nonmedical limits of \$30,000 or more at the juvenile ages.

The other way of looking at the question is to compare the cost (claim and expense) of a nonmedical policy for, say, \$30,000 with the corresponding cost for a medically underwritten policy for \$30,000. The nonmedical limit is established at that amount where the two costs are equal, the break-even point.

Of course, the nonmedical limits under both these approaches will depend on the relationship of nonmedical mortality to medical mortality and the relationship of nonmedical underwriting cost to medical underwriting cost. In addition, the limit under the class theory will depend upon the distribution of policies by amount up to and including the proposed nonmedical limit.

The basic question is whether one is looking for two broad classes which will produce about equal cost or for that amount where the expense savings just about equal the cost of the extra mortality. I would expect mutual companies to adopt the "class" approach and stock companies to adopt the "break-even" approach. However, this does not appear to be the case.

MR. ADAMS: I have a question on the possible relationship of policy loans to dividends. Would it be feasible to reduce the dividend for a policy on which there is a substantial loan?

CHAIRMAN ROBERT W. WALKER: Some of our policy loans are at 5 per cent and some at 6 per cent; most of our policies have no policy loans outstanding. It is conceivable that refinements in dividend scales could recognize policy loans.

MR. CHARLES A. YARDLEY: If we start reducing dividends only on the policies with 5 per cent loans, it seems to me that we would violate the New York and Massachusetts laws specifying a 5 per cent maximum loan interest rate. It also seems to me that, if we attempt to justify such a procedure by establishing a separate dividend class for policies with a special benefit, we would have to apply these reduced dividends to all policies that have the 5 per cent loan privilege in them, not just to those that have the loans on them. When you start doing that, you defeat your purpose, since most of your policies would get the reduced dividends.

MR. EARL S. MAGNUSON: Philosophically, I would like to know what the basic differences really are between a par and a nonpar policy. Historically, we have had to recognize certain differences because of the New York and other state laws. When you get down to the terms and the benefits for the policyholder, however, it seems that the only thing we are really doing is guaranteeing a premium rate in one case and in the other case offering a premium rate that varies slightly over the years.

Mr. Adams mentioned tying cash values to the asset shares, and Mr. Munro mentioned that their nonpar cash values are based on a higher interest rate than their par cash values.

Could not a product be designed in which everything is identical between the two in terms of cash values, benefits, surrender options, settlement options, and everything else, with the one difference being dividends to compensate for the difference in premiums?

MR. MUNRO: I think there are several companies in Canada doing what you have suggested. The same cash value tables apply to par as to nonpar.

MR. THOMAS K. PENNINGTON: There are a number of small companies that have done that on occasion, partly to reduce their printing and computational costs.

MR. ADAMS: One of the reasons, I think, that we have gone to two different rates after quite a long period of using the same rates on par and nonpar policies was the recognition several years ago that interest rates were on the rise. We felt that we wanted our nonpar rates to be as low as

we could make them in the face of higher interest rates and to have the cash values consistent, or at least fairly consistent, with the interest rates used in computing the premium. This was also a period of time when we were having trouble coming out with rising dividend scales on policies issued in the early thirties on the basis of a relatively high interest rate for reserves. We had difficulty making the dividend rates increase with duration because of the high guaranteed interest rate, and we wanted to avoid running into that situation again in years to come when the interest rates might fall.

We could see that, if we had had a  $2\frac{1}{2}$  per cent interest assumption, for example, on the old par policies, we would not have faced the problem that we did with the  $3\frac{1}{2}$  per cent rate.

MR. MUNRO: I might add another point. In the computation of non-participating premium rates, there has been a tendency in recent years to use a relatively high rate of interest effective for the first fifteen or twenty policy years followed by a lower rate thereafter. As a result, it is difficult to provide a value that is comparable to the participating cash value in twenty years' time.

MR. LYLE H. BARNHART: Do any of the companies represented here use different mortality factors in their dividends for term and permanent plans?

MR. REA B. HAYES: On our older policies, based on the 1941 CSO Table, we had different mortality factors for term and permanent plans. However, possibly because of selective underwriting, our recent mortality experience has been about the same for term and permanent, so that we do not distinguish in the mortality element.

MR. HUNSTAD: We have the same mortality charge in the dividend scale for the term as for the permanent, but we include in the term dividends a special charge for conversion and also for renewal.

CHAIRMAN WALKER: We also recognize the difference between term and permanent mortality with a higher mortality charge on term contracts.

2. What differences in philosophy or techniques arise in designing the following:
- a) Policies for only a segment of the general population, such as the segment that has refrained from smoking for a period?
  - b) A generalized income replacement policy with premiums and retirement benefits changing to reflect the policyowner's needs and income level?
  - b) Coverages that vary in accordance with the cost-of-living changes or the results of investment in equities?

MR. SAMUEL P. ADAMS: The construction of premiums for a policy designed for only a segment of the general population seems to me to call not so much for a difference in philosophy and technique as for careful consideration of the factors entering into the premium formula. On the assumption that assets behind the policy in question will be mingled and invested with other assets, nothing special should be expected in the way of interest rates. However, depending on the segment involved, it would be well to consider mortality, lapse, and possibly expense rates.

Premiums for a policy for nonsmokers presumably could be based on normal lapse and expense rates, but that would call for the use of a special mortality table. Incidentally, if an otherwise similar policy for both smokers and nonsmokers had previously been in existence, it would seem that premiums for it would need to be raised to cover the mortality that could be expected under it after nonsmokers stopped buying it.

An example of a policy for a population segment which could be expected to show abnormal lapse rates might be a policy sold through, or with the help of, home mortgage lenders on the lives of their borrowers. Mortgage cancellation coverages, in the experience of my company, produce higher than normal lapse rates, presumably because the borrowers often put them into the same category as their fire insurance and drop them when their homes are sold.

Unusual expenses may be anticipated when the population segment demands a policy with an unusual and administratively expensive feature—such as a stop-and-go provision in a policy for schoolteachers or a flexible premium arrangement for H.R. 10 prospects—or an unusual amount of service, such as seems to be required with policies on the lives of participants on pension plans.

MR. ROYAL A. JOHNSON: Regarding topic 2a, it seems to me that we are dealing with a subject that could create some concern among the state insurance departments with respect to the antidiscrimination laws. In particular, if you are able to establish a special policy for nonsmokers, it seems to me that you would be able to establish a special policy for any

other class (teachers, for example) in which mortality is definitely shown to be substantially better than that of the general population.

I would like to know if anyone has run into anything bearing on this problem or if anyone has any ideas on what the attitude of the states might be.

**CHAIRMAN ROBERT W. WALKER:** I know of no state department philosophy on this particular point, although we all know that, as far as the total population is concerned, we started by underwriting. This is the first break from accepting the whole population. Then medical underwriting was broken up into medical and nonmedical, substandard, and various other categories.

The question in my mind is how much fragmentation should be undertaken. Can you reconcile the savings to this group and the added expense to the remainder?

Prior to World War I, there were temperance policies for the non-drinker. These policies eventually disappeared, probably because of the difficulty of separating the abstainers from the nonabstainers.

**MR. ROBERT E. HUNSTAD:** Although the type of policy specified in the topic is relatively new, the life insurance industry has for many years offered policies for only a segment of the general population. Past distinctions have been primarily with respect to the mortality results expected. However, distinction by plan of insurance as to rates of lapse used in calculating premiums may also qualify in serving only a segment of the general population. I believe there are three criteria that any special plan should meet.

First of all, the distinguishing feature should be capable of measurement. We must have some facts on which to base the distinction. Second, these changed facts should have a significant impact on the cost. What might be termed "significant" is certainly open to discussion. Last, the balance of the population, the segment for which the special rate is not available, must have its price adjusted to reflect the changed facts applicable to that class.

Regarding topic 2*b*, I believe that policies which guarantee specific incomes via terminal funding endorsements may have a basic flaw, since under the typical endorsement a policyholder can select income at the company's price or he can elect to purchase it on the open market at a lower price. Therefore, this provision will cost the company money, unless its price is equal to the current market price. That is the only situation where they break even. Although it has certainly not been the trend

today, I wonder if companies should not begin to charge for this provision.

MR. ADAMS: The topic seems to contemplate a policy which perhaps would provide for replacement of income lost because of death or retirement but under which only the retirement benefits could be changed. On this assumption, the difference in technique and philosophy that would be called for in the determination of nonparticipating premiums would depend on the type and details of the mechanism by which the change in retirement benefits would be provided and on the nature of the guarantees.

One can visualize a conventional policy of the retirement type—with or without a life insurance benefit. To this would be added a provision for a side fund into which additional premiums, less a deduction to cover associated expenses, might accumulate at interest, the accumulations being payable on death or surrender and being used at retirement to provide additional income.

The deduction for expenses would need to cover any commissions, premium tax, and administrative expense. The question of commissions would be rather sticky, and, depending on the nature of the side fund, there could be some question of whether deposits paid into it would be subject to premium taxes. Handling of the side fund and deposits into it would create appreciable administrative expense over and above that associated with conventional premium collections.

Even though I am referring to a nonparticipating policy, I would be most reluctant to set up the side fund on the basis of a guaranteed interest rate with no provision for the allowance of extra interest as declared by the company. A long-term guarantee that would be both safe and competitive in a situation of this type just does not seem to be possible these days.

The determination of the factors to be applied at maturity to convert the side fund into income would present some additional questions. If the factors used for the same purpose under the basic policy are reasonably conservative, presumably they could also be applied appropriately to the side fund. It might also be stated in the policy or provided by company practice that, if more favorable, single-premium annuity rates prevailing at the time of retirement would be used instead.

MR. RUSSELL E. MUNRO: Regarding topic 2c, in Canada several companies have been selling individual ordinary insurance policies with an equities flavor. In some cases, the death benefit under the contract is the sum of the proceeds of a term to 65, either level or reducing, and the

net asset value of an equities fund. The division of the premium is usually disclosed for the first and renewal years. Cash and loan values are not usually available, but conversion rates are shown for conversion of the net asset values to paid-up life or endowment insurance benefits.

In another case, the death benefit is guaranteed at an amount equal to the sum of the premiums to be paid over the endowment period for the combined contract. Further, cash values are guaranteed but on a basis lower than the corresponding traditional endowment.

Still another plan splits the traditional whole life participating contract so that one-half is based on equities. The death benefit is a stated amount. Dividends purchase paid-up additions; and, since dividends may be negative, the total death benefit can be reduced.

Although my own company has been administering an equity-based fund in connection with the accumulation period under group pensions, we have for the present decided that an equity-based life contract is not for us. However, from personal discussions and discussions at meetings or workshops, it seems that many companies feel there is a market for such a product. There has been a definite reduction in the amount of the endowment business sold in recent years, and sales of the equity-based contracts could regain some of the higher premium income. Additional sources of income are provided for the agents, and such a product might help in recruiting. It is anticipated that the plan could counteract some of the effects of inflation. Because of all these points, it is necessary to educate the agents very carefully, to control all sales material, including growth estimates, from the head office and to use carefully worded safeguarding statements. The client must be sophisticated and not dependent upon the traditional guarantees.

It would seem that some of the contracts differ little from a mutual fund; and, although some have added a substantial life insurance element, I fear there may be difficulties in maintaining them as insurance contracts and in keeping the control and supervision of such contracts in the life insurance field. The tax position of the policyowner and the company is not too clear now and is even cloudier for the future. Dual licensing of agents is also presenting a problem.

The superintendent in the province of Alberta has issued a set of guidelines with respect to equity-based life insurance contracts.

**MR. CHARLES T. P. GALLOWAY:** Mr. H. R. Lawson has designed an equity-based contract. This policy differs from most other policies which involve investment in the company's separate fund in that it was designed specifically as an answer to the criticism that the guaranteed

death benefit and cash values of a regular policy are eroded by inflation. Except for the fact that it was to be "split-funded" by investing an amount equal to half the liability of the basic policy in the equity fund, it was in all other respects (where not inconsistent with the investments being made) to be a regular life insurance policy comparable to the typical straight life policy. It was intended as a long-term life insurance contract with a hedge against inflation and not as a means of competing against installment purchases of mutual funds with plan completion insurance. Most of the other plans being offered seem to involve a "buy term and invest the difference" structure which is designed to compete with the above-mentioned mutual fund product.

The amount invested in equities is adjusted annually at the beginning of each policy year to be equal to the current year's mean reserve through the device of adjusting the policy dividend by the amount necessary to accomplish this. The effect on the death benefit is smoothed out over the years by having the dividends, as so adjusted, used to purchase paid-up additions to the sum insured in the general accounts of the company. The other policies being offered generally deal with the investment portion as a sort of side fund added to the guaranteed benefits of the term policy to which it is attached.

MR. ADAMS: I assume that a coverage that varies with the cost of living means, as far as life insurance is concerned, a policy under which both premiums and death benefits vary. A policy under which the death benefit, but not the premium, varies would not seem to me to be proper; in my judgment this would constitute insurance not only against death but also against an increase in the cost of living. I think that such a policy would make considerably more sense to all concerned if the premium varied in the same manner as the death benefit. Despite all this, at least one company has announced a policy under which the death benefit, but not the premiums, depends on the cost of living. It is interesting to note, however, that the variation is subject to a rather restrictive limitation on both time and amount.

If the variation in death benefit is controlled by the variation in, say, the consumer price index, it does not seem that antiselection could be too large a factor. However, a fair amount of extra administrative expense could be anticipated, especially if the premium goes up at the same time and even more if a permanent type of policy with cash values is involved. The latter thought requires the rather precarious assumption that some practical method of handling cash values under the Standard Nonforfeiture Law could be found.

With respect to coverages that vary in accordance with the results of equity investments, it seems that a variable annuity is perhaps the most realistic example. Here the main problem seems to be not so much determination of premiums as such as the determination of how much of the expense charge permitted by the SEC can be spent for various types of expenses and whether these amounts will do the job. The philosophy seems to be one of rough justice and the technique one of approximation.

**MR. KENNETH G. MURDEN:** My own company, which has its head office in Amsterdam, has been for the last two years selling a policy in the Netherlands based on equity holdings.

This can be any of the main life or other policies. It differs from the normal policy in that both the premium and the sum insured are expressed in units and not in guilders.

The amount of premium and the amount paid out are related to an index based on a common stock fund in which the reserve of the policy is invested. A net premium calculated on a 3 per cent interest rate is paid into the fund.

Because of the inherent interest assumption, the number of units automatically increases each year by 3 per cent, so that, if the performance of the fund is equal to 3 per cent, the unit value remains constant.

In addition, the fund exceeds the reserve of the policy by an excess amount paid into it from the general funds of the company. This is virtually an investment in the equity sector of funds available from the guilder sector.

This excess fluctuates, among other things, with the mortality results of the equity policies. This means that the company is underwriting the mortality risk on an equity basis.

There is a difference in philosophy in both participation and selling. Unlike the formal participating policy in the Netherlands, where a share is given to the policyholder of the interest, mortality, and expense profits of the company, the unit policy shares wholly in investment gains and losses but not in profits or losses in mortality and expenses.

On the other hand, the participating policy has guaranteed minimum benefits which are not provided in the unit policy.

On the selling side, there has been a major change in not giving the agent a large commission in the first year but a smaller percentage of each premium. As a consequence, his commission will also vary with the performance of the equity fund.

This smaller percentage is initially not so attractive to the agent. Sales of this policy have therefore not been large, and it is sold mainly to a select market from which the original demand came.

In Canada, my company is looking into the equity type of policy but has not yet issued one; if we do, it may not be of the same format as the one we issue in the Netherlands.

The main emphasis in Canada has been toward the policy of a split-funding type, where part of the premium goes to an equity fund and part to pay for expenses and death coverage.

The big difference in this type of product in comparison with the normal policy is the emphasis on the split between the two parts of the policy. This is a continuation of the cry of the mutual fund salesman to buy term and invest the difference.

Perhaps the market is becoming a little more sophisticated and appreciates that a life insurance policy does have two parts—first, an investment content and, second, an insurance content. As the market becomes aware of this, it will obviously want the best investment performance possible.

I think we have, as a result, introduced a different level of participation. Until the present time the insurance companies had a nonparticipating policy with full guarantees, with no share in any part of the company's profits. The alternative was a participating policy which had guarantees but, nevertheless, shared in the profits of the company on mortality expenses and interest, together, of course, with a refund of part of the premium, which helps to stabilize the results.

In the equity plan, we have a new type of participation, where the policy does not share in the mortality and expense profits but does get a full share of the investment gains and losses of the fund, subject to management charges.

We are experiencing in ordinary policies exactly what happened some time ago in the pension field, when, to meet the competition of the trust companies, it was necessary to develop the deposit administration type of policy, which had a minimum of guarantees but gave the policyholder a share of the investment performance of the fund.

As always, we must try to provide what the market is looking for in the most efficient way. In regards to this type of policy, it means that we have to make certain that our investment performance is first class, but we must also see that our mortality and expense charges are drawn efficiently and accurately.

3. To what extent and in what manner are profit-analysis studies employed?

MR. THOMAS K. PENNINGTON: In the various comments which I am going to make on this question, it should be borne in mind that I function as a consulting actuary mainly to smaller and younger companies and that, therefore, much of my thinking and comments are adapted more to the problems of this type of company. However, since these mini-companies portray the characteristics of any life insurance company, concepts relevant to them, in many cases, relate equally well to the larger and more established companies. When one considers the importance of profitability studies, one finds that, perhaps at this corporate size level far more than at any other, these studies become essential.

While many methods of developing satisfactory premium rates are available, the very real surplus problems of the young, small companies force a consultant to give far greater emphasis to the date at which the product will be producing surplus for the company and to the reduction of the early surplus drain than to total profits from the business, yield on investment in the business, or any of the other considerations that have been suggested. Accordingly, in developing rates for these companies, almost invariably the first question asked by the company or by the actuary is, When will the coverage break into the black? The traditional asset share approach, which in essence is a profit analysis of a prospective or existing block of business, becomes a prime determinant in developing the rates for these companies, because this method alone answers this question.

Beyond this, profit analyses of new business provide a necessary discipline, for, as we know, to write business requires an investment of surplus and, for a young company, a loss on the statement blank. However, the fact that a loss in Company B was larger than a loss in Company A does not mean that Company B was more successful, despite the attitude of some investors. It is only by an analysis of the business being written and of the expected profit to arise from it that a company can determine whether the losses it is showing on its statement are a valid investment of corporate assets or whether they are, in fact, true losses never to be recovered in the future. This is probably equally valid for a company that has been in existence for a long time and whose surplus drain due to new business is substantially hidden by the operating profit generated by the older and probably more profitable blocks of business. If the company makes a realistic analysis of the profitability of a block of business and develops from it a true value to the company of these future earnings, then for internal accounting purposes a true, adjusted earnings figure,

not derived by any rule of thumb but by realistic analyses based on realistic assumptions, can be developed and the company's progress or retrogression from year to year can be determined.

I think that the concept of adjusted earnings, which, in effect, relates the costs of new business to its value, is probably a realistic concept, no matter what the size of the company. Ignoring the considerations of the stock market, which sometimes rewards the theory that insurance in force is worth getting at any price, if we are going to realistically inform management how well the company is doing and what the sales efforts mean to stockholders or existing policyholders, I think we must separate and identify our renewal-year profits arising from the existing block of business. If we do this, we can show clearly the cost of our new business and analyze this new block of business from the viewpoint of what it is realistically worth to our stockholders in terms of future yield. If a company has invested an average of \$20 a thousand to write the 1967 block of business, and an analysis of it on realistic assumptions indicates that the present value of the profits to be realized from this block of business is \$15 a thousand, the company has realistically lost money during 1967.

A third essential area requiring profitability analysis for any company that has decided it is going to expand substantially is in the development of future projections. Only if we know the profitability of the business on the books and that to be written under the projected expansion of the company, can we determine whether a given growth curve is supportable based upon the company's resources and minimum surplus objectives. Such asset share studies must be modified in bulk from the assumptions on a policy basis to fit the budgeted costs of such expansion. Only by analysis such as this can the optimal expansion rate of a company be determined. Experience from a number of these studies has indicated that for most capital, surplus, and in-force sizes there is indeed an optimal expansion rate below which the expenditures on a true cost basis are higher than can be justified or recovered by the extra production and above which the period of surplus drain is substantially prolonged because of the excessive growth of the operation.

It should be noted that in recent years an increasingly important need for profit analysis has arisen in conjunction with the burial of many of our mini-companies. When a company fails and is up for sale, frequently the most valuable asset the company owns is the block of business it managed to sell while it was operating. I am sure everyone has his own idea of the appropriate rule of thumb to use, and I am equally sure we all know about blocks of business for which any rule of thumb would have been misleading. Accordingly, whenever I find myself involved in merger

negotiations, whether my client is the seller or the buyer, I feel that an analysis of at least the major business blocks of both my client and the other party is called for. This should be done on the basis of assumptions which seem realistic in the light of the combined company in order to evaluate the relative value of the two companies and the value to my client of the proposed exchange, whatever its terms may be.

I have also found frequently that, when my client has an unusual product or situation (such as having terminated all its agents and having no renewal commissions payable), it is only by means of a detailed analysis such as this that the full value of the company's investment can be recovered.

MR. RUSSELL E. MUNRO: Profit-analysis studies undoubtedly include asset share calculations. These are developed by us quite regularly; and, with our computer programs, we can produce asset shares rapidly for any age, plan, and amount class under a variety of situations or assumptions. We are using them mainly for the calculation of cash value scales, and we compare them with valuation reserves. We have not used them in dividend scale adjustments, but they were valuable when we introduced our last scale of participating rates and values.

Profit or loss on lapse or surrender is examined at regular intervals throughout the year. Being on a net level premium reserve basis for valuation, these figures can be quite significant; and they fluctuate with the terminations. This, together with select mortality margins, offsets other items of expense. Loading in annual premiums and also in fractional premiums enters into our analysis as well.

Mortality profit studies are made regularly for basic insurance, term and other riders, reinsurance ceded and accepted, and settlement annuities. Interest profits reflect losses for immediate payment of death claims; other investment items, too, are examined.

In participating funds, the amount of profit or loss distributable from the three main factors must be determined and compared with the profit and loss arising from the same sources.

MR. SAMUEL P. ADAMS: In the determination of a premium for a nonparticipating policy, it is rather general practice to build in a specific margin for profit and contingencies. If the formula premiums are not adjusted arbitrarily to meet competition, or for some other reason, this margin should be available for profit as long as experience coincides with the other factors entering into the premium formula. However, formula

premiums are sometimes adjusted, and experience rarely duplicates that which is assumed in the premium formula.

In my company, we are quite wedded to profit studies in order to keep track of the effect on margins of changes in mortality, interest, expense, and lapse rates. We have developed a rather elaborate computer program that, in effect, will produce a prospective asset share, or, if you please, a gross premium reserve at duration zero, for a wide range of types of policy, lapse rates, conversion rates, and the like. By making these computations for a great many pivotal combinations of plans, sex, age, amount, and anticipated lapse rate, we can, and do, by interpolation, arrive at the present value of margin for each policy paid for in our company. We add these items for policies paid for in each period of six months and, thus, keep track of what kind of total picture is produced by the actual mix of our business.

4. What viewpoints do actuaries hold on the soundness of using marginal expense rates in determining the profitability or price structure of an added volume of business?

MR. THOMAS K. PENNINGTON: I suspect that most of us feel that marginal pricing is the approach other companies must be using to justify their term rates, juvenile rates, adult rates, smoking rates, nonsmoking rates, and so forth, when they appear to be totally inconsistent with the expenses we know they must incur and the commissions they must be paying. If they are not using marginal expense rates, we must do so to get competitive.

However, on a more serious approach, there do appear to be a number of areas where marginal expense rates must be considered rather than full expense rates for a company, particularly a smaller company, to be able to participate competitively in the life insurance market. There are three or four major areas where we find that marginality must be employed.

1. Any new company, when it first commences business, must ignore its true expense level and establish the expense level per unit that it can reasonably expect to incur after it has been in business seven or eight years. Only by recognizing the start-up costs as costs to be borne by the stockholders of the company, not by the policyholders, can the product be priced in such a way that policyholders will be around to pay for the operating cost of the company. This is, of course, a rather specialized form of marginal pricing. However, considering the number of new companies established over the last ten years, I would not be at all surprised if it is the most common area of marginal pricing.

2. A second area where marginal pricing would appear to be currently in use by many companies and where, to be competitive, a young company must employ it, is in the "executive ordinary life" coverage. I find that only by assuming marginal expenses can these rates be justified when other assumptions are realistic. From past experience, when I find that marginal expense assumptions are necessary, I have then what normally is a successful battle to, in effect, nail the product to the floor by lowering the commission scale below the company's top scale. This also helps the premium rates; but, more importantly, it guarantees that, while the company has a product to utilize in agency recruiting (and, at least for the size of the company I am talking about, this is probably the biggest area where this product is required), at the same time the product is not sold to anyone except the members of the board of directors and the agents buying for themselves. As a result, the utilization of the out-of-pocket costs only in developing this product is justified. Unfortunately,

in the few cases which I have seen, in which no differentiation has been made in commission between the marginally priced "executive" type of life contract and the regular bread-and-butter contract, within a relatively short period of time substantially all the company's sales are made on the much more easily sold "executive" series. The marginal expenses assumed in developing this coverage simply are not large enough to cover the expenses of the company, which is at this point issuing 80 per cent of its business in this area. Accordingly, the use of marginal expense rates in what could become, with very little agency pressure, a major product of the company is fraught with danger to the future of any company and contains the fallacy of assuming that the product will stay at the 5 or 10 per cent production level which was projected when the marginal rates were justified.

3. A third area where marginal pricing is essential to the small company is the larger term products. I do not know the experience of most people here, but I have always found it a little difficult to explain to clients why some of their competitors in the term market are charging rates somewhat lower than that being charged my client's company by the reinsurer. A review of the current rate levels on term policies in the ranges of \$25,000 and \$50,000 (and even, in fact, on term policies aimed at the much broader \$10,000 and \$20,000 market) indicates, however, that there are a number of policies which agents are going to compete with that just cannot be priced at a level which provides for any reinsurance, no matter what else is assumed in the development of the rates. When I am faced with developing a term product that is going to be sold in the larger-size term market, I find that the only way in which I can have a product which the client can hope to sell is by pure marginality. Essentially I take the cost of reinsuring the coverage and add to it the commissions and the direct out-of-pocket expenses. Here, partly because these rates are still somewhat less than extremely competitive, the marginality concept is not going to overwhelm the company's expenses, since, with their typical agency force, not enough of this business will be sold to have any great effect on either the premium or the profit flow. As in the case of the "executive" series life policy, most of the time these rates are used for agency recruiting.

4. The fourth, and most legitimate area of marginal pricing, is in the area of the single-premium annuity. For all but the largest companies, the volume of these to be written is so little that any sale must be regarded as supplemental to the regular business of the company rather than as a substitution for life sales. It then appears that the company is justified in analyzing this product in terms of its top investment dollar and

pure out-of-pocket costs in determining whether it wishes to write this product line.

Having considered the areas in which, at least in my experience, marginal rates are being used, I am forced to come to the conclusion, based on the experience of a number of companies, that any mass adoption of marginal pricing is going to prove unsound in the long run for a company. We have reviewed a number of instances where a product was not priced consistently with the balance of the portfolio, either by accident or by intention. In almost all such cases, this product, which normally would not have been expected to be a major seller, has become one of the leading issues of the companies.

We know of one case in which a misunderstanding caused two products in the company's portfolio to have a price and dividend structure which did not support the product in comparison with the rest of the portfolio. The rest of the portfolio had an adequate premium and dividend structure. At the time that we were asked to look at the company to help explain its problems, we found that these two products—which, prior to the action which made them unsound, had comprised about 15 per cent of the company's issue—were currently accounting for 83 per cent of the new issues of the company. Since this had been going on for approximately five years, it was quite understandable that the surplus margin that the company felt should be arising was not.

We know of another situation in which a company, on the assumption that it would attract additional business from brokerage connections, made a deliberate decision to go into the brokerage term market with rates which were among the lowest in the country. This company had written a normal mix of term and permanent prior to that time. At the time that they abandoned the experiment and resumed term rates more in line with those being charged by other companies, this company was writing 80 per cent term and their brokerage business was even more highly weighted toward term.

Accordingly, any decision to issue policies using marginal pricing must be recognized as a decision which, unless controls are built in to maintain the distribution of business assumed in the justification for marginality, will eventually result in the company's writing a substantial portion of its business at rates that are not self-supporting. On this basis, I do not believe that marginal pricing is normally justified for any company selling in the general insurance market.

MR. RUSSELL E. MUNRO: Our philosophy requires that each contract contribute its proper and equitable share toward expenses, includ-

ing overhead. We also develop our rate structure so as to reimburse our agency force on a basis which does not place the agent in an awkward position in his recommendations for his client. For us, these considerations rule out the introduction of loss leaders, the stacking of term riders, and the use of a double rate structure for essentially the same plan, and so on.

5. What concepts and methods are considered suitable and practical for making intercompany comparisons of "net cost"?

MR. RUSSELL E. MUNRO: The twenty-year net cost and net payment approach promoted by the insurance publications is very easy to determine and to understand. The figures are usually available for illustrations of a company's current scale. However, they are not always available for a company's dividend history.

The dividend history figures are more reliable, since they represent the average of twenty actual and different scales. The current scale illustrates one scale only, and net payment and net cost illustrations will reflect the mood of the company at a particular time only. Dividend history is often not provided by a company for obvious reasons.

Net payments do provide a fair basis for comparing the cost of the death benefit or the results at the maturity date of an endowment. On the other hand, net costs assume that a contract will be surrendered at a specific duration, such as twenty years. We know that very few contracts are actually surrendered at a specific duration, such as twenty years. Some companies will show figures for net costs at shorter durations, while others will prefer net costs for longer periods. It all depends upon which presents the company's picture in a more favorable light.

The twenty-year net payment and net cost figures may not give a favorable comparison for a company with a steeper dividend scale or for one with cash values which are lower, that is, based upon a higher interest assumption. The company with a termination dividend may show up favorably in the net cost figures and not so favorably in the net payment figures. In nonparticipating net costs, several companies will use the same cash values for both par and nonpar policies and, therefore, show a much better ranking position than they have with their gross premiums.

It is necessary to examine net payments and net costs in various amount classes. The variety of policy fees and formulas for discounting for different bands can produce different rankings of companies for different amount classes.

The Moorhead method may or may not improve the figures. At some ages a company may show up to better advantage, while at other ages on the same plan the opposite result is obtained. The method is easy to calculate if the accumulation figures are available. Why one should divide by 30 may be difficult to explain to a client. I am sure that many field men tend to use the factor of 20 in their endeavor to show a better net cost figure than the publications' net cost.

Ratebooks of most companies show more dividend accumulations or

cash values of paid-up additions than total sums on their current scale. There is, then, a natural tendency for agents to show net cost figures, say, to age 60 or 65, using those figures with which they are provided.

With the increased use of accumulated figures, the rate of interest takes on increasing importance, not only in the calculation of the annual dividend but also in the accumulating rate. Interest rates have been on an upward trend for many years now, and how long they will continue up or even at today's level no one can say. Perhaps a participating company should take a hard look at the treatment of interest in the nonparticipating rate. Perhaps a current interest rate should be assumed in the dividend illustrations for only a short period, say, fifteen or not over twenty years, and a lower rate for subsequent or longer durations. Who wants to be the first to move in this direction?

Mr. Schwartzschild's method is really not one to use in the comparison of companies. However, it might be useful in comparing the results for a company between its traditional life insurance policy and its equity-based life contract. As a result of Mr. Linton's suggestions of many years ago, we have used the somewhat simpler application of the Schwartzschild method for several years. This demonstrates on the current dividend scale the compound interest rate which must be earned to produce the cash value and annual dividend at twenty years or at 65 of a whole life contract by the investment premium which is determined after deducting the cost of the risk according to our renewable term rates and the annual dividends. A very satisfactory return is being shown, and this is further improved when one considers that in Canada the increment in the cash value is not considered as a capital gain as yet.

Net cost figures do not provide the only answer in comparing companies. The reputation of the company is made through its underwriting and investment policies, its service facilities in the areas in which it is active, the caliber and training of its field forces, the flexibility of its contracts, and the availability of many additional coverages through riders for term insurance, income disability, accidental death, and the like. If comparisons were made on net cost alone, there are many high-cost companies which would not be selling much business; and the very fact that they do place large amounts of insurance in force demonstrates that net cost figures are perhaps not too important in sales.

**MR. ROBERT E. HUNSTAD:** I think it would be well to begin this discussion by looking first at the traditional definition of net cost. One of the most serious objections raised is that the use of net cost figures gives undue advantage to the company with a steep dividend scale. To attempt

to see if this is actually the case, I investigated the 1967 dividend scales for \$10,000 size whole life policies issued at age 35 for the twenty-five largest mutual life insurance companies (measured by total insurance in force). In this study I excluded the four companies which automatically include the waiver of premium benefit in their premium charges. Because my company also provides automatic waiver, I am very sensitive to this matter. For the remaining twenty-one companies, I developed a correlation coefficient between the slope of dividends and the twentieth-year net surrender cost. The slope was defined as the ratio of the sum of twenty dividends to the sum of ten dividends. Incidentally, it is interesting that the slopes determined vary over a very small range. The resulting correlation coefficient was equal to .2, a relatively uncorrelated result. Admittedly, the way in which I have defined slope is only one of many possible measures of the steepness of a dividend scale. Other possible measures, such as the ratio of twentieth-year dividend to first-year dividend, may well give different results.

I also felt that net cost figures are distorted by the size of the premium. My hypothesis was that companies with larger gross premiums would be able to pay larger dividends; and, to the extent these dividends represent additional interest earned on the excess premium, they would have a comparative advantage over companies with lower premiums and lower dividends. I performed two calculations to test this hypothesis. The first was an attempt to correlate the sum of twenty years' premiums with the sum of twenty years' dividends. Here the result was a correlation of .4—a small indication that there was some relationship between the level of premiums and the level of dividends. However, as to the advantage which these higher premiums gave the companies in terms of net cost comparisons, the resulting correlation coefficient between the sum of premiums and the net surrender cost was  $-.3$ . This seemed to disprove my hypothesis.

There are many other possible ways of looking at premium and dividend levels, and there are many other factors that influence net cost besides the level of gross premiums or the steepness of a scale. I looked at another way of measuring cost—the “rule of 30” developed by Moorhead. For the same companies used above, I developed net cost figures by this method and compared these rankings with those obtained by the traditional method. Of the twenty-one companies, only two changed their ranks by more than three positions. At this point, it appeared to me that, at least for this particular group of companies, the traditional net cost method provided a fairly good actuarial approximation to reality.

MR. JOHN W. LINCOLN: The replacement regulation recently passed by the state of Washington is interesting and timely, because it involves a new type of net cost formula which is, I believe, similar to the one that has been promulgated by Professor Belth.

The regulation provides that a replacing agent has to state in the application that he is replacing the business of another company. There is nothing new about that; but he also has to provide a net cost comparison along what we now call the "Washington formula." He must provide a copy of this to the prospect and his home office, and he keeps a copy. He does not have to give a copy to the company that is being replaced, but that company has to be informed. If the company that is being replaced wants to make a comparison, it also has to make it along the lines of the Washington formula.

How does the Washington formula work? If one starts out with a three-factor dividend formula and sets out to solve for the mortality rate in terms of everything else, the resulting formula closely resembles the Washington formula.

This is what the formula is, and it must be computed the first, the fifth, and the tenth policy year on the new policy. This might be the sixth, tenth, and fifteenth years of the old policy, and the calculation must be performed for the new policy and for the old policy, so that a direct year-by-year comparison can be made.

For a given policy year, one takes the premium and subtracts the dividend, if a dividend is paid, and then subtracts the increase in the cash value and adds a year's interest on the cash value at the end of the policy year. The result is then divided by the net amount at risk.

The regulation is far from perfect, but it does have merit. It is a reasonable yardstick for measuring insurance protection costs on a year-to-year basis, and it reflects acquisition costs in the first year. In other words, it develops a much bigger cost in the first year on a new policy than for the same age on an older policy.

The regulation also has its defects. In the first place, it only requires a comparison for the first, fifth, and tenth years following the replacement. This is not a method that gives an over-all view for ten or twenty years, as the traditional net cost approach does or as the Schwartzschild method does. As a mutual company, the interest rate (which is applied to the cash value) is a sore point with us, because the regulation says we should use 4 per cent. For nonparticipating contracts the interest rate guaranteed in the contract should be used. However, we feel it would be more equitable for nonpar companies to employ the rate used in determining the premium.

When there is an extremely small net amount at risk on the existing policy along with, of course, a thousand dollar net risk on the new policy, the division by such a small number can produce strange results, inflating the cost on the existing policy out of all proportion.

**MR. ALVIN B. NELSEN:** The Washington replacement regulation requires the comparison of relative one-year costs of old and new insurance in specified future years. Such one-year costs are to be determined by a formula set forth in the regulation, which relates a total annual cost for a policy year to the net amount at risk at the end of the policy year, to arrive at a cost per \$1,000 at risk.

There is implicit in this regulation that the part of the cost representing expenses should be related entirely to and be a function of the net amount at risk. No part of the expense charge is associated with the cash value, which can be applied to provide benefits on a net basis, and I think that this is the fallacy of the approach used. For a policy that has developed a substantial cash value, and accordingly has a relatively low amount of net protection, the cost index becomes inflated. Consider the extreme example of a retirement income policy in a policy year where the cash value exceeds the initial face amount. In this instance there would be no net amount at risk to relate the expenses to, and, of course, application of the formula of the regulation would produce a meaningless result.

**MR. ROBERT H. DREYER:** I want to address one remark to Bob Hunstad on his statistical study.

The attack on the traditional net cost method did not develop so much as a result of the comparisons made by the established, reputable companies that have been using it for a good many years, but rather, I suspect, because of its misuse by other companies. The purpose of the attack was to remove the elements in the net cost method that make it possible for the smaller, newer, and less reputable companies to mislead the public by exaggerating a few relatively minor features, so that the public would have a more accurate gauge of what some of these newer companies really can provide. Had you been able to include this latter class of companies, the results might have supported your hypotheses rather than disproving them.

**MR. GEORGE H. DAVIS:** The ALC and LIAA have been involved in the development of the Washington regulation, and we opposed the cost-comparison feature of the proposed regulation.

I tried as hard as I could at the hearing to endorse everything else in the regulation, because I think that replacements are a problem and that the policyholder needs to have all the information he can use in deciding whether or not he should replace his policy. But the position we took of opposing the cost-comparison detail of it proved to be quite unattractive to the Washington Insurance Department and the agents' association there, which was strongly supporting the regulation. They thought that we were opposing the guts of it, and perhaps they were right.

As John Lincoln and Al Nelsen pointed out, this formula throws all the loading into the protection element, and this creates what seems to me to be a bias against the policy with a small protection element; that is, it creates a bias against permanent insurance in favor of term insurance and a bias in favor of new policy against old policy. In fact, I am afraid that it produces results that seem to justify replacement in some situations where it is not justified.

MR. WILLIAM R. BURNS: Mr. Hunstad spoke about the relatively low correlation between, on the one hand, companies that offer relatively high premiums and, on the other hand, companies that provide relatively low net costs. There seems to be the implied suggestion that it might generally be more advantageous to issue policies at relatively low premiums.

I would think that, if an additional increment in premium is charged for the same benefit, not only would margins be greater but, in the typical situation, the company with the higher premium would indeed be able to come out better on the net cost ladder. The fact that such a company should not come out better on the net cost ladder would probably be due to other factors, such as company policy.

There is an increment of income, in the way of additional premiums; typically, this increment of income comes in on a level basis, while the incremental dividends are usually paid out on an upward-slanted basis. This would suggest that the high premium-high dividend company should find itself in a relatively superior net cost position.

Perhaps the correlation, to which Mr. Hunstad refers, may be somewhat spurious.