

**A NEW APPROACH TO  
PREMIUM, POLICY AND CLAIM RESERVES FOR  
HEALTH INSURANCE**

**E. PAUL BARNHART**

**ABSTRACT**

The entire subject of reserves and liabilities with respect to health insurance is in disarray. Traditional methods of addressing it have failed to cope with the problems of uncontrollably escalating claim costs and frequent rate increases under the vulnerable coverages, such as major medical and medicare supplement insurance. The same traditional methods have lacked sufficient flexibility and adaptability to respond to reserving problems created by changing morbidity patterns and obsolescent tabular standards.

Moreover, there is evident confusion and deeply divided opinion among health actuaries on the subject. Some view health reserves as measures of actual or potential liabilities, present and future, which have been or are expected to be incurred by insurers. Others tend to view health insurance reserves more as retrospective fund balances measuring what is left over after payment of past claims and expenses. Still further confusion and divided opinion arise with respect to the basic functions to be served by the several categories of reserves, especially claim reserves as contrasted to policy reserves in addition to unearned premiums. Even the basic question of appropriate dates of incurral of claims, rather surprisingly, seems to be subject to widely ranging opinion, to the point that some regard it as a matter of optional preference.

This paper reexamines the basic concepts and functions involved, and attempts to clarify and redefine them in an orderly and consistent manner. It then proposes a new approach to the total subject, for the consideration of actuaries serving both in industry and in regulation. I believe this new approach provides a more effective, adaptable and consistent structure to cope with certain major problems besetting the health insurance field. Among the problems specifically addressed are:

1. Reserve systems that are unresponsive to rapidly changing claim costs and to situations involving frequent rate adjustments.
2. Reserve systems which fail to recognize cash flow realistically or which achieve "conservatism" in artificial or nonadaptive ways serving little practical or constructive purpose.
3. Risk deterioration and prohibitive cycles of rate increases in closed, declining blocks

of health business, and how a responsive reserve system can be structured to assist in mitigating this problem.

4. Regulatory problems arising in connection with policy forms, as well as with the entire health business of some insurers, under which cumulative experience never appears to rise to reasonable loss ratios.

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#### INTRODUCTION

Regulators, in general, tend to view the loss ratio experience under an insurer's different forms and lines of business as standing separately and independently. The same insurer thus may be subjected to regulatory criticism for excessively low loss ratios in one area, while simultaneously experiencing excessively high losses in another. Existing reserve systems contain no mechanism designed specifically to view an insurer's health business holistically or to create any constructive relationship between areas of excess loss and excess gain. This paper proposes a reserve system which achieves a constructive interrelationship between such areas, and which also formally addresses the situation of health insurers whose total business consistently produces unreasonably low loss ratios.

The several problems cited have all been identified by members of the Life, Accident and Health Standing Technical Task Force of the National Association of Insurance Commissioners (NAIC). The NAIC has assigned a subcommittee of the Committee on Health of the American Academy of Actuaries to develop new minimum reserve standards for health insurance which will respond to these problems to the fullest extent possible, while still serving the traditional objectives of adequate valuation of an insurer's net contractual liabilities and of measuring and testing solvency. I am the chairman of this Academy subcommittee and have prepared this paper in the process of examining and proposing concepts for the consideration of the committee, and of the profession at large. I hope it will help to meet the objectives of the difficult task assigned. It must be emphasized that this paper is based solely on my work and does not necessarily reflect the views of any other members of the subcommittee. Appendix A, of the paper, is, however, a "working draft" which has been reviewed and revised, in part, at the subcommittee level. This draft remains, as of this writing, solely a working draft. Any or all portions of it remain subject to revision, acceptance or rejection by the full subcommittee.

Regardless of whether this paper successfully addresses all the problems cited, it is my hope that at least it will lead to increased dialogue, thoughtful research, and dedication on the part of the profession, thus resulting in substantial headway toward solving the stubborn problems that confront us.

I hope also that such dialogue and research will aid the subcommittee before its own report is completed and final.

I. UNDERLYING ISSUES: ARE HEALTH INSURANCE RESERVES  
LIABILITIES OR FUND BALANCES?

Many health actuaries have fallen into the habit of viewing reserves as "funds." They see reserves as funds set aside from premium income to provide for future claim payments or to fund the eventual insufficiency of level premiums. They speak of the need for premiums of sufficient adequacy to fund appropriate reserve requirements.

This concept of reserves as funds is not a harmless matter of terminology or perspective. Too often it is implicitly assumed that if premiums are inadequate, or funds are not provided, then sufficient reserves simply are not being accumulated and, therefore, do not exist, because an insufficient balance remains out of premium income to provide for adequate funding. This is equivalent to asserting that if no money is left over from one's personal budget to make the mortgage payment, then no mortgage liability exists.

Reserves are the actuary's measure of net liability. They are his estimate of the present value of an insurer's unpaid present contractual obligations, plus any excess in the value of future contractual obligations over the value of future contractual premiums. This liability exists whether funds have been set aside or not. These are basic concepts that apparently need reemphasis.

It is true that the net excess of the value of future obligations over future premiums is affected by the extent of guarantees relating to the premiums. If future premiums are guaranteed, it would seem that the net excess value of the future obligations should be measured more conservatively than if the same premiums are not guaranteed. It would further seem that the net excess value of future obligations should also be measured distinctly more conservatively when renewal of the contracts and the contract benefits are guaranteed than when they are not. Unfortunately, existing reserve standards do not adequately recognize these distinctions which is one of their major shortcomings. It is the standards themselves, by which the liabilities are required to be measured, that seriously need redefinition.

Reserves are present value measures of net contractual liability, nonetheless. The existence and extent of contractual obligations obviously affects their value but not their basic nature as liabilities. What is funded from premium income is the build-up of assets, which should exceed the liabilities by sufficient margin to create adequate surplus and reasonable profit. Again, this is an elementary concept that apparently needs reemphasis.

Another confusing area is in the unfortunate nomenclature of claim "reserves and liabilities." Here the term liabilities is meant to refer to *accrued*

liabilities; those liabilities which are already fixed in the sense that they are precisely determinable and due, even if in fact they remain unreported to the insurer. Claim reserves cover the *unaccrued* liabilities; amounts not yet due and which cannot as yet be determined precisely even when the claim is reported.

Both parts, however, are present incurred liabilities—obligations that the insurer must pay—irrespective of any future premiums or guarantees relating to such premiums or to contract renewal in the future. Hence, there is no net excess over the value of any future premiums to be considered. There is only the responsibility of appropriately measuring the presently incurred liability, known or unknown, precisely determinable or not. Here, it is the nomenclature that needs revision. “Reserves for accrued and unaccrued incurred claims,” would be better than “claim reserves and liabilities.”

## II. UNDERLYING ISSUES: CLAIM, PREMIUM AND POLICY RESERVES. IS IT USEFUL TO MAINTAIN DISTINCT ROLES FOR EACH?

The current “Life and Health” Convention Blank identifies three major categories of reserves, brought together and summarized in Part 2 of Schedule H:

1. Claim reserves (that is, claim “reserves and liabilities”),
2. Premium reserves, and
3. Policy reserves.

Virtually every health actuary is quick to point out that the adequacy of an insurer’s health reserves is to be determined only in the aggregate. While this may be entirely true, this concept appears to have spread indifference toward how that aggregate is distributed among the three categories. It also appears to have lent credence to the notion that it is optional actuarial or insurer preference as to whether a given liability is presumed covered by the claim reserve or by one of the other two. If the aggregate reserve is all that matters, then what difference can it make whether one accounts for a particular item as part of the claim reserve or as part of the policy reserve? What difference does it make what rules one follows to assign incurred dates to claims? Cannot the rules differ according to each individual actuary’s particular philosophy as to conservatism, or as to rating principles (or the like), just as long as the aggregate reserve is adequate? I intend to demonstrate that it makes a great deal of difference.

While reserve adequacy is ultimately determined in the aggregate, adequacy can hardly be *tested* in the aggregate. What must be tested is the summation of the various items of liability that make up the aggregate. Only

then can the adequacy of the aggregate be judged. Accordingly, the valuation actuary must have a clear and orderly notion of the appropriate magnitude of the various parts, in order to certify to his opinion as to the adequacy of the aggregate.

It easily happens that the valuation actuary may regard a given regulatory standard (like the gross pro-rata unearned premium reserve) as excessively redundant. He may then be willing to certify to the sufficiency of the aggregate reserve, even though he knows or suspects that a given category is undervalued. Relying solely on the adequacy of the aggregate is dangerous and invites confusion and difficulty.

It is enormously important that clear and distinct roles be defined and maintained for each of the three major reserve categories. It is similarly important that each category be valued with appropriate care. These roles, described as follows, mention the claim reserve first because it is the most basic and ultimately most critical of the reserve categories:

A. *The Claim Reserve.* The role of this reserve should be to value appropriately all claims of the insurer which have been incurred but are unpaid as of the date of valuation. Further, it should be rigorously limited to this single, clear purpose. It should be neither broadened, to sweep in other liabilities which more appropriately are dealt with under the other two categories, nor narrowed, by transferring so-called contingent claim liabilities off into other categories. If an unpaid claim is incurred, it should be covered by the claim reserve. If it is not yet incurred, it should not be covered by the claim reserve.

Thus defined, the claim reserve clearly is independent of whatever guarantees or provisions apply to future premiums or to future contract renewals. The only exception to this might be where termination of the contract itself modifies the extended benefit obligations. This usually occurs only under group contracts. Most individual contracts specifically provide that termination of coverage may not prejudice any claim pending as of the date of such termination.

The most obvious reason for proposing these strict boundaries on the claim reserve is that the incurred claims of the insurer's statement year are determined from the starting and ending claim reserve values. (While this, in itself, is a matter of considerable importance, past controversy on this subject makes further discussion necessary. See section III.) For this same reason, however, it is also extremely important that the incurred claims derived from the starting and ending reserves be reasonably accurate. While this objective cannot be allowed to take priority over reserve adequacy, it can often be served reasonably by giving attention to the goal of consistency in margins of conservatism in the claim reserve, from one valuation date to the next.

Also, while care should be taken to achieve adequacy in the claim reserve itself, the policy reserve can better carry the major responsibility for aggregate adequacy.

B. *The Premium Reserve.* Traditionally, the premium reserve, which normally is just the unearned premium reserve, has not been kept rigorously distinct from the policy or additional reserve. I think it would be better to keep it distinct. For one thing, certain classes of health insurance, such as optionally renewable policies, single premium contracts and annual renewable term policies with attained age premiums, have not carried additional reserves (although the system proposed in this paper would establish an additional reserve with respect to some of these contracts). In view of this, it is useful to have clearly in mind exactly what the function of the premium reserve is.

Secondly, since the unearned premium reserve easily serves such a clear and specific function, it would seem advantageous for it to remain so and to allow the policy reserve to be responsible for other functions. Traditionally, and in the existing NAIC health insurance reserve standards, it is actually the unearned premium reserve which serves as the ultimate "minimum reserve" floor: "in no event, however, should the aggregate [policy] reserve . . . be less than the gross pro-rata unearned premiums under such policies." Since some significant categories of health policies require only an unearned premium reserve, regulators have tended to regard this reserve, carried as a gross unearned premium reserve, as the ultimate protector of reserve adequacy.

As a result, many small- to medium-size insurers find that they cannot produce an increasing volume of even the soundest and most routine types of health insurance because a highly redundant gross pro-rata unearned premium reserve brings about surplus drain. It is unnecessary to put this artificial obstacle in front of smaller company health insurance growth. This is not done in life insurance. Policy reserve standards can more effectively serve the broad objectives of prudent conservatism.

In short, the unearned premium reserve, like the claim reserve, should be limited to its single clear function, preferably shown separately in statutory statements, and can function on a more reasonable basis than the onerous full gross pro-rata unearned premium reserve. That single clear function is simply to cover the liability specifically associated with the unexpired terms of premiums that have become due or have been paid, as of the valuation date.

C. *The Policy, or Contract Reserve.* This reserve can and should shoulder all reserve objectives not specifically assigned to claim or to premium reserves. It should be the main base of aggregate reserve conservatism. It should be a flexible, adaptable "balancing" reserve, picking up any addi-

tional recognition of or provision for liabilities not addressed by the other two reserve categories.

The system proposed in this paper also intends for this reserve to cope with the several problem areas outlined in the Abstract. It can do this most effectively if the functions of the several reserves are not confused and blended. Let the claim and premium reserves fulfill their clear and singular purposes exclusively. The tasks of the policy reserve are then apparent.

### III. THE CLAIM RESERVE: THE BASIC RESERVE OF HEALTH INSURANCE

The claim reserve remains the most basic and critical reserve in health insurance if properly restricted to its clear and single purpose. To appreciate this fact, just review the well published reasons for most of the insolvencies among health insurers that have emerged in the past decade. Most, if not all, of the more significant insolvencies have been due to serious deficiencies in the claim reserves established by these insurers. Perhaps this only has been because the claim reserve is more readily tested (if it is clear what liability it is intended to value) and can be tested far sooner than the policy reserve. In any case, it is most frequently a deficient claim reserve that brings down a health insurer.

Another reason for the crucial importance of the claim reserve has already been cited. The incurred claims of the statement period are dependent upon the starting and ending claim reserves. It is true, of course, that morbidity studies can ultimately be conducted based on "developed" paid claims. But the actuary must usually wait a long time after the incurral year for this type of study, especially if it is to be essentially independent of all claim reserve estimates that have come and gone along the way. That means that any unpaid claim residue still existing at the end of the observation period must be relatively nominal.

Much of the time, a reasonably confident estimate of incurred claims is needed long before the ending claim reserve has receded to residual insignificance. For example, if the coverage we are concerned with is major medical or another coverage vulnerable to inflation and other shifting trends, the size of the justifiable rate increase may well be the most urgent matter to decide. Therefore, we want a reasonable measure of the magnitude of incurred claims as quickly as possible. This alone is ample reason why the claim reserve should be kept restricted to its one objective of carefully measuring unpaid, contractually incurred liability. If other objectives are allowed, such as early or conservative provision for "imminent" claims to be incurred among policyholders known to be disabled or in ill health, we are actually distorting the estimated value of claims incurred in the most recent statement period. The premium and policy reserves exist to cover

“imminent” claims, so why confuse the function of the claim reserve with such extraneous objectives?

It should also be apparent that if the role of the claim reserve is blurred by introducing optional functions, substantial opportunity for deliberate manipulation arises. I have seen it done more than once: for tax reasons; to “justify” as large a rate increase as possible; to produce a profit for directors or stockholders that is not really there. I suggest we should minimize all such temptation and keep the claim reserve clean.

This brings us to the nagging issue of incurred dates. If the claim reserve presumably is intended to value “incurred” but unpaid claims, then presumably it is also to be tested, as in Schedule O of the “Life and Health” Convention Blank, by the paid development of claims dated as “incurred” on or before the valuation date. The liability being discussed is the liability arising from those claims that the insurer becomes contractually obligated to pay, on or before the valuation date.

One would therefore think that incurred claim dates should be determined by rules that are reasonably consistent with contract provisions, within the limits of justifiable practicality. However, many health insurance actuaries apparently think otherwise. Most discussions I have heard or read on this subject of dating never mention the contract. One actuary wants disability claims dated as of the end of the elimination period; another prefers the date of disablement. One wants to date maternity claims as of conception; another as of termination of pregnancy. One wants to date major medical claims as of the date the deductible is satisfied. Another dates claims as of the date of first expense applied to the deductible, or even as of the earliest date the claimant was known to have been treated for the covered condition. What better arbiter can there possibly be, in deciding the correct incurred date, than the contract whose provisions created the liability, along with laws, regulations or court precedents that have established an interpretation of the contract? The insurer becomes liable to pay claims because of the provisions of its contracts. The incurred date of any claim is the date on which the insurer became contractually obligated to pay that claim.

Some health actuaries choose to extend this debate even further. It has been argued that continuing claims, such as total disability claims, should be considered only partially or conditionally incurred as of the date the insurer first becomes obligated to pay disability benefits, on the grounds that continuing liability is contingent upon the occurrence of unforeseeable later events. The disabled claimant may die in an accident, or recover unexpectedly or temporarily, or suffer unpredictable complications that extend the disability. Were we to accept this line of reasoning, confusion would indeed reign supreme. Imagine the difficulty in attempting construction of a disability continuance table built on a theory of partial or conditional incurral or



continuation, with continuing liability of the insurer distributed among contingent pieces, each with its own presumed date of incurral. All such contingencies affecting the future development of a disability claim are inherently (and properly) dealt with through the probabilities of termination built into the continuance table itself. Again, it is the contract that resolves the issue of the date of incurral through its recurrent disability clause. If the contract defines resumption or recurrence of a particular disability to be a continuation of the earlier disability, then that settles the matter.

There are other important reasons for recognizing clear, objective, logical incurred dating rules based on contract provisions rather than on mere personal actuarial preference. Insurance department examiners should be able to rely on objective, consistently based rules in reviewing and testing an insurer's claim reserve practices. Intercompany experience studies should surely be based on incurred dating rules more objective than a plethora of personal preferences and theories of various individual actuaries. I can only hope that exposing the controversy that continues to swirl around the subject of incurred dating will help bring about some logical and objective consensus.

Determining the incurred claims of a given period and a given "exposure cell" is, as has been stated, the most basic and critical actuarial task in health insurance. Hence, there is the overriding importance of the claim reserve and of incurred dates. Ultimately all else depends on morbidity: trends, tables and projections; sound rates and appropriate rate increases; the validity of all the other reserves, including the policy reserve. Only if the function of the claim reserve is clearly and cleanly limited to its single purpose can we effectively address the other reserves and construct a total reserve system that addresses the objectives and problems in a logical, orderly manner. Only then do we know what we are trying to do, and how.

NOTE: Any discussion of specific claim reserve methods, as such, falls outside the purpose of this paper. The reader is referred to other excellent sources such as the paper "Health Insurance Claim Reserves and Liabilities," by John M. Bragg, *TSA XVI*, Part 1, p. 17, together with the discussion of Mr. Bragg's paper.

#### IV. THE PREMIUM RESERVE

The gross pro-rata unearned premium reserve in health insurance is an anachronism, dating back to times when health insurance was a "casualty" line, not encumbered with "additional reserves." When additional policy reserve requirements were introduced, the mean tabular reserve method was borrowed from life insurance, but the requirement was carried over that in no event should the aggregate policy reserves be less than the gross pro-rata

unearned premiums. Thus the premium reserve continued to carry the burden of serving as the ultimate “minimum floor” of conservative policy reserve standards, when it could have better served its singular purpose if less had depended upon it.

In section V, two new types of health insurance policy reserves are proposed. These policy reserves, together with traditional tabular reserves, can carry the burden of conservatism and free the premium reserve to serve its simple purpose. At the same time, the premium reserve will avoid the artificial and unnecessary problems that arise from depending upon it to double as a minimum reserve floor.

For the small- or medium-size health insurer, the gross unearned premium reserve becomes a major, and largely unnecessary, obstacle to even normal growth. This is because of its excessive redundancy, particularly in the first year when expected claims are often small and expenses are usually at their highest. Total first year expenses frequently account for well over 100 percent of first year gross premiums. As a result, if, say, an average 50 percent of annual mode premiums are set up as unearned, the insurer is in the red by more than 50 percent of corresponding annual mode premium income, without paying the first dollar of claim. Looking at it another way, if the anticipated loss ratio is 50 percent, and we can view the net benefit premiums as 50 percent of the gross, the gross unearned premium is equivalent to 200 percent of the net unearned premium, under any payment mode, without even considering such matters as first year select morbidity. It is surely not necessary to establish such burdensome first year requirements, particularly if reasonable conservatism is observed as to renewal year policy reserve requirements.

The anticipated loss ratio, whether we like its overly simplistic nature or not, has come to be the yardstick of reasonableness for health insurance premiums. The fact that it is the presumptive guideline under the NAIC Individual Health Rate Filing Guidelines, and even a specific standard in some states, renders it an increasingly appropriate and readily available basis for establishing an alternative to the gross pro-rata unearned premium reserve. A modified type of minimum valuation standard with respect to the premium reserve is proposed. This would be a net unearned premium, determined by multiplying the gross pro-rata unearned premium by the applicable anticipated loss ratio, increased by a factor allowing for unaccrued expenses associated with the unexpired premium term.

Such an unearned premium would normally be substantially less than the gross unearned premium. For example, if the anticipated loss ratio for the policy is 60 percent, the modified net premium might well be about 70 percent of gross, leading to 30 percent relief as compared to a full gross unearned premium. For many insurers, particularly those with relatively

large increases in premiums in force, this would amount to very substantial relief as to minimum premium reserve requirements.

#### V. THE POLICY OR CONTRACT RESERVE

The policy reserve is the reserve category where this paper proposes major changes involving some new concepts. This reserve will hereafter be referred to as the contract reserve. Under the existing NAIC Reserve Standards for Individual Health Insurance, the only additional reserve requirement (except, possibly, the reserve for "deferred contingent benefits," which under individual health insurance is usually more appropriately included in the claim reserve) is the tabular policy reserve required for policies with certain types of renewal guarantees. There are serious shortcomings to this reserve requirement as it presently exists in the standards:

1. There is no distinction recognized as to renewal type. No reserve is required for purely optionally renewable policies (even if the rates are structured as level premiums); identical standards apply, however, to all other policy types providing similar benefits. The kinds and the extent of renewal and premium guarantees obviously affect the insurer's prospective liabilities under such contracts, and some distinction is in order.
2. The tabular reserve is essentially unresponsive to changing costs and claim loss levels, particularly where a specified morbidity table applies. The reserve can be more fluid and adaptable with respect to benefits such as major medical, where no specified morbidity standard applies. This in itself becomes a disadvantage since, as a practical matter, there is no objective standard at all in such cases. Each insurer is largely free to apply its own reserving philosophy to such undefined areas.
3. The tabular reserve becomes a clumsy and complicated affair when an attempt is made to relate it to level premium rate structures that have gone through several rate adjustments. The actuarial theory is simple enough, but many valuation record systems are not designed to handle successive reserve increments, each of which may require its own valuation issue date. Moreover, few rate structures which were initially truly level premium are really maintained as level premium in structure after one or two rate increases. It is far more common simply to adjust the rates by a uniform percentage increase applied to all in-force policies, and the appropriately related tabular valuation reserve basis rapidly becomes obscure.
4. Because of the three problem areas just mentioned, the tabular reserve tends to become less and less related to the actual prevailing premium and morbidity situation. As a result, reserves are established and released on artificial assumptions often having little correspondence to reality.

Under these circumstances, the reserve ceases to perform one of its basic purposes, which is to stabilize the redundancies and deficiencies of the gross premium structure used over the policy lifetime. The reserve is simply a "reserve," a largely artificial liability that is carried along against the block of in-force business.

All of this strongly indicates that major changes and redefinition of concept and function are sorely needed with respect to the contract reserve. As mentioned in the introduction, a subcommittee of the American Academy of Actuaries Committee on Health has been assigned the task of developing new valuation standards for health insurance. The most recent subcommittee working draft, as of December 27, 1984 is appended to this paper. The following is a brief summary of the concepts proposed in section III of the working draft on contract reserves, under study by the subcommittee.

1. Traditional tabular reserve standards would be restricted to classes of policies providing stable benefits and using level premium rate structures.
2. Two new types of reserve requirements are proposed, both of which would function in a highly responsive manner toward cumulative incurred claim experience in relation to anticipated loss ratios, as defined and applied under NAIC rate filing guidelines for health insurance contracts:
  - a. The Loss Limitation Reserve (LLR). This would be a general reserve (not carried against specific policy forms) the purpose of which would be to assist in covering excessive prospective losses under closed blocks of unstable or volatile benefit contracts, in order to dampen otherwise prohibitive or uncontrollable rate increases on such closed blocks.
  - b. The Balancing Reserve. This reserve, to be carried against specific contract forms, would be a retrospective reserve that would maintain, on a balancing basis, the anticipated loss ratio applicable to each such contract form, calculated on a cumulative retrospective basis. It would, however, be only positive or zero at each valuation date.

In combination, these two new reserves could help to minimize the problems associated with the existing tabular standards. (The reader may wish to review the appendix before reading the balance of this paper.)

#### VI. COMMENTS ON THE WORKING DRAFT

Some comment and rationale will be helpful on various aspects of the working draft, as follows:

1. Note that while tabular reserves are required only for certain type-classes of contracts, other contract reserves are still required for most remaining individual health contracts and for certain group contracts. In some cases, the only contract reserve requirement would be the balancing reserve.

In my opinion, traditional tabular reserves continue to constitute a desirable requirement for the type-classes specified. In such cases, tabular reserve requirements continue to provide a useful, specific and objective minimum reserve standard that is not dependent upon an insurer's gross premium or left solely to insurer or individual actuarial judgment.

2. The balancing reserve would be a retrospectively determined reserve entirely and is therefore quite similar to the fund balance concept of reserves mentioned in the first section of this paper. Nevertheless, it is a true liability reserve, recognizing the implicit liability created by rate filing guidelines, which limit future rate increases in relation to cumulative loss ratio experience up to the date of a filed increase. It recognizes as a liability any shortfall in retrospective incurred claim experience as measured against anticipated loss ratios. It further provides that such liability must be recognized as a potential obligation to policyholders, under the rules and to the extent indicated.

Even in the absence of formal rate filing guidelines, presently established in only a limited number of jurisdictions, it is my opinion that an implicit liability attaches to any rate filing that includes a statement as to a specific anticipated loss ratio, since such loss ratios have become established as the yardsticks by which the reasonableness of premiums are measured. Insurers should pay serious attention to the implicit obligation that the emerging cumulative lifetime loss ratio experienced on the contract form should be monitored against the anticipated ratio under which the rates were originally filed. Thus, in any situation where the retrospective cumulative loss ratio has been favorable (that is, it is below the anticipated value), the insurer should be prepared to give credit to this in determining and filing a rate increase based on an expectation of higher future loss ratios on the block of business. The balancing reserve provides a means of recognizing and measuring this implicit liability arising out of retrospective experience.

The balancing reserve is also highly responsive to actual insurer experience. If loss experience turns adverse, the balancing reserve immediately reacts to the impact and does so on a cumulative basis. Tabular reserves exhibit no such responsiveness. The balancing reserve also adapts itself to renewal and premium guarantees, under the rules proposed, in the absence of any tabular reserve requirement as to a particular block of business.

Further, balancing reserves provide a very simple means of reflecting changes in reserve requirements which result from rate increases and altered valuation assumptions consistent with such increases. If the rate structure involved was originally a level premium structure, or even continues as a series of truly level premium increments, the balancing reserve

automatically takes account of the benefit net premium associated with the revised gross premiums, as derived from the anticipated loss ratio that applies. The balancing reserve also reflects early contract year experience automatically, whether this is select or antiselect.

Accordingly, the balancing reserve concept directly and simply addresses several major problems cited earlier in the paper.

3. The loss limitation reserve concept is in some respects a fund balance concept, but less so than the balancing reserve. It would be funded, in the sense that it accumulates only to the extent contributions have actually been made. However, it can only be drawn upon for assistance on a budgeting basis, to the extent the rules allow for it to be released. Once an LLR contribution has been made in any statement year, it cannot be recovered as an automatic result of cumulative retrospective recalculation of the loss ratio. The balancing reserve is recoverable.
4. While the loss limitation reserve addresses the problem of deteriorating closed blocks of business, it may or may not prove to be an adequate or even substantial solution in any particular situation. It depends on the magnitude of the problem that may emerge, both in terms of size and frequency of rate increases needed and in terms of the volume of business involved as compared to the size of loss limitation reserve accumulating. Thus, while its effectiveness can by no means be assured in every case, the LLR is far better than nothing, and under a range of scenarios, would be of material help.

The LLR contribution percentages proposed in the Appendix may be about as large as they reasonably can be set, as a practical matter, under the competitive and regulatory environment that exists.

Allow me to make a final comment about the closed block requirement proposed for qualification for LLR assistance. It could be that an open block still being issued could meet all the criteria for LLR assistance. However, it does not appear appropriate that any insurer should be marketing a contract form that at the same time is receiving LLR assistance. This would be a form of subsidizing the premiums of policies currently being sold.

5. In the formulas for calculating the balancing reserve (Appendix, section III.C.2.), the reason for adjustment of first year claims and premiums in the calculation (note that, by the fifth year, these amounts become fully included in the cumulative development) is to recognize first year expense over and above the limited provision for this built into the proposed unearned premium reserve rules. This is a modified reserve concept intended to meet the same broad objective as that of using two-year preliminary term tabular reserves. (The exact manner in which this is handled

may be substantially modified by the subcommittee, as is true with anything and everything in the working proposal.)

6. Note that the loss limitation reserve and balancing reserve provide an insurer with specific means of relating excess losses on some forms with excess gains (as measured by the applicable loss ratios) on certain other forms.
7. Substantial relative conservatism is built into the aggregate balancing and loss limitation reserve requirements, in comparison to the existing reserve standards. Under these standards, no contract reserves at all are required for a wide range of contracts. Accordingly, it is my view that the primary burden of conservatism would be effectively transferred from both the unearned premium reserve and the claim reserve to the contract reserve. This is where it should be placed, if the objectives cited earlier in the paper, including responsiveness and adaptability in the health insurance reserve system, are to be attained.

#### CONCLUSION

At the beginning of this paper, I took issue with the fund balance view of health insurance reserves. However, in discussing policy reserves, I have advocated two new health insurance reserve concepts—the balancing reserve and the loss limitation reserve. Both, especially the balancing reserve, embody aspects of the fund balance concept.

There is a definite reason for this apparent contradiction. The fund balance view of policy reserves as held has failed to recognize fully the nature of reserves as liabilities, as well as the fact that existing statutory and regulatory standards have prescribed how these liabilities should be determined.

If statute and regulation can accept and recognize a fund balance type of reserve as an appropriate measure of the liabilities associated with future contract and premium guarantees, particularly in the case of volatile coverages, then the fund balance concept becomes viable. But reserves on such a basis must be perceived fundamentally as liabilities, with the fund balance concept being actuarially acceptable only if it suitably measures the liability.

It is my opinion that, given both the objective and proper perception of how the underlying liability should be measured in relation to future contractual guarantees as to benefits and premiums, balancing and loss limitation reserves of the kind proposed become appropriate and can be valuable in attacking the serious problems besetting health insurance.

## APPENDIX A

[NOTE: This working draft is a discussion document, revised as of the date shown and under continuing study by the Subcommittee on Liaison with NAIC Accident and Health (B) Committee of the Committee on Health of the American Academy of Actuaries. No portion of it is necessarily final. It is included here in order to encourage comment and discussion by the profession on the valuation concepts proposed.]

WORKING DRAFT: *December 27, 1984*

*Reserve Standards for Individual and Group Health Insurance Contracts*

I. CLAIM RESERVES

A. GENERAL

1. "Claim Reserves" includes all items formerly covered under the compound heading "Claim Reserves and Liabilities." Those items formerly included under "Reserves" are referred to herein as reserves for unaccrued liabilities. Those items formerly included under "Liabilities" are referred to herein as reserves for accrued liabilities.
2. Appropriate claim reserves are required with respect to all health insurance claim amounts (whether reported or unreported, accrued or unaccrued) that have been incurred but are unpaid as of the valuation date. Claim reserves are required, as of a valuation date, only for claims which have been incurred on or before that date. Reserves, if any, for claims which have not actually been incurred as of a valuation date are to be provided for under premium (section II) or contract (section III) reserves.

Definition of incurred: A claim, including both its accrued and unaccrued portions, has been incurred, on or before a given valuation date, if the insurer's obligation to pay all such benefits, as may accrue under that claim, exists on or before that valuation date in accordance with the provisions of the contract (or of law or established judicial precedent to which the contract is subject) under which the claim arises. The liability should be determined on the same basis as if the contract ceased to be in force after the date of valuation.

In determining the incurred status of claims, insurers may use practical and convenient approximations to actual contractual incurred dates. This is provided that it can be demonstrated that aggregate claim reserves resulting from such approximate dating represent a reasonable and adequate determination of aggregate unpaid claim liability. The valuation actuary should review the incurred dating practices and approximations followed by the



insurer periodically to determine whether a satisfactory determination results.

3. Appropriate claim expense reserves are required with respect to the estimated cost of settlement of all incurred by unpaid claims.
- B. CLAIM RESERVES FOR DISABILITY INCOME DUE TO ACCIDENT OR SICKNESS
1. *Interest.* The maximum interest rate for claim reserves is 5 percent, unless a different maximum applied prior to the effective date of this regulation on the basis of the date the claim was incurred.
  2. *Morbidity.* Minimum standards with respect to morbidity are those stated in Appendix B of these Reserve Standards. The exception is, at the option of the insurer for claims with a duration from date of disablement of less than two years, reserves may be based on the individual insurer's experience or other assumptions designed to place a sound value on the liabilities. Adequacy of reserves based on such experience or assumptions should be verified by the development of each year's claims over a sufficient period of years to demonstrate that the amount of the matured liability is reasonable. Such claim payments may be discounted, at the appropriate rate (or rates) of interest, back to the date of valuation.
  3. For contracts with an elimination period, the duration of disablement should date from the time that benefits would have begun to accrue had there been no elimination period, regardless of the date of incurral of the claim.
- C. CLAIM RESERVES FOR ALL OTHER BENEFITS
1. *Interest.* The maximum interest rate for claim reserves is 5 percent, unless a different maximum applied prior to the effective date of this regulation on the basis of the date the claim was incurred.
  2. *Morbidity or other contingency.* The reserve should be based on the insurer's experience or other assumptions designed to place a sound value on the liabilities. The results should be verified by the development of each year's claims over a sufficient period of years to demonstrate that the amount of the matured liability is reasonable. Such claim payments may be discounted at the appropriate rate (or rates) of interest back to the date of valuation.
- D. AGGREGATE ESTIMATION OF LIABILITY
- It is permissible for insurers to estimate liabilities, except for

disability income reserves subject to specified minimum morbidity standards (see section I.B.). They may use integrated methods that value the various statement items in the aggregate, combining accrued and unaccrued, reported and unreported, in course of settlement, and so on. Specific statement items as may be required in the Convention Blank may then be separated out by allocation using any reasonable method.

E. METHODS IN GENERAL

Any generally accepted or justifiable actuarial method or combination of methods may be used to estimate all claim liabilities not subject to section I.B. minimum morbidity standards. Any such method or combination of methods may also be used in connection with liabilities subject to section I.B. minimum morbidity standards, provided that the aggregate reserve actually established separately for such liabilities is demonstrated to equal or exceed aggregate reserves calculated on the related minimum standards. The methods used for the liabilities generally may be integrated, as described in section I.D., or various Convention Blank items may be separately valued. Approximations based on groupings and averages may also be employed. Adequacy of the claim reserves, however, is to be determined aggregately.

All such reserves should be verified by the valuation actuary aggregately by the development of each year's claims over a sufficient period of years to provide reasonable demonstration of the aggregate amount of matured liability, taking any interest discount appropriately into account. Record systems, coding, and methodologies used to estimate the liabilities should also be assessed from time to time by the valuation actuary to determine their continuing adequacy and reliability.

II. PREMIUM RESERVES

A. PAID PREMIUMS: GENERAL

Unearned premium reserves are required for all contracts with respect to the period of coverage for which premiums have been paid beyond the date of valuation. Reserves are also required with respect to any existing retrospective experience rate credits.

B. MINIMUM RESERVE STANDARD FOR UNEARNED PREMIUM RESERVES

The minimum reserve requirement with respect to any contract is the pro-rata unearned premium derived from a net modal premium that is determined by multiplying (a) the gross modal premium in force on the contract by (b) the anticipated loss ratio determined for

the contract, plus 25 percent of the difference between such loss ratio and 100 percent. This is provided, however, that the value of (b) shall not exceed 100 percent.

C. RESERVES FOR RETROSPECTIVE EXPERIENCE RATE CREDITS OR REFUNDS

Reserves are required with respect to all accrued retrospective experience cash refunds or rate credits. Such reserves must be adequate on the basis of the present value, at date of valuation, of the estimated accrued contractual liability represented by such refunds or credits. If the insurer's practice or intent is to provide such a refund or credit, even in the absence of contractual obligation to do so, reserves are required on the basis of such practice or intent.

D. PREMIUMS DUE AND UNPAID

Premiums due and unpaid may be carried as an asset, subject to the following limitations:

1. Only premiums past due for less than three months may be so included.
2. The sum of the following amounts must be carried as offsetting liabilities:
  - a. The appropriate unearned premium reserve (section II.B.);
  - b. All unpaid commissions and premium taxes incurred in connection with such due and unpaid premiums.

E. VALUATION PROCEDURES

The insurer may employ suitable approximations and estimates, including but not limited to groupings and averages, in computing premium reserves. Such approximations or estimates should be tested periodically by the valuation actuary to determine their continuing adequacy and reliability.

### III. CONTRACT RESERVES

A. GENERAL

Contract reserves are required for (1) all individual health insurance contracts; (2) all group health insurance contracts which are not experience rated; (3) group health insurance contracts to which the level premium principle applies to a sufficient extent to give rise, actuarially, to an additional contract reserve of material value.

A group contract which is not experienced rated is a group contract for which neither a retrospective nor prospective premium credit or adjustment is determined at regular intervals. This is based directly on the experience of the covered group or on the experience of a pool of group contracts to which the contract is assigned.

The contract reserve is in addition to any claim reserve and premium reserve. The nature of the contract reserve required depends upon the type and class of contract involved and upon the existence of the level premium principle in respect to the contract.

Definition of level premium principle: The level premium principle is present in the rate structure of a contract whenever the net benefit premiums for the contract are calculated so that the present value of the premiums spanning some portion (exceeding one year) of the earlier expected lifetime of the contract exceeds the present value of the expected claims over the same interval. Correspondingly, the present value of the premiums spanning the remainder of the expected lifetime of the contract is less than the present value of the expected claims over the same period.

When this situation exists, the need arises to accumulate actuarially a reserve to overcome the premium deficiency in the later contract years. If, under the rate structure in question, the original net benefit premium, in accordance with the assumptions employed, exceeds the corresponding net benefit premium on a one-year term basis by 10 percent or more, the resulting reserve is deemed to be material in value, and the level premium principle exists with respect to the contract.

#### B. TYPES AND CLASSES OF HEALTH INSURANCE CONTRACTS

1. Type, as to renewability:
  - a. Contracts which are guaranteed renewable for life or to a specified age or for a specified duration which exceeds one year, at guaranteed premium rates (whether level or increasing).
  - b. All other contracts.
2. Class, as to stability of risk:
  - a. Stable contracts. Contracts providing benefits having relatively predictable claim costs. Normally, this includes:
    - disability income,
    - hospital indemnity at a predetermined level,
    - surgical benefits provided on the basis of a fixed schedule of payments or maximum payments,
    - accidental death, and
    - other fixed or scheduled benefit contracts.
  - b. Volatile contracts. Contracts having benefits with unstable claim costs that are difficult or impossible to predict for more than one year. Examples of such contracts are those that are

sensitive to inflation, to cost shifting, and to changes in Medicare deductibles, such as:

major medical,  
major hospital, and  
Medicare supplement contracts.

For such coverages, frequent rate adjustments are normally to be expected.

If a contract does not clearly fit within the stable class, it should be treated as a volatile class.

NOTE: With respect to type of contract:

- (a) A contract may have guarantees qualifying it as type III.B.1.a., until a specified age or duration after which the guarantees, or lack of guarantees, may qualify it as type III.B.1.b. In such a case, the contract during each period should be considered for reserve purposes according to the type to which it then belongs.
- (b) Where all of the benefits of a contract, as provided by rider or otherwise, are not of the same type and class, each benefit should be considered for reserve purposes according to the type and class to which it belongs, as of any date of valuation.

C. NATURE OF CONTRACT RESERVE REQUIREMENTS WITH RESPECT TO TYPE AND CLASS OF CONTRACT AND EXISTENCE OF LEVEL PREMIUM PRINCIPLE

1. Tabular reserves are required for contracts of type III.B.1.a. and contracts of type III.B.1.b. which are also stable class contracts to either of which the level premium principle applies. These reserves must be equal to or greater than minimum reserves calculated on morbidity, interest and mortality assumptions as specified in section III.D.
2. No tabular reserve is required for contracts of type III.B.1.b. which are also volatile class contracts, and all other type III.B.1.b. contracts not covered under section III.C.1. A balancing reserve is required, however, with respect to the aggregate of all contracts which have been issued on the form involved, since the effective date of the additional balancing reserve requirement. This is as of any valuation date for which the following ratio is less than the anticipated loss ratio  $R$  filed or declared in connection with the rate filing applicable to the contract form:

$$\frac{C}{G} \text{ is less than } R, \text{ where} \quad (3)$$

$C$  = accumulated value, as of the valuation date, of all past claims incurred up to the valuation date, with an adjustment for claims incurred in the first contract year as provided in section III.C.3.

$G$  = accumulated value, as of the valuation date, of all past premiums earned on the contracts affected, up to the valuation date, with an adjustment for premiums earned in the first contract year as provided in III.D.

$R$  = the filed or declared anticipated loss ratio.

The rate of interest used to compute  $C$  and  $G$  shall be the same as that used to compute  $R$ .

- c. The required balancing reserve is the amount  $B$  which, when added to the numerator of (3), will bring the ratio up to equality with  $R$ :

$$\frac{C + B}{G} = R, \text{ or } B = (G \times R) - C \quad (4)$$

In no event may  $B$  be less than zero.

- d. Standards governing the release of balancing reserves are set forth in section IV.D.
3. An adjustment is made for premiums earned and claims incurred in the first contract year. In the computation of  $C$  and  $G$  in the preceding formulas, a temporary graded adjustment is allowed with respect to the accumulated values of premiums earned and claims incurred within the first contract year, as follows:
- a. 100 percent of the accumulated values of such amounts earned or incurred within twelve months of the date of valuation may be excluded from  $C$  and  $G$ .
  - b. 75 percent of the accumulated values of such amounts earned or incurred more than twelve but within twenty-four months of the date of valuation may be excluded.
  - c. 50 percent of the accumulated values of such amounts earned or incurred more than twenty-four but within thirty-six months of the date of valuation may be excluded.
  - d. 25 percent of the accumulated values of such amounts earned or incurred more than thirty-six but within forty-eight months of the date of valuation may be excluded.
  - e. 0 percent of the accumulated values of such amounts earned or incurred more than forty-eight months before the date of valuation may be excluded.
4. Valuation procedures are such that the insurer may employ suitable approximations and estimates, including but not limited to

groupings, averages and composite values and rates of interest, in computing balancing reserves. Such approximations, estimates and/or composite values should be tested periodically by the valuation actuary to determine their continuing adequacy and reliability.

D. MINIMUM STANDARDS FOR TABULAR RESERVES

1. *Interest.* The maximum interest rate for tabular reserves is 5 percent, unless a different maximum applied prior to the effective date of this regulation, on the basis of the date the contract was issued.
2. *Mortality.* Mortality rates used in the computation of tabular reserves shall be on the basis of a mortality table permitted by law in the valuation of whole life insurance issued on the same date as the health insurance contract.
3. *Morbidity or other contingency.* Minimum standards with respect to morbidity are those stated in Appendix B of these Reserve Standards which are subject to revision at times with respect to dates of issue of contracts.
4. *Negative Reserves.* Negative reserves on any benefit may be offset against positive reserves for other benefits in the same contract, but the total mid-terminal reserve for the contract may not be less than zero.
5. *Preliminary Term.* The minimum reserve shall be on the basis of the two-year full preliminary term reserve method, that is, under which the terminal reserve is zero at the first and also the second contract anniversary.
6. *Reserve Method.* The minimum reserve is the mid-terminal reserve.

E. GROUP CONVERSION RESERVES

[To be considered]

F. ALTERNATIVE VALUATION PROCEDURES AND ASSUMPTIONS

Provided the tabular reserve on all contracts to which the method or basis is applied is not less in the aggregate than the amount determined according to the applicable standards already specified, an insurer may use any reasonable assumptions as to the interest rate, termination and/or mortality rates, and the rates of morbidity or other contingency. Also, subject to the preceding condition, the insurer may employ other methods in determining a sound value of its liabilities under such contracts, including but not limited to the following: optional use of either the net level premium—the one-year full preliminary term or the two-year full preliminary term

method; prospective valuation on the basis of actual gross premiums with reasonable allowance for future expenses; the use of approximations such as those involving age groupings, groupings of several years of issue, and average amounts of indemnity; the computation of the reserve for one contract benefit as a percentage of, or by other relation to, the aggregate contract reserves, exclusive of the benefit or benefits so valued; the use of a composite annual claim cost for all or any combination of the benefits included in the contracts valued.

#### IV. THE LOSS LIMITATION RESERVE (LLR)

##### A. CLASSES OF BUSINESS SUBJECT TO CONTRIBUTION TO, AND ASSISTANCE FROM, LLR

1. Health insurance business of (1) type III.B.1.b./volatile class; and (2) type III.B.1.b./stable class but without the presence of the level premium principle; are subject to these standards, except single premium contracts and experience rated group contracts. All contracts requiring tabular reserves (see section III.C.1.) are excluded from LLR contribution requirements.
2. Only those contracts for which the filed rates have made specific provision for LLR will be subject to the regular contribution requirements specified in section IV.B.1. When the filed rates have made specific provision for LLR, the LLR contribution actually made during each statement year is to be counted against the anticipated loss ratio the same as and in addition to incurred claims. That is, a contribution once made is not recoverable, as is the case with the balancing reserve, as a result of cumulative calculation against the retrospective loss ratio. Any additional LLR contribution is to be made each statement year only to the extent available without exceeding the applicable loss ratio on a cumulative retrospective basis. In the formula for determining the amount of balancing reserve required, the cumulative past and current year LLR contributions are to be included before calculating the balancing reserve. The LLR contribution rate counts toward the anticipated loss ratio, in the filing of rates.
3. Any contracts of the type and class specified in section IV.A.1. may become subject to transfer of excess balancing reserves to LLR. This would be under circumstances set forth in section IV.D. of these standards, regardless of whether provision for LLR was made in any rates filed. If such contracts have become subject to such transfer of reserves, they also become eligible



for future LLR assistance as provided in section IV.C.2., when warranted by these rules.

4. Contracts receiving LLR assistance will have their contributions to LLR waived during the continuation of such assistance, but the anticipated loss ratios applicable to such contracts will not change.

B. LLR CONTRIBUTION RATES AND LEVELS

1. Initial required contribution rates for contracts regularly subject to LLR.

- a. For type III.B.1.b./stable class contracts, the initial rate is 2 percent of gross premiums.
- b. For type III.B.1.b./volatile class contracts, the initial rate is 5 percent of gross premiums.

For type III.B.1.b./volatile class contracts involving the level premium principle, however, the portion of the gross premium (that exists on account of the level premium principle and is reasonably identified on the basis of the premium assumptions) may be counted in lieu of the required LLR contribution rate. This amount may then be accumulated as part of the balancing reserve for the contract, rather than contributed to LLR. The same amount may also be counted toward the filed or declared anticipated loss ratio for the contract.

2. Maximum level of aggregate LLR.
  - a. An insurer's LLR will continue to accumulate at the initial contribution rates, together with appropriately allocated investment income, until the maximum level is attained. This maximum level is the greater of:
    - i. 50 percent of the total annualized premium in force on the aggregate business regularly subject to LLR; or
    - ii. 150 percent of the total annualized premium in force on such regularly subject business in closed blocks no longer currently issued.
  - b. When the maximum level has been attained, contribution rates will be reduced aggregately to such rates as are required only to maintain LLR at maximum, or to zero if no contributions are required. Excess LLR amounts arising due to allocated investment income may be transferred back to balancing reserves in the proportions of the cumulative contributions from each block of business, thereby reducing normal increases in those reserves to the extent of the back transfer.

3. Effect of drain in aggregate LLR.
  - a. If, because of LLR assistance to a block of eligible business, LLR that has reached maximum falls below the maximum level but not below 75 percent of maximum, initial contribution rates are to be reactivated until the maximum is again restored.
  - b. If, because of LLR assistance to a block of eligible business, LLR that has reached maximum falls below 75 percent of maximum or begins to decrease due to such assistance before having attained 50 percent of maximum, the rates of contribution are to be increased from the initial levels to:
    - a. 3 percent for type III.B.1.b./stable class, contracts, and
    - b. 7.5 percent for Type III.B.1.b./volatile class contracts.

In no event will regular LLR contribution rates exceed these maximum contribution rates, although transfer of balancing reserves may still be required as provided in these rules.

C. QUALIFICATION FOR ASSISTANCE FROM LLR AND RULES GOVERNING SUCH ASSISTANCE

1. *Qualification.* Contracts in closed blocks of business only, no longer issued, will qualify for LLR assistance on the following basis.
  - a. The block involved has become subject to cumulative rate increases, including the rate increase otherwise currently proposed, of 200 percent or more.
  - b. A current rate increase on the block is proposed to be needed which the filing actuary certifies to be in excess of any increase needed purely on account of utilization and inflationary trends and advancing age of those insured (in other words, the excess is due to additional factors presumably due to excess risk deterioration).
  - c. The proposed increase must be in excess of the greater of 25 percent, or the amount of increase deemed by the filing actuary to be attributable solely to age, utilization and inflationary trends, rather than to risk deterioration.
2. LLR assistance through release of reserves.
  - a. Release of reserves from LLR shall be made, only to the extent required to eliminate the excess defined in section IV.D.1.b., on a one-year term basis. The rate increase otherwise to be filed will then be reduced by the amount of such excess.

- b. Aggregate LLR depletion is further limited, during any one statement year of the insurer, to a maximum equal to the lesser of 33 percent of the maximum level, were LLR to be at maximum, or 50 percent of the amount of LLR actually standing at the beginning of the year.

D. PROVISION FOR TRANSFER TO LLR OR FOR RELEASE OF EXCESS BALANCING RESERVES

1. The continuing appropriateness of the balancing reserve carried on each form is to be reviewed at least every third statement year by the valuation actuary. The valuation actuary may deem any block of health insurance business holding balancing reserves to have no substantial probability of reaching its filed or declared anticipated loss ratio based on cumulative claims incurred and regular contributions to LLR. The valuation actuary then shall transfer to the insurer's LLR, as of the end of the statement year in which the determination was made, at least 20 percent of the amount of balancing reserve equivalent to the original determined excess over the projected attainable loss ratio based on claims incurred on regular LLR contributions. Such transfers shall be repeated each subsequent year until transfer of 100 percent of such excess balancing reserve (as reevaluated each year, inclusive of past transfers) has been made.

With respect to all contracts not regularly subject to LLR contributions (except experience rated group contracts), the amount of any excess balancing reserve may first be released, to the extent of any cumulative losses on other such contracts in excess of cumulative retrospective anticipated loss ratios, as calculated in formula 1 of section III.C.1.b. This section IV.D.1. then applies to any remainder of transferable excess balancing reserve.

2. Such transfer of reserves, as provided in section IV.D.1., shall continue until the aggregate LLR attains a maximum level equal to 150 percent of the maximum otherwise applying as prescribed by the rules of section IV.C. of these standards.

For the year in which 150 percent maximum is attained, transfer of excess balancing reserves shall be made first to the extent required, and regular LLR contribution made second to the extent required.

3. If no further transfer of such excess balancing reserves is required, as a result of attaining the 150 percent maximum level defined in IV.D.2., any additional excess balancing reserves

deemed to exist shall be released to the insurer's surplus. This is subject to the limitation that a maximum of 25 percent of such additional excess may be released in any one statement year. In the insurer's annual statement for that year, such release shall be specifically identified in the footnotes as the result of a change in reserve.

## APPENDIX B

### RESERVE STANDARDS FOR INDIVIDUAL HEALTH INSURANCE

This is an illustrative Revision of what is presently Appendix A of the Reserve Standards. Years and dates are merely illustrative. Proposed new wording is underlined. Proposed deleted wording is [bracketed].

#### APPENDIX A (effective January 1, [1981] 1986)

Minimum morbidity standards for valuation of individual health insurance policies are as follows:

1. [Total] Disability due to accident or sickness.

Active Life (Policy) Reserves:

Policies issued on or after January 1, 1965 and prior to January 1, 1986:

The 1964 Commissioners Disability Table.

Policies issued on or after January 1, 1986:

The 1985 Commissioners Disability Tables.

Claim Reserves:

The minimum morbidity standard in effect for active life reserves on currently issued policies, as of the date the claim is incurred.

2. Type C Hospital Benefits, Surgical Benefits, Cancer Expense and Maternity Benefits (either Specified or Expense Reimbursement).

Active Life (Policy) Reserves:

Policies issued on or after January 1, 1955 and before January 1, 1982:

The 1956 Intercompany Hospital-Surgical Tables.

Policies issued on or after January 1, 1982:

The 1974 Medical Expense Tables (Table A).

Cancer Expense policies issued after January 1, 1985:

The 1984 Cancer Expense Tables.

3. Accidental Death Benefits.

Active Life (Policy) Reserves:

Policies issued on or after January 1, 1965:

The 1959 Accidental Death Benefits Table.

4. All Type D benefits, including major medical and cancer expense not of Type C; [and other than total disability.] and claim reserves for other than disability.

The insurer should adopt a standard or basis which will produce reserves that place a sound value on its liabilities under such benefits and claims.



## DISCUSSION OF PRECEDING PAPER

CLAUDE Y. PAQUIN:

Some of the concepts which Mr. Barnhart charitably suggests "need reemphasis" are not so basic as he makes them out to be. Should he be right, his assertions indict an actuarial educational system which would produce actuaries whose rote application of misunderstood formulas would lead them to assert that "if no money is left over from one's personal budget to make the mortgage payment, then no mortgage liability exists."

Few people perceive a difference between the two words incurred and accrued, and it is possible that Mr. Barnhart is "tilting at windmills" when he seeks to impress upon the reader that there might be an important difference (as when he speaks of "reserves for accrued and unaccrued incurred claims").

In reviewing legal materials that bear on the notion of accrual, I encountered two relevant notions: (1) a cause of action generally "accrues" on the date on which damage is sustained and not on the date when causes are set in motion which ultimately produce injury, and (2) under U.S. Treas. Regs. section 1.451-1(a), "under an accrual method of accounting, income is includible in gross income when all the events have occurred which fix the right to receive such income and the amount thereof can be determined with reasonable accuracy." This "all events test" (long used in the field of accounting) is repeated, with respect to accrued expenses, in Internal Revenue Code section 461(h)(4).

I gather from Mr. Barnhart's comments that he would classify claims which have met the "all events test," as liabilities, and that he would not require reporting of the claim to be one of the events needed to meet the test. This is difficult to reconcile with his later statement that "the incurred date of any claim is the date on which the insurer became contractually obligated to pay that claim," since notions of due process, if not the terms of a well-drafted contract, would suggest that the obligation to pay cannot arise until the claim has been reported. There is concurrence between law and logic on that point.

For the insurer and the insured, there is only one question to resolve: is the insured yet entitled to payment from the insurer?

The question for the health actuary is not so simple. I have great sympathy for the actuary who wants to date maternity claims as of conception; though I am impressed with the delicacy of the enquiry. I suggest that the solution,

not as simple as Mr. Barnhart would have it, comes from reflecting on the word *events* in the expression "all events test" and on an application (at least intuitive) of Bayes's theorem (used to measure the probability of an event, *B*, given that one has already observed a related event, *A*).

A claim can have more than one incurral date; a succession of relevant events may occur before the claim accrues and is ultimately paid.

The key to the process is to make a practical determination of the most significant events in the life of a claim. Different events characterize different coverages. From this could follow appropriate reserve computations as the events occur.

Let us take a maternity claim, for instance. Its events (or stages) might be (1) conception, (2) admittance to the hospital, (3) delivery, (4) release from the hospital, and (5) completion of any post-partem well-baby care provided by the insurer's policy. On a practical basis, one might want to collapse items 2, 3, and 4 into one—hospitalization. Item 5 might prove relatively minor. Item 1 is significant in assessing the value of the insurer's undertaking, regardless of what one considers the true incurral date. Using only one incurral date for a progressive claim of this type is inappropriate.

It is wrong for an actuary to insist that "the incurred date of any claim is the date on which the insurer became contractually obligated to pay that claim." The actuary is only peripherally concerned with legal determinations of that kind and is usually little concerned about any one particular claim. His role is to blend logic and practicality to arrive at sensible determinations of values, making good use of his mathematical ability and training. Using Bayesian theory could lead to an imaginative answer to a problem that may otherwise seem intractable.

I applaud Mr. Barnhart for bringing to the fore the problems involved in computing health insurance reserves, and for his and his subcommittee's hard work in attempting to forge solutions. Above all, I commend him for bringing these problems to the attention of the membership, submitting his views to his colleague's scrutiny, and soliciting helpful comments.

DAVID L. CRESWELL:

Mr. Barnhart does a great service to health actuaries by lending his considerable authority to the seemingly self-evident truth that incurral dates are defined by contractual provisions. Additional evidence that this is not a matter for legitimate differences of opinion is apparent if we consider the basic accounting principle of matching revenue and expense. The payment of premium and the obligation to pay claims are cause and effect, respectively, of the coverage being in force. The strongest possible matching of revenue and expense, that based on cause and effect, is available. The ob-



ligation to pay a claim exists if and only if the coverage is in force on the incurral date. We thus define the incurral date as that date on which the coverage, having been in force, was necessary and sufficient to create the obligation to pay the claim.

Actuaries working in group medical insurance are often faced with a practical difficulty in assigning incurral dates. The National Association of Insurance Commissioners (NAIC) model bill mandates an extension of benefits provision, whereby the insurer is obligated, for a limited period of time, to pay for medical procedures performed after termination when continuous disability has existed since termination and treatment is for the disabling condition. The incurral date under such a contract is the date of disablement, subject to the time limitation on extension of benefits, whenever treatment is received for a disabling condition.

Claims for nonterminating business are often paid without determining any date of disablement, since such disablement is irrelevant to claims adjudication. Assigning accurate incurral dates to individual claims can be impractical. Any inaccuracy in the technique used to assign incurral dates will affect lag studies, reserves, and the runout used to test the previous year's reserve in Schedule H of the Convention Blank.

One solution to this dilemma involves the study of terminated cases. The simplest approach is to measure, on terminated cases, the percentage of the final year's incurred claims constituting the runout, compare this to the percentage of a year's incurred claims represented by the reserve, and adjust the reserve if necessary.

If tracking each month's incurrals as they run out is desired, the problem must be solved at its source by reassigning incurral dates so as to approximate the correct assignment. This can be achieved by:

1. doing a preliminary study of lag, using the dates of procedures as incurral dates and yielding a percent of annual incurred claims represented by the resulting reserve, ( $R\%$ );
2. studying runout on terminated groups to determine what proportion ( $P$ ) had dates of procedure after termination and would not be apart of the reserve from (1);
3. noting that the complete reserve is the reserve from (1) multiplied by

$$1 + \frac{P}{1 - P};$$

4. noting that  $R\% \times \frac{P}{1 - P} \times 12$  is the number of months of incurred claims to be added to the reserve from (1), which can be accomplished by setting back incurral dates an average of  $R\% \times \frac{P}{1 - P} \times 12$  months;

5. using an appropriate disability continuance table and finding the relative number of people remaining disabled for 1 month, 2 months, . . . ,  $n$  months where  $n$  is the time limit on extension of benefits; assuming the relative amount of claims to have incurral dates set back 1 month, 2 months, . . . ,  $n$  months is similar; and solving for the absolute proportion of claims to be set back 1 month, 2 months, . . . ,  $n$  months so that the total average setback of all claims (including those not setback at all) is

$$R\% \times \frac{P}{1 - P} \times 12 \text{ months};$$

6. incorporating such setback into the incurral date assignment.

JUDY C. ENGELS:

One fascinating aspect of Mr. Barnhart's paper is the use of the balancing reserve. Because this reserve is highly sensitive to actual experience, it has the beneficial effect of reducing earnings sensitivity to experience fluctuations.

Mr. Barnhart mentions that this reserve will be carried against specific contract forms. I am unclear as to what forms he has in mind, even after reviewing the appendix. It seems that all blocks for which the loss limitation reserve (LLR) is not required (closed blocks of unstable business) should have a balancing reserve.

Mr. Barnhart mentions that the reason for adjusting first-year claims and premiums in the calculation is to recognize first-year expenses over and above the limited provision. The two-year full preliminary term method already provides generous recognition of the first-year expenses, and first-year expenses should not be recognized further.

My company's experience is that the first-year expenses which can be deferred and recovered are usually 1.50–1.75 times the premium. In other words, we can justify using a one and one-half year or one and three-quarter year full preliminary term method (if such a method exists), but not a two-year full preliminary term method.

Although first-year expenses should not be recognized beyond the two-year full preliminary term method, Mr. Barnhart is correct that an adjustment should be made for the premiums earned and claims incurred in the first contract year. My reasoning is as follows:

1. Presumably the  $R$  in Mr. Barnhart's paper is the average loss ratio over the duration of the contract.
2.  $R$  theoretically should vary by contract year since expected loss ratios usually increase by contract year. That is,  $R_1 < R_2 < R_3, \dots, < R_t < \dots$  where  $t$  is the contract year.
3. For practical reasons, it is desirable to use the same  $R$  for each contract year.
4. The temporary graded adjustment is a practical way to modify the loss ratio in the first contract year.

Mr. Barnhart is quite correct that conservatism is best placed in the contract reserves. In reserving, it is impractical to use the same maximum interest rate for all issue years. I suggest that the maximum interest rates be the same as the interest rates prescribed for the U.S. tax reserve calculations for health business. These interest rates are as follows:

<u>Issue Year</u>	<u>Interest Rate</u>
Pre-1946	4%
1946-1974	3.5%
1975-1979	4%
1980-1982	4.5%
1983-1984	7.25% guarantee duration $\leq$ 10 years
	6.75% guarantee duration 11-20 years
	6% guarantee duration $>$ 20 years

These interest rates are conservative and appropriate for valuation purposes. If the tax reserves and the statement reserves are different, companies will incur extra tax. This is one more reason for using these interest rates.

ROBERT B. SHAPLAND:

I commend Mr. Barnhart for expressing his views, stimulating dialogue, and increasing understanding and progress regarding health insurance reserving principles and practices. This subject needs further development, especially because of the instability of health care (including its costs), recent changes in regulation, and the changes in rating practices and related reserves that regulation changes have created.

As chairman of a past Society of Actuaries Committee on Individual Accident and Health Insurance Valuation Principles, I have spent considerable time examining this subject. A draft report of our committee's findings was disseminated to members of the Society of Actuaries and our final report is published in this volume as a paper entitled "Reserve Principles for Individual Health Insurance" authored by Spencer Koppel, Francis T. O'Grady, Gary N. See, and myself. Since there are differences between Mr. Barnhart's conclusions and those of our paper, an in-depth response to Mr. Barnhart's paper will be helpful in clarifying the issues. However, this response is mine alone and, therefore, does not necessarily represent the thinking of my coauthors.

Different actuaries adopt different rules and viewpoints regarding reserves, but this is a natural consequence of a correct understanding of basic accounting and actuarial principles. Accounting principles call for the matching of revenues and expenditures in the measurement of profit and net worth.

This matching on renewable insurance contracts is determined by actuarial rating principles and practices.

Currently, insurers have the right to determine their own rating practices within the limitations of state laws and regulations. States also have the right to independently adopt such limitations. There are valid reasons why insurers and states have chosen nonuniform rating practices, which in turn call for different reserves.

These are the basic premises of my remarks:

1. Reserves stem from rating practices and principles regarding the matching of revenues and expenditures.
2. Disregard for this matching can lead to confusion and manipulation.
3. Insurers and states have the legal right to differ regarding rating practices and principles.
4. It is appropriate that insurers and states continue to have such rights.
5. Any uniform valuation standard in conflict with these rights is inappropriate.
6. A valuation proposal consistent with uniform rating practices and principles is perceived as an attempt to restrict rating practices and principles.
7. Restrictions on rating practices and principles could more appropriately be placed on a direct basis than via the promulgation of reserve standards.

Current accounting for premium revenues is on the basis that premiums are earned pro rata over the premium period. Some comments in regard to this practice may be helpful. The current method of revenue and expenditure matching is to start with earned premiums (i.e. an allocation of premiums to past versus future). This calls for making accounting adjustments to recognize future claim payments allocable to earned premiums (e.g., claim reserves). An alternative is to start with the claim side by recognizing certain future claim payments in a claim liability account. This calls for recognizing premiums meant to pay such claims to attain proper matching. Both approaches produce the same financial results but use different reserves. Thus, confusion can arise if different actuaries are looking at these accounts from different perspectives.

Mr. Barnhart's proposal is a third approach since it contains elements of both approaches. Continuing the current approach to premium accounting while defining claim reserves on a nonmatching basis requires new accounting adjustments. Mr. Barnhart uses policy reserves to correct for claim reserve mismatches with earned premiums.

#### THE RATING ENVIRONMENT—THE MACROCOSM

Some risks are insured on a short-term basis while others are insured for as long as the insured's lifetime. In the long-term cases, the risk may be stable or subject to change. The forces of change may be predictable or

unpredictable. For example, under major medical coverage, claim costs vary from year to year in the aggregate and by individual insured because of:

1. aging,
2. inflation in medical care costs,
3. enhancements in levels and types of medical care,
4. changes in control of utilization,
5. changes in an individual insured's health status,
6. changes in medical care practices,
7. changes in residency as it affects medical care costs and utilization,
8. wellness programs,
9. changes in lifestyle and habits that impact on health,
10. changes in occupational risks,
11. changes in benefits brought about by law (courts, legislatures), and
12. antiselection.

Additionally, administration and other expenses change over a period of years because of some of these and other factors.

Any business facing change seeks to protect itself from detrimental impacts on earnings and solvency. For insurers this can be done in a variety of ways including:

1. contracting on a short-term basis only,
2. contracting on a long-term basis but with protection against cost change via
  - a. the unilateral right to terminate the contract,
  - b. retaining the right to change prices and product within contractual limits, and
  - c. retaining the right to change prices and product without restriction.

The less protection an insurer or other business retains against increasing costs under long-term contracts, the greater the risk of loss. Each insurer decides whether to enter into long-term contracts and what protection against cost increases to retain. This determination is made with regard to the competitive environment, the company's assessment of the risks involved, the risk margins intended in the premium calculations, the company's risk capital, and the legal restrictions on initial and renewal pricing.

Insurers issuing long-term contracts are faced with known cost increases (e.g., from aging) and speculative cost increases (e.g., from inflation). Insurers have wide freedom in how they determine the future revenue stream to meet the future expenditure stream. Portions of the revenue stream might level some components of the expenditure stream. Other portions might be changed each year in unison with the expenditure stream.

For example, in an individual major medical policy, the insurer faces all of the vagaries of cost change. The insurer must decide which protective contractual provisions and rating practices it will adopt. These include:

1. Renewability Restrictions

2. Right to Change Benefits
3. Right to Change Premiums
4. Issue Age Versus Attained Age Schedules
5. Method of Inflation
6. Method of Health Deterioration

Different insurers adopt different contractual provisions and rating methodology because of different views on:

1. competitive initial premiums,
2. the predictability of the impact of aging and inflation,
3. durational morbidity,
4. leveling some cost trends when others cannot be leveled,
5. the need to avoid a premium spiral which cannot cope with possible cost spirals,
6. the responsibility to keep policyholders from cost spirals that may create renewal premiums in excess of new business premiums,
7. the inappropriateness of charging short-term policyholders for the health deterioration of long-term policyholders,
8. the probability that costs spirals will take place, and
9. the use of level versus YRT pricing systems.

Because of the future cost changes facing insurers under major medical coverage, some insurers adopt the most flexible contractual provisions and rating system possible.

The “filed loss ratio” has implications that deserve comment. Initial premiums are predicated on assumed claim and administrative costs. Some insurers maintain that their contractual provisions give them the right to increase prices because of either type of cost overrun. This means that the initially calculated loss ratio and its complementary expense ratio are subject to change. Insurers do not guarantee these ratios since they cannot guarantee the individual components which create these ratios. For this reason, loss ratios have been referred to as “anticipated.” The future may call for a different ratio than originally assumed. The concept of balancing reserves is in conflict with this view since it assumes that filed loss ratios entail guarantees.

Still, a few states have adopted NAIC model rate regulations regarding premium revisions which assume that filed or minimum loss ratios involve guarantees. Insurers therefore do not have complete freedom regarding rating practices in these states. Also, some states (via law and regulation) have placed other limitations on loss ratios. I am unaware of any other industry, being regulated on a ratio basis, but this approach has practical appeal if applied with enough flexibility to deal with cost changes.

## POLICY RESERVES IN THIS RATING ENVIRONMENT

The subject of policy reserves stemming from revenue and expenditure matching as determined by the rating practices and principles in use has been adequately expressed in my paper with Koppel, O'Grady, and See. Given the adoption of different rating practices and principles by different insurers and regulators, different policy reserves are called for. The confusion observed regarding policy reserves is due to the relationship between such reserves and rating practices and principles.

One insurer might assume that its filed anticipated loss ratio involves an implied guarantee. Loss ratio experience below that filed creates restrictions on future premiums to produce prospective loss ratios higher than those filed. To the degree that this restriction creates prospective losses, policy reserves are generated. Since the prospective loss is related to the retrospective experience, policy reserves are stemming from "retrospective fund balances." This concept of policy reserves is appropriate under this pricing practice.

Another insurer might adopt the position that tabular reserves under level premium plans represent "policyholder equity in company assets." Given diligent experience monitoring and timely premium adjustments, this rating system automatically makes the tabular table the realistic measure of the prospective imbalance between premiums and revenues. For such an insurer tabular reserves are appropriate policy reserves.

Still another insurer might rely strictly on premium adjustments to maintain an ongoing yearly balance between revenues and expenditures. If that system is successful, such an insurer would need no policy reserves.

## DETERIORATION OF HEALTH

The proposal to alleviate premium increases stemming from health deterioration through loss limitation reserves and balancing reserve transfers adds impetus to a final resolution of this problem area.

While there has been considerable discussion on the need to avoid unaffordable premiums stemming from deteriorated experience under closed blocks of business, little data have been presented regarding the extent of the problem. A fuller understanding of the level of the problem would seem appropriate before developing a regulatory solution.

Having foreseen the need for more information, the Health Section Committee on Principles of Ratemaking and Valuation (which I chair) has undertaken two related projects. The first project involves obtaining data from insurers to measure health deterioration. A cursory review of available data indicates that there are many cases where health deterioration is essentially nonexistent or even negative. Health deterioration may be affected by such things as the type of coverage and level of initial underwriting.

The second project is a dissertation on possible solutions to the health deterioration problem. This project has been completed, and the findings have been disseminated to the NAIC Life, Accident, and Health Standing Technical Task Force. The solutions discussed include (1) establishment of substandard and uninsurable risk pools; (2) establishment of rate stabilization reserves (and the various bases that could be used in establishing them); and (3) pooling of open and closed blocks of business. Readers interested in these solutions are encouraged to read the Health Section committee report. Mr. Barnhart's American Academy of Actuaries Committee Report (as modified after his paper was formulated) suggests transferring excess balancing reserves on some forms to ameliorate premium levels on other forms, which is a fourth possibility. The loss limitation reserve proposal is a fifth possibility. A sixth possibility is to vary individual policyholders' premiums (maybe within limits) after issue based on their claim experience or their current risk factors in order to retain the better risks and provide incentives to maintain good health. This, in turn, might ameliorate experience deterioration in closed blocks of business.

I visualize several problems with Mr. Barnhart's and his committee's proposals as amended subsequent to his paper:

1. The transfer of balancing reserves is voluntary, and thus, its implementation is subject to pressures to maximize returns to stockholders.
2. The use of balancing reserve release is premised on the assumptions that loss ratios involve guarantees and that retrospective claim experience margins belong to policyholders. I question the appropriateness of this assumption.
3. Profits from one block of policyholders are transferred to another unrelated block. This raises a question of equity; perhaps claim experience margins belong to the policyholders who generate them.
4. The proposals might necessitate rate increases on a block that would not have needed increases if the retrospective profit (balancing reserve) had not been transferred. This would happen if experience unexpectedly deteriorated after the transfer of balancing reserves.
5. Transfer of balancing reserves is valid only if an insurer has past unneeded profit, on some forms, which is material in relation to future excess morbidity on other forms.
6. Past margins on some forms could be transferred to cover past losses on other forms. This would not reduce premiums, since only past net margins reduce premiums under the balancing reserve rating system.
7. The proposed funding and release rules have not been tested against actual or assumed experience.

If persons other than the deteriorated risks should pay for adverse experience, it should be the persons originally insured. In other words, if renewing policyholders are not to be charged for the deteriorated portion of their health costs, then the initial premium structure should cover the costs. This is



similar in concept to utilizing level premiums (and commensurate policy reserves) where costs increase with age. Whether or not such a funding system encompasses the tontine feature depends on the use of nonforfeiture values.

An alternative political viewpoint is that everyone should have access to certain insurance coverages within certain premium bounds. This has led to state substandard/uninsurable risk pools. Though pool losses are assessed to insurers, an offset against premium taxes shifts the cost to taxpayers. Where this offset is not in use, expansion of assessments to self-insurers would be more equitable. Federal legislation which would allow such assessments has been introduced (i.e., H.R. 1770).

#### INTERNAL RATING PRACTICES—THE MICROCOSM

Insurers face a stream of expenditures over the life of an insurance contract, and there is rightfully little regulation on matching these expenditures with the revenue stream. For example, initial commissions and issue costs could be charged against initial premiums or amortized on various bases (e.g., on a uniform dollar charge or on a uniform percent of premium charge over the life of the policy). Some regulators have interjected to some degree by requiring higher loss ratios on the entire premium or on the incremental premium when filing for premium increases.

The impact of the matching basis chosen for nonclaim expenses on individual health reserve requirements has received little attention. On the other hand, considerable discussion has taken place regarding the reserves related to claim expenditure matching but possibly without adequately examining the actual matching practice adopted by each insurer. This could lead to the erroneous conclusions that actuaries are in disarray, and that claim reserves are being improperly set.

An insurance contract does not state how the stream of expenditures is to be matched with the revenue stream. Since claim payments are subject to differing conditions and contingencies, various insurers will make different decisions regarding claim and revenue matching. This properly leads to different "incurred" date rules and different claim reserves under similarly worded policies.

For example, under a calendar-year-type major medical policy (where ongoing benefits terminate on lapsation), one insurer might charge all claims stemming from a given sickness to the premiums earned at the time the sickness commenced. This method has merit since it avoids relying on renewing policyholders and new entrants to pay claims that have started already. This method of matching is in conflict with the proposal. Another insurer might charge each dollar of benefit to the premium earned at the

time the related medical treatment is provided. This may be viewed as less conservative and less equitable but acceptable. This is the matching method envisioned in the proposal. Obviously, these two methods would generate completely different incurred date coding, claim reserves, and statistical results on the adequacy of current premium levels.

Another problem is matching premiums to claims taking place during the grace period. For different insurers, this could include premiums earned before, during, or after the grace period. Maternity claims involve similar flexibility (e.g., charged against premiums earned at conception or delivery). Different views in these areas are logical, legal, and lead to different reserves.

Given a certain claim and revenue matching formula, the simplest approach is to define claim reserves as those unpaid claims chargeable to past earned premium revenues. Incurred date coding consistent with this definition provides the foundation for calculating claim reserves.

A proposed alternative is to force all insurers to a common incurred dating system based on rules related to each of the contingencies involved in a policy's claim provisions. The proposal would require setting up additional policy reserves to achieve proper matching. Here, policy reserves cover prospective long-term imbalances between revenues and expenditures, while claim reserves correct for additional specific claim dollars chargeable to retrospective revenues. An extreme case would be to call these corrections "policy reserves" under a step-rated major medical policy where claim liability is dependent on in-force status, but the insurer has chosen to match revenues and claim payments on the basis of when the claim started. In any event, the foundation for making these corrections would seem to be a second set of incurred-date data based on the date premiums are to be charged.

The proposal also suggests that claim reserves should be based on the assumption that the policy ceases to be in force after the valuation date. The foundation and purpose of such an assumption is unclear. This would be consistent only with rating practices that maximize claim liabilities. If this assumption were extended to policy reserves, such reserves would vanish. This assumption would also terminate the recognition of "due premiums." One interpretation of this proposed rule is that all insurers should use this rule to establish their matching assumptions.

Any assumption of discontinuance of business in total or in part deserves more discussion regarding its purpose, its relationship to rating practices, and the matching of revenues with expenditures.

#### CLAIM RESERVES BASED ON CONTRACTUAL PROVISIONS

I basically question the choice of rules regarding contractual provisions. When a policy is issued, the insurer immediately becomes contractually

liable for all future claim payments. Of course, this claim liability is subject to contingencies and requirements including:

1. Keeping the policy in force.
2. Meeting deductible requirements.
3. Continuing disability or medical care.
4. Providing for extension of benefits.

I would like to see a more detailed rationale for the proposed rules regarding these items.

#### REVIEW OF THE ISSUES

My analysis indicates several issues created by the proposed reserve regulation. I hope listing them will aid in their resolution:

1. Are reserves the result of matching revenues and expenditures with this matching controlled by rating practices and principles?
2. Are rating practices and principles flexible or fixed by law and/or practice?
3. Do the proposed valuation standards reflect the answers to (1) and (2)?
4. Is the assumption that loss ratios represent guarantees acceptable?

#### CONCLUSIONS AND OBSERVATIONS

Historically the regulation of reserves has contained many shortcomings (under life and health insurance). Renewable policies are moving away from premium "guarantees" in the face of unpredictable costs and competition, which is creating pressure to minimize initial premiums. This led insurers (and states) to differing systems regarding the determination of premiums and the matching of revenues and expenditures. A regulatory valuation system that does not adequately cope with this situation is inappropriate.

Regulations can cope with the current situation by setting forth general rules which require reserves to be consistent with the underlying rating principles and practices in use by each insurer and state. This could be clarified by sufficient examples.

Those who feel that insurers should be limited in their choice of rating practices and principles should appeal to regulators to adopt restrictions. Accomplishing such goals indirectly through valuation standards seems inappropriate. Since regulators have not broadly adopted such rating restrictions, the proposed reserve requirements are in conflict with rating requirements in most states. Let there be separate debate and adoption of such rating restrictions before adopting the reserves called for by such restrictions. It may be logical to propose, for safety and equity purposes, that insurers cannot adopt claim and revenue matching that calls on new entrants and renewing policyholders to pay for claims that have already commenced re-

ardless of contractual policy provisions. This approach would call for a minimum definition of when a claim commenced with insurers allowed to adopt more conservative definitions.

Some insurers may not be establishing appropriate reserves. This is because reserve regulation has not kept pace with changes in rating practices. Updating regulations is in the best interest of the continued sound operation of insurance programs.

I recommend that more discussion and analysis take place regarding who should pay for health deterioration, how they should pay, and the costs involved before deciding on a solution such as that proposed. This would call for looking at all of the solutions mentioned as well as others.

Finally, we should consider differentiating between conservative liabilities used for regulatory monitoring and the liabilities (and prepaid expense assets) used for experience analysis and insolvency proceedings. The conservatism could be injected on a basis that would not call for expensive conflicting valuation systems. An alternative would be for regulators to monitor more closely companies where an  $X$  percent increase in nonconservative statutory reserves would jeopardize company solvency.  $X$  could vary by type of reserve and type of contract. Surplus requirements would be based on non-conservative statutory reserves.

ANTHONY J. HOUGHTON:

First I would like to discuss the subject of claim reserves, which is item I in the working draft included as Appendix A of Mr. Barnhart's paper. I agree with the draft with the exception of the sentence in the second paragraph of section I.A.2., which reads, "The liability should be determined on the same basis as if the contract ceased to be in force after the date of valuation."

The reason for my concern is that several actuaries, some insurance companies, and the Internal Revenue Service (IRS) have a theory that no claim reserves are necessary if the policyholder must continue the policy in force by paying premiums in order to continue to receive a benefit for an existing claim. The argument has been made that if the claim reimbursement is inevitable, as in the case of continuing confinement in a hospital, the claim payment can be charged against future earned premiums. The proponents of this theory hypothesize a contract for a disability income benefit, hospital indemnity policy, or nursing home policy that requires premiums to be paid during the continuance of disability, hospital confinement, or nursing home stay in order to be eligible for benefits. They assert that the only liability would be accrued days of disability or confinement, and no liability exists for the present value of amounts not yet due because such benefits are properly chargeable to future premiums.

I reject this theory. It is my opinion that contract language itself cannot eliminate a liability or reserve if the situation clearly requires such a reserve. In the hypothetical case, I would establish a reserve for the present value of amounts not yet due because the required premiums do not offset the benefits for continued disability or continued confinement.

Actually these extreme examples do not occur in practice because the contracts are not written with this type of provision. The situation that does occur frequently involves the per cause major medical policy with a benefit period of 24 or 36 months following the beginning or end of the satisfaction of the deductible for that particular cause. The industry practice is to define the incurred date of each benefit payment as the date the deductible was satisfied or the date the first expense was used to satisfy the deductible. The policy form frequently states that the incurred date of a service is the date the service is rendered or a supply furnished. The policy form also may state that the policy must be in force when the expense is incurred to be eligible. Those who challenge the industry position assert that there is no reserve required for the present value of amounts not yet due. They argue that the payments are contingent on future premiums, and in the event of a termination, the policyholder would not be entitled to the benefits. Even if policy continuance is likely, the benefit payments can be covered by future earned premiums.

This theory is incorrect because the future earned premiums are required for new benefit periods for causes that may start at any time. A person who has broken an ankle skiing may, during the benefit period for that cause, suffer a heart attack or be struck by an automobile. Therefore, the future premiums will be necessary for future benefit periods for other causes. In many, if not most, per cause major medical claims, the bulk of the expenses involve intense treatment during a short period of time. It is perverse to reserve the balance of a confinement for a patient with a hospital indemnity contract but not to reserve the same confinement for the patient's major medical policy. Nevertheless, some would suggest that that is proper depending upon contract wording.

Contract wording is important, including the insuring clause, definitions, grace period, extensions of benefits provisions, and in some cases, provisions about terminations not being prejudicial to claims which originate while the policy is in force. However, contract language cannot eliminate the need for claim reserves which are actuarially required for policies with essentially the same benefit provisions and similar claim payment patterns.

I agree with many of Mr. Barnhart's comments about claim reserves in sections II.A and III of his paper. The third paragraph of section III, however, includes some statements which may cause problems depending upon one's interpretation. One sentence reads, "This alone is ample reason why

the claim reserve should be kept restricted to its one objective of carefully measuring unpaid, contractually incurred liability." I fear that some may construe this as meaning that the incurred liability is determined solely by the contract. Some liabilities must be recognized by establishing claim reserves in spite of arguments that certain contract provisions make benefit payments contingent upon policyholder requirements, or that the amounts not yet due are chargeable against future premium.

The next sentence uses the word *imminent* with the purpose perhaps of downgrading a hospitalized person's next day in the hospital as being not yet incurred but only imminent, or a disability, not yet through the elimination period, as not yet having incurred a claim. Perhaps Mr. Barnhart is thinking of the pregnant woman whose hospital confinement is imminent but, under the terms of most medical policies, has not yet incurred a claim. On this latter case, I agree that policy reserves should provide for the future expense. Probably the area where the practicalities of insurance coverage would cause a disagreement is for the unaccrued expenses during a benefit period of per cause major medical or specific stop loss coverage with a large deductible (i.e., \$20,000 to \$50,000) covering the balance of a policy year or calendar year.

In my opinion, if a premature child is born on December 1, 1984; incurs expenses of \$60,000 through December 31, 1984; remains in the hospital; has further expenses of \$140,000 through June 30, 1985; and a carrier has a specific stop loss of \$50,000 covering a policy year running from July 1, 1984 to June 30, 1985, the liability as of December 31, 1984, is \$150,000 (not \$10,000, which reflects only the accrued through December 31, 1984). I believe most companies would code their payments with an incurred date of 1984 regardless of any contract language.

Mr. Barnhart mentions recurrent disability. Some hospital or disability contracts have a provision that states that a recurrent confinement or disability for the same or related cause will be considered as a continuance of the prior confinement or disability. Usually this means that any maximum benefit period such as 90 days or 24 months will be applicable to all confinements or disabilities not separated by the recurrence period. The elimination period would not have to be resatisfied. Most of the contracts with which I am familiar do not extend eligibility for benefits through the recurrence period should the contract lapse during this period. However, many companies would code these recurrent claims back to the original incurred claim date and would use the payments as part of their data base for developing claim reserve factors. I agree with this approach although I am not convinced that this is always necessary. Mr. Barnhart appears to believe that the presence of a recurrent disability clause provides a sound reason for establishing an incurred date, and I do not disagree. Others, in view of the

policyholder requirement to pay premiums to keep the policy in force, would argue that the recurrence clause is irrelevant.

Sections V and VI of Mr. Barnhart's paper discuss the policy or contract reserve and explain the rationale for the working draft recommendations for the balancing reserve and loss limitation reserve. A balancing reserve that depends upon the filed anticipated claim ratio is not desirable from several points of view. From the point of view of a regulator, two companies filing exactly the same premium scale for exactly the same benefits and experiencing exactly the same level of incurred claims but having submitted different anticipated claim ratios would have balancing reserves that would vary. This would convey the impression that the experience of the companies was different when in fact it was similar. It is true that in some cases a favorable claim ratio in the early policy years may not indicate greater ultimate profit than projected by the filed claim ratio because of needed rate increases for trends (major medical) or contractual benefit changes (Medicare supplements) which may be restricted so that the filed claim ratio will be achieved. However, this situation is not applicable to all types of health insurance. Some policy types do not allow for premium changes, and other types do not require increases when the experience is favorable.

The active life reserves established for a policy form should represent future benefits in excess of future premiums. If the tabular reserves are adequate, the balancing reserves are unnecessary. Should there be a situation in which the company must either restrict future rates to increase the cumulative claim ratio or refund premiums under state regulations, one could use the approach of establishing a separate liability as is done for experience rating refunds for group contracts. This allows the actuary to establish a liability only for those situations where it is needed. This is a more reasonable approach for management as a financial analysis tool.

The concept of the loss limitation reserve appears to be to provide advance funding for policy forms which will eventually develop experience so adverse that premium rates cannot be made to support the benefits and expenses. The loss limitation reserve would then be used to subsidize the experience. But such a subsidy does not change the underlying reality, and institutionalizing subsidies is not an effective approach. It may even encourage insurance departments to disapprove rate increases on the basis that the carrier should add a subsidy to premiums of new issues or reduce profit margins for old issues.

In many cases, companies are willing to accept high loss ratios and underwriting losses during the closing years of a book of business or on a policy form that was written with an inadequate premium scale. However, this is handled better on a company by company basis than by complicated reserve rules.

CHARLES HABECK AND MARK E. LITOW:

Mr. Barnhart and the Academy subcommittee that he heads have laid the foundation for a review and analysis of reserving principles and practices for health insurance. His paper and the subcommittee's working draft respond to perceived shortcomings of the current system, raising a number of issues that call for thoughtful discussion.

#### I. PRELIMINARY REMARKS

The tone and content of Mr. Barnhart's abstract describe a chaos we have not observed. The paper does not recognize the extent to which actuaries have succeeded in coping with the problems that have been thrust upon them in recent years. The difficulty arises from the burdens that health insurance has been expected to bear.

One burden on reserve systems is to create a constructive relationship between areas of excess loss and excess gain. Insurers have shouldered the burdens of mandatory benefits, minimum loss ratio requirements, and competition with government-sponsored plans. They do not need a formal and elaborate system to help them decide how to transfer funds from profitable business to unprofitable business. Insurers already know how to do this, both internally among a mixture of products, and externally through state guaranty funds and state pools for substandard or uninsurable risks.

The approach proposed here is not a reserving method, but a means for redistributing surplus funds. As a consequence, the regulatory function becomes even further entwined with the management function. Other methods can be cited for meeting these same goals, and these should be tried before making profound changes in current standards and methods. Four problems are listed in the abstract; we give our reactions to each.

1. *Reserve systems that are unresponsive to rapidly changing claim costs and to situations involving frequent rate adjustments.*

This is not a new problem. An inflationary environment combined with high unemployment has been present for some time. Frequent rate adjustments have been common for at least ten years. Claim reserves can be estimated to allow for inflation as well as for the wearing off of initial selection. Policy reserves have not been used with attained-age premiums, except during an assumed select period. Part of this problem has resulted from the movement in our society to put all funding schemes closer to the pay-as-you-go basis.

2. *Reserve systems which fail to recognize cash flow realistically or which achieve "conservatism" in artificial or nonadaptive ways serving little practical or constructive purpose.*

Statutory reserve systems have not had as their purpose the realistic recog-



nition of cash flows, except for the use of preliminary term periods. Artificial conservatism can be achieved by an arbitrary increase in best estimates. Perhaps Mr. Barnhart could clarify the meaning of "nonadaptive ways."

3. *Risk deterioration and prohibitive cycles of rate increases in closed, declining blocks of health business, and how a responsive reserve system can be structured to assist in mitigating this problem.*

We grant the problem exists; we disagree with Mr. Barnhart on the means to alleviate it. Further comments are included in section IV of this discussion.

4. *Regulatory problems arising in connection with policy forms, as well as with the entire health business of some insurers, under which cumulative experience never appears to rise to reasonable loss ratios.*

Some states have promulgated corrective actions that must be taken in such situations. These do not involve the reserve systems, but rather involve premium reductions or refunds, higher benefits, or cessation of sales. Other factors may enter in. Low loss ratios are not categorically indefensible. They may occur with experimental coverages; they should be self-correcting if not corrected by competition.

## II. RESERVE COMPONENTS

The actuarial terminology we have inherited is somewhat infelicitous. Most of the difficulty could be removed if we did not have to explain to the public what we mean by "reserve." Mr. Barnhart's suggestions have merit, but we think the public understands "liabilities" better than "reserves." We propose these changes in nomenclature:

1. claim reserves and liabilities will become simply "claim liabilities";
2. premium reserves will become "unearned premiums"; and
3. policy reserves will become "policy funds."

The label "policy funds" is appropriate for what are now called "policy reserves" since their magnitude can vary considerably under the permitted alternatives and since they are artificial by nature, although calculated exactly.

### *Claim Liabilities*

Claim liabilities constitute the most important element of the aggregate reserve estimate. Errors in claim liabilities do underlie most insolvencies, along with certain other, related conditions.

Mr. Barnhart implies that claim liabilities tend to be overstated. We disagree. We have not found any case of an insurer deliberately overstating the claim liability in order to justify a larger rate increase. To the contrary, any

tinkering with the method will produce results of no meaning or value to management. The difficulty that Mr. Barnhart sees relates to allocating claim payments to exposure periods, that is, matching against earned premiums for a particular quarter or year. Once again the terminology may need revision to make clear what we are talking about.

Two meanings are routinely attached to the term "incurral" or "incurred." The contract may provide that the loss must be incurred while the policy is in force, with certain coverage extensions at termination. In this case, "incurred" means the date on which the service is rendered or the supply is furnished; for greater clarity this date could be called the "date of service."

For actuarial purposes, "incurral dating rules" or "assignment of incurral dates" to claim payments has to do with the matching of payments to earned premiums during a certain period of coverage. Instead of "incurral date," a more accurate term might be "claim date" or "loss date" or "accident date"; we prefer "claim date." Typically, the claim date is the date of the accident, or if loss is due to sickness, it is the date the insured person first seeks medical advice.

A claim record is opened if the loss is covered under the policy. A claim date and claim number are assigned. Payments coded under that claim number are allocated to the period of coverage which includes the claim date. These payments make up the "stream" or "runout" for that claim; the claim liability provides an estimate of how much money remains to be paid on each claim, whether reported or unreported, accrued or unaccrued, as of the end of an accounting period.

Rules are needed as to when to open a new claim, whether for the same cause or for an entirely new cause. The definition of the benefit period, the deductible amount, and the maximum benefit all may have an impact on this decision. Regarding these considerations, the contract provisions give no explicit guidance. The inclusion of "laws, regulations, or court precedents" as a source of enlightenment emphasizes the inadequacy of the contract language for assigning a claim date to a given payment.

The ambiguity centers on future payments that will be assigned claim dates prior to the valuation date. If the policy must be in force on the date of service for such a payment to be made, does this mean that the insurer need not provide for this liability? The working draft is fairly clear when it says that "the liability should be determined on the same basis as if the contract ceased to be in force after the date of valuation." The paper appears less specific, pointing out that "most individual contracts specifically provide that termination of coverage may not prejudice any claim pending as of the date of such termination." Later the author seems to modify this

position by reminding us that the date of service must fall during a period that the policy is in force. Otherwise there is no contractual obligation.

We find that the termination assumption is unrealistic and impossible to apply meaningfully. A more tenable position can be derived from Mr. Barnhart's allusion to certain actuaries who would reduce the value of disability claims "on the grounds that continuing liability is contingent upon the occurrence of unforeseeable later events." He correctly points out that "all such contingencies affecting the future development of a disability claim are inherently (and properly) dealt with through the probabilities of termination built into the continuance table itself."

We submit that the same principle applies to the continuance or runout of a major medical claim. Instead of assuming that the contract "ceased to be in force after the date of valuation," the method should reflect the probability that the policy will stay in force through future dates of service related to prior claim dates. Most development methods will build in this probability automatically by recording payment dates and claim dates as benefits are provided under the terms of the policy.

Finally, more should be said about the relationship of rating principles to reserving methods. There is an implicit recognition of this relationship in the concept of the balancing reserve.

### *Unearned Premiums*

Mr. Barnhart's views on current requirements for the unearned premium liability seem inconsistent with his later recommendations for the build-up of certain policy funds. The gross pro rata unearned premium is said to be onerous. The net basis is more realistic; also, it should be kept separate from any policy funds.

First, there is not much reason to change the current requirement. New business for any health insurance product almost always results in a surplus drain. The requirement may be recognized as a limitation on rapid growth. Second, where a policy fund is used, the unearned premium can be stated on a net basis anyway after a few years. Last, the current approach is simple and consistent. The gross basis is needed to find the earned premiums for statement purposes. Additional calculations for a variety of plans and anticipated loss ratios should not be mandatory.

It may be true, however, that the gross unearned premium liability may have become an ultimate "minimum reserve" floor more by default than by conscious intent. A review of this liability may be in order.

### *Policy Funds (Contract Reserves)*

Current methods of setting the level of policy funds are artificial. When these methods were valid, the stabilization function noted by Mr. Barnhart

provided for increased costs due to aging, and not for inflation or risk deterioration. The current methods are still valid for stable benefit, issue-age rated policies.

Of greater concern are the two new types of funding requirements that have been proposed. The loss limitation reserve aims to dampen future premium rate increases on closed blocks of business. The balancing reserve appears designed to remind insurers that they are obligated to return a stated proportion of gross premiums before they can justify a rate increase. We have several comments:

1. These requirements would intrude into the domain of company management.
2. The systems and staff required to administer and audit these requirements would be onerous for regulators and companies. Since judgment is involved, the possibility of manipulation may arise.
3. The LLR is primarily a contingency fund and will probably be treated, for tax purposes, as part of surplus, even if it may be used in the loss ratio test.
4. Depending on how the fund contributions are reported, actual claims experience may prove difficult to monitor and interpret. It appears that loss ratios in the Accident and Health Policy Experience Exhibit will reflect only the contribution to the LLR.
5. It is not clear how the balancing reserve will operate over a period of years; perhaps the subcommittee can prepare a simple projection under typical scenarios.
6. Applicability to group health insurance is doubtful; what rationale can be advanced for requiring group plans to establish these funds?

### III. RATIONALIZATION OF EXISTING METHODS

We have not experienced the difficulties in premium formulation and reserve certification listed in the abstract to this paper. Perhaps we have chosen benefit structures that were not quite so volatile. Perhaps premium growth under these products has not been exponential. Perhaps "needed" rate increases have been arbitrarily reduced by our clients or by regulatory officials, or applied in steps.

But we have seen insurers make mistakes in plan design, reserve estimates, and underwriting safeguards. We believe these errors, not current reserving practices, have led to the problems that are said to necessitate drastic changes in the existing systems. Since we doubt the premises on which these changes are advocated, we do not accept the solutions proposed. We endorse a continuation of existing methods; any adjustments to meet

goals other than solvency of the insurers should be applied outside of the reserve system.

*Claim liability.* We have found ways to adjust for over a dozen influences on claim liability estimates without major changes in the development approach. We have regularly made retrospective tests to confirm our results.

*Unearned premiums.* There is no substantial controversy here in regard to techniques. We find the current standard appropriate and simple.

*Policy funds.* To eliminate the need for incremental augmentation of policy funds as premiums and benefits increase, we have adopted two rules for volatile benefits, based on expediency:

1. For major medical policies using issue-age premium rates, the policy fund is left unchanged when rates are increased.
2. For Medicare supplement policies, the policy fund is adjusted as premiums and benefits change, amounting to an issue-age strengthening.

The rationale for major medical benefits relates to the shift in rating principles that occurs. Initial rates are issue-age (never promised as "level premium"). Rate increases are not age-specific but across-the-board, based on average aggregate experience. This approach reduces the required rate increase. The policy fund continues to grow on the underlying layer of coverage and serves as a rate stabilization fund which is released as policies lapse.

The rationale for Medicare supplement benefits is simplicity. Reserve factors can be stated as tables of ratios applied to annual gross premiums in force by duration.

All policy funds are derived from premium income; there is no other logical source. If poor experience is irreversible and premiums cannot be expected to break even, a gross premium value must be established to recognize the deficiency. This deficiency is funded from surplus.

#### IV. HIGH AND LOW LOSS RATIOS

High loss ratios may indicate problems not relating to reserve or funding methods. A high deductible, major medical plan may have a liberal mental illness benefit which could result in severe adverse selection and the need for premiums three and four times the original ones, even with scheduled benefits. These higher rates may still be reasonable.

A Medicare supplement plan may include an optional prescription drug rider. It is likely that no premium would ever be adequate for this benefit, and the only solution would be to discontinue sales.

In other cases purposeful underpricing could occur, with subsequent attempts to run up the premiums as the waiting period for preexisting conditions neared its end.

The regulatory response should depend on the circumstances and not on a fixed limit on premium increases. But if the loss limitation reserve were made an element of surplus adequacy, insurance departments logically could expect insurers to absorb at least a portion of their losses in cases where misrepresentation and neglect were present. Even without the LLR, regulators have long been limiting the level of premium increases. Also, at least six states sponsor risk-sharing plans for substandard or uninsurable risks; these pools are subsidized by the insurance industry.

Low loss ratios can better be dealt with by requirements for corrective action. Analysis of durational loss ratios could provide support for continued use of current premiums. The use of a balancing reserve could delay the implementation of corrective action.

#### V. CONCLUSION

Reserve systems and standards are designed to insure solvency. Other goals must be secondary. The current system is satisfactory if routine examinations and audits are carried out.

Our thanks to Mr. Barnhart and to his subcommittee for their work and the chance to discuss it.

#### WILLIAM H. ODELL:

Mr. Barnhart's paper is valuable and helpful because it addresses a timely topic, presents well-reasoned solutions to significant problems, and gives us incentive to continue the search for optimum solutions to these problems.

The ideas developed in this discussion center around three themes:

1. The environment: The nature of today's environment, how it differs from the environment of years gone by, its effects on health insurance reserving.
2. The liability for the obligation to pay future policy benefits: What is the source of this liability, what is its nature, how is it to be measured?
3. The role of government intervention: The cause of it, its effects on health insurance.

#### I. THE ENVIRONMENT

Through the first half of this century, each generation prepared itself for its place in society by becoming better educated and more productive and contributing to the store of the nation's well-being. This was considered a responsibility. The freedom to fulfill this responsibility was highly valued to the point of being worth defending. The time had not long passed when the best thinking of political economics was that a national government

would spend no less than 95 percent of its budget on national security. Debt was undesirable. Currency was convertible to commodities of real value. In that environment, life companies entered the health insurance field with considerable vigor. Policies offered long-term security against the financial loss of accident and sickness. Since medical care costs rose by 2 percent or so per year, the companies reserved the right to change premium rates. This right was exercised as conditions warranted. The guaranteed renewable contracts were much the same in concept as life insurance.

Today, each new generation seems to stress seeking greater rights. The right to go to school, the right to an immediate high standard of living, and so on. Once obtained, these rights are zealously guarded. On a national basis, we seem to consume our capital, spending what we have not produced. Ours is a fiat currency. Short-term results are valued by individuals and organizations. The role of government is to move capital and the production of some to others and regulate our affairs even to the point of price regulation. The concept of private property is being questioned. Freedom from the vicissitudes of life is sought. Debt is fashionable.

The direct effects of the environment on health insurance include (a) the need for frequent and significantly apparent rate increases (not real—they only reflect the continuing reduction in the perceived value of the currency); (b) detailed and exhaustive government regulation; and (c) demands for prompt and gratifying “returns” on insurance policies even at the expense of solvency.

These effects have consequences of their own. A Subcommittee of the Standing Technical Advisory Group of the NAIC Actuarial Task Force, of which I am Chairman, recently issued its Report on a Structure for Consideration of Health Coverage Valuation Standards which, incidental to its main purpose, recognized some of these consequences. One is that the terminology of fifty years ago, which we still use, is often confusing and misleading. “Guaranteed renewable” is now affixed to contracts which, as regards premiums, are level premium and also to those which are one-year term. The buyer sometimes cannot tell the difference. Another consequence is the increased difficulty of quantifying claim reserves due to increased variability of all experience elements in the environment.

These events are not the actions of individuals but the results of trends in the social forces. Nothing in this discussion should be interpreted as a criticism of any individual nor group of individuals nor of state regulation.

The question is not what the environment has to do with health insurance and health insurance reserves. It is whether or not health insurance has anything to do with the environment. For example, long-term inflation-sensitive contracts (especially those based on level premiums) may no longer fit the environment.

## II. THE POLICYHOLDER OBLIGATION

The insurance contract is unilateral; the insurance company promises to perform in a certain manner as long as premiums are paid. Generally, there is no promise made by the policyholder.

The policy is the entire contract. In fact, the uniform individual accident and sickness policy provisions law contains the following required provision:

ENTIRE CONTRACT; CHANGES: This policy, including the endorsements and the attached papers, if any, constitutes the entire contract of insurance. No change in this policy shall be valid until approved by an executive officer of the insurer and unless such approval be endorsed hereon or attached thereto. No agent has authority to change this policy or waive any of its provisions.

How can we describe this policy, which is a package of rights, obligations, and so on? It is a contract. A brief review of one classification of contracts is helpful for purposes of this and the next section.

An expressed contract is an actual agreement of the parties, the terms of which are openly uttered or declared at the time of making it, being stated in distinct and explicit language, either orally or in writing.

An implied contract is one not created or evidenced by the explicit agreement of the parties, but inferred by the law, as a matter of reason and justice from their acts or contacts, the circumstances surrounding the transaction making it a reasonable, or even a necessary, assumption that a contract existed between them by tacit understanding. [“Implied contract” as used here excludes the situation covered in the next paragraph.]

[A quasi-contract creates an obligation] imposed upon a person by law, not in pursuance of his intention and agreement, either expressed or implied, but even against his will and design, because the circumstances between the parties are such as to render just that the one should have a right, and the other a corresponding liability, similar to those which would arise from a contract between them.<sup>1</sup>

The contract of insurance falls in the expressed contract category. The insurance policy relates to dealings between two parties, and those dealings culminate in a transaction referred to as a contract. The parties to a contract are those named therein.

The policy creates a liability with respect to the insurance company. This liability is to pay future benefits and incur the future expenses necessary to honor the contract. This liability, net of the premiums which the insurer will receive from the insured, is recognized in the financial statements of the insurer. State laws specify to some degree the minimum amount of liability

<sup>1</sup>The quotations in this section are from *Black's Law Dictionary Revised Edition*, West Publishing Company. Other sources utilized include *Business Law with UCC Applications* by Rosenberg, Ogden, Beyers and Brown, and *Corbin on Contracts* by Arthur Linton Corbin.



which must be recognized. To do this, the laws specify the parameters to be used in its calculation.

The entire contract provision prevents, as a general rule, the company from entering into other transactions which would relieve it of its liability under the insurance policy. Relief from the liability can be sought, of course, by rescission, novation, and substitution. These are not, and quite properly so, possibilities taken into account in determining the amount of the insurer's liability.

Whatever other discussions, correspondence, commitments, and contracts the insurance company may enter into, it cannot relieve itself of the obligation to pay benefits under the policies.

### III. THE REGULATORY OBLIGATION

The law has imposed a second obligation. ("Law," as used here and following, includes regulations, rulings, and so on. It does not arise from contract.)

The legislative vehicle is a Guideline for Filing of Rates which has been adopted in a number of states. Under these guidelines, to issue a policy form, a company must give some indication of future results. The indication may be expressed with the word "anticipated"—i.e., "the anticipated loss ratio will be at least"—or otherwise. The future result is in terms of a loss ratio. The means of expression and minimum acceptable loss ratios vary from state to state.

The rate filing restricts the company's right to seek a rate increase even though that right is otherwise guaranteed by the contract. Unless past and anticipated results indicate the filed loss ratio is exceeded, no rate increase is forthcoming. It even has been suggested that companies pay monies back to policyholders in those cases where a block of business matures with a loss ratio less than the filed loss ratio.

The regulatory obligation is different from the policyholder obligation. The latter arises from contract, the former arises from law. The latter is the result of negotiations of parties, neither of which represent the state. The former arises from a decision by the state to impose certain obligations by law.

The rate filing articulates an ongoing obligation. It is not a simple requirement that can be met only one time. The author makes a cogent case that an implicit liability attaches to the rate filing. Here is a list of some aspects of a rate filing that produce ongoing effects:

1. The right to raise rates is severely limited.
2. The company is exposed to the hazard that, even if a rate increase is warranted under the rate filing, it will be reduced or delayed.

3. The company is exposed to the hazard that the interpretations given by the regulatory authorities result in no rate increase at a time when the financial statements of a company indicate that an increase is needed.
4. The rate filing creates a degree of expectation that some money will be paid out in benefits under the contracts.

Clearly there is an undertaking of financial obligation, of a commitment to forbear from doing things that were a matter of right otherwise, and of exposure to hazards caused by uncertainty. This undertaking with regulators in all its aspects is called here "the regulatory obligation."

The regulatory obligation is separate and distinct from the policyholder obligation, arises from different sources, and is of a different nature.

#### IV. THE COST AND EFFECT OF REGULATION; THE INFLATION-REGULATORY COMBINATION

Traditionally we have been reluctant to attribute a cost to government regulation. If there were no cost of government regulation, then there would be no case for recognizing a liability arising therefrom. However, the rationale of the paper seems irrefutable.

The liability recognizes a future expenditure which otherwise would be accrued against future earnings but is more properly accrued against earnings of the period[s] which gave rise to the expenditure.

This cost has been borne and will be borne by policyholders and others connected with the insurance industry. One of the values of the paper is that it brings us one step closer to being able to measure this cost. (The cost being considered here is the cost impacting directly on those connected with the insurance industry. This is over and above the cost required to support the regulatory mechanism which is presumably accessible to the citizenry in general.)

Three trends in the health financing area are:

1. shifting within the traditional health insurance financing mechanism from individual insurance to group insurance and amongst the individual lines,
2. movement from traditional insurance financing to integration of delivery of and payment for health care, and
3. losses to those involved in health care financing, especially traditional insurers.

It is instructive to consider the relationship between regulation and these trends.

The burden of rate regulation falls on all lines of business. But it falls more heavily on individual than on group and more heavily on guaranteed renewable than other individual lines. One then expects the rates of growth to be greater (or the rates of decline less) for group than for individual and for all individual combined than for guaranteed renewable.

An examination of the growth rates by line indicates that this is indeed the case. The average growth in premiums for 1974-83, for a sample of companies, was 8.57 percent for the entire health insurance line, 2.97 percent for the individual lines, and - 1.42 percent for the guaranteed renewable lines. (The measure is earned premiums. The data source is the Argus Health Chart. The companies are those falling in the top five companies ranked by earned premiums according to *Best's* for two recent periods in either the individual or guaranteed renewable categories with two companies experiencing exceptional circumstances removed from the calculations. The growth rate for the year 1979 over 1978 was excluded from the calculations because of the change in the method of computing earned premium from 1978 to 1979.)

Of course, there may be other factors at work to produce the shift. Indeed, an examination conducted of the Accident and Health Policy Experience Exhibits of these companies for the years studied indicates another interesting phenomenon. With respect to coverages which are guaranteed renewable and not inflation sensitive, at least two companies have experienced rapid rates of growth. Also, the two companies showing growth in guaranteed renewable as great or greater than for all individual combined lines achieved this growth through noninflation-sensitive products. This implies that non-inflation-sensitive products, including those based on level premiums, remain viable, but inflation-sensitive level-premium products are in real difficulty.

The trend away from traditional insurance financing—perhaps one of the most telling effects of the regulatory burden on the industry—is causing regulators themselves to try to find a way around it. Consider a typical case: “. . . faced with the continuation of mounting costs of health care, coupled with the state’s interest in high quality care, the legislature has determined that there is a need to explore alternative methods for the delivery of health care services, with a view toward achieving greater efficiency and economy” and “it shall be the policy of this state to: . . . recognize that prepaid comprehensive health care plans shall be exempt from operation of the insurance laws of this state except in the manner and to the extent set forth in this part.”<sup>2</sup>

It is hard to escape the conclusion that, due to regulation, the traditional health insurance mechanism has been falling short, and that the legislature has had to seek other mechanisms which avoid this regulation. The other side of the coin is that as these other plans have fallen into financial difficulty and have frustrated benefit expectations, there has been a growing movement to bring them under the insurance regulatory mechanism.

With respect to the third matter of losses (even to the point of insolvencies)

<sup>2</sup>Florida Insurance Code 641.18

to those involved in health care financing, perhaps the cost and effect of regulation are most painfully obvious when companies in financial difficulty obtain rate increases only after expenditure of considerable resources, if at all.

Why are the results of health insurance rate regulation contributing to the industry showing signs of leaving the market? Because it is one thing to apply the rate filing regulatory mechanism to short-term lines such as auto and homeowners, and quite another to apply it to policies considered to run for life or to age 65. Why not end this rate filing mechanism for health insurance? Unfortunately, this is not as likely to happen.

#### V. CALCULATION OF THE POLICYHOLDER LIABILITY

Two criteria for the minimum reserve are:

1. the reserve must be sufficient to mature the policy obligations, and
2. the reserve must meet minimum statutory standards.

Regardless of any actual or proposed legislation, the liability to mature the policy obligations exists and must be recognized.

The paper presents two problems encountered in setting this reserve. They must be solved, and the quantification of another type of liability will not remove the need for solution.

- A. The first problem is a block of business with respect to which experience has rapidly deteriorated, the policyholder liability currently recognized is not sufficient to provide for policy obligations, and because of past excellent experience, a rate increase cannot be obtained.

The difficulty here involves the adequacy test. The situation is addressed in the American Academy of Actuaries Financial Reporting Recommendations and Interpretations, in Recommendation 7 and in Interpretation 7-B. A gross premium valuation is performed to determine whether or not the liability is adequate and, if not, to determine the appropriate amount of liability.

In this situation, the statutory minimum calculation is not likely to pose a great problem.

- B. The second problem is frequent rate increases. We hypothesize a level-premium, hospital-expense, inflation-sensitive, guaranteed renewable contract. There have been numerous rate increases, and it is impossible to distinguish the extent to which the rate increases have been due to incorrect estimates in morbidity made at the time of pricing, worsening levels of experience, deterioration in the perceived value of money, increases in the cost of medical services, improvement in medical services, and so on. Our obligation is to have a reasonable measure of the company's policyholder liability.

Here, the adequacy problem can be handled in the same way as in the previous situation.

For the statutory minimum calculation, a number of choices suggest themselves.

1. The liability is based on the valuation factors calculated at the time of issue.

This procedure views the original premium level as based on the level-premium concept, and the rate increases to be based on level excesses of morbidity costs over those originally assumed. This procedure is used fairly frequently, supported with factual documentation infrequently, and recommended for ease of application.

2. Each rate increase is treated as being an additional level premium for a nonlevel benefit cost.

Theoretically, the calculation for the liability would involve (a) first applying the original set of reserve factors; (b) then applying a second set of reserve factors based upon the first rate increase, with the reserve element starting at zero at the time of the rate increase and being based on a level premium from the date of the increase to the end of the contract; (c) then applying a third set of factors representing the second premium increase and similar in nature to those for the first increase and so on; and (d) adding the results. This approach views each rate increase as representing another application of the level of premium concept. One theoretical rationale is that each successive increase corresponds to an increase in the anticipated benefit. The method is complex.

3. The original reserve factors are multiplied by the ratio of current gross premiums to original gross premiums.

One rationale is that an improved estimate is being made of the liability. The method is not often used. It is simple.

4. The liability is the original reserve plus a single-premium element.

The liability is increased at the time of the rate increase by the excess of the present value of benefits based on the experience relating to the rate increase over the present value of benefits based on the reserve standard. At each later date comparable calculations are made. There is no apparent rationale for this approach. It can be useful as an approximation where the additional reserve element is calculated manually.

The statutory minimum calculation problem may be more an exercise in interpretation than calculation. If there were general agreement on how the

law applies or if the law were clarified, any difficulty would be greatly diminished.

Even if another reserve system (such as balancing reserves) were in use, sufficiency tests would be necessary. This is because the policyholder liability of the insurer is always with us. Hence, we must have the tools for making these tests.

If a balancing reserve were available and if it were known that the discharge of each dollar of liability thereof would discharge a dollar of the policyholder obligation, then we might test the balancing reserve for adequacy by using approximations. However, liberal use of approximations in testing reserve adequacy can sometimes be fraught with danger.

Perhaps the most critical situations will be those of small companies which have written rapidly increasing amounts of business with emerging experience far worse than anticipated by the gross premiums. Those cases beg for careful and direct determination of the sufficiency of the policyholder liability.

No change in the minimum standard, neither as to the value of the parameters it uses, the parameters themselves, the type of reserve prescribed, nor the addition of a second minimum standard (the present standard being retained for the policyholder liability and a new one for the regulatory liability), would eliminate the need for sufficiency tests.

#### VI. CALCULATION OF THE REGULATORY LIABILITY

To calculate this liability, we must define the anticipated cash outflows, which the company is obliged to make under the terms of the rate filing. A logical place to begin is to anticipate future cash outflows at least great enough to produce the results indicated in the rate filing. Whether and when it would be appropriate to anticipate lower cash outlays than indicated by the filed loss ratio is beyond the scope of this discussion, but we should not rule out that possibility. Once future cash flows are quantified, the calculation should not be onerous.

We make no distinction as to line of business or nature of coverage.

With respect to a statutory minimum standard for the regulatory liability, the balancing reserve approach presented in the paper indeed fits rather well. Using tabular reserves, however, seems more related to determining the policyholder liability than to the regulatory liability. The regulatory liability arises out of the rate filing and the loss ratio statements made therein. Tabular reserves usually are not directly connected with the rate filing and the related loss ratios. Perhaps if the valuation standard defined modifications of the tabular reserves corresponding to different loss ratio levels, then an appropriate connection between the rate filings and tabular reserves could be made.

## VII. THE RELATIONSHIP BETWEEN THE TWO LIABILITIES

The two obligations described previously must be recognized by quantifying two liabilities for financial reporting purposes. What is the relation between these liabilities?

Each liability represents an obligation of the insurer. But they are not mutually exclusive. In fact, a dollar paid to discharge one of the liabilities may at the same time discharge a portion of the other liability. Generally speaking, the payment of a dollar of benefit under the terms of the contract not only extinguishes a portion of the policyholder obligation but also extinguishes a portion of the regulatory obligation.

It is an oversimplification to say that the company must pay the policyholders at least so much money or else pay the money to the regulators. The matter is more complex. The actual payments are to the policyholders. But the total payout of the insurer is related to both obligations, not just one of them.

The question of the total liability shown in the financial statement must be addressed. If the policyholder obligation is denoted by  $\$P$  and the regulatory obligation by  $\$R$ , then the total liability  $\$L$  must satisfy the conditions  $\$L \leq \$P + \$R$ ,  $\$L \geq \$P$ , and  $\$L \geq \$R$ .

First, for a given policy form, can  $\$P$  be greater than  $\$R$ ? Can  $\$R$  be greater than  $\$P$ ? We consider this from the viewpoint of sufficiency:

1.  $\$P$  can be greater than  $\$R$ :

One example is a block of business on which the company anticipated and priced for experience which would produce a loss ratio of, say, 65 percent, which would exceed the minimum required loss ratio of, say, 55 percent. The policyholder liability would probably be geared to the 65 percent loss ratio. The regulatory liability, if determined using the balancing technique, would be smaller.

2.  $\$R$  can be greater than  $\$P$ :

An example is a new block of business, priced in anticipation of the loss ratio used in the rate filing, where experience has been far better than anticipated.  $\$P$  of a very small magnitude or zero would probably be sufficient, but the sufficient  $\$R$  would probably be close to the value of a balancing reserve.

Obviously, to determine the total liability  $\$L$  of the company, we cannot simply calculate one of  $\$R$  or  $\$P$  and ignore the other.

However, we should take into account the extent to which a payment discharging one dollar of one liability also discharges one dollar of the other. To what extent does the discharge of  $\$R$  discharge  $\$P$ ? Generally the payment of  $\$R$  discharges  $\$P$ . If this is the case (and it is assumed to be true throughout the remainder of this discussion unless otherwise indicated),

our total liability can be constructed by holding for each policy form the greater of  $\$R$  or  $\$P$ .

The discharge of  $\$1R$  would not discharge  $\$1P$  under certain proposed laws requiring payments over and above contractual benefits to blocks of policies on which benefit payments had failed to come up to filed loss ratios. This type of regulation forcefully brings home the reality of the regulatory obligation even under existing law.

Delays in obtaining rate increases have an interesting effect. The present value of any future premium deficiencies (which could have been avoided in absence of the delay) do not impact  $\$R$ . In fact,  $\$R$ , if computed by the balancing method, would appear to be decreased by the delay. However, the present value of the premium deficiencies may increase the sufficient  $\$L$ . Hence, one of the costs of regulation is reflected not by increasing  $\$R$  but by increasing  $\$L$ .

The fact that a deterioration of experience can lead to a decrease in  $\$R$  is another indication that  $\$R$  is not an appropriate measure of the sufficient quantity of  $\$P$ .

More work is needed to produce appropriate supportive demonstrations. However, it appears that the insurer's liability is composed by taking for each policy form the greater of  $\$R$  and  $\$P$ , being watchful for situations where payments discharging  $\$R$  would not discharge a comparable amount of  $\$P$ .

#### VIII. CAN THE COMPANY BE RELIEVED OF THE POLICYHOLDER OBLIGATION?

The company can be relieved of the policyholder obligation, but it is unlikely, especially in view of the entire contract clause. One way the company could be relieved of its policyholder obligation is by the government redefining the rights of the parties to a contract which is no longer remote. The possibility of the states changing the insurance contract to take away rights from insureds does exist. State laws have already taken away the freedom of individuals to purchase certain types of policies. So far this type of law is rare. The value of currency has been taken away. Also, laws have increased the obligation of insurers under existing contracts. From taking away the freedom to contract and placing additional obligations on parties to existing contracts, it is but a small step to take away rights of parties under existing contracts.

Suppose a law stated that an insurer would never have to pay more than the filed loss ratio under an insurance contract, and we were using the balancing reserve to quantify the regulatory liability. If the filed loss ratio were 60 percent, then we could reason that the total future payout of the company is 60 percent of future premiums plus the excess of 60 percent of



past premiums over past claims. As long as 40 percent of future premiums is sufficient to meet obligations other than morbidity costs, then the excess of 60 percent of past premiums over past claims—i.e., the balancing reserve—is adequate provision for the regulatory liability.

If it were also true that the insurer had no other obligation to the policyholder—i.e., meeting the 60 percent loss ratio discharged all obligations under the contract—then the discharge of \$1 of regulatory liability would discharge \$1 of policyholder liability. Hence, any policyholder obligation, if indeed it could be said there were one, would be provided for by the regulatory liability.

Absent such unlikely laws, the policyholder obligation exists. It is sometimes difficult to quantify, but it does exist.

#### IX. EFFICACY OF STATE RATE FILINGS FOR LIABILITY DETERMINATION

How is the regulatory liability to be quantified from the rate filings? Consider a company issuing business in many states on a multitude of policy forms. Rate filings have been made in its home state and many other states. The various states have different requirements that have different impacts on the obligation of the company. Also suppose the company has changed policy forms from time to time. Each generation of policy forms has slightly different rate filing requirements and needs to be addressed somewhat differently.

Changes in interpretation of Guidelines for Filing of Rates also are a problem. These regulations stemmed originally from the short phrase “premiums not unreasonably related to benefits.” That short phrase has been used to develop a large body of laws which has considerable variety. Some of the laws have had retroactive effects. Therefore, assuming we could articulate the liability specified by the rate filings of a particular company in a variety of states for a variety of policy forms, we would still have the problem of the financial impact of those rate filings being changed by future regulatory action.

How are we to sort through this material and assemble supporting information as to the regulatory obligation undertaken by the company? How are we to measure the related liability?

One simpler way is to rely to a considerable extent on the NAIC Guidelines for Filing of Rates. This document is:

1. clearly defined,
2. public and easily accessible (as opposed to the thousands of rate filings stored away in the files of insurance departments and insurance companies), and
3. subject to interpretation in the public forums (because it is clearly defined and easily accessible).

However, the problem is not solved. Suppose that a particular rate filing produces a greater regulatory obligation than the NAIC Guidelines? The existence of the NAIC Guidelines does not relieve the insurer of the regulatory obligation imposed by the particular rate filing. Perhaps it would be an appropriate approximation to calculate the regulatory liability using the NAIC Guidelines providing that the actual rate filings were carefully reviewed for evidence of any greater obligation.

With respect to the possibility of future changes in legislation applying to in-force policy forms, we might take the view that we can only recognize liabilities that presently exist; liabilities created by future changes in law will have to be recognized and charged to earnings at that time.

The rate filings are used to quantify the regulatory obligation, not to quantify the policyholder obligation. (They may occasionally be useful in calculating the latter by providing an indication of the value of certain parameters, especially in connection with claim reserves.)

#### X. SHOULD GUIDELINES FOR FILING OF RATES BE INCLUDED IN A VALUATION STANDARD?

Should a statutory valuation requirement be related to Guidelines for Filing of Rates?

Recent events and study of the subject make it difficult to formulate a thoughtful and definite response. I approach the subject with great trepidation.

Not many years ago, regulators were charged with the responsibility to be sure that "benefits were not unreasonably related to premiums." From these words grew a huge body of law. This has imposed a cost burden and has produced significant effects. A portion of the burden placed on the companies has been labeled here: "the regulatory obligation."

One of the contributions of Mr. Barnhart's valuable paper is that it is a first step toward quantifying the dollar impact of this regulatory obligation.

Considering the past results of involvement with rate filing guidelines, I am not at all sure I want to see valuation standards also become enmeshed with them.

However, whether or not the regulatory obligation becomes enshrined in a valuation standard and whether or not Guidelines for Filing of Rates enter into a valuation standard, the extremely important message of the paper that there is indeed such an obligation, which begs for monetary measurement, stands.

#### XI. OTHER MATTERS

The paper touches upon a number of issues which are important. With respect to incurred dates, we must be able to distinguish between claims

which will be paid under the contract and claims which will not; how termination of the contract under various conditions will affect the payment of claims; whether the amount of the total liability of the company is sufficient with total future income from the contracts to pay out all future cash disbursements; and whether the treatment of the incurred date between the contract and claim reserves is consistent. Each contract and each type of contract (individual, group, reinsurance, stop loss, and so on) must be considered separately.

The author has made a sorely needed contribution to terminology. Now can someone help us decide between "loss reserves" and "claim reserves"?

We should not part too readily with articulation of each element of the claim reserves. For certain purposes it is helpful or even necessary to examine those elements separately.

## XII. CONCLUSION

The author's pen has changed my view of reality, probably in ways he did not intend. Much of this view, as set forth in the following conclusions, is disquieting. I hope the contribution of health insurance to our society will continue and strengthen. With further discussion of the cost and effect of rate filing regulations, a more refined approach may be found to the mutual benefit of all parties.

1. The environment today is different than the environment in which the products, terminology, benefit patterns, guarantees for renewability, premium rating practices, and so on were developed. The developments in health insurance mirror those for our country as a whole. Emphasis on rights, especially the right to a speedy and satisfactory return from insurance, has helped stimulate vastly expanded government regulation. Production (profits) and even capital (insolvencies) are moved by government from some to others. The price being paid is the loss of freedom to purchase certain long-term assurances at a stable price.
2. Improvements in terminology, especially regarding guarantees for renewability and different types of premium rate scales and practices will be helpful.
3. The regulatory rate filing mechanism seems to have been transplanted from short-term lines, such as auto and homeowners to long-term coverages such as individual guaranteed renewable health insurance policies.
4. The increasing regulatory burden has placed an obligation on the insurance companies. This regulatory obligation creates a regulatory liability which is separate and distinct from the policyholder liability.

The former is a creature of law, the latter a creature of contract. The former arises between the state and the insurance company, the latter between the policyholder and the insurance company.

5. The regulatory liability is a function of the future cash outflows required by the rate filing. A minimum standard might well be based on the concepts contained in the paper.
6. The policyholder liability must be quantified.
7. The total liability appears generally to be the summation of the greater of the two liabilities with respect to each policy form. This presumes that the discharge of a portion of the regulatory liability discharges a like amount of the policyholder liability, which will not hold under certain contingencies. Theoretical consideration of the regulatory liability has just commenced.
8. Long-term individual products which are not inflation sensitive still appear viable. The regulatory burden has apparently contributed to the shift from individual to group lines and away from traditional insurance financing of health care. The decline in the perceived value of the dollar and increased regulation have impacted most heavily on long-term, inflation-sensitive products.
9. Whether or not the rate filing mechanism should be brought into the statutory minimum reserve standard is a serious question.
10. More theoretical, analytical, and mathematical work is needed to demonstrate the appropriate determination of the sufficient regulatory liability and total liability.

Health insurance financial reporting poses extremely difficult questions to actuaries today for many reasons. Much of the difficulty arises because our world has evolved at such a fast pace. Each viewpoint is valuable as we reason toward the most meaningful solutions.

One of the most significant contributions a professional can make in these circumstances is to present his or her thoughts in spite of the difficulty of the problem and the fact that whatever he or she says will be exposed to many different views. It is through the exposition of such a paper that we can work toward solutions. Mr. Barnhart has done this for us. For his effort and the freedom to responsibly present our views, we are fortunate.

(AUTHOR'S REVIEW OF DISCUSSION)

E. PAUL BARNHART:

First, I express my sincere appreciation to the eight individuals who have contributed formal discussions of this paper. One objective of the paper was to encourage such discussion as part of the exposure process for the report of the Subcommittee for Liaison with the NAIC (B) Committee of the Com-

mittee on Health of the American Academy of Actuaries (AAA), concerning minimum reserve standards for health insurance. This report, entitled "Report on Reserve Standards for Individual and Group Health Insurance Contracts," was completed in April 1985 and was accepted by the NAIC in June 1985 for exposure, prior to final adoption of new minimum standards.

Several of the discussants will be pleased to find that some of their criticisms have been responded to in the minimum standards recommendations as included in the subcommittee's report submitted in June 1985. As of this writing, these recommendations are still in the exposure stage and subject to additional revision prior to promulgation by the NAIC.

I assure Mr. Paquin that I am not "tilting at windmills" in reasserting the specific and well-established actuarial and accounting distinction between "incurred" and "accrued" as these terms have long been used in statutory financial reporting. He questions whether there is any important difference between them. In seeking clarification, he refers to legal materials, whereas it would have been more appropriate had he referred to actuarial materials.

"Accrued" liabilities are those associated with loss that has occurred as of the valuation date, and for which the amount of loss (if fully reported) can be determined with reasonable precision. The definition corresponds closely to Mr. Paquin's reference to U.S. Treas. Regs. section 1.451-1(a), concerning an "accrual method of accounting," except that the text he quotes fails to mention that unreported items may contain accrued items which are not determinable with accuracy.

"Unaccrued," on the other hand, refers to liability associated with loss that has not yet occurred as of the valuation date but, nevertheless, exists because events that have occurred on or before the valuation date obligate the insurer, under the provisions of its contracts, to pay for the loss. A simple example is a contract that obligates the insurer to pay a stated benefit for each day of a period of hospitalization that commences while the contract is in force. If the confinement began on December 15 and eventually terminates on January 15, then for a valuation date of December 31, 16 days of benefit have been accrued and another 15 days will prove to be the unaccrued liability.

"Incurred" is simply the sum of the accrued and unaccrued portions; in the previous example, 31 days, although the 15 unaccrued days obviously cannot be known as of December 31 precisely, and the entire claim may remain unreported to the insurer as of December 31.

I would not require "reporting" to be one of the "events" tests to establish incurred liability; Mr. Paquin apparently regards this as inconsistent with my later definition of the incurred date. "Reporting" generally is not required to take place while the contract is in force. It is true that contracts typically require that reporting must occur within some stated period (most

often, one year) after the loss occurs. Failing this, the liability may become extinguished. If any regulatory authority (and I know of none) would approve a contract requiring that a loss must also be reported while the contract remains in force, then one could possibly argue that this event must occur before a loss can be considered incurred.

Mr. Paquin suggests that a claim can have more than one incurral date. He illustrates with a maternity claim, citing five dated events or stages that could be relevant to the eventual amount of liability. He questions whether any of them deserves selection as the one incurral date. But the claim is incurred when the contract says that the claim is incurred. It may say "at conception." Or it may say "upon admittance to the hospital." Or it may say "upon delivery." If the contract does not answer his question, it is an improperly drafted document.

This question as to the correct incurred date keeps causing confusion and controversy. Mr. Paquin asserts that "the actuary is only peripherally concerned with *legal* [my italics] determinations." I emphasize that we need to understand the contracts that give rise to the liabilities we are valuing.

The actuary has the practical problem of dealing with claims in mass. It is normally necessary to adopt broad, approximate, and simplified dating rules, in order to deal practically with large numbers of claims. But that is no excuse to avoid reading the contracts involved to understand how the true incurred date should be determined. Otherwise, how can we know whether our practical dating rules produce accurate data, even in the aggregate? An actuary must understand true incurred dates to certify, as required for statutory financial reporting, that the reserves "are based on actuarial assumptions which are in accordance with or stronger than those called for in policy provisions" (this language does not say *some* policy provisions but not others, so I presume it means all of them); or that the reserves "make a good and sufficient provision for all unmatured obligations of the Company guaranteed under the terms of its policies" (this language does not say *some* terms and not others, so I presume it means all of them).

Contract provisions are written, first, for the benefit of contract holders. The contract holder, though a layman, should be able to determine the *incurred date* and to what extent the insurer will be liable for continuing loss. If the layman cannot determine these things, it is a poorly drafted contract. If he can, then surely actuaries can.

I am delighted that Mr. Creswell agrees that incurral dates are defined by the contractual provisions. Mr. Creswell goes on to support this basic principle on the basis of the accounting principle of matching revenue and expense.

Mr. Creswell points out that there are practical difficulties in assigning incurral dates, and that "assigning accurate incurral dates to individual claims

can be impractical." I quite agree, as I also agree with his next, quite significant observation that "any inaccuracy in the technique used to assign incurral dates will affect lag studies, reserves, and the runoff used to test the previous year's reserve in Schedule H of the Convention Blank."

He continues with an interesting and useful discussion on resolving the practical dating dilemma by means of adjustment factors derived from runoff studies. I appreciate his discussion and contribution.

Ms. Engels cites a beneficial side-effect of the balancing reserve; it reduces undesirable earnings fluctuations arising from experience fluctuations.

The balancing reserve concept is so simple that it is easy to overlook its inherent advantages. For example, the balancing reserve automatically adjusts for select period experience, without elaborate select and ultimate benefit reserve factors frequently needed under GAAP accounting. The balancing reserve also permits contract reserves to be based on realistic assumptions, assuming that the anticipated loss ratio and the premiums are determined on such assumptions in the first place. If experience differs from that which matches the original anticipated loss ratio, the balancing reserve provides for correction. Further, it automatically adjusts reserve levels to match the effect of revised premium rates. Any tabular basis designed to fulfill these same objectives would be enormously complex.

A danger arises from the simplicity and even from the label "balancing." This reserve is more than simply the balance needed to artificially sustain the anticipated loss ratio. The reserve is subject to the requirement of adequacy, and there can be situations calling for balancing reserves in excess of the minimum basis proposed. The revision of these proposed standards as submitted to the NAIC seeks to point out the danger, along with the adequacy requirement itself. The revision also clarifies the fact that continuing experience may indicate that the guideline loss ratio underlying the balancing reserve should either be increased or considered redundant and reduced to a corrected probable loss ratio replacing the original anticipated loss ratio. The working draft attached to the paper failed to address these considerations adequately, as several discussants have noted.

Ms. Engels inquires as to which specific contract forms the balancing reserve is intended to apply. The revision submitted to the NAIC also clarifies this matter. Any given contract form is made generally subject either to tabular reserve or balancing reserve requirements, but not to both. Further, single premium and YRT (not level premium) noncancelable (guaranteed premium) contracts are exempted entirely from minimum contract reserve requirements. The balancing reserve is then required for all contracts without guaranteed premiums and which contain any benefits, other than incidental benefits, not scheduled or not limited to stated time period payment rates and also limited to disability income, hospital indemnity and scheduled sur-

gical benefits. All other contracts using level premiums require tabular reserves in the traditional mold.

This also clarifies and answers Ms. Engels's observation that the two-year preliminary term tabular reserve method sufficiently recognizes first-year expenses, without additional provision for this in the balancing reserve. The revised reserve standards as submitted call for only one type of contract reserve, not both, on any one contract form.

I do not agree with the conclusion Ms. Engels makes concerning her company's expenses. She states that the first-year deferrable expenses usually equal 150 to 175 percent of an annual premium. This does not equate to using a 1.5 to 1.75-year preliminary term period, since there are claims, as well as nondeferrable expenses, during the first two years. In most cases, the use of a full two-year preliminary term method would be appropriate against this level of deferrable expense.

Mr. Shapland wrote a searching and thorough discussion. While I disagree with his theories of statutory reserving, I wish to acknowledge the substantial amount of useful comment in his thought-provoking discussion.

In developing his views concerning health insurance reserves, Mr. Shapland states two basic premises concerning a "correct" understanding of accounting and actuarial principles:

Accounting principles call for the matching of revenues and expenditures in the measurement of profit and net worth. This matching on renewable insurance contracts is determined by actuarial rating principles and practices.

Most of his discussion rests wholly upon this set of premises. It must be kept in mind that the topic here is not GAAP financial reporting, but rather statutory financial reporting. Statutory financial reporting principles, as currently established, are not built upon such premises. On the contrary, the basic statutory premise, essentially, would appear to be that insurer liabilities must be adequately valued, supported by matching assets conservatively valued. The six assurances contained in the actuarial opinion required in connection with the statutory life and health annual statement nowhere suggest any reliance upon Mr. Shapland's premises. There is no mention or even inference to the effect that the actuarial reserves carried in the balance sheet are appropriate in relation to the matching of revenues and expenditures, or to the measurement of profit and net worth.

Accordingly, I do not accept Mr. Shapland's premises as a foundation for determining reserves under statutory financial reporting; most certainly not as initial starting premises. This is not to say that they ought to be rejected out of hand. What is first needed from Mr. Shapland is a demonstration that his premises deserve to be considered as a basis upon which statutory reserves and financial reporting might be restructured. From that base, he could



proceed to develop his proposal. He cannot escape the burden of first demonstrating that his premises provide a reasonable alternative simply by insisting from the outset that they are basic premises which represent an accepted "correct understanding." He has to show that good reasons exist for seriously considering the fundamental change in statutory reserving philosophy that his premises actually embody.

Mr. Shapland's premises do appear to relate somewhat to GAAP accounting and reporting principles, and some further comment is in order on this score. The basic public served by GAAP reporting consists of investors and stockholders, rather than contract holders, hence, the underlying concern for appropriate reporting of earnings and net worth. Insurance, like banking, is a fiduciary enterprise. I have been dismayed by some of the philosophy behind deregulation of the banking industry, which appears to view banking as primarily a business risk venture, enjoying the same "freedom to fail" as any other risk capital venture. The trouble is, venturesome bank executives have been failing with depositor money, as well as with investor and stockholder money.

The only practical means by which Mr. Shapland's proposals could effectively be implemented would be through virtually total deregulation, so far as reserve standards are concerned. Before we get pulled too far down that road, I hope we will all carefully consider how well deregulation is safeguarding the interests of bank depositors, and how well it can be expected to safeguard the interests of policyholders.

While keeping in mind my philosophical disagreement with Mr. Shapland's basic premises, I will attempt to reply to various points in his discussion.

Having stated his initial premises, Mr. Shapland goes on to assert seven additional premises, for a total of nine upon which all further conclusions are to be based. Some of them rely entirely, in turn, on the two original basic premises. Others are arguable and in need of qualification or limitation.

Commenting further on his views of accounting methods in relation to proper matching, Mr. Shapland suggests that either of two approaches may appropriately be followed:

1. Start with earned premiums, and then make appropriate adjustments as to future claim payments to be allocated to these premiums; or
2. Start with the claim liabilities intended to be recognized, and then recognize the premiums to be considered earned or allocated to the recognized claim liability.

This is a highly relativistic approach to matching that goes far beyond even what is permissible under GAAP financial reporting, which does not

allow nearly as much latitude in achieving the desired level of net gain as the bottom line.

So far as "correct understanding" among actuaries as to premises is concerned, it is of interest that the report of the Health Subcommittee of the Standing Technical Advisory Group on Structure for Consideration of Health Coverage Valuation Standards, submitted to the NAIC, makes comments such as the following:

(Section C, referring to active life [contract] reserve term periods): For a valuation standard to be objective, it must be possible to objectively determine the reserve term from the valuation law for each policy.

(Appendix A, page 2, again referring to active life [contract] reserves): Items which need to be determinable from the policy when read in light of the law include the reserve term and values of other parameters required for the reserve computation.

(Section D5, referring to determination of claim incurred dates): In any event, in computing reserves, the techniques in any given situation for assigning the incurred date must be consistent with the methods used in the same situation for computing the incidence rate utilized in the determination of the active life reserves.

(Section C2): The active life [contract] reserve relates only to claims which have not yet been incurred.

The report holds that both contract and claim reserves should be subject to legal or regulatory standards requiring uniform and objective rules for calculation. The position of the report would appear to be at the opposite pole from the treatment of reserves that Mr. Shapland advocates.

I generally agree with Mr. Shapland's comments in his section "The Rating Environment—The Macrocasm." In fact, I think his comments point to the appropriateness of the balancing reserve concept as a practical, adaptable, and responsive method of dealing with unstable contracts.

One of Mr. Shapland's objections to the balancing reserve, based on the anticipated loss ratio, is that he sees it as guaranteeing such ratios. I see no basis for such an interpretation. The June 1985 report of the Academy subcommittee provides for adjusting the underlying loss ratio from the original filed or "anticipated loss ratio" to a revised "probable loss ratio" from time to time. There is no "guarantee" of the loss ratio in the submitted report.

Mr. Shapland apparently concedes more legitimacy to the balancing reserve in those states which have adopted regulatory versions of the NAIC model rate filing guidelines implying or establishing loss ratio guarantees. However, and with the understanding that guarantees are not implied or assumed, the balancing reserve is still a reasonable and practical reserve standard with respect to nonguaranteed premium contracts involving benefits vulnerable to changing values, and for which anticipated loss ratios have been determined, regardless of rate filing regulations. It is a reasonable

measure of the benefit/premium ratio objectives of the insurer, even though these objectives may be subject to change.

It becomes evident, as one reads Mr. Shapland's section on "Policy Reserves in this Rating Environment," that his proposed treatment of policy reserves could only be implemented in an atmosphere of deregulation of reserve standards. He says, "Given the adoption of different rating practices and principles by different insurers and regulators, different policy reserves are called for." He also states, "Still another insurer might rely strictly on premium adjustments to maintain an ongoing yearly balance between reserves and expenditures. If that system is successful, such an insurer would need no policy reserves."

He sees different insurers, even though they might have identical contracts, identical premiums, and even identical experience, rightfully establishing different reserves if their rating principles and practices and chosen matching objectives differ. Later, in his "Conclusions and Observations" section, he says, "Regulations can cope with the current situation by setting forth general rules which require reserves consistent with the underlying rating principles and practices in use by each insurer and state. This could be clarified by sufficient examples." Given the variety in rating principles and practices that Mr. Shapland advocates, the list of "sufficient examples" would grow to great length. This approach to reserve standards would amount to *de facto* deregulation.

In regard to the section on "Deterioration on Health," let me respond briefly to each of the problems Mr. Shapland visualizes in relation to the recommendations contained in the Academy's submitted report:

*Problem 1.* I agree that voluntary transfer of balancing reserves could become subject to such pressures. But don't such pressures exist anyway? And couldn't they operate almost free of restraint under Mr. Shapland's subjective matching premises?

*Problem 2.* There is no assumption that loss ratios involve guarantees. Quite the contrary is assumed.

*Problem 3.* The problem of profits being transferred from one block of policyholders to another unrelated block exists anyway. Does not insurer surplus generated by profitable business necessarily subsidize other business that generates excessive losses?

*Problem 4.* It is true that the proposals would allow future rate increases on a block that would not have needed those increases if the balancing reserve had not been transferred away. The balancing reserve concept is not presumed to be a panacea, invulnerable to such effects.

*Problem 5.* The situation of an insurer realizing unneeded profit on some forms, which is material in relation to future policy life excess morbidity on

other forms, is possible entirely aside from balancing reserves or rules pertaining to them.

*Problem 6.* Mr. Shapland's statement appears to be internally contradictory.

*Problem 7.* What tests would Mr. Shapland apply to the proposed funding and release rules, and to what purpose?

Mr. Shapland further states, "If persons other than the deteriorated risks should pay for adverse experience, it should be the persons originally insured."

I could not agree more. Regulators would serve the public well if they would cease their opposition to the level premium process implicit in what Mr. Shapland describes. Spreading regulatory opposition to level premium funding of increasing medical cost trends helps no one in the long run and merely accelerates the deterioration and antiselection cycle.

Mr. Shapland's comments in his section "Internal Rating Practices—The Microcosm," reinforce my conclusion that what he advocates would be impossible to regulate. For example, he says that "various insurers will make different decisions regarding claim and revenue matching. This properly leads to different 'incurred' date rules and different claim reserves under similarly worded policies." Even claim reserves of zero appear valid under this scenario. Does it not permit matching of revenue with claims paid during the same accounting period? Or does even Mr. Shapland admit to some limitations on insurers' chosen practices as to matching?

In the section "Review of the Issues," four issues are cited by Mr. Shapland as being in need of resolution. My response to each is as follows:

1. *Are reserves the result of matching revenues and expenditures with this matching controlled by rating practices and principles?* No. The underpinnings of statutory reserves are adequate valuation of claim and contract liabilities. Matching of revenue and expenditure is a secondary objective.
2. *Are rating practices and principles flexible or fixed by law and practice?* Neither. Rating principles and practices are flexible within the guidance of accepted actuarial principles and as limited by law.
3. *Do the proposed valuation standards reflect the answers to (1) and (2)?* Yes.
4. *Is the specific assumption that loss ratios represent guarantees acceptable?* This is not the assumption.

I thank Mr. Houghton for his helpful discussion of several fundamental issues. Mr. Houghton's opening discussion of claim reserves neglects the place of the contract reserve in the total liability picture.

Mr. Houghton objects to what he calls a "theory" of several actuaries, insurance companies, and the IRS "that no claim reserves are necessary if the policyholder must continue the policy in force by paying premiums in

order to continue to receive a benefit for an existing claim." Further, he says, in reference to a hypothetical contract that recognizes contractual liability on a "date the service is provided" basis and requires that the contract be in force on any such date, that "they assert that the only liability would be accrued days of disability or confinement, and no liability exists for the present value of amounts not yet due because such benefits are properly chargeable to future premiums." Mr. Houghton says, "It is my opinion that contract language itself cannot eliminate a liability or reserve if the situation clearly requires such a reserve. In the hypothetical case, I would establish a reserve for the present value of amounts not yet due because the required premiums do not offset the benefits for continued disability or continued confinement."

Mr. Houghton is misinterpreting the position of the AAA subcommittee with respect to such liability, because he is ignoring the contract reserve.

Our subcommittee is saying that incurral dates must be determined from the contract. Claim liability determined to be unincurred and, at best, imminent, is not a part of the incurred claim liability. But it must be taken into account in determining the contract liability. The liability should be provided for in the proper place, namely, in the policy reserve (here viewed as including both the contract and unearned premium reserves).

What defines and determines the amount of the policy reserve? To quote from the report of the Health Subcommittee of the Standing Technical Advisory Group (Section C1 comment): "the quantification of the reserve ["active life," or policy] liability is simply quantification of the excess of the value promised by the contract over the available income stream therefrom." This is what Mr. Houghton is talking about when he says "the required [future] premiums do not offset the benefits for continued disability or continued confinement." In that case, the contract reserve covers the liability. As the same report further states, (Section C2 comment): "The active life reserve relates only to claims which have not yet been incurred and *should be sufficient for that purpose* [my emphasis]."

The objective of our AAA subcommittee that drafted the recommended reserve standard language was to identify a clear, objective, and clean demarcation between claim liability that has been incurred (and should be provided for in the claim reserve) and claim liability that has not yet been incurred (and should be provided for in the unearned premium and contract reserves). The issue is not whether liability exists, but which reserve category provides for it.

Mr. Houghton, Mr. Shapland, Mr. Habeck, and Mr. Litow raise objections to the demarcation line recommended by our AAA subcommittee but offer no clear-cut alternative. Do they propose that the line be drawn at the

subjective preference of each actuary? How far do they go in including imminent claim liability within the claim reserve?

Perhaps these discussants think it does not matter as long as the aggregate reserves are sufficient. I think it matters a lot. If it is unclear what liabilities are to be covered by what reserves, then we lack any clear basis for measuring any of the reserves. That is the existing situation, and attention to contract reserves has suffered as a result. Most health actuaries given careful attention to the claim reserve. When it comes to the contract reserve, however, it is not clear what real liability is being valued. There is a tendency to be satisfied if minimum tabular standards are being met or, lacking objective minimum tabular standards, if some tabular basis is established.

If the area of liability that is to be covered by contract reserves can be clearly delineated, then all of us will take such reserves much more seriously. And perhaps the IRS can be persuaded to take all health insurance liabilities and reserves more seriously.

Beyond providing a clear line of demarkation, there are other reasons (given in the paper) for recognizing a clear, objective basis for determining when a claim is incurred. The problem deserves resolution.

In discussing the balancing reserve, Mr. Houghton makes this critical observation:

From the point of view of a regulator, two companies filing exactly the same premium scale for exactly the same benefits and experiencing exactly the same level of incurred claims but having submitted different anticipated claim ratios would have balancing reserves that would vary. This would convey the impression that the experience of the companies was different when in fact it was similar.

No such impression is conveyed if the basis of the balancing reserve is understood. Let us say that Company B has determined a higher anticipated loss ratio. This says that Company B is prepared to live with a higher loss ratio, possibly because its expenses are lower. If claim costs trend toward higher cumulative loss ratios, Company A will need to file a rate increase sooner, or for a larger increase amount, than Company B. It is appropriate, in such a case, that Company B has been reserving all along against a higher ratio.

On the other hand, suppose the experience of the two companies continues to be identical. Let's say that no rate increase is ever needed, and Company A's loss ratio forecast proves accurate, while B's turns out clearly conservative. B may then weaken its loss ratio basis, since its more conservative reserve is not needed, and it may release the excess to surplus or transfer the excess to cover losses under some other contract form.

Mr. Houghton comments on the requirements proposed in the Appendix

of the paper for balancing and tabular reserves on the same contract form, and also for an LLR. Both of these provisions have been deleted from the recommendations in our AAA subcommittee report to the NAIC. We agree with Mr. Houghton that the LLR provisions were getting too complicated.

My thanks also to Mr. Habeck and Mr. Litow for their discussion. In their preliminary remarks, Mr. Habeck and Mr. Litow make references to the balance reserve and the loss limitation reserve. Their first criticism is that insurers "do not need a formal and elaborate system to help them decide how to transfer funds from profitable business to unprofitable business." I agree. A key objective of these proposals is to support insurers in this area by establishing regulatory recognition of the problems occurring and by creating a more "constructive relationship between areas of excess loss and excess gain." The idea is to create a framework under which regulators can observe this relationship quantitatively, instead of viewing an insurer's excess gains as unrelated to simultaneous excess losses by the same insurer.

Our Academy subcommittee eventually agreed with Mr. Habeck and Mr. Litow that the LLR concept was too elaborate and too entwined with the management function, and deleted it from the recommended standards. But it has retained the balancing reserve as an important tool.

The discussants second criticism is that "the approach proposed here is not a reserving method, but a means for redistributing surplus funds." I disagree. The balancing reserve is a reserving method and can help assure that funds exist to redistribute.

Under section I of their preliminary remarks on unresponsive reserve systems, Mr. Habeck and Mr. Litow comment that "claim reserves can be estimated to allow. . . for the wearing off of initial selection." They appear to suggest that this is a function better served by claim reserves than by policy reserves. Perhaps I miss their point, but it seems that policy reserves better serve this function.

On the failure of traditional tabular policy reserve systems to recognize cash flow, Mr. Habeck and Mr. Litow ask for a clarification of my phrase "nonadaptive ways." Let me illustrate using a hypothetical block of guaranteed renewable major medical business with original-issue-age premiums. Suppose the insurer establishes a presumably conservative tabular reserve basis, and claim experience progresses just about as projected for three or four years. Then, due to medical inflation, costs abruptly escalate. The company rushes to file increased premiums, and from then on the block requires incessant rounds of increasing rates. The tabular reserves, being predetermined, are indifferent to the worldly problems around them. One begins to question what purpose they really serve. Underwriting losses are mounting, but the tabular reserves are unaffected and "nonadaptive." The balancing reserve was conceived as something considerably more adaptive.

In section II "Reserve Components," Mr. Habeck and Mr. Litow suggest that "the label 'policy funds' is appropriate for what are now called 'policy reserves' since their magnitude can vary considerably under the permitted alternatives and since they are artificial by nature, although calculated exactly." I disagree. A fund represents some form of assets, such as money or securities. But policy reserves represent liabilities. Viewing reserves as funds leads to misinterpretations.

It is unclear how these discussants find in my paper the implication that claim liabilities "tend to be overstated." Too often they cover liabilities extending beyond unpaid claim liability, but it does not follow that they are overstated, especially with respect to the broader treatment. They may be understated in comparison with the liabilities they are presumed to cover.

Mr. Habeck and Mr. Litow suggest that, in determining incurral dates of claims, the contract provisions may give no explicit guidance. If that is so, the contract is very poorly drafted. I would hate to find myself insured under a contract which gave no explicit guidance as to when I incurred a claim.

The discussants, in referring to future service claim payments under policies that must be in force on the date of service for the service to be covered, commit the same oversight that Mr. Houghton does. There are two reserves other than the claim reserve. Any liability that exists must be covered under the proper reserve.

With regard to contract reserves (what the discussants choose to call "policy funds"), the comment is made that "the current methods [i.e., tabular reserves] are still valid for stable benefit, issue-age rated policies." The Academy subcommittee's report to the NAIC recommends that the current method be retained for such contracts.

Mr. Habeck and Mr. Litow have six comments and questions concerning the LLR and the balancing reserve. Several of these are resolved by the fact that in the final Academy report the LLR concept was abandoned, while the balancing reserve requirement was limited to the types and kinds of contracts specified.

In comment 2, the discussants suggest that the requirements would be onerous. For the balancing reserve, the Academy subcommittee concluded that the requirements are quite easy to deal with; far less onerous than for any equally appropriate and equally effective tabular methodology.

In answer to comment 5, one illustrative projection is included as an appendix to the Academy subcommittee's report. I would expect that members of the AAA subcommittee could supply additional projections to help the writers clarify other scenarios.

I will respond to the question posed in comment 6. First, the dividing line between group and individual contracts has become increasingly blurred in recent years. Group policies are employed by some insurers to avoid regu-



latory requirements where individual policies would otherwise serve equally well.

The Academy subcommittee concluded that no simple definition or classification could distinguish between so-called group versus individual insurance, and it did not believe that any justification existed for excluding large classes of contracts on the technicality that they are group policies.

Many "true group" policies would require little, if any, balancing reserve. Those that do, in the subcommittee's judgment, should be subject to the requirement. Possibly the discussants are aware of a specific group example for which the balancing reserve requirement is not justified. If so, the subcommittee would like to hear from them.

In section III, "Rationalization of Existing Methods," the discussants again take up the subject of "policy funds." They state: "All policy funds are derived from premium income; there is no other logical source." Whatever may be the source of policy funds, premium income is definitely not the source of policy reserves. That source is the insurer's benefit obligations with respect to claim liabilities as yet unincurred. To quote again from the report of the Health Subcommittee of the Standing Technical Advisory Group (from CI-Comment): "the quantification of the [active life] reserve liability is simply a quantification of the excess of the value promised by the contract over the available income stream therefrom."

Later in the paragraph, the discussants acknowledge that something other than premium income may indeed enter the picture: "if . . . premiums cannot be expected to break even, a gross premium value must be established to recognize the deficiency. This deficiency is funded from surplus." The discussants seem to view this deficiency reserve as something separate and in addition to the policy funds. Here the policy reserve is being strengthened because the available [future] income stream has been recognized to be inadequate.

In the discussants' description of their major medical reserving rule, they seem to infer that increasing premium rates by an "across-the-board" average implies no requirement for any policy reserve strengthening. This is not true in the general case. Let me demonstrate this by a hypothetical illustration.

Suppose an insurer has issued a block of disability income contracts, using level premiums based on issue age, to a large employer key-man managerial group. It establishes policy reserves based on the minimum standard, regarding this as sufficient. After three years, an agreement is reached with the employer that all income amounts under all policies will be increased by 50 percent, and all premiums will likewise be increased by 50 percent, which is equivalent to issuing additional coverage at the original age rates.

Hence, there is an across-the-board rate increase of 50 percent, as of the third policy anniversary.

Is there a change in the policy reserve requirement? Obviously. Provision must be made for valuing a 50 percent increase in all income amounts. Accordingly, one may not assume that an across-the-board percentage rate increase carries no corresponding policy reserve adjustment. In general, such increased rates remain age-specific rates, related to issue age, unless it can be demonstrated that different treatment is appropriate in a specific case.

In discussing high and low loss ratios Mr. Habeck and Mr. Litow suggest that use of a balancing reserve could delay the implementation of corrective action. It could and should serve the purpose of preventing premature corrective action. A need for corrective action might become apparent when reserve weakening, called for in the AAA subcommittee's submitted report, makes the probability of continuing low loss ratios apparent.

In their conclusion, the writers say "Reserve systems and standards are designed to insure solvency." I agree. And the immediate function of reserve systems and standards is to place an adequate value on liability. The existing minimum standards are not adequate for this purpose and need revisions along the lines recommended in the Academy subcommittee's submitted report.

I appreciated receiving a discussion from Mr. Odell, a past chairman of the Academy's Committee on Health and current chairman of the Health Subcommittee of the Standing Technical Advisory Group, whose report to the NAIC I have quoted from several times in this review.

Mr. Odell has contributed a very thoughtful and thought-provoking discussion. Of special interest is his inquiry into the concept of the regulatory obligation as distinct from the policyholder obligation along with the question of the relationship between the two and to what extent they may overlap.

I greatly appreciate the valuable contribution that Mr. Odell has made to the general discussion and examination of reserve standards, and the emphasis he gives to the importance of continuing thought and research in this area.

I will comment on two aspects of Mr. Odell's discussion. First, he apparently views the recommended minimum requirement of the balancing reserve to be a response to developments on the regulatory side; in particular, the NAIC Guidelines for Filing of Rates under Individual Health Insurance Contracts and related regulations adopted in a number of states.

While these developments triggered consideration of the balancing reserve requirement, the Academy subcommittee has broader reasons for it, as stated in the subcommittee's report to the NAIC. The requirement is recommended as a replacement of former tabular reserve requirements with respect to volatile benefits, such as major medical. Further, the requirement is rec-

ommended as a reasonable one in relation to the actual benefit/premium ratios anticipated by insurers regardless of regulatory loss ratio requirements. Accordingly, the balancing reserve requirement is recommended in the Academy subcommittee's report as a general minimum reserve requirement not limited to contracts subject to specific regulatory obligations in the area of anticipated loss ratios. As such, it is also directed toward the policyholder obligation.

Second, Mr. Odell's discussion appropriately points out that the total obligation, policyholder and regulatory combined, may well exceed the minimum reserve standards recommended (whether tabular or balancing). The valuation standard proposed emphasizes this by calling for periodic review of reserve adequacy. Should the actuary's examination indicate that reserve levels higher than minimum are necessary, then the balancing reserve, for example, may need to be strengthened to anticipate a higher loss ratio level than that filed or originally anticipated. This indicates recognition of both policyholder and regulatory liability in the reserve determination.

