

# RECORD OF SOCIETY OF ACTUARIES 1980 VOL. 6 NO. 2

## LOSS RATIO ANALYSIS

Moderator: MONTE J. HOPPER.

Panelists: SPENCER KOPPEL, PAUL E. HANSEN, JAMES H. HUNT

1. What does "Loss Ratio" mean?
2. Who uses what "Loss Ratio" tests?
3. What do the states currently require and why are multiple standards appropriate?
4. Is the use of "Loss Ratio" a valid test of product choice from the consumer's viewpoint?
5. Is there a correlation between "Loss Ratio" tests and proposals relative to life insurance cost disclosure?

MR. MONTE J. HOPPER: The purpose of this panel is to discuss the subject of "Loss Ratio" from as many perspectives as possible. It is for this reason that I chose as the panelists an insurance company actuary, a consulting actuary, and an actuary involved in regulation.

Spencer Koppel is with the Combined Insurance Company of America, Paul Hansen is a consulting actuary with T.P.F. & C. in Minneapolis, and Jim Hunt formerly with the Vermont, New Hampshire and Massachusetts Insurance Departments, is now with the Federal Trade Commission in Boston.

MR. SPENCER KOPPEL: In my comments today, I will try to cover the items listed in the program with a primary focus on the regulation of loss ratios through minimum standard regulations. It has long been recognized that loss ratios by themselves are not the only criteria by which to measure reasonableness of benefits in relation to premium. In 1949, in an address to the Bureau of Accident and Health Underwriters, Dr. C. A. Kulp, Professor of Insurance at the University of Pennsylvania said, "The materials available for analysis, particularly loss and underwriting ratios, are, even in the hands of experts, of very little help.... The moral is not that loss and underwriting ratios are to be ignored, but that the greatest caution is required in translating them into standards for judging the adequacy and the reasonableness of premium. Expansion of business has been accompanied by a wide spread liberalization of policy provisions and a general relaxation of underwriting controls without corresponding increase of premium. The result is the creation of an important and even dangerous source of deferred and hidden liability, not reflected in loss ratio figures when times were good and jobs were better than benefits, but bound to show up in the number and size of claims when the tide turns...."

When Monte first asked me to participate in this panel, I hesitated because I felt that the topic of loss ratios is a very difficult one to discuss. To my knowledge, no other concept in actuarial literature looks so deceptively simple and yet is quite as complicated as the concept of loss ratios.

A loss ratio is the relationship between benefits and premiums under a policy. Because it sounds so simple, everyone thinks he or she understands it. As a result, unfortunately, it is one of the most misunderstood concepts actuaries have had to deal with. Loss ratios can be incurred to earned, paid to written, incurred to written, first year, renewal, anticipated, or actual to expected. They can be calculated including the increase in additional reserves (either in the numerator as an addition to claims incurred, or in the denominator as a reduction from premiums earned), or excluding the increase in additional reserves. They can be calculated including interest or excluding interest, and probably in many other ways which I cannot think of at the present time.

Each of these types of loss ratios has a specific purpose and when used correctly (and I emphasize the term "when used correctly"), can be an effective analytical tool for both company actuaries and Insurance Department actuaries. The corollary to that, however, is that because there are so many different types of loss ratios, the loss ratio concept can be misused by each of those same parties.

Therefore, my purpose in accepting the challenge of speaking on the topic is to try to shed some light on the use of loss ratios with particular emphasis on the new NAIC model loss ratio guidelines which have been adopted.

In recent years we have started to see a proliferation of many types of loss ratio regulations. Some are in the form of regulations; others are in the forms of departmental guidelines. Some are single "Benchmark" loss ratio regulations; others add special requirements for certain types of policies. Unfortunately, all are different from one another. These differences emphasize the growing trend away from standardization of policy forms by states.

The question of what "loss ratio" does mean can be considered in at least two different ways.

From the point of view of the company, the loss ratio is the amount of the premium which needs to be set aside to meet claims. It can provide a useful tool as a means for measuring actual versus expected results, as a means for determining the price for a product given its benefit level or, alternatively, the benefits for a product given the price. The complementary opposite number to the loss ratio is the expense and profit ratio. For the company to accurately determine the prices or benefits under a product it must have an idea of the anticipated expense and profit ratio.

From the point of view of the consumer or the regulator, the loss ratio is intended to be a measure of the expectation of payout of a policy that is issued by an insurer. Conversely, by knowing the loss ratio, the consumer or the regulator can determine the proportion of premium that the insurer expects to keep as its retention for expenses, risk, and profit charge.

The calculation of the loss ratio involves an estimate of the benefits that will be paid and, where significant, can also require an estimate of the level of persistency and the interest rate. Of course, as Joe Pharr has demonstrated in his paper, "The Individual Accident and Health Loss Ratio Dilemma", the measured loss ratio for a particular policy form will differ from year to year, based on many factors. The inclusion or exclusion of

increases in reserves or interest levels has an effect on the numerical result of calculating the loss ratio.

Furthermore, in analyzing any measured loss ratio one must take into account the mix of the block of business by duration, age, etc., in determining whether the actual loss ratio is consistent with the expected loss ratio. The NAIC's adopted loss ratio standard defines an anticipated loss ratio for a policy as follows: "The present value of the expected benefits to the present value of the expected premiums over the entire period for which rates are computed to provide coverage." This anticipated loss ratio as defined by the NAIC provides the measure desired by the NAIC of the expected percent of premium which is anticipated to be returned as benefits. This number, though, will not be found in the Annual Statement nor in the Policy Form Experience Exhibits as they are currently constructed. The loss ratio shown on these forms is based on the claims incurred during that year for all policies on a specific form regardless of their duration, (including the increase in the additional reserve on those policies) divided by the premiums earned on those same policies.

The NAIC anticipated loss ratio definition can be looked at in another way. It is an average loss ratio weighted by duration and by exposure over the period for which rates are computed to provide coverage. This average loss ratio must be tested against a single year's loss ratio in the Annual Statement for determining whether the two are consistent. Either one may be higher than the other. Annual Statement loss ratios are subject to annual fluctuations. Further, Annual Statement loss ratios are subject to the mix of business by duration. The only time the two would be equal would be a coincidental result or the result where the Annual Statement loss ratio was comprised of a mature block of business with all durations represented according to the anticipated persistency and where claims were not subject to any variance due to annual fluctuations. Claims would have to be precisely at the anticipated level assumed by the actuary at the inception of the policy.

In analyzing a loss ratio, it is important to realize that it does not measure several elements. First, it does not measure the expense ratio and, therefore, does not determine of itself the level of profit or loss that the insurer can anticipate as a result of issuing this specific product. Also, the loss ratio does not measure the cash flow requirements associated with the product and, therefore, does not measure the anticipated surplus strain. It does not measure the risk elements to the insurer. As an extreme example, a company might write a policy which insures against the risk of having to evacuate the insured's home due to any cause which results in the government ordering such an evacuation. Examples of this, which we are all familiar with these days, might be the eruption of a volcano, a nuclear accident, or the possibility of unsafe chemicals in an area. Such a policy has a low claim frequency, but a high severity, especially if an insurer has a higher concentration of risk in a particular geographical area. Under such a policy the insurer is subjected to the possibility of very favorable results in a single year in the event of no claims; in the event of a major claim, however, the insurer may find itself insolvent. Therefore, the anticipated loss ratio under such a policy is necessarily low so the insurer can protect itself and provide for the risk of financial ruin.

Somewhat related to the risk element of the policy is the economic utility value of benefits to the insured. Loss ratio does not measure such an economic value. As an example, a prospective insured would not be very interested in buying a policy which covered him for two dental checkups a year, but limited the amount of benefits to \$10 per checkup, even if such a policy could be advertised to have an 80% loss ratio and a \$25 annual premium.

By these examples, I am really illustrating that the typical statutory wording that requires the benefits be reasonable in relationship to premiums cannot be interpreted solely as being based on the loss ratio. In the one case, that of the policy which covers dental checkups, I would not consider benefits to be reasonable in relation to premiums even though the policy has an anticipated loss ratio of 80%. In the other case where a policy covers against the risk of evacuations, benefits might be considered reasonable in relation to premiums even though the loss ratio were 25 or 30%. In all cases, the expense ratio must be taken into consideration, in addition to the risk element, in determining whether benefits are reasonable in relation to premiums.

Some would suggest that the answer to this problem is not the regulation of loss ratios, but rather the regulation of the level of profit in a manner similar to that used in the regulation of public utilities. In the case of a mutual insurance company, this may be done in the form of regulation of the level of dividends required in order to keep surplus at reasonable levels. In the case of a stock company, it would have to be done in the form of outright regulation of the profit level.

Regulation of profits has the adverse effect of de-emphasizing cost control and therefore does not have the desired effect of keeping the cost to the policyholder at the minimum possible level. I would like to concentrate for a few minutes on the purpose of states adopting minimum loss ratios standards.

As I said before, the typical statute requires that benefits be reasonable in relation to premiums. This requirement is placed both on the company and on the department to determine that the benefits are indeed reasonable at the time the policy is filed or at the time of a rate increase. Reasonability of benefits encompasses many things, one of them being loss ratios.

The minimum loss ratio regulation can actually be thought of as being a screening device, whereby the State Insurance Department actuaries or other personnel can reduce their workload by not having to carefully scrutinize the policies which have an anticipated loss ratio greater than the minimum standard. Therefore, in the NAIC guidelines to loss ratios, the minimum standard states that benefits are presumed reasonable if the anticipated loss ratio of the policy filed, or the rate after an increase, is greater than or equal to the standard indicated. The converse is not necessarily true. Benefits are not necessarily unreasonable in relation to premiums if the anticipated loss ratio under the policy filed is less than the standard stated. In fact, under the NAIC guidelines, consideration is required for several factors such as accident or short term non-renewable coverages, specified peril coverages and other specified risks, various marketing methods that have extraordinarily high acquisition expenses, and policies with high risks of claim fluctuations because of the low loss frequency, or the catastrophic or experimental nature of the coverage.

These factors and other considerations are incorporated to encompass the various examples that I mentioned previously. In order that a loss ratio standard be viable, it must be written in such a way as to treat most of the usual types of policies readily and without unfairly discriminating in favor of or against any specific policy type.

The NAIC model guidelines distinguish between medical expense and loss of time insurance, somewhat in recognition of the lower loss ratio attributable to loss of time insurance due to a higher risk element associated with it. They also distinguish between various renewal categories in order to recognize the increased risk associated with the more restricted right of renewal for the insurer. They set lower standards for policies with average premium sizes below \$200 per year in recognition of the higher percentage of premium that fixed costs represent in such lower premium forms.

Additionally, the NAIC guidelines provide for a minimum anticipated loss ratio on Medicare supplement insurance policies of 60% regardless of the renewal provision and regardless of the average size premium. There is no actuarial basis for such a separate requirement for Medicare supplement policies. Rather from a social consideration, because of the market to whom Medicare supplement is issued, a 60% loss ratio standard for such policies may be considered desirable. Under the Baucus amendment, a loss ratio standard for Medicare supplement policies will be required to be adopted by the states, if they are to avoid Federal control of Medicare supplement policies.

While there is a social desirability of having a higher loss ratio standard for certain policy types, states should be careful in over-using such standards. The impact of an arbitrarily high loss ratio standard for a particular policy type is to eliminate from the market certain forms which may be otherwise desirable from the public's point of view.

There are no undesirable products in or of themselves. We have seen unsatisfactory and inappropriate sales methods applied to certain types of products, but this does not make the product bad for all consumers. Regulation of the sales practices is a much more desirable approach to eliminating undesirable sales of policies than regulation of loss ratios. Requiring disclosure to the consumer of the coverage that is being purchased and the anticipated loss ratio under such a policy, along with a program of educating the public on the types of insurance available and the desirability of different types of coverages for different situations, is a more logical, if more difficult, approach to protecting the public from buying unwanted or unsuitable coverages. This is the approach being taken by the life insurance industry through the use of cost disclosures and policy summaries in some states.

MR. PAUL E. HANSEN: As a consultant to small and medium size insurance companies, where some companies have actuarial staffs and others have little or no actuarial help, I have seen a variety of loss ratio methods and uses. First, I would like to describe what a company without an actuarial staff would use internally. Secondly, I will talk about the types of loss ratios that I would supply to a company for new products and for rate increases. And finally, I will review state and consumer loss ratio requirements.

A small company without an actuarial staff is usually characterized by a modest health portfolio with conservatively priced products. The definition

and use of a loss ratio is usually the responsibility of one of the officers of the company who is in accounting or financial planning. The most prominent of these loss ratios are paid claims to paid premiums or paid claims to earned premiums. Earned premiums in this case are not adjusted for any additional reserves in the denominator. The reasons for the use of these loss ratios are:

1. Paid claims and premiums are readily available from the accounting, claims, or policy service department of the company.
2. These figures are more easily reviewed on a monthly or quarterly basis since claim reserves and additional reserves, generally, are not frequently calculated.
3. Because of lack of usable statistics the method of estimating incurred claims may give incurred claim reserves a low credibility. Therefore, the paid ratio is the best ratio available to this type of company.

The uses of these paid ratios would be:

1. They are used as a substitute for the incurred claims and earned premiums ratio. In some cases, the consequences of such a substitution are not known. For example, a 55% loss ratio referred to in an actuarial memorandum for filing purposes, given to a company when a new product is developed, will not be comparable to a 55% paid loss ratio.
2. A more sophisticated approach is to use the ratios as trend indicators, where a comparison of paid ratios by duration to previously sold products of similar benefits can be used as a guideline. For example, if a comparison indicates a higher, unacceptable ratio for a current product than that of a successful predecessor, given that all other factors are consistent, the product pricing should be reviewed.

No matter how the paid loss ratio is used, one important factor that must be taken into account is the growth pattern of the business. Frequently with small companies, a surge in the selling of a product can greatly affect the loss ratio. In the early durations it can lower a loss ratio to a point where it looks normal but it may be approaching a dangerous level. An unexpected increase in production may also indicate an underpriced product which will quickly become apparent in loss ratio analysis.

Incurred loss ratios, similar to those in annual statements, are calculated at year-end. However, in most cases these ratios are not calculated frequently enough and plans may be grouped together, diluting the effect of a deficiently priced product.

Companies with internal actuarial capabilities often use the incurred claims to earned premium loss ratio on a quarterly basis. The expertise to develop and properly use an incurred loss ratio can be developed if it is not already available. Additional reserves are also included in these ratios and are adjusted in the numerator or the denominator. The affect on the ratios of using the additional reserve adjustment, either in the numerator or the denominator, obviously depends on the size of the components involved.

As an actuary to these companies, my responsibilities when developing a product are to inform the company of the expected loss ratio, based on the

agreed upon assumptions. If the loss ratio would not be acceptable to some states, a review of the premiums and assumptions is necessary. This usually involves a review of expenses. Commissions in recent years have been the subject for considerable reduction. Home office expense assumptions, which are often difficult for small companies to transform into per policy and percentage of premium factors, are subject to indiscriminate reduction. In all cases, it must be made clear to the company that these assumptions must be reasonable or the profitability of the product will be jeopardized.

When the product is fully designed, I must certify to the states that the loss ratio meets the requirements. The loss ratio is based on the assumptions used to develop the product with no deviations.

The loss ratio I use in the certification is the present value of anticipated benefits divided by the present value of anticipated premiums. This ratio produces the same results as the level ratio referred to in Joe Pharr's paper as the "Incurred Claims Loss Ratio plus Reserve Changes Based on Realistic Assumptions with Adjustment for Interest". I will refer to that from now on as realistic assumptions.

If durational loss ratios are requested by the states, the simple incurred claims ratio without reserve or interest has been used.

For rate increases, it is preferable to have an actual to expected study where demonstration of increased morbidity can be shown. This is almost never possible in small companies. Therefore, in most companies a loss ratio method is used. The type of ratio used here is the incurred claims ratio plus a statutory reserve change without an interest adjustment, as shown in Joe Pharr's paper. This can lead to possible overstatement of the rate increase. The paper shows this by demonstrating that the incurred claims ratio with statutory reserves will produce a higher loss ratio after the second duration than that which is produced by realistic assumptions. An adjustment to the ratio should be used in order to avoid a higher rate increase than needed.

I have mentioned eight variations of loss ratios and have not even started on the state regulations yet. None of these ratios has been created by the State Insurance Departments. All can be justifiably used if they are used consistently and the reviewer of the information knows what they imply and how to discriminate between them.

Each state seems to have its own ideas as to what a loss ratio should be. The requirements could be legislated, they could be the rules formally used by the Insurance Department, or informal guidelines. They can vary from those used by Minnesota, which has had twenty categories of ratios based on type of benefit and renewal provision, to North Dakota, which has one ratio for all lines of individual business which is 60%. The definition can be specific as in Michigan when you are filing for a rate increase, or vague as in North Dakota, where the correspondence that I have seen merely mentions a "loss ratio" with no description. Kansas follows up with insurers to confirm that lower ratios in the annual statement are justified. Wyoming requires at least a seventy percent loss ratio on closed blocks of business before a rate increase is allowed.

In most of the above cases the loss ratio is not defined but is given a level it must exceed. This allows the company flexibility in determining

what method best suits its needs. When methods, assumptions or statistics are challenged by the states, some companies avoid confrontation even though the confrontation is justified. The time and money involved are not worth the benefits of issuing that policy.

This points toward a universally recommended standard for both new issues and rate increases. However, an improperly designed standard may be more ineffective and costly to both the companies and consumers than the current system. Also, since there are many different guidelines in effect, a universal standard may be impossible to achieve as we see the regulatory system today.

Now that I have mentioned types of loss ratios I have encountered from the industry side, what about the consumer?

From a consumer's point of view what does a loss ratio mean? I have not made any surveys but I doubt that a loss ratio without sufficient explanation can be interpreted correctly by the consumer.

Some states, like Minnesota, already require that a disclosure statement be included in the policy. This disclosure statement must contain an anticipated loss ratio, but anticipated loss ratio is not defined. The term loss ratio without being defined could be meaningless and when it is defined on a technical basis may be confusing and incomprehensible.

The definition that I have seen is that the loss ratio represents the percentage of the premium which is returned to the consumer in payment of benefits. For example, 55¢ of every \$1.00 collected on a policy is returned in benefits to those paying premiums. This is fine if the aggregate concept is used, but the consumer is usually thinking on an individual level and may feel cheated if he or she does not collect on the policy. An alternative definition may be warranted.

North Dakota is one state that has tried to explain the loss ratio to the consumer through a brochure. This explanation is simplified but is much too long to put in an advertisement or in a policy

MR. JAMES H. HUNT: I was the principal proponent of a sweeping individual health insurance regulation in Massachusetts that was ultimately adopted in September 1979, in a scaled down form. We originally envisioned rather comprehensive minimum standards and minimum loss ratios for both the under 65 and the 65 and over policies. The final regulation abandoned minimum standards for the under 65 market, although not minimum loss ratios, but other features of the regulation were maintained, including a prohibition on the sale of cancer insurance.

The idea behind the proposed regulation was to create sufficient standardization so that price competition of the kind that prevails in auto insurance, for example, could take place in health insurance. (We decided that disability income products were sufficiently standardized and competitive that they should be left alone.) We hoped that price competition would be sufficient to avoid the necessity of tracking loss ratios. Loss ratio standards were set for the under 65 market principally to rid it of low value policies; in a state where the average cost of a day in the hospital comes to over \$300, the sale of a \$50 a day hospital indemnity policy, for example, may be a "deceptive sales act". Stiffer loss ratios for the



Medicare market simply echoed a legislative trend in Massachusetts to protect the elderly to a greater degree than others.

It should be noted that our proposed regulation contained an exception to the loss ratio standards. Certain types of low premium policies offering catastrophic protection may justify a lower loss ratio standard, and the regulation was drafted to accommodate them even though we never got to the point of setting any "mental" loss ratio standards for such contracts.

What was the outcome of the Massachusetts regulation? As of recently, only two insurers, besides Blue Cross/Blue Shield, had filed Medicare supplement policies meeting the minimum standards, which were similar to Blue Cross/Blue Shield policies previously sold to that market. In the case of one of the companies, the actuarial memorandum indicated that the anticipated loss ratio was based on a 3% interest discount (evidently this assumption helped the company meet the 65% Medicare supplement loss ratio standard). This raises the interesting question of whether the company's actuary, in providing the actuarial certification required by the regulation, violated any professional canons by using such a low interest rate.

I suppose many would consider the Massachusetts regulation a failure because only two commercial insurers, so far, have chosen to meet the Medicare supplement standard. Probably this result reflects a number of factors: reluctance of commercial insurers to sell coverage similar to the Blues at much higher prices (in one case, one insurer's rates were almost twice as high); a preference for the simplicity of hospital indemnity plans; and a decision to continue the marketing of previously sold policies but under a name other than Medicare supplement, Medigap, etc. The regulation's chief effect in the Medicare market, due to the 65% loss ratio, is to upgrade hospital indemnity coverage. No significant public good is served by the sale of low premium, lower value policies to supplement Medicare that leave the buyer completely at a loss as to how many of them are necessary. But even this upgrading of the regulation may be tempered a bit by what I expect will be some "fudging" of anticipated loss ratios. Regulation of rates by loss ratio analysis is a hopeless task except in the one or two states that have a significant health actuarial staff. It is simply too complicated. But, perhaps the setting of minimum loss ratios could be more successful if actuarial standards of the kind outlined by Joe Pharr and Paul Barnhart were specified by the NAIC and if rate filings were required to be signed by qualified actuaries.

It seems a much more satisfactory regulatory approach to standardize policy forms so as to create the conditions under which rates will be governed by competition.

With these preliminary remarks, let me address two or three of the program items.

#### What does "loss ratio" mean?

The term "loss ratio" is a property-casualty term. It was apparently coined to deceive the public and regulators into thinking that companies were losing money on property insurance. Such companies still calculate their "underwriting gains or losses" each year in a ritualistic habit whose continuance in this day of high interest rates seems to have no other purpose.

There is no generally accepted definition of loss ratio in life and health insurance. I found this a distinct handicap when I testified in Virginia in a credit life regulatory hearing. There the statute required a 50% loss ratio standard and I insisted that in the sale of credit life insurance whose term may run as long as fifteen years and which is sold in the form of a single premium, that there was no other reasonable interpretation of the statute and the loss ratio had to include some form of investment income. I lost that argument perhaps because there was an actuary on the other side who was willing to testify to the opposite.

I read Joe Pharr's paper and Paul Barnhart's discussion of it as arguing that the only satisfactory definition of loss ratio is one that either uses fairly realistic actuarial assumptions, or that produces results close to this standard. I subscribe to the views essentially of Barnhart in discussing a portion of Pharr's paper.

What do states currently require and why are multiple standards appropriate?

In Massachusetts, we use multiple loss ratios and standards as low as 45%, for certain products, and as high as 65% for Medicare. These were similar to the recommendations of the NAIC group. The reasons for multiple standards are self-evident. We called for "anticipated loss ratios" in our regulation and, although this term was not defined precisely, the regulation did make it clear that this was a "present value" concept implying that interest and lapsation should be considered in calculating such ratios.

Is the use of "loss ratio" a valid test of product choice from the consumer's viewpoint?

If one sought an individual health insurance policy from the company with the highest anticipated loss ratio, I suppose one would get Blue Cross/Blue Shield. This would be a good average result but, especially in the case of under 65 coverage, not necessarily the best choice. I suppose all of us at one time or another have tried to advise a person not eligible for group insurance of his or her health insurance alternatives. All other things equal, Blue Cross/Blue Shield is the best choice, but of course all other things are not equal. Buyers differ according to age and sex and geographic location in a state; the Blues sometimes concentrate on first dollar coverage, to the partial exclusion of catastrophic coverage. These factors have obvious implications for buyers. So the use of anticipated loss ratios by consumers is probably generally valid, but frequently could lead to an inferior choice in a particular case.

Is there a correlation between "loss ratio" tests and proposals relative to life insurance cost disclosure?

In 1973, I conducted a public hearing in New Hampshire on a proposed life insurance cost disclosure regulation that included Joe Belth's Consumer Retention method. I adapted Joe's method as it then existed by making a loss ratio out of it: the present value of the death benefits and cash values divided by the present value of premiums less dividends. This was done in an effort to make the retention method more understandable. Joe's disclosure system now contains this loss ratio concept, but it seems that such a loss ratio, which should be called a "Benefits-to-Premiums" ratio, may suffer from the same defects that the NAIC Model Regulation does: it is difficult to know whether a particular result is bad or good without a

yardstick, and it is necessary to restrict comparisons of loss ratios to similar policies.

I do not have any information on whether the New York requirement on anticipated loss ratios has been helpful to consumers in choosing policies in that state. My guess is that it has been much more useful as a regulatory tool, especially in eliminating low value policies from the marketplace. I am not a believer in loss ratio comparison as a cost discriminator that can be used by the public with reasonable success. Yesterday I saw an advertisement for non-group Blue Cross coverage in New York State and in small print it says, "This program meets New York minimum standards for basic hospital and surgical medical coverage. It does not provide major medical benefits. Anticipated loss ratio is 94%." I wonder what that term means to someone who is not familiar with insurance jargon. A loss is the opposite of a gain. The term loss itself is not appropriate. It is not a loss, it is a claim. I do not know that that term connotes any meaning at all to the average buyer, and it is somewhat surprising that for many years New York has required this disclosure to be made and has never required that a brief explanation of a loss ratio be given. It is for reasons like these that disclosure of a loss ratio probably is wholly ineffective; yet, as a former state regulator, it is hard not to require their disclosure because it seems it may be helpful to one or two people.

MR. HOPPER: Jim made reference in his paper to Paul Barnhart's discussion of Joe Pharr's paper. Paul mentions, and I quote, "That any discussion of the proper method of determining a loss ratio must take directly into account the anticipated loss ratio. The method of measuring actual experience loss ratios from time to time should be consistent with the method used to determine the anticipated loss ratio, since the latter is the basis declared in the rate filing by guideline by which the reasonableness of premiums in relation to benefits is to be judged."

Paul also says, "In my opinion any actuarially appropriate definition should be of the present value at issue type which means that the corresponding present values must be derived using a realistic rate of discount."

I believe we are in agreement that the definition of anticipated loss ratio should be a present value type calculation -- present value of benefits over present value of premiums. I would like to ask the panel, does this present value include discounts for mortality, interest, lapses, and if so, what rates do you use? Do you use rates used in determining the premiums, or do you use something else? For mutual companies, do you include dividends in this calculation and, if you do, should the dividends be viewed as benefits or deductions from premiums?

MR. HANSEN: When you develop the premium you are developing the loss ratio at the same time. You can put all the information into a computer program, which includes lapses, interest, claim costs, and reserves, and create an asset share model. The interest used is slightly lower than what you find in current life development, around 6% to 8%. It may be as low as 5%, depending on the company. Mortality rates are usually ignored; they are included in the lapse rate. Mortality does not have a significant effect when pricing the product. The lapse rates used are taken from the company's own experience, if those statistics are available. In developing the loss ratio we take the present value of claims, with lapses and interest and relate this to the gross premium. You do run into some problems with infla-

tion. Often, inflation is projected only for three to four years in the pricing of open-ended major medical benefits because if you projected it indefinitely the product would be uncompetitive until several years from now. When you are filing with the states, and the state wants to know what the loss ratio will be in the tenth year or the fifteenth year, you may be able to add the inflation factor indefinitely, indicating that if you keep the same premiums in force for the next ten years you will have a 200% loss ratio. If this is done, however, perhaps you should also anticipate what the premiums will be in a few years. You will then have a nice projection that is meaningless once a few years have passed. In most cases I have used loss ratios as anticipated. I have used the assumptions that are specifically defined in the assumptions memorandum that the company and I agree on -- with no deviations.

MR. KOPPEL: In the NAIC guidelines, the NAIC Subcommittee, as well as the HIAA group, considered this question, specifically with respect to interest. We finally came to a definition which said, "Interest shall be used in the calculation of these present values only if it is a significant factor in the calculation of the loss ratio." That supports Jim's statement with regard to the single premium credit insurance and, in that case, it clearly would have a significant impact on the calculation of the loss ratio. There are other coverages, especially with regard to accidental death or accident only types of coverage, where interest, persistency, and mortality other than the accident mortality have little or no effect on the calculation of a loss ratio. Many companies apparently do not consider interest in those situations. What interest assumption do you use or what persistency assumption do you use? Again, if you have an inflation factor that is part of your premium rate calculation you may choose to use a lower interest assumption and a lower inflation assumption, assuming that one offsets the other. This should be left to the discretion of the company actuaries. It seems illogical to require a major calculation with all factors considered when some simplifications which do not materially affect the calculation could be made.

MR. HUNT: Health insurance dividends probably do not exist, but if they did they should be subtracted from the denominator. There are other views to this, however.

I might cite an example of Mr. Barnhart's work. We had hearings on the proposed regulation about cancer insurance, which is highly sensitive to age. Mr. Barnhart had done a study of the largest companies specializing in that business and produced some useful statistics. He filed loss ratios on a 0% interest basis but with persistency and on a 5% interest basis, which was a good way of doing it. In that case it was easy to leave it up to whoever was reading the materials to make his own judgments about which was more reasonable. The 0% interest loss ratio was 54%; the 5% loss ratio was 63%. That is a significant difference.

MR. HOPPER: If we accept the premise that an anticipated loss ratio is reasonable for the states to request at time of rate filing or time of rate revision, then isn't it also reasonable to expect that the states should have some way of monitoring the emerging loss ratios? Unfortunately, loss ratio information shown in the annual statement is very difficult for the states or anyone else to work with directly. I wonder if the panelists could comment on how the states should go about monitoring emerging experience.

MR. KOPPEL: Very carefully. The best system I have seen is in Canada, where the company is required to file its anticipated loss ratios on its forms and each year sends an updated experience exhibit for these forms. The Canadians rely on the company actuary to certify that the experience for that particular year is not in conflict with the anticipated loss ratio expected at the inception of the policy and, further, that if it is in conflict the actuary will make recommendations as to changes to bring it into compliance.

MR. MARIO S. GALIZIA: Canada Life simulates the business one hundred times and calculates standard deviations and, if our actual is within two standard deviations of expected, then we can, with a very clear conscience, say that our experience is not significantly different from expected.

MR. HUNT: Perhaps the only hope for making better products available is reliance on the actuarial profession. In the credit insurance area there can be very complex regulations about seeing to it that the loss ratio benchmarks are enforced. Some of the credibility theory is quite complex and I suggested to a friend who works for the National Consumer Loss Center, an organization which, among other things, tracks credit insurance developments, that it would be much better if in this country we stopped trying to make complicated formulas and put the burden on the actuarial profession to certify that the loss ratio standards were met. His comment was that I had more faith in my profession than he did. Canada has a more sophisticated approach which should be more actuarially satisfying to those of us in this profession.

MR. BURNES R. EILER: The loss ratio concept originally derives from property/casualty insurance where there used to be a very clear one-year income and outgo. We should not use the loss ratio analysis any more. Even the property/casualty companies learned that you cannot close up the book of business in one year, as some of our local institutions learned after the medical malpractice.

We have an adversary attitude between the regulators and the industry here in the United States which varies from my experience when I was in Canada. When the first retirement income security came into Canada, the Department urged that comments be forwarded to them through the Canadian Life Insurers' organization so everyone would not be asking the same question twenty times. That was cooperation. Here, we have an adversary.

I agree that the loss ratio totally ignores premium level. Jim gave us an example of the Blues concentrating on first dollar coverage and ignoring catastrophe. We had a small segment of one particular type of policy (Long Term Disability to age 65) that, as near as we could tell, had the lowest premiums in the nation for comparable coverage. However, we also had very good people who did not become disabled. We therefore had a fairly low loss ratio. For about seven years New Jersey has been trying to get us to withdraw the policy simply because the loss ratio was too low. Some other way should be found to guarantee that people are getting their money's worth.

MR. HANSEN: Does anyone have an idea of what a good substitute would be? It's not an easy question.

MR. BRUCE R. DARLING: J. C. Penney Life works primarily in direct response business in selling mail order hospital confinement. We are unusual in that we underwrite our business rather than issuing the guaranteed issue like a number of our competitors do. As a result we have a real problem with meeting loss ratio requirements. Even though we offer a cheaper product than our competition, they have the benefit of not only having worse claim costs because they guarantee issue, but they also have lower expenses since they do not spend the money on underwriting. I wanted to point that out as one fallacy in the consumer's view of a loss ratio in terms of judging whether a product is good or not.

In regard to monitoring experience, you have a real problem with the Policy Experience Exhibit because of the type of reserves that you build into it. Companies are very limited in the types of reserve that they can use for statutory purposes because quite often the net level version is also used for federal income taxes where only standard tables can be used in order to allow them to be used for a deduction. That limits you to some variation of the 1956 tables, which are extremely out of date, or the 1974 Nelson and Warren tables which still have not been proven in practice and which may not reflect your own expected morbidity in your particular line of business. In particular, with smaller and medium sized companies you have the problem that with the particular market, geographical or professional, you may vary quite a bit from industry standards. In our case, we have several large lines of business where our own anticipated experience is about two-thirds of what the TSA experience would be, even using several years of older data, such as the '74 Nelson and Warren tables used. So, if we use the full 1974 Nelson and Warren table for our reserves, our loss ratios are thrown off even if we attempt to use Joe Pharr's anticipated experience basis. We did some playing around with that and found that Joe's paper was brilliant and finally came up with the loss ratio that was supposed to be constant by duration if you measured it, but that is only true if the expected morbidity used in your reserves is also the expected morbidity that you are anticipating and experiencing.

MR. HANSEN: Today's market has new disability income type formats where underwriting quite often includes inflation and future increase options and tailor-making the policy so it will eliminate overinsurance. All those factors that are increasingly becoming common in the industry are not just increasing expenses. They are also lowering the morbidity. It is the same as underwriting a product; you have a lower premium and it is costing you more to do the underwriting. Maybe it is a benefit to the consumer. It is a difficult question and that is why the loss ratio completely violates underwriting standards. It is best to sell something that has no restrictions on it and price it to make it profitable.

MR. EARL L. HOFFMAN: I have a question concerning including a demonstration of actual to expected loss ratios with rate increase filings. I see this posing a problem for blocks of business that are relatively new. For example, if there is a block of business, say three to four years old, where the average of the policies in that block is two years, since the expected loss ratios increase by duration we might expect that the expected loss ratio for the block of business would be about 40 or 45%. Now, if we find that the actual loss ratio has been about 50 or 55%, could we reasonably expect to get a rate increase based on those actual loss ratios?

MR. HANSEN: We do a good share of rate increases. Mostly it is on older blocks of business. It is hard to prove the necessity when a block is that young. It depends upon on how big the block is. You may be running a 55% loss ratio on it and you are supposed to be looking at an approximate 45% loss ratio, ignoring reserves. Is that significant difference just because you had a bad year, and next year it is going to be better? Those are the questions at which states will be looking. On a new block of business you may know that you are in trouble but if it was designed correctly in the first place you should not have that much problem in the first couple of years unless something really went wrong. In that case if you could prove to the Insurance Department that you have loss ratio problems, and also state the reasons why you have loss ratio problems -- the product was priced for a certain type of group and you ended up with a different type of group than you thought the agency force was going to sell, for example -- the rate increase might be approved. It is very difficult to get good credible data on a new block of business in order to apply for a rate increase that early.

MR. HOFFMAN: Are you saying, Paul, then it is more than just demonstrating higher loss ratios, but also showing that the underlying assumptions may have been wrong?

MR. HANSEN: Yes. If you say we made a mistake, we were trying to sell disability income to professional workers but our agency force sold to blue collar workers and now we are really suffering, I think it is legitimate that you could go for a rate increase.

MR. HOPPER: Are you really talking about actual to expected studies here as the appropriate way of demonstrating the need for a rate increase?

MR. HANSEN, Yes, an actual to expected study could work in this situation. It has been mentioned that two standard deviations is appropriate. Is something less than that more appropriate? It can get very theoretical. Can you show with the block of business by one company, that the actual to expected is going to be enough for a rate increase that soon? That is the big question.

MR. HOFFMAN: I would like some comments from the panel concerning the recognition of inflation in filing rate increases on some of the more open-ended medical coverages like Medicare Supplement or Major Medical.

MR. HANSEN: First, you must make general assumptions about what the inflation rate will be and for how many years you will project it before you would have to file for another rate increase. This is probably two to four years depending upon the type of product -- how scheduled it is internally, and where the inflation is going to be for that particular type of product. You then project the benefits expected to be paid and use inflation to increase those before calculating the premium.

MR. KOPPEL: I think companies have to ask themselves a fundamental question when they are marketing products that are subject to inflation and advertising them as level premium guaranteed renewable contracts.

The term "level premium" is getting out of hand when you are talking about policies subject to inflation and, loss ratios aside, a policyholder could find that he or she bought a policy with a much lower premium assuming that

it was going to remain lower for a longer period of time, because the company actuaries determined that they were going to require a rate increase in only two to three years. That is opposed to another policy which might have a higher premium going in but the company actuaries felt that they were going to avoid a rate increase for maybe five to six, or even ten years. This is something that companies and regulators both ought to be thinking about.

MR. HUNT: I developed a position in Massachusetts that anyone willing to write truly inflation sensitive health insurance was welcome to do it and I would not worry about the premiums charged for it. The word "inflation" is sometimes used to cover many things on non-inflation sensitive benefit structures, however.

MR. KOPPEL: Paul, as a consultant to companies, I think you indicated that many of the companies have small blocks of health business. What is your feeling about how able they would be to comply with some of the current minimum loss ratio standards around some of the states and make a reasonable, or for that matter, any level of profit on their accident and health business?

MR. HANSEN: They are getting out of the business. If states were to ask you every year why your loss ratios were so low, it would become an administrative and expensive nightmare. Smaller companies cannot have that much in staff and they do not have people who are available to do this kind of work. The more technical they get the more they will turn to consultants, and that is expensive too. In most cases the companies that I deal with will attempt to handle all their problems themselves before they come to us, but it is getting more and more technical. Each time we send out a new product there is always one more state that comes back with something new. Small companies are being hurt by it. I am not so sure that some small companies should even be in the medical business unless they are prepared staff-wise to get into it and be prepared to be on top of the business. It is not like life business at all. It has a higher lapse rate, it is more subject to inflation and deficient premium, it has harder reserve requirements. It is becoming more and more difficult for a small company to worry about health insurance.

MR. HOPPER: Can we look at this subject for a moment from the consumer's point of view? Given that the consumer or the insurance buying public has a right to know something about what he is buying, I think we on the panel agree that giving him a loss ratio figure probably is fairly meaningless. But, what would be meaningful to the consumer? Is there some other figure, or some other explanation we could give to him or her that would be more helpful?

MR. HUNT: Clearly, loss ratio is a meaningless term to the public. If we were going to give out loss ratios, they could be dressed up a bit and made more meaningful. Even then I do not know if it would be helpful, although it might be. Instead, we should, perhaps, try to standardize coverage and let companies compete on price. That is perhaps an unrealistic view of the health insurance market, in part because health insurance is a residual coverage. Most people have it at work, and it is not like auto insurance which may be mandatory coverage on a statewide basis. I would be more hopeful in terms of standardizing coverage than in terms of printing loss ratios.



MR. HANSEN: If you cannot standardize the coverages does that mean you have an actuarial equivalence test, such as those in the state of Minnesota? This is one method of comparing non-identical products. It has many holes, it is difficult, and requires large quantities of paperwork, but I am afraid it might turn out to be a solution by some states to try to work in a cost disclosure.

MR. HOPPER: In 1979, there were several changes made to the Annual Statement in the reporting of individual health insurance data. Would anyone on the panel care to comment on whether those changes are helpful or not?

MR. KOPPEL: I was on the Industry Advisory Committee that recommended some of these changes. I thought they were pretty helpful until I met Ernie Frankovich yesterday. For example, Ernie was concerned that we had eliminated Part I of Schedule H of the Annual Statement. I was not aware that anyone used or even did Part I of Schedule H correctly, yet Ernie points out that he uses that frequently to determine the method by which a company computes the unearned premium reserve. So I thought they were helpful, the whole committee thought they were helpful, the NAIC thought they were pretty good, but I guess you cannot please everybody.

MR. HANSEN: Ernie uses Part I as an audit tool.

MR. KOPPEL: I think he made a good point. I did not know that that was one of the uses for Schedule H, Part I.

MR. HUNT: The change in reserves got moved from a deduction in the denominator to an increase in the numerator, which has obvious window-dressing advantages, for whatever purpose.

MR. RICHARD L. MUCCI: Regarding the reserve adequacy test, if you have a deficiency you show a positive difference and when you have a good reserve run-off you show a negative difference. In addition, nowhere in Schedule H is the investment income allocated to the lines. I think that causes difficulty in analyzing your experience for the subcategories of your disability and group coverages.

