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FINANCIAL UNDERWRITING FOR INDIVIDUAL LIFE INSURANCE

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ABSTRACT

This paper describes a system of financial underwriting for individual life insurance. In its principal thesis it advocates the establishment of, and adherence to, a relatively disciplined framework within which a financial evaluation may be made of the characteristics of an insurance applicant as well as the financial implications of the purposes for which insurance is sought.

The authors begin with the premise that, for most insuring purposes, "income," as defined in the paper, is the best available measure of an adult individual's worth. They describe, for various levels of income, the proportions they consider acceptable for the purchase of life insurance. They then proceed to analyze, in both the personal and the business insurance areas, the various purposes to which insurance can be applied. The paper goes on to describe how these different purposes are often interwoven, how the actual uses are not always what they seem or what they are purported to be, and how overinsurance—inadvertent or intentional—can result if appropriate analyses are not made. The role of accidental death coverage is touched upon briefly, and the financial implications of that coverage and the waiver of premium benefit are mentioned.

The paper concludes with a brief description of a "capital gains" approach to measurement of income for applicants in the upper income ranges. The authors close with the thought that financial underwriting should be developed and utilized as an integrated system, subject to change only on a managed program basis, and that "exception" underwriting by its nature does not lend itself to the degree of the analysis necessary to provide a basis for sound use.

INTRODUCTION

THE motto of our Society is particularly appropriate to the task of the life insurance underwriter, for it is he who, in helping the actuary meet his obligation to guide a company along sound financial paths, must substitute the facts of an applicant's situation for the appearances and impressions the applicant has created in the mind

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of the life insurance salesman and in the community where the salesman found him.

In carrying out that task, perhaps the most difficult area in which to identify and fit the facts to the amount of insurance applied for is in the area of financial underwriting.

Medical versus Financial Underwriting

Medical underwriting, in contrast to financial underwriting, is relatively objective. Professional differences of opinion among doctors do occur, of course. Such differences become particularly troublesome when we are called upon to explain the differing significance an impairment might have for current medical management compared with the long-term, extra mortality implications it has for the insurance company medical officer and actuary. For major areas of medical underwriting, however, a substantial body of statistics has been accumulated. Interpretations of those statistics can vary among actuaries and the medical officers with whom they work, but at least there is a body of statistics on which to lean when pressed. When less well-documented medical questions are involved, the actuary can still lean on the professional expertise of the medical director—and even the most aggressive layman will pause in some degree of deference to the medical man.

When it comes to financial underwriting, on the other hand, the impressive statistical array is not there, nor is the professional medical consultant standing in the wings. All that remains is the underwriter and the actuary, armed only with a few broad indicators of past mortality experience. They must rely on judgment, tempered by long—usually undocumented—personal experience in assessing the financial characteristics of the applicant presented to them for consideration. Of course, it is well known that, in such matters, instant experts of diverse background often have insight into the heart of the matter greater than that of the underwriter, slowly forged in the fires of experience. This tends to complicate things and to obscure the real dangers of the financial loss which lie ahead if a company accepts the risk without due regard for the hazards involved.

Recent Mortality Experience and Its Uses

The recent intercompany mortality experience report under medically examined standard ordinary life insurance policies for large amounts (*TSA*, *1970 Reports*, "Mortality on Policies for Large Amounts") identifies general areas in which a substantial financial antiselection appears to have been exercised against the companies contributing to the study; it repeats many of the findings identified in various other earlier studies

and reports. In addition to that study, a few spectacularly large claims in recent years have served to highlight the problem. Medical antiselection was undoubtedly involved in some of the cases, but the major impact may be attributed to less than careful—and certainly to less than effective—financial underwriting.

Yet, when the actuary turns to the actuarial studies to try to convert the results to usable underwriting rules and guidelines, he finds that they do not lend themselves to ready conversion; they only define in broad outline the presence of a very real hazard. Facts in sufficient quantity and detail are not present, and the actuary largely is cast back on general reasoning and intuition. Standing alone, those resources do not always provide great reassurance, either to the actuary himself or to corporate management, that his creations are necessarily sound or reasonable, particularly when they come under attack from competitive forces of one kind or another, regardless of origin.

Judgment is a necessary and precious ingredient for the underwriter working on individual cases, and for the underwriter and actuary analyzing the results of case underwriting; yet judgment needs an adequate frame of reference if one is to obtain consistent results, avoid discrimination between applicants and policyholders, and provide a reasonably homogeneous exposure for analysis.

A Financial Underwriting Guideline—What It Should Accomplish

We have developed a system which we find effective in providing a frame of reference for financial underwriting. It enables the actuary or the underwriting officer to generate screening tables at various levels of amount and income, which will pass virtually all cases involving valid, reasonable amounts applied for. It is flexible enough to accommodate the very large amount applications and special situations, while still retaining constraints against allowing an individual to become overinsured. It enables the underwriter to handle applications designed to serve a wide variety of different purposes for which insurance may be purchased, and all this in a consistent and reassuring manner. It contains a logic or rationale which has on occasion proved to be effective in demonstrating the reasonableness of the underwriter's position, both to company management and to the salesman or field manager who thinks that his applicant is eligible for an unlimited amount of insurance. Best of all, it provides the underwriter himself—and the actuary who may be responsible for the financial results achieved by the underwriter—with touchstones of consistency and reliability in areas in which they often stand entirely alone.

The system appears to meet these tests quite effectively, but not so mechanically that it removes the "art" from the craft. It has enabled our company to maintain a position about midway in rank by mortality ratio among companies contributing to the intercompany large-amount study and produces a mortality experience acceptable for this category of our business. Nevertheless, even that relatively favorable large-amount experience contains cases where the occasional early claim suggests that speculative and antiselective forces were at work and were operating to the company's disadvantage.

This paper outlines that system of comprehensive guidelines to financial underwriting and the rationale on which it is built. We believe that it should prove useful as a reference point for actuaries designing their own set of financial underwriting rules or in modifying existing rules.

PURPOSE OF FINANCIAL UNDERWRITING

In applying the principles of financial underwriting to the various situations for which insurance solutions are proposed, it is essential to keep in mind what it is that the underwriter is attempting to measure and what it is that financial underwriting attempts to do, namely:

1. To establish an insurable interest consistent with the amount of insurance applied for.
2. To relate the amount of life insurance applied for to demonstrated needs.
3. To keep the amount of personal life insurance issued within the capacity of the proposed insured to pay for it.
4. To avoid entrapment by the occasional exotic case which seems to have the power to entice even the most seasoned insurance executives to cast caution to the wind.

Financial underwriting rules alone do not guarantee success in these endeavors. They must be implemented by adequate financial research on the applicant involved, and they must be applied in a firm and consistent manner if they are to fulfill the role expected of them. Yet the underwriter must go beyond mere mechanical application of the financial underwriting rules—that is where the "art" of underwriting comes in. However, as in any discipline of the arts, he must operate within a controlled framework which contains points of reference that enable the critic—in this case, the actuary and corporate management—to evaluate the performance.

INSURABLE INTEREST

The classic definition of insurable interest states that an individual has a valid insurable interest in the life of a second person only if it is to his financial advantage and interest that the second person continue to

live. Sometimes the total amount of insurance sought—in force and applied for—is alone sufficient to destroy any pretense at a valid insurable interest. Sometimes the ultimate beneficiary of the insurance may not be clearly identified, and, were that ultimate beneficiary known, that too would destroy any pretense at a valid insurable interest. In those circumstances extra care must be taken in underwriting the financial risk. The mere fact that someone wants ready cash on the death of another does not create an insurable interest in the life of the proposed insured; the choice must be overwhelmingly in favor of paying more premiums rather than fewer premiums, and the amounts involved must be appropriate to the roles of all parties if an insurable interest is to exist and speculation is to be avoided. It is surprisingly easy for that requirement to be lost sight of as insurance uses move away from purely personal insurance purposes into the so-called sophisticated business insurance usages; this is particularly true where only a partial loss may occur on the death of the insured because of residual values remaining in assets associated with a venture which accrue to the beneficiaries in addition to the insurance proceeds.

INCOME AS A PRIME DETERMINANT

The basic premise in the system we describe is that income is generally the best available measure of an adult individual's worth for most insuring purposes. (For juveniles different criteria must be used, usually related to the amount of insurance on, and the income of, the parent.) This is not a new idea, of course, but the method of utilizing income as a major control—and the control levels used—may be new to some who read this paper and who have been faced with the question of determining "how high is up" in underwriting matters. Income for this purpose includes income in addition to salary or cash payment and is defined in further detail in Appendix I.

In our opinion, and on the basis of our experience, income is a better tool for measuring such worth because income can usually be established with greater confidence than can the value and ownership of other assets. It is the best basic measure of ability to pay. The income-generating capacity, real or imputed, of other assets is considered, but the claimed asset values alleged to be owned by a proposed insured will not of themselves qualify the individual for insurance coverage of equal amount; this is a difference which appears to be not always readily apparent to an applicant or to the sales representative who sells the idea.

The maximum proportion of income which we believe can be allocated to the purchase of life insurance without building in an automatic risk of unmanageable financial antiselection is discussed in Appendix II.

Lower Incomes

Income and any associated net worth must be reasonably well documented. In the lower income ranges, if the reported income looks reasonable and the amounts applied for are well within the amount limits permissible under the financial underwriting rules, cases may be passed without further development as to the accuracy of the income reported. Even in the area of income under $12,000 per year but above poverty levels (currently around $4,200 per year for a nonfarm family of four), insurance amount screening charts have value as a quick check on the reasonability and appropriateness of the amount of insurance applied for, particularly in a large company which employs a large number of underwriters or approvers of varying authority. However, even in a smaller department consisting of only one or two underwriters, a screening table can have the virtue of providing a consistency control. It may also force the underwriter to think consciously about the income reported instead of passing over it quickly.

The screening tables in Appendix II do not show figures for incomes below $4,000 per year for the practical reason that, for ages over 25 at least, little or no money properly may be available for the purchase of life insurance. In the age range 17–25, amounts up to two or three times income may be reasonable; larger multiples may be appropriate in some instances, depending on the circumstances involved.

Higher Incomes

In all other cases, the information received from the sales representative and/or the proposed insured—or any other interested person—should be confirmed through outside sources; preferably more than one such source should be used. Potential income in the near future may be assessed for certain kinds of cases, but large windfall, nonrepetitive types of profits or income should be discounted or disregarded.

Stability of income and the trend of increase or decrease are important factors in minimizing risk of financial antiselection. Stability is also a most important factor in assuring a satisfactory persistency for any insurance offered and placed in force. Certain occupations are characterized by substantial fluctuations in income, for example, where capital gains constitute an important source of earnings. Although we discuss a method of assessing that sort of income in a later section of this paper, we do not regard it as a preferred method or as a sound substitute, particularly where very large amounts of insurance are involved, that is, over $250,000 in force and applied for. Individuals engaged in speculative endeavors tend to establish a general level of success which can be deter-

mined with reasonable confidence by analysis of financial records and by the general tenor of the various reports the underwriter can secure. To go beyond that general level of success and the income identified with it to allow insurance based on the periodic peaks in earnings or on the potential income is to deviate too widely from regular and reasonable standards; it invites serious antiselection which will work against the insurer. There is some further discussion of this aspect in the section on "Business Loans" below.

PERSONAL VERSUS BUSINESS INSURANCE

Life insurance purchases may be regarded as falling into two broad categories: personal insurance and business insurance. It is convenient to discuss the applicable financial underwriting rules for each category separately. Different considerations apply, and each category generates its own unique amounts and limits, subject, however, to certain aggregate limits on any one life beyond which we believe it is not prudent to go.

PERSONAL INSURANCE

Personal insurance as discussed in this paper is defined to be insurance on self-supporting individuals for the ultimate benefit of close family members. Under the "income approach," the maximum amount of personal insurance permissible is a direct function of the proportion of income deemed properly allocable to the purchase of insurance; thus a straightforward application of the screening tables and factors described in Appendix II is in order.

The "20 Per Cent Rule"

As indicated in Appendix II, the so-called 20 per cent rule is a first screening point. It should provide amounts of insurance adequate to cover most amounts applied for. This is a historic measure of sorts, although it may not be currently familiar to many actuaries who have not been closely involved with underwriting matters. Early references to this rule appear in papers by Mr. John M. Laird (*TASA*, XXXI, Part I, 82) and by Mr. John R. Harris (*Proceedings of the Home Office Life Underwriters' Association*, I, 127). Mr. Harris attributes the 20 per cent rule to Mr. Samuel Milligan, who introduced it when, according to Mr. Harris, Mr. Milligan assumed charge of underwriting at Metropolitan—that would place it soon after December, 1926. Mr. Harris also mentions the 1922 paper by Mr. R. D. Murphy (*TASA*, XXIII, Part II, 322) in which Mr. Murphy discussed the policy of limiting the percentage of earnings applicable to life insurance, in one example using a 15 per cent factor and the ordinary life plan as the plan to which the fixed percentage

is applied to determine the maximum amount of insurance. Even then, there was apprehension as to the mortality being experienced for the larger-amount cases, using this rule or modifications of it. So it is not a new rule (or a new problem) by any means. To the best of our knowledge, the 20 per cent rule has had reasonably wide use over the years as a guideline for the moderate amounts of insurance in the moderate income ranges. However, it has generally not met the amounts requested under some of the newer marketing developments, and it has been necessary to devise reasonable ways to extend the 20 per cent rule for those income areas in which a larger proportion of income can be spent without evident strain, for the purchase of insurance for which a desirable purpose is identified. Any such extension must be done only in a manner which retains some order and discipline in what the underwriter is authorized to do; some of the recent large-amount experience suggests that it has not always been extended wisely or carefully.

The "25 Per Cent Rule"

In recent years we have begun to use a 25 per cent rule in place of the 20 per cent rule in establishing personal insurance limits for individuals whose income is $25,000 or more and for whom income can be very well documented. We have also used this guideline on occasion for individuals whose income is between $15,000 and $25,000 per year if a demonstrated need is identified and the case is reviewed and approved by one of our top-level underwriters.

We use this extension of the 20 per cent rule as a controlled response to changes which have taken place in the economy, including changes in income and tax levels, changes in the cost of insurance, the effect of inflation on individuals and their assets, and so on—recognizing that all such factors do not all have effect in the same direction. Such extension should be used only sparingly, in our opinion. It should not be used if the income is not well documented or if there is an evident lack of candor in answering questions on the application or in providing medical histories. It is prudent to avoid extending this rule to individuals who evidence a sudden interest in substantial amounts of insurance where there is no current evidence of increased earnings or when an unusually large portion of the applicant's income is unearned, particularly when that occurs at the older ages.

In general, we have found that the 25 per cent rule will accommodate most applications for personal insurance purposes, including estate taxes (discussed below), for individuals in such higher income ranges. The amounts of insurance and the amounts of premium involved do not, on a best-judgment basis on carefully selected, "clean" cases, appear to be

unreasonable. While we have not yet completed any definitive mortality study on this business, we do see individual claims of $50,000 and over, and we have not observed any apparent abuse of policies issued under this extension of the basic 20 per cent rule.

Two Special Personal Insurance Situations

ESTATE AND INHERITANCE TAXES

It is not uncommon to encounter resistance in seeking a common understanding and acceptance of the fact that, for sound financial underwriting, it is not always possible to insure the full amount of potential estate and inheritance tax liabilities. It has been our experience that, where the size of the estate has been well documented and is well organized—and particularly where the estate consists largely of active, income-producing assets—the 25 per cent rule shown in Appendix II will generally provide enough insurance to meet personal insurance needs, including estate and inheritance tax obligations.

However, estate details are not always well documented, and the values claimed are not always accurate or appropriate. The value of the estate may be inflated to such an extent that the 25 per cent rule will not generate amounts of insurance large enough to cover the alleged tax liabilities and other personal insurance needs. It is often impossible, as a practical matter in such situations, to determine either the present or the intended ownership of the estate, and many of the assets may already be in the name of the spouse or other family members. To the extent that the estate is poorly organized, the estate analysis, made in connection with the insurance solicitation, will often prompt the insured to take steps designed to substantially reduce the potential tax liability. In such situations an alternative approach is to drop back to the amount of insurance provided by the 20 per cent rule, increase that amount by 50 per cent of the estimated death tax liability, and then allow the larger of that sum or the amount available under the 25 per cent rule. For these situations the 50 per cent "discount" provides a modest underwriting cushion against the probable overinsurance which would otherwise exist if 100 per cent of the claimed death taxes were insured.

WIVES AND THEIR ESTATES

Dependent Housewives

Applications for life insurance on dependent housewives can also present special underwriting problems from a financial underwriting point of view, particularly in families where estate taxes of consequence may be involved. Here, too, certain principles and practice must be carefully observed if speculative insurance is to be avoided.

In the absence of special tax problems, it is usual to define the amount of insurance which may be allowed on the life of a dependent wife as a function of the husband's income and the amount of insurance in force and applied for on the husband's life, for example, an amount not more than twice the husband's income and not in excess of the husband's insurance, or some smaller percentage thereof, depending on amount. We use an equal amount through $10,000, one-half through $50,000 on the wife, and one-third through $100,000 on the wife, with larger amounts receiving special review. This follows the theory that the primary insurance should be on the life of the breadwinner if he is insurable. Within that framework, we believe that up to $100,000 of insurance can be allowed without undue risk of speculation on the life of the dependent housewife who does not own estate assets in her own right, in order to cover her value as a wife—including, incidentally, the value of the potential tax savings which might ultimately be lost to the husband and to his estate under the joint filing and marital deduction provisions of the tax laws, if the wife predeceases him.

However, if the wife does possess estate assets in her own right (including community property rights in community property states), the husband may also be faced with immediate death tax liabilities which mature on death of the wife if she predeceases him. In situations where the larger amounts of such tax liability and marital deduction loss are held to be involved, the $100,000 figure will prove inadequate, and great pressure may be exerted to allow substantially larger amounts of insurance. Sophisticated computer analyses, using undocumented input data, easily generate the potential estate tax payouts in the various combinations of survival of the spouses. The potential tax losses are pinpointed, and it is contended by the salesman and other estate analysts that life insurance should be permitted to provide 100 per cent reimbursement.

We do not agree with that. We use the approach that only 50 per cent of the potential death taxes payable on the wife's estate should be covered by life insurance, in addition to the basic $100,000 amount. This approach will provide sufficient funds for the husband in the great majority of cases of smaller amount, up to, say, about $150,000, but it does start to fall short of 100 per cent reimbursement after that. In our opinion, it is not sound to try to provide 100 per cent reimbursement in such larger amount ranges, for the following reasons: (*a*) The potential loss of the marital deduction to the husband is not a noncontrollable loss; remarriage is a distinct and likely possibility, especially as the size of the estate increases. (*b*) The husband may die first, or the marriage itself may dissolve by divorce. (*c*) There is no certainty that estate assets will pass

to the wife, and, even if they do pass to her, she may not survive the husband long enough to cease benefiting by taxes paid on the husband's estate. The underwriter rarely sees the will, and, if he does, it may subsequently be changed to arrange more favorable tax results; many of the assets may already be in trust for children or grandchildren or may otherwise be placed outside of the taxable estate. In this situation, too, it should be anticipated that the estate analysis, made in connection with the insurance proposal, will open the applicant's eyes to the respective tax problems and will lead him to take steps to reduce tax liability through various devices; if he does that and retains in-force insurance issued on a 100 per cent reimbursement basis, the wife can soon be in a significantly overinsured position. (*d*) The value of estate assets tends to be overstated when used for insurance analysis purposes in order to promote the sale of the largest amount of insurance possible, and there may even be shrinkage in the estate itself by the time of the first death.

Thus the 50 per cent factor may be regarded as a prudent "probability of occurrence" discount designed to guard against both speculative and inadvertent overinsurance. Relationships between individuals (and between individuals and assets) do change, and substitution of a new partner may be neither economically difficult nor emotionally unattractive. Careful adherence to a well-designed set of guidelines, known to and approved by company management, adds great stability to situations where the alleged insurable interest and the alleged need may be more apparent than real.

Working Wives

Applications for insurance on working wives generally offer no problem. If the working wife is in receipt of true earned income, she can be insured for the larger of the amount for which she qualifies under regular personal insurance rules, based on her income, and the amount for which she qualifies as a dependent housewife. If, however, she is reportedly working for her husband but does not actually perform valuable business duties in the enterprise, no value should be attached to the alleged salary in determining her insurable value, and she should be underwritten as a dependent housewife.

NONPERSONAL INSURANCE AND THE "35 PER CENT RULE"

A large part of the population purchasing life insurance coverage consists of individuals whose insurance needs are essentially personal. As they move up the economic ladder, they accumulate small estates on which some tax liability is created at death, and that obligation, too, may be funded in advance by the purchase of life insurance. Normally, the

personal insurance obligations which the individual seeks to satisfy will not, as a practical matter, exhaust the amounts available to him as personal insurance under the formulas described in this paper, so that unused capacity often remains.

There are some individuals, however, who have a real and significant economic value to persons other than their immediate families. Business relationships may develop so that insurance coverage is sought on the life of the individual, in favor of a third party. If the underwriter finds that a valid insurable interest exists, he can ordinarily issue such coverage to fill out the personal insurance limits of amount without any further special consideration of the problem. If, however, the individual has already acquired personal coverage in amounts equal to the personal insurance limits of amount, it is necessary to consider the extent to which such business insurance needs can be accommodated, even if it means that the aggregate amount of insurance in force will exceed the personal insurance limits.

We believe that it is possible to supplement the personal insurance limits to accommodate certain business insurance needs without necessarily introducing undue financial risk. In the absence of any restraints, of course, it would be possible to build a total insurance estate of very large amount, all justifiable on a "needs" basis. Such aggregrate amounts can easily approach a speculative overinsurance situation, so firm guidelines are in order and should be adhered to consistently.

The "35 Per Cent Rule"

Thus we believe that there is a "ceiling" on the total amount of insurance which should be allowed on any one individual, both for direct issue and for participation purposes. That ceiling is again expressed as a function of the individual's income—repeating the assumption that a man's income is the basic measure of his value for insurance purposes, and for all such purposes. The ceiling which we find appropriate is the amount of insurance which may be purchased by premiums equal to 35 per cent of the individual's net income after taxes.

It is important to note that premiums which may be paid by the individual out of his own income are limited to not more than 25 per cent of net income, except in the unusual estate tax situation. The balance of the 35 per cent factor must come from sources other than the individual's own personal income. In our experience, the 35 per cent factor comes into play only on the relatively infrequent occasion when the 25 per cent factor does not allow sufficient coverage to meet the amount applied for and where, in the opinion of top-level underwriting officers, the need is well established and the amount to be allowed is not excessive.

This approach treats nonpersonal insurance as an entity somewhat separate and apart from personal insurance, subject to the over-all 35 per cent limitation described in the preceding paragraph. It embodies elements of the "needs" approach without completely losing touch with the ability to pay or with the "value" of the individual, as we measure it under the income approach. It visualizes a total insurance program as a series of building blocks, with nonpersonal insurance uses superimposed on personal needs, but the whole not exceeding an aggregate amount which is itself measured as a function of income. Even though "additional needs" can be demonstrated by competent tax and accounting counsel, we believe that it is necessary to stay within this relatively disciplined framework if the underwriter is not only to avoid taking on the disastrous "exception" case but is to resist effectively the steady pressure of the antiselective forces working against him.

There are a number of different business insurance situations. Each has certain unique characteristics which operate to define the amounts of insurance appropriate for the situation. Some applications also possess certain characteristics which are not always obvious but which remove the application from the category of coverage to which it is claimed to belong. It is essential to categorize each application properly as to the role it plays, in order to avoid allowing insurance to be used for a particular purpose for which it is not eligible. Even inadvertent overinsurance can become speculative, although it may not have started out that way.

Keyman

An employer has a valid insurable interest in the life of a key employee to the extent that he will incur major probable loss on premature death of the employee. Life insurance is frequently requested to cover the loss of valuable keyman services.

Amounts requested for this purpose can be—and often are—excessive in relation to the actual keyman role of the individual. But even an "exceptional" keyman does not, from a financial underwriting point of view, have unlimited value to an employer for insurance purposes. The insured value of the employee must not be set so high that it becomes a matter of financial indifference to the employer whether the employee survives. So we are back to the acid test of insurable interest again.

At what point does speculative coverage start? Obviously, it varies with the individual employee and employer. We believe that it starts in the area of ten times the income of the keyman, and that multiple should be allowed only for the "exceptional" individual under age 55 who is clearly the driving and sustaining force behind the business. As the key role of the individual lessens, and as the age of the individual ap-

proaches the normal retirement age of 65, the amounts of coverage expressed as a multiple of income should be scaled down. For example, a "five times" multiple is tops for the "average" keyman whose death may prove only somewhat inconvenient for the employer but will not be of significant financial impact; at issue age 64 it is hard to justify more than—or even—a "one times salary" factor for any keyman. There is a tendency to accord keyman status to the most unlikely people if it appears that doing so will enable qualification for larger amounts of life insurance in favor of the employer. For that reason, a minimum income requirement is essential in order to head off most of the clearly inappropriate applications. Currently, a practical line of demarcation between keyman status and non-keyman status may be at the $15,000 yearly salary level; a slightly lower figure may be appropriate for a close relative of the employer, just beginning his business career.

If an insured is self-employed or is a substantial owner of a business, keyman insurance should be based only on that portion of his income from the business which is equivalent to the ownership share of the business held by his business associates. Any amount of so-called keyman insurance in excess of the amount so determined should be counted as personal insurance. This distinction must be made in order to avoid allowing inadvertent overinsurance by counting the same income twice, should the individual subsequently seek additional personal insurance based on earnings derived from or retained in the business.

If a company has several key employees, and if only one of them is selected for keyman insurance, the situation must be underwritten very carefully for speculative intent. Sometimes so-called keyman insurance is sought for arrangements outside the employee-employer relationship or outside the joint and co-ownership situation; in such situations, an adequate, valid insurable interest will almost invariably be found lacking, and speculation must be anticipated. It is difficult to demonstrate that substantial financial loss would accrue to the beneficiary in such arrangements if the insured person were to die; more likely, any insurance proceeds would simply constitute a fortuitous windfall to the survivor, who would merely pocket the proceeds and go on about his business in a more or less regular way.

Tempting situations come along where substantial amounts of keyman insurance are sought on a principal of a new corporation that is being formed or where an existing close corporation is "going public." In the latter case there is a tendency to equate the amount of insurance applied for with the amount of outside investment rather than with the past earnings record of the close corporation or with a reasonable projection

of earnings for the new company. In the case of the former, there is of course no established record of earnings, but the underwriter is assured that the financial backers would not be putting up large sums of money if success were not "virtually guaranteed." And, with enough life insurance on the proposed keyman, their investment would really not carry much risk. It is curious how often a new venture's prospectus prominently mentions the amount of life insurance being carried on the principal by the XYZ Life Insurance Company. Inventors and other unique specialists figure prominently in such schemes. In these situations it is tempting to loosen the reins of financial underwriting; the excitement is heady and contagious, and "who knows how to really underwrite the situation?" This is where a carefully structured set of financial guidelines can prove of inestimable value to steady the underwriter until the record of earnings starts to emerge from the new corporation.

Business Loans

Business loan life insurance is somewhat akin to keyman coverage. In this situation, insurance is sought on the life of key person(s) in a company which has borrowed money. Sometimes the borrowing company itself seeks the coverage because loss of the individual will impair its ability to repay the loan. That is essentially keyman coverage and should be underwritten as such.

More often it is the lending institution which it is alleged is seeking protection for all or part of the loan, over and above the security for the loan itself. Speculation—inadvertent or intentional—can always be a strong potential element, and the underwriter must be alert to avoid walking into an overinsurance situation. Careful adherence to well-planned guidelines is essential to minimize difficult debate as to exceptions and precedents.

Although a few lending institutions may actually require life insurance on direct loans, it is not usual to do so on well-secured loans, since that would increase unnecessarily the cost to the borrower. On less sound loans, of course, the insurance provides a nice crutch for poor investment practice. The underwriter is well advised to consult with his company's investment department; it can be of great help in evaluating the loan situation, and it may have knowledge of the individuals involved.

The request for life insurance is frequently encountered on loans guaranteed by the Small Business Administration (SBA). Generally, the SBA does not require life insurance as a condition for granting a loan, although it does recommend it; in such cases, when insurance is made a condition of such loans, it is as a requirement of the lending institution

itself. Many such loans are somewhat speculative because often they appear to be granted primarily on account of social or political considerations and not because the borrower is able to meet the usual tests for sound business loans. The lending institution already has the SBA guarantee as well as the value of the business itself as security; insistence on a full amount of life insurance to cover the full loan, in addition to those guarantees and equities, may suggest a rather dubious and highly speculative situation.

Quite apart from the desire of the lender for the additional security, life insurance to cover the full amount of the loan is usually not justified, and an insurer may choose to put an automatic limit on the proportion of the loan it will cover, for example, 70 per cent. One hundred per cent of the loan will rarely be lost to the lender if the insured dies before the loan is paid off. In many cases, the full loan is not granted immediately but is paid in installments as the construction or other expansion for which the loan was granted progresses. By the time the full loan is expended, there is usually a fully completed or nearly fully completed facility which would secure most, if not all, of the loan, since the amount of the loan itself is generally less than the expected value of the completed facility.

With all these considerations in mind, we find that financial underwriting guidelines can most effectively measure proposed business loan insurance in terms of the keyman value rather than by the amount of the loan. If the proposed insured is a principal owner, the increased earnings which may be expected to arise from use of the new facility will be included in his income used as the basis for the coverage. If the proposed insured is not an owner, the increased earnings should be regarded only as an increased ability to pay premiums on the part of the owner; they do not automatically increase the keyman value of the proposed insured over what it was prior to the loan.

Partnership, Stock Purchase, and Stock Retirement Insurance

This involves applications for insurance on the part owner(s) of a business (either as a partner or as one of a small number of principal stockholders of a corporation) which name the other part owners or the corporation as beneficiaries. The insurance is designed to provide cash on the death of the insured which the surviving partners (either as individuals operating under crisscross purchase agreements or as corporate officers under corporate purchase arrangements) transfer to the insured's family in exchange for the deceased's share of the business. Such individuals will often have sizable amounts of personal insurance coverage

already in force, so that, when the additional business insurance is applied for, the personal insurance financial underwriting limits may be exceeded.

If the amount of business insurance coverage requested is properly related to the value of the insured's share in the business, this transfer of cash to his family or estate does not increase the net worth of the insured; it is just as if it were some other asset separately held, liquid or not. Thus any amount of insurance equivalent to the value of the insured's share of the business should not be charged against his personal insurance limits; rather, it is additive to the personal insurance limits, but is subject to the over-all limits defined by the 35 per cent rule. Any amount of insurance applied for in excess of the value of the insured's share of the business should be charged against personal insurance limits if it is intended that it eventually reach the insured's estate, and against keyman insurance limits if the funds are for the ultimate benefit of his business associates.

On the death of the insured, the surviving business associates would take over the deceased's share of the business, thus experiencing a monetary gain upon his death; such increase in their holdings (or the insurance used to fund it) should be regarded as—and charged against—keyman insurance amounts payable to the business associates. The logic of this is that, in addition to his ownership interest in the firm under which he provided a capital contribution, the insured may have performed keyman services to his associates in the operation of the business which they may seek to insure separately. The value of such service should not be counted twice—once as keyman value and once under the guise of partnership or stock purchase—if speculative coverage in favor of the business associates is to be avoided.

It is important that all the principal business associates in the organization enter into an insurance arrangement for amounts of coverage on each life consistent with that individual's percentage of ownership in the firm. If adequate cross-insurance is not applied for, the underwriter must be alert to the speculative implications of the request.

Subchapter S Corporation.—This is a special corporate device authorized by the Internal Revenue Code whereby a closely held corporation may elect to avoid corporate taxation and have its income taxed to the shareholders directly, even though the shareholders may not have received an actual distribution of income; the shareholder benefits by reason of capital gains tax treatment accorded any subsequent increase in value of the stock attributable to the retained earnings, and double taxation of dividends is avoided. The Subchapter S device was developed

to accommodate certain individuals and estates (or groups of individuals and estates) comprising a corporation of not more than ten shareholders. Cross-purchase or stock retirement insurance coverage may be sought in these situations, and, for financial underwriting purposes, such ownership should be treated the same as ownership in any other corporation.

Section 303 buyout arrangements.—These serve a different purpose. Basically they utilize tax provisions which permit a corporation to redeem shares in an amount sufficient to cover death taxes, funeral costs, and certain administrative expenses, without having a distribution by the corporation for that purpose considered as a taxable dividend distribution to the proposed insured's estate. This approach is used primarily for a family corporation where the proposed insured is either the sole owner or the principal owner of the corporation, and where it is desired to retain control in the family. For that reason, and since the corporate stock owned will usually be the insured's principal asset, insurance purchased for this purpose should be considered as personal insurance subject to the personal insurance limits of amount, rather than as stock retirement insurance, even though stock redemption is involved.

Sole Proprietor Coverage for Benefit of Employees

Insurance on the life of a sole proprietor, where an employee or a group of employees is to be the beneficiary of the coverage, is one of the very difficult areas in which to establish a common understanding with the client and the salesman as to what an insurer can properly do in the way of providing coverage. In many of these proposed situations, the employees stand to gain substantially by the early death of the employer; this introduces strong speculative aspects. Carefully drawn financial guidelines can be of very great value in helping to reach a common understanding, even though they may not bring about complete agreement.

Such insurance is designed to provide funds to help one or more key employees purchase all or a major part of a business from the estate of the sole proprietor at the time of his death. Ideally, at the date insurance is applied for, a transfer-of-ownership program with well-planned and healthy funding arrangements should have been in existence for some time. Insurance should be primarily an aid to completion of the funding and not the trigger that leads to creation of the program. If such a program has not been in existence and the life insurance salesman has introduced the idea for the transfer-of-ownership program, life insurance can be considered without undue risk of speculative hazard, provided that it is to fund only a portion of the purchase price (i.e., a remainder portion not yet purchased at death of the employer), with the employee

to purchase a portion of the business out of his current and future earnings or by the use of other assets which he invests in the business. In either event the insurance should only be in favor of key employees who have the necessary knowledge and ability—and desire—to operate the business on their own; normally that will only involve employees having a relatively long period of service with the employer. Such insurance in favor of employees related by blood or marriage, who are actively in the business, appears sound; and sole-proprietor coverage in modest amount, paid for in whole or in part by the employer, designed to hold and reward valuable, long-time key employees who might otherwise leave, may contain no undue hazard.

Sometimes the underwriter is asked to consider the employer as a kind of keyman as far as the employee's interest in him is concerned. On the surface, that may appear to be a valid approach, since the employer in the sole-proprietor situation is indeed often the sparkplug of the business or has the professional and technical know-how around which the business revolves. However, the employee generally has no real "investment" in the employer, and the keyman argument is not sound, with one possible exception. That exception involves the long-service employee, getting up in years, who would experience considerable difficulty in obtaining new employment if his employer's firm were to fold up. In those cases, coverage equal to up to two years of the employee's salary may be considered without undue risk, in order to help tide him over an adjustment period until he secures other employment; people over age 50 with at least ten years of experience with the employer fall in this category. In these situations the insurer must avoid providing "unemployment insurance"; it should seek only to provide coverage which meets the test of a valid insurable interest and a reasonably sound economic need.

Between the two extremes of the older age, long-service employee and the young, short-service employee (who should not be allowed to be a beneficiary of such coverage) is a considerable range of gray area. In most such situations the employees stand to gain inordinately by the early death of the employer, particularly if the employee can merely pocket the cash and then go on to something else; that introduces very strong speculative aspects even if the sole proprietor is not highly substandard or does not appear to be either semiretired or contemplating retirement. If it appears that life insurance on the owner provides the *only* avenue by means of which the employee may hope to succeed to the ownership of the business, then the interest of the employee—and the degree of self-knowledge about the condition of the sole proprietor—may be

suspect. Life insurance should be used only in the amount necessary to eliminate the risk of loss of investment, already made by employees capable of carrying on the business operations, which cannot be recouped if the business dies with the sole proprietor; it should not be used as a financing method whereby funds will conveniently be made available to one person on the death of another.

MISCELLANEOUS USES: DEFERRED COMPENSATION; SPLIT DOLLAR; PERSONAL LOANS

There are other arrangements between individuals or between individuals and business enterprises where some form of life insurance may be sought. They may involve a hybrid of personal and business insurance. While they may introduce no new principles, it is useful to touch on them, and it is important to have them recorded in any set of financial underwriting guidelines. It is very easy to fall into the trap of simply regarding them as "special purpose" programs which do not have particular significance for the total insurance in force on an individual's life—we believe that to be an entirely erroneous and dangerous attitude which should not be indulged in by default.

Deferred Compensation

This involves an arrangement—sometimes contractual—entered into by an employer and an employee whereby the employer, in exchange for services rendered currently, makes a promise to pay the employee a specified compensation commencing at some future date—usually at retirement, when the employee will be in a lower tax bracket. Life insurance is purchased on the employee, with the employer paying the premium, to fund the deferred compensation arrangement.

Death proceeds may be paid to the employee's widow in the event of death prior to retirement, with some sort of survivor benefit to the widow if the employee dies after the deferred compensation payments have begun. Unfortunately, the term "deferred compensation" is sometimes used rather loosely in describing such arrangements and the purpose of the insurance. Thus it is well to test the validity of such a proposal by examining the present tax bracket of the life proposed for insurance and also to examine carefully just how the proceeds are to reach the widow and the employee. If there is strong evidence that policy values will be used to provide income to the employee and/or the widow, that is one thing; it is quite another thing if the employer is to be the owner and beneficiary and there is only an informal agreement or understanding as to what the employee and widow are to receive. In any event, if it is

clear that the insurance proceeds will ultimately benefit the insured's family, it should be underwritten as personal insurance, and be subject to and counted against personal insurance limits.

Occasionally it is indicated that insurance is to serve both keyman and deferred compensation purposes; the implication is that the employer will retain the death proceeds and will pay the employee some form of compensation only if he survives. In that situation, the coverage should be considered under the keyman requirements, and the alleged deferred compensation aspects should be ignored. If, however, such insurance is to be on a son of a principal owner of a close corporation or on the owner himself, it should be considered as personal insurance and not as keyman coverage.

Split Dollar Plans

This is an arrangement whereby an employer and an employee combine to purchase life insurance on the employee's life, with the employer paying an amount each year equal to the increase in cash value and the employee paying the balance of the annual premium. The policy is assigned collaterally to the employer. At death of the employee, the employer receives an amount equal to the cash value and the remainder is paid to the insured's named beneficiary (other than the employer). This is simply personal insurance and must be counted against personal insurance limits.

Personal Loans

Insurance sought to cover personal loans should be counted against personal insurance limits. Applications for insurance for this purpose should be viewed skeptically, since credit life insurance is normally easily obtained, even on large personal loans.

ADDITIONAL INDEMNITY BENEFIT (ACCIDENTAL DEATH BENEFIT; DOUBLE INDEMNITY, AND OTHERS)

There may be a tendency to relax somewhat in considering applications for additional indemnity benefit (AIB) coverage and to permit exposure to a larger total payout on accidental death than would be allowed (under the financial underwriting rules) for life insurance alone. Whenever that tendency is encountered, it should be questioned closely; AIB is not a benefit entirely independent of or insulated from financial underwriting considerations.

If the maximum amount of personal life insurance for which an applicant is eligible under the financial underwriting rules is in force and applied for—and if the applicant qualifies without financial strain and has

potential for some increase in income, and there is no aspect of the case which suggests a more-than-normal exposure to accidental death—we will consider issuing the full amount of AIB for which an applicant is eligible under the AIB issue and participation limits, in addition to the life insurance in force and applied for; if the case does not display these characteristics, such excess amounts of AIB are not issued. Currently, for example, for the best AIB rating class, we will issue up to $200,000 AIB for ages 25 and over and up to $150,000 for ages 20–25, with individual consideration for amounts in excess of $25,000 for ages under 20; we will participate in up to $500,000 AIB in all companies, with a higher participation limit considered on an individual basis where travel accident and other accidental death benefits of that type are involved.

PERSONAL INSURANCE USES OF AIB

Self-supporting Individuals

Personal insurance limits of amount for self-supporting persons can be filled out with almost any combination of life insurance and AIB (assuming that the maximum AIB is on a 1:1 basis with the life insurance) up to the normal issue limit for the benefit, provided that there are no aspects to the case which suggest a more-than-normal exposure to accidental death. (If a 2:1 relationship of AIB to life insurance is involved, i.e., "triple indemnity," a modification in the total amount of AIB allowed at the upper end of the amount range may be in order.) AIB should not be allowed as a substitute for life insurance if any aspect of the case suggests speculation or antiselection with respect to the accidental death benefit, if AIB is not deemed to be appropriate for any reason, if the case is speculative as to life insurance and a reduced amount is offered, or if the underwriter has had to stretch to qualify the amount of life insurance applied for.

Dependents

Because of its speculative content, AIB generally should not be used to provide insurance on dependents. If the amount of life insurance on the dependent wife and child is within the required relationship to the breadwinner's insurance and income, AIB on the dependent can be considered; but if the amount of life insurance on the dependent is at the maximum permitted by the rules, AIB should generally not be granted in addition. The relatively high incidence of accidental death among children and young adults makes it prudent to pursue conservative evaluation of AIB applications on such lives from a financial underwriting point of view, and insurance on a child should be directed toward pro-

viding a sound foundation for the child's future adult insurance program; AIB does not fit that role well. In the case of coverage for death taxes in excess of the basic $100,000 dependent wife coverage, discussed earlier in this paper (i.e., the "50 per cent of death taxes" guideline), AIB should not be used, because of the speculative element involved.

BUSINESS INSURANCE USES OF AIB

Partnership, Stock Purchase, and Stock Retirement

In the case of stock purchase and stock retirement, or partnership purchase, AIB may occasionally be requested in lieu of a portion of the life insurance which would otherwise be required. That is not a desirable use for this benefit, and its use for this purpose usually cannot be justified. It may be considered on occasion without undue extra risk in the case of a family corporation where insurance on the owners is essentially personal insurance for the benefit of family members; other than that, it can rarely be considered without introducing some measure of speculative hazard. AIB used in that way would be counted as regular life insurance in determining how much life insurance may be allowed on subsequent applications for life coverage, and it is useful to remind the sales representative and the applicant of that.

If the amount of life insurance purchased is adequate to cover the buyout, and the applicant further insists on purchasing additional AIB coverage for personal insurance purposes as a rider on the basic life insurance policy, written evidence that the accidental death proceeds will definitely reach the personal beneficiary should be obtained to avoid speculation by his business associates. Either a copy of the buy-and-sell agreement should be required (which, in the usual business insurance case, the underwriter does not actually get), or the policy provisions themselves should specify the personal beneficiary as the recipient of any accidental death proceeds. Sometimes, if life insurance adequate to cover the buyout is purchased, AIB will be requested for keyman purposes as a rider on the life policy; that can be considered favorably without undue risk of speculative hazard if the business associates are young and healthy individuals and if there is reasonable expectation that the AIB coverage requested will be replaced by life insurance as their fortunes improve.

Keyman

Similarly, in the case of keyman coverage, life insurance is the vehicle which should be used. However, in unusual circumstances (as indicated, for example, in the preceding paragraph), part of the total keyman

benefit can be made up by AIB without undue risk. Whenever that is allowed, the aggregate amount payable to the owner on death of the keyman should not exceed the appropriate keyman limit under the financial underwriting rules. We are inclined to limit the use of AIB in this connection only to those identified as "exceptional" and "average" keymen.

In this situation, too, the applicant and salesman should be made aware that any AIB so allowed would be counted toward life insurance limits as far as any additional keyman insurance is concerned. In addition, it would be counted toward the accidental death maximum in any subsequent purchase of additional amounts of AIB, either for personal insurance purposes or for business insurance purposes.

Deferred Compensation

While it is not well suited to the purpose, AIB may be used to fund deferred compensation benefits to personal beneficiaries if adequate evidence is presented that the entire amount will reach such personal survivors of the insured and will not accrue to the employer.

Sole Proprietor

We believe that there is no circumstance where the AIB would be appropriate for insurance on a sole proprietor if the employee is to be named beneficiary or owner. The speculative element in that arrangement is much too great for that benefit to be considered.

WAIVER OF PREMIUMS DISABILITY BENEFIT

While this benefit does not come directly within the scope of the financial underwriting guidelines for life insurance, it is important not to overlook the impact this benefit can have under very large amount policies. That is especially true if the underwriter tends to include the benefit regularly, either as a matter of company policy or because his field force is trained to add it whenever possible.

For the larger amounts of insurance, a carefully designed disability claim can convert a life insurance policy into a comfortable source of income to the policyholder via the mechanism of the policy loan, if the premium being waived is sufficiently large. In order to exercise reasonable control on that possibility, the amount of premium on which the disability waiver benefit is allowed should be limited. (For example, we currently write the waiver of premium benefit in policies up to $1,000,000 face amount in force and can go to $1,500,000, depending on the amount of premium involved.) As a guideline, the amount limits of disability income the insurer would allow on the best applicants for noncancelable disability

income policies could be used. If a company does not write disability income coverage, limits followed by some other company whose underwriting judgment is respected may be used. For substandard cases it is appropriate to scale down the amounts allowed and, at some point, to refuse to issue the benefit altogether.

MEDICAL UNDERWRITING PRACTICE IN RELATION TO FINANCIAL UNDERWRITING CONSIDERATIONS

In the usual course of events, medical underwriting decisions are made independently of the financial underwriting considerations.

There are two situations involving financial underwriting considerations, however, where extra caution in the medical underwriting area is desirable even if the development of medical facts has been going smoothly and there has been no apparent reticence or attempt at concealment on the part of the applicant; in such circumstances, medically borderline situations should be resolved on the conservative side.

First, if the initial appraisal of the case suggests the possibility of overinsurance or the possibility of other antiselection (e.g., limited insurable interest), the medical underwriting officer should be alerted so that he can take that element into account in deciding on the extent of the medical workup and in reaching the final medical decision if the risk is borderline from a medical standpoint.

Second, if the amount initially applied for over the applicant's signature is subsequently reduced at the request of the salesman for the purpose of avoiding a medical requirement, the medical evidence needed for the amount initially applied for should still be obtained. However, if the underwriter offers or expects to offer a reduced amount for financial underwriting reasons before the medical requirements have been completed, he may consider it adequate to require medical development only to the extent needed to underwrite medically the amount he is prepared to consider. That is a judgment decision which should generally be in favor of the more liberal position on an unimpaired risk and in the direction of the more conservative position as the degree of impairment increases.

OVERINSURANCE

Occasionally cases will be encountered where the amount applied for appears to be excessive in relation to the financial factors developed. When that happens, the underwriter can either (*a*) regard the amount as speculative and decline the case outright or (*b*) limit issue to that amount which he feels is consistent with the financial picture. However, in the latter situation, if there is an indication that the applicant will not stop

until he has obtained the total amount applied for—or some even higher amount—the application should be declined.

Applicants with complex medical problems and extensive medical histories present special problems because it becomes increasingly difficult to evaluate the medical characteristics with confidence. Similar difficulty may be presented by nonmedical factors, as, for example, at the older and younger issue ages where the economic (and medical) characteristics either are changing rapidly or have not yet been established. While some antiselection can be inherent in such factors, they do not of themselves imply an overinsurance situation, and applications for the full amount for which such applicants are eligible under the financial underwriting rules can still be entertained. A company may decide to reduce its retention on such cases, and then either seek reinsurance for the difference between the amount retained and the amount eligible for issue or let the salesman try to place it with some other company.

In general, we believe that a company should not knowingly participate in total amounts of life insurance on an individual which are in excess of its issue limit as determined in accordance with its financial underwriting rules (in the case of the smaller company, "issue limit" as used here includes amounts for which the company can secure reinsurance in excess of its retention, but the total issue limit is still determined by its financial underwriting rules). If higher participation limits are used for any reason, the financial underwriting rules should be addressed to—and should give clear recognition of—that level of risk exposure, because it is the participation limit which effectively determines the exposure to financial underwriting risk. Whatever the system of financial underwriting guidelines adopted, we believe that it should be adhered to with a strong sense of consistency and obligation to the concept of achieving equity between policyholders. If the system appears to require change or revision, that should be done only as part of a managed program of change; it should not be attempted on an "exception" basis. Only in that way can the actuary and the underwriter retain control of what is going on in their case underwriting and preserve a rational system susceptible to analysis and explanation as history reveals how well or how poorly they did their work.

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APPENDIX I

AMOUNTS WHICH MAY BE UTILIZED AS INCOME IN ADDITION TO SALARY OR WAGES AND REGULAR BONUSES[1]

1. Excess of pretax earnings over aftertax earnings in close corporations and partnerships may be considered as income.
2. Annual appreciation in value of non–income-producing real estate is allowed as income.
3. If the applicant has personal use of a company car, up to $2,000 is allowed as annual imputed income.
4. An amount up to an extra 10 per cent of salary is allowed if the applicant works for a company with a liberal employee benefit plan (e.g., a generous noncontributory retirement plan).
5. A suitable adjustment to income may be made if the applicant derives substantial benefit from an expense account.
6. If insurance has been issued to fund a deferred compensation arrangement, the insurance premium may be considered as current tax-free income to the proposed insured; if the arrangement is funded by some other method, the amount set aside each year for that purpose may be regarded in the same manner.
7. The estimated increase in income from investments may be included.
8. The repayment of principal in mortgage payments made by a business may be regarded as income to the owners.
9. (Share of) retained earnings in a business owned (in part) by the proposed insured may be considered as income.

APPENDIX II

SCREENING TABLES

As indicated in the paper, income is generally the best *available* measure of an individual's worth for insuring purposes. "Income" is salary or wages and regular bonuses, plus other amounts which may be utilized for this purpose as described in Appendix I.

The following tables (excerpts) provide a guide to the amounts of insurance for which an individual is eligible, assuming that the indicated portion of an individual's income (gross, or net after taxes, as indicated) may be applied to the purchase of life insurance without—of itself—introducing antiselective forces.

[1] Do not give great weight to current income derived from a one-time event, e.g., sale of property or business, successful promotion of a rock festival, and other types of financial windfalls.

TABLE 1

Table 1 is a basic quick-screening table. For incomes of $15,000 or more, it assumes that 20 per cent of an individual's net aftertax income is applied to the purchase of life insurance, at the composite premium rate shown in Table 3. For incomes less than $15,000, lower percentages of gross income are used, as shown in the accompanying tabulation.

Gross Annual Income (in Thousands)	Per Cent Used
$15 and over*	20%
$12–$15	15
$10–$12	12
$8–$10	10
$6–$8	7
$4–$6†	5

* Net aftertax income.

† At the lower end of this range the dollar amounts shown in Table 1 were further adjusted downward sharply because 5 per cent was deemed too high for such incomes.

Table 1 can be used to identify the great majority of applications which do not present any overt financial underwriting problems, thereby avoiding the need to make specific calculations. It can be used without much distortion through the moderately substandard tables, assuming current age and the standard classification for all amounts in force and applied for. For the higher

TABLE 1

MAXIMUM AMOUNT (IN THOUSANDS) OF INSURANCE PERMITTED FOR INDICATED GROSS INCOME FOR MORTALITY CLASSES THROUGH 250 PER CENT* OF STANDARD

(For Higher Mortality Classes, Use One-Half Maximum Shown)

Annual Income before Federal Income Tax	Age Groups			
	18–37	43–47	53–57	63–67
$ 4,000	$ 17	$ 9	$ 5	$ 3
5,000	21	11	6	4
10,000	100	52	31	17
15,000	221	115	68	38
20,000	288	150	89	49
30,000	415	216	128	71
50,000	638	333	196	109
75,000	884	461	272	152
100,000	1,120	584	345	192

* This is 250 per cent of standard mortality, using "conventional" debits as generally used in the industry. Some companies might prefer to grade amounts by smaller groupings of mortality classes.

NOTE:—For simplicity this table assumes that all insurance, in force and applied for, is issued at current age and at standard rates.

substandard classes, Table 1 should be used as a screen for amounts equal to only one-half of those shown.

A few small adjustments must be made in using Table 1 to accommodate inclusion of nonlevel and "nonregular" coverages routinely encountered; such adjustments must be relatively easy for the underwriter to make quickly. For example, group insurance up to $50,000 is not counted as in-force insurance, since most group programs are not subject to control by the individual (however, the underwriter must be alert to those situations where the individual *can* exercise control over his group amounts). Decreasing term insurance must be adjusted, using factors ranging from 75 per cent of the in-force commuted value for terms of ten years of remaining duration, up to 90 per cent for twenty-five years of remaining duration.

TABLE 2

For incomes in excess of those shown in Table 1, and for cases which do not pass the Table 1 screen, an approximate calculation must be made to obtain the total premium involved on the insurance in force and applied for. This can be done quickly by applying composite annual premiums per $1,000 face amount—reflecting an average mix of business (see Table 3)—to the amounts of insurance in force and applied for, by issue age. The total premium so calculated is compared with a control list of annual incomes required for specified premium outlays in order to determine whether or not the proposed total premium outlay is acceptable. Table 2 illustrates such a control list for maximum premium outlays allowable under the 20 per cent rule and under the 25 per cent rule.

The "net" aftertax incomes shown in Table 2 to which the indicated maximum percentages of premium outlay were applied were calculated using tax

TABLE 2

MAXIMUM ADJUSTED PREMIUM OUTLAY PERMITTED FOR GROSS INCOMES OF $4,000 AND OVER

Gross Annual Income	Net Annual Income	Maximum Annual Premium Outlay	
		20% Rule	25% Rule
$ 4,000	....	$ 200	....
5,000	....	250	....
10,000	....	1,200	....
15,000	$ 13,260	2,652	....
20,000	17,260	3,452	$ 4,315
25,000	21,150	4,230	5,288
30,000	24,870	4,974	6,218
50,000	38,300	7,660	9,575
75,000	53,025	10,605	13,256
100,000	67,200	13,440	16,800
200,000	119,800	23,960	29,950
500,000	260,000	52,000	65,000
1,000,000	500,000	100,000	125,000

rates in the United States effective January 1, 1972, and assuming (*a*) a married couple, (*b*) two dependent children, (*c*) a joint return, (*d*) deductions which vary as a percentage of income before taxes, and (*e*) all income taxable as ordinary income.

TABLE 3

"AVERAGE" PREMIUM RATES PER $1,000 OF INSURANCE

(Net after Adjustment for Dividends)

Age of Insured at Issue	Mortality Classes through 250%* of Standard Mortality	Mortality Classes over 250%* of Standard Mortality
18-35	$12	$24
45	23	46
55	39	78
65	70	†

* This is 250 per cent of standard mortality, using "conventional" debits as generally used in the industry. Some companies might prefer to grade amounts by smaller groupings of mortality classes.

† Not applicable.

NOTE:—The composite premiums shown in Table 3 assume a 50 per cent five-year renewable term plus 50 per cent whole life premium for ages 33–52, inclusive, grading off to 20 per cent five-year renewable term at age 18 (30 per cent five-year renewable term at age 62), with whole life making up the remainder.

In the case of heavily rated substandard insurance, short-term endowments, insurance at high issue ages, and so on, the actual total premium to be paid may be substantially in excess of the maximum adjusted premium outlay of Table 2, calculated with the Table 3 average premium rates. In that event, careful judgment must be exercised to avoid permitting an excessive percentage of income to be used to purchase insurance if the amount of insurance applied for is at or near the maximum permitted under the financial underwriting rules, using the "average" premium.

As an additional guide for that purpose, we add two schedules which indicate the maximum actual premium outlay in relation to an individual's gross income, which we believe should be observed if one is to avoid unmanageable antiselection (see accompanying tabulations).

A. FOR PERSONAL INSURANCE EXPENDITURES

Gross Annual Income (in Thousands)	Per Cent of Gross Income for Premium
$25 and over	25 %
$15-$25	20
$12-$15	17½
$10-$12	15
$ 8-$10	12
$ 6-$ 8	7½
Under $6	5

B. FOR AGGREGATE PERSONAL AND BUSINESS INSURANCE EXPENDITURES

Gross Annual Income (before Tax)	Maximum Premium Outlay (Adjusted Basis) Using 35%* of Net Aftertax Income
$ 25,000	$ 7,403
50,000	13,405
75,000	18,559
100,000	23,520
200,000	41,930
500,000	91,000
1,000,000	175,000

* Of which not more than the first 25 per cent may be payable from the insured's own income, except in the unusual estate tax situation.

CAPITAL GAINS APPROACH FOR INCOMES OVER $30,000

Studies by Metropolitan Life Insurance Company's Business Economics Department suggest that on the average, for incomes of $30,000 and over, inclusion of capital gains tends to provide the taxpayer with an aftertax income equal to at least three-quarters of gross income. By contrast, the aftertax income shown in Table 2, calculated without reference to capital gains impact, drops below that ratio near the $55,000 gross income level.

Argument can be made that a capital gains approach should be built into the income approach as a more or less automatic component for incomes in the higher amount ranges on the assumption that individuals in those income ranges are generally sophisticated enough in financial matters to arrange their financial affairs to benefit by the potential for capital gains available to them.

We have not adopted this "automatic" capital gains approach because of the difficulty of determining just what capital gains may have been realized by an individual over a period of time, and it is not apparent from the financial data we see that individuals are equally adept at making this device work to their benefit. The stability of that type of income is questionable and, for the very high incomes, use of a "capital gains" net income would permit extremely large amounts of insurance well in excess of the amounts available under the regular income definition we use. Table 4 compares the net aftertax income on the two bases (capital gains basis versus regular income basis) and the maximum premium outlay associated with each basis. The capital gains basis involves the same family composition and tax-filing basis as the regular basis but includes amounts of net long-term capital gains in the income used; the annual premium outlay involves the same composite premiums as in the regular basis.

The 20 per cent rule on the regular basis imposes a limit on the amount of gross income which can be devoted to premium, ranging from 15 per cent at the $15,000 level down to 10 per cent at the $1,000,000 level; the 25 per cent rule on the regular basis allows 12½ per cent of gross at the $1,000,000 income level. The capital gains basis would allow 15 and 19 per cent of gross, respectively, at the $1,000,000 income level. While we have no final, conclusive studies on the

TABLE 4

MAXIMUM ADJUSTED PREMIUM OUTLAY FOR INDICATED INCOMES

Annual Gross Income	Annual Net Income		Maximum Annual Premium Outlay			
			20% Rule		25% Rule	
	Regular Basis	"Capital Gains" Basis	Regular Basis	"Capital Gains" Basis	Regular Basis	"Capital Gains" Basis
$ 20,000	$ 17,260	*	$ 3,452	*	$ 4,315	*
25,000	21,150	*	4,230	*	5,288	*
30,000	24,870	$ 25,140	4,974	$ 5,028	6,218	$ 6,280
50,000	38,300	50,280	7,660	8,040	9,575	10,050
100,000	67,200	75,800	13,440	15,160	16,800	18,950
200,000	119,800	151,600	23,960	30,320	29,950	37,900
500,000	260,000	379,000	52,000	75,800	65,000	94,750
1,000,000	500,000	758,000	100,000	151,600	125,000	189,500

* Not applicable.

point up to this moment we have had some indications that, where ratios of policy premium to gross income exceed 10 per cent, speculative purchase of insurance may be involved. This suggests that the 20 per cent rule is not unduly conservative, and, if one is to go beyond that limit, increasingly sharp scrutiny is in order.

DISCUSSION OF PRECEDING PAPER

JOHN GUMMERE:

The subject of this paper is one that has long caused concern to underwriters. The new contribution is most welcome, and this is especially true of the analysis of personal and business insurance needs. Terminology in the two areas is frequently confused.

The latest mortality experience on policies for large amounts was quite favorable (*1970 Reports*), although nothing is shown to contradict the authors' thesis that a consistent approach to underwriting large amounts is most desirable. It is true that several giant claims not included in this experience would have altered the results materially had they been included, and certainly any question as to the statistical significance of these claims has been overshadowed by general concern as to the effectiveness of large case underwriting.

The authors have constructed a set of guides using what essentially is an "ability to pay" approach, in which estimated premiums are related to net income. This is in contrast to a "needs" approach, in which a multiple (varying by age) is applied to gross earned income in an effort to estimate the value of the loss to the beneficiary. There has been insufficient time to check the two approaches on a sample of our cases. It would appear that the needs approach would produce larger amounts, although the allowable adjustments to net income suggested in Appendix I may be more than offsetting; certainly in most cases the underwriter will have difficulty in obtaining justification for these adjustments.

I assume that the 20, 25, and 35 per cent rules relate to combined earned and unearned net income. Certainly this would seem to be generous, although one might expect income spendable on insurance to be lower at the lower income levels and to increase as income rises.

Some years ago, in an effort to control persistency on minimum deposit business, we adopted the approach that the full premium for both new and in-force insurance should not exceed 7 per cent of the first $10,000 of gross income, 12 per cent of the next $15,000, and 20 per cent of the remainder. The theory was that the applicant should at least have the capacity to pay the full premium whether he chose to do so or not. This did not prove to be a satisfactory control for persistency. Establishment of a minimum income level for purchase of minimum deposit insurance proved eventually to be the answer.

This is a most interesting presentation. Although actuaries have long had an interest in underwriting, one might wish that this paper could first have been presented to one of the two underwriting associations.

A. C. WEBSTER:

Messrs. Baskin and Marshall are to be congratulated on a welcome and interesting paper on an important underwriting problem. As the authors point out, rules for financial underwriting have been around for many years and sometimes, certainly recently, seem to have been "more honoured in the breach than the observance." Financial underwriting is probably the most difficult problem faced by the underwriter today, and it has become more complicated over recent years by the introduction of all kinds of tax arrangements which are not, of course, guaranteed by the taxing authorities. Financial underwriting is bound up closely with insurable interest and perhaps this is the major intangible which the underwriter has to consider. While intangibles are not capable of accurate measurement, as, for example, is blood pressure or weight, I would not discourage the authors or any underwriters from trying to construct a guide to financial underwriting. The underwriter might bear in mind another important difference between tangibles and intangibles. He can measure in advance with reasonable accuracy the monetary effect of underrating a medical impairment. No comparable measure is available for underrating intangibles.

There is one underwriting axiom that bears repetition. If the public is given a chance to select against the company, the public will undoubtedly take advantage of the opportunity, and this applies to all forms of insurance. The purpose of selection is primarily to avoid antiselection, and in pursuit of this purpose it is well, I think, to remember that in addition to immediate antiselection there can be a deferred antiselection; this is likely to occur most often in the case of intangibles. Further, in this area the underwriter has to distinguish—and sometimes it is not easy—between a "legal" insurable interest and an "insurable" insurable interest. The phrases are not synonymous, and sometimes it is difficult to explain to the lawyers, let alone the sales representatives, that while a legal insurable interest exists the company should not go on the risk. A very simple example is an application for insurance to cover a bad debt. The creditor has a legal insurable interest, but he is hoping that the insurance company will bail him out because he has no hope of ever receiving anything from the debtor.

The rules relating the amount of personal insurance to the applicant's income are reasonably liberal, and I agree with the authors that they

probably would fit the majority of cases. I was, however, a little surprised to find in Appendix I a list of items which might be included as additional income, some of which would be difficult to verify. It seems to me that if the underwriter has to strain to get from extraneous items the income to justify the amount of insurance applied for, he had better apply a severe rather than a liberal rule.

The weakness of the 20 or the 25 per cent rule is that very few people are willing to spend these percentages of their income on life insurance. The upper-limit cases are the exception rather than the rule. The authors quite properly reduce these percentages for incomes of less than $15,000. I wonder whether the applicant with a higher gross income, even $25,000 (does the tax bite include state taxes?) would spend over $5,000 in premiums if he happened to be married with two dependent children. Perhaps he should, but there is a practical question as to whether he can.

I have doubts about the "ten times income" rule for keyman insurance, even allowing for scaling down as suggested in the paper. The "five times" rule may be considered to provide reasonable time for the business to overcome the loss of the keyman. Does the business need ten years to recover? The latest large-amount experience admittedly showed favorable results for both business insurance and keyman insurance (including deferred compensation). The exposure, however, was relatively small—not large enough to be divided into "five times income and less" and "over five times income."

The authors make only a brief reference to very large amounts of insurance applied for, such as 5, 10, or even 20 million. These are more common these days, and generally in this group. While financial information may be available, nearly always it is complicated. The large-amount studies have, in recent years, shown favorable results, but the authenticity of these results has been questioned because a few large death claims did not get into the study. The reason for this omission was not negligence on the part of the contributing companies but the fact that the initial application in many of these instances was made not to one of the contributing companies but to a relatively small company which filled the line with the help of many reinsurers.[1] I suggest that there is an amount limit on any life, irrespective of finances, if for no other reason than that the very, very large amount produces a statistical distortion in the exposure—there are not enough of these risks to make a book. The insurance industry exists to take risks, but surely the risk should meet some standard of reasonableness.

[1] The discussion on "Mortality and Underwriting of Individual Policies for Large Amounts" (*TSA*, XXIII, D489) is an admirable supplement to this paper.

Another item which I wish the authors had covered is selection by plan. Today the marketing approach seems to be in favor of term insurance, and in the past term insurance seems to have had an inherent antiselection. There is some evidence to the contrary in current experience. Perhaps the drive for term insurance has been brought about by the competition for the savings dollar and consequently the mortality on term insurance will be as good as that under permanent plans. I hope that this will prove to be the case, and I hope also that many companies will find it possible to publish their mortality experience on term insurance. The margin on term premiums is rather thin and may not be enough to take care of even slightly adverse fluctuations in mortality, and, in addition, there is no interest cushion to soften the blow.

The authors, I am sure, could have written at greater length about the tax situations giving rise to insurance applications for large amounts. Such applications should be considered very carefully, and it is often wise to check the tax situation which gives rise to the application, and check it very carefully, with a tax expert. There are tax needs which should be covered by insurance, and I can recall instances where the estate taxes could well have been so covered. The estate tax does not need to be enormous to justify the amount of insurance. There is the interesting case of the irregular beneficiary (including charities). Perhaps such applications are acceptable if the total insurance income ratio falls within the guidelines, but the value placed upon the insurable interest should not be ignored.

There is a brief reference to overinsurance, with a comment upon "hedging." That is where the underwriter decides that he can offer a limited amount. There is, I think, a place for hedging in underwriting but *not* in financial underwriting. Hedging could be confined properly to cases where the medical picture is unclear or where the applicant has some unusual impairment. Otherwise I suggest that hedging simply invites severe antiselection.

The comments on the additional indemnity benefit (AIB) are interesting, and I would endorse the advice that AIB should not be allowed as a substitute for life insurance. The chief underwriting problem with the AIB is that it is cheap and can be added to the primary benefit for only a few cents. This appeal is not neglected by the salesman. There is no logical justification for the addition of AIB to business insurance or keyman insurance. But how many underwriters will refuse such a benefit? A disturbing factor, perhaps in favor of liberality, is that the accidental death benefit experience continues to be favorable.

It takes an effort to refrain from expatiating upon many of the authors'

comments (giving illustrations) or even from disagreeing with some others. The paper will repay close study by underwriters and actuaries, but all readers should note carefully that there are many caveats contained in the paper, and these certainly should not be overlooked or forgotten. It may further help some of the readers, particularly the actuaries, to realize that there is no price high enough to overcome antiselection. Messrs. Baskin and Marshall state that the guide rules are apparently working satisfactorily for their company. Before all underwriters start writing these rules into their underwriting manuals, might I remind them that what works for Company A may not work for Company B? Underwriting results are affected by more forces within the company than the actions of the underwriting department.

The primary purpose of insurance is protection against uncontrollable hazards. Insurance is not a means of enriching the insured or his beneficiaries at the expense of the other members of the insured group or an excuse to unload a personal burden upon the other members of the insured group. The underwriter should remember that the price of good selection is eternal vigilance and perhaps even longer vigilance (if that is possible) when one is engaged in financial underwriting.

HARRY A. WOODMAN, JR.:

Messrs. Baskin and Marshall are indeed to be congratulated for developing an integrated frame of reference for financial underwriting. As they modestly point out, it should prove useful as a reference point for actuaries designing their own set of financial underwriting rules or in modifying existing rules. In practice, I expect that many companies may adopt this integrated approach with relatively little modification.

The authors suggest that their screening tables "will pass virtually all cases involving valid reasonable amounts applied for." I agree that this is true, but I caution all actuaries and underwriters to recognize that this is merely a reference point. Before declining or limiting a case that fails to meet the criteria, they should be sure that the case does not meet a real but perhaps unusual need. Before accepting any case with an unusual personal or business beneficiary that appears to meet these criteria, they should be sure that they have identified the real need and that it is not a spurious one.

Considerable ground is covered in this paper, which encompasses a very large subject. Hence it would not be expected that the authors could develop fully every area of financial underwriting. In the interest of clarification and to avoid misunderstanding, I feel that further comment should be made on some of the point made by the authors.

Measuring Insurance Needs

The ability of the underwriter to determine that the total amount in force and applied for does not exceed insurance needs varies directly with the scope and validity of the financial information furnished. If a reliable agent who is experienced in writing large cases submits an application on a principal of a well-established business and documents his estimate of the proposed insured's net worth and income with reliable financial information that is subsequently confirmed by inspection sources, there is little problem in reaching a decision as to whether or not the amount of insurance in force and applied for is reasonable. Not surprisingly, the underwriter will often find that such amount is very close to his evaluation of maximum insurance needs. On the other hand, an application from an inexperienced agent with few supporting data and sketchy information from inspection sources makes it almost impossible to render a reasonable financial underwriting decision, and a very conservative approach is dictated unless further information can be developed.

Financial guidelines to measure insurance needs tend to break down when applied to a young man of significant but undefined potential, particularly one who is just getting started in his own business. If the business is in a new field, the problem is further complicated. Failure to grant the insurance requested can hurt the proposed insured if the expected future needs materialize and he is then uninsurable. Here is where the "art" of underwriting comes into play and where the underwriter may need the counsel of his investment department to estimate the success of the business venture.

Insurable Interest

It could be wrongly concluded that the classic definition of insurable interest given by the authors (that is, that an individual has a valid insurable interest in the life of a second person only if it is to his financial advantage and interest that the second person continue to live) is intended to apply only when the applicant is other than the proposed insured. I believe that the authors intend their subsequent remarks to apply equally to cases where the proposed insured is purchasing insurance on his own life. Legally such a person has an unlimited insurable interest in his own life, but it is not sufficient for an application to meet the "legal" definition in order to satisfy the "underwriting" insurable interest requirements to which the authors address themselves.

It seems appropriate in a discussion of financial underwriting to specifically caution underwriters to be sure that the actual purchaser of the insurance (that is, the premium payer) is properly identified, so that

"legal" insurable interest statutory requirements are not violated. In most jurisdictions, such purchaser, whether or not he is the applicant, is the one who must have the insurable interest. This is certainly true where the purchaser is the owner and hence retains control of the policy. It may not be true where the purchaser pays the premiums and releases control to someone else as owner. If the purchaser who retains control of the policy does not have a legal insurable interest because of love and affection or because of the possibility of a measurable financial loss, the company approving the application could be liable for damages amounting to much more than the face amount.

Insurance on Children and Students

The authors do not make any reference to insurance on children and students, perhaps because it is difficult to develop a frame of reference for financial underwriting in this area. It would appear that the standard requirements for insurance on the father to be at least two times that on the child and for the insurance program to be balanced among all children are sound rules to apply. However, the "two times" rule breaks down if a large proportion of the insurance on the life of the father is to meet estate tax liability. Nevertheless, a substantial amount of insurance can be justified if it is clear that the child will have a sizable estate tax problem in the future; the amounts for this purpose should be balanced among all children. Even though the estate tax problem is deferred rather than immediate, it is desirable not to postpone the insurance because of a possible future change in insurability.

A substantial amount that is not in balance with amounts on the other children can be justified on a young man being groomed to take over his father's business, provided that he is mature enough to have demonstrated the potential for this responsibility. Such amounts could approach 50 per cent of the father's total needs, depending on the individual circumstances.

From this discussion, it can be seen that there are indeed problems in the financial underwriting of children and students. I include these statements solely to suggest that application of specific rules could unwisely limit the amount of insurance in a case where there is a significant need for the insurance.

Income as a Prime Determinant

In suggesting the use of income as the prime determinant of insurance needs, the authors use a composite premium rate (illustrated in Table 3 of Appendix II) rather than the actual premium for the case. This use of a

composite premium rate is perhaps not emphasized sufficiently. It is quite important to recognize that considerable overinsurance would result from granting term insurance, particularly decreasing term, based on the maximum premium outlay shown in Table 2 of Appendix II.

We use the traditional multiple of gross income approach in measuring maximum insurance needs. If such multiples are derived from present values of mortality and interest that are based on conservative assumptions, they give a reasonable limit on the maximum amount of insurance. The underwriter then can add perhaps another 25–50 per cent if he is sure that income has been accurately determined and if the proposed insured appears to have good prospects for a future increase in income. We feel that the income multiple method provides a good framework upon which to base consistency of underwriting action and, in addition, has the important advantage of simplicity.

The authors' application of the average premium rule for persons in the upper substandard classes is questionable, in my opinion, because the need for insurance is not diminished by the extent of insurability. The substandard risk has as much need to protect his family as the standard risk and is well advised to seek maximum protection. As a practical matter, however, I recognize that a reduced amount may be indicated because of the much higher not-taken rate among highly substandard risks. It could also be argued that such risks need a smaller amount of insurance because of the shorter earning period due to their reduced life expectancy. This is not a very convincing argument, however, to present to the substandard risk who has the same need to provide future income to his family as the standard risk.

"Coinsurance" of the Estate Taxes

The authors offer sound advice in advocating a "coinsurance" element where insurance is applied for to cover estate tax liabilities. As they point out, this guards against overestimates in the estate, removal of assets from the estate, changes in marital status, and the like. Moreover, it recognizes that there is rarely a need to preserve the entire estate. This is particularly true of the large estate where ample amounts will pass to the heirs even if the estate is reduced by estate tax liability that is not entirely offset by insurance. Occasionally there may be a need to cover virtually all of the estate tax liability because the estate consists entirely of nonliquid capital assets where a forced liquidation would cause loss of control by the surviving heirs or find a poor market forcing sale at greatly depressed prices. The argument to provide insurance to cover almost the entire estate tax liability of a nonliquid estate applies with equal, or perhaps even greater, force to insurance on the wife in a community

property state. Forced liquidation to meet estate taxes could shatter the husband's business at the peak of his career.

In measuring the estate tax liability in cases where they would apply their 50 per cent discount rule, the authors do not comment on whether they take 50 per cent of the estimated death tax liability before or after including the insurance proceeds in the estate. This point is particularly relevant for companies which use estate tax liability as a direct measure of insurance needs. Coverage of the liability before adding the insurance proceeds to the estate provides a significant element of coinsurance. Even so, it is unlikely to interfere with a sale to cover maximum estate tax liability needs, since most sales are based on estimates of estate tax liability before inclusion of insurance proceeds.

Business Loans

The approach to providing a ceiling on overlapping "needs" is a good one. It is certainly unrealistic to provide insurance to cover each "need" separately. This is particularly true in connection with business loans where the additional need created by the loan is largely spurious. The loan per se does not increase income replacement or estate tax liability needs. The loan may, however, be for expansion purposes, with a solid expectation that both income and net worth will increase rapidly as a result of this expansion. To this extent some additional insurance could be justified above the maximum amount that would be needed for keyman purposes if the loan did not exist.

If insurance to cover a loan is controlled by limiting the maximum to keyman needs, as the authors suggest, the exposure to antiselection by lapse when the loan is substantially reduced or paid in full is greatly reduced. That is, the keyman needs should continue to exist and thus should provide a good reason even for those in good health to keep the insurance in force.

Stock Purchase

The authors suggest that the full amount of stock buyout can be considered as keyman insurance, provided that the total does not exceed the 35 per cent limitation. This is based on the assumption that the proceeds will be payable entirely to the other partners or shareholders. However, if the proceeds are payable to the business without a specific agreement to keep the proceeds out of the insured's share of business, the insured's estate will share in the proceeds to the extent of his ownership in the business. This part of the proceeds would therefore be considered personal insurance and should be subject to the personal insurance maximum.

Accidental Death Benefits

I echo the authors' sentiments that the accidental death benefit (ADB) with double indemnity is not entirely independent of or insulated from financial underwriting considerations. This benefit is useful and desirable only when there are insufficient financial resources to provide additional life insurance. Considering the cost of term insurance today, this would be a rare situation in large-amount cases. Moreover, the sale of ADB is contrary to the agent's best interests in selling life insurance, inasmuch as it creates the impression that the prospect's needs will be adequately covered. For these reasons, I look upon the sale of any significant amount of ADB as essentially speculative. Small amounts cause no concern because ADB is sold regularly as part of a package to the young family man. He is the most logical candidate for ADB because of his limited financial resources and because ADB is likely to meet his needs in view of the high ratio of accidental deaths to total deaths among young males.

Overinsurance

The statement that an application should be declined if the total amount in all companies cannot be controlled represents somewhat harsh and cruel punishment of the agent. He may have spent months in competition before being given an opportunity to get at least a share of the insurance. Rather than declining, it would seem desirable to try to place such business with a reinsurer willing to accept it on a basis that would not affect any participation in profits resulting from other business ceded to that reinsurer.

MICHAEL A. HALE:

This paper presents a well-conceived, flexible, and useful approach to many of the problems embodied in the concept of financial underwriting. It provides a framework for focusing attention on the financial aspects of the risk. It describes the relationship between various "insurance needs" in such a way as to cover situations in which a number of these needs converge. It imposes the concept of an upper limit to the amount of insurance appropriate on one life.

In examining this approach, I have worked out preliminary screening tables that might be applied to the business of my own company. We write business in Canada, the Caribbean, and a limited number of states in the United States, with the bulk originating in Canada. Table 1 of my discussion shows the true 20 per cent of after-tax figures, using the federal and provincial rates applicable in Ontario and assuming personal deductions ranging from $2,000 to $5,000 (relatively conservative assumptions, par-

ticularly at the higher income levels). The insurance amounts shown are based on the authors' assumptions as to the suitable after-tax portions by income level and composite premiums derived similarly from our own nonparticipating rates. The resulting amounts are not too far from the authors' Table 1, the effects of the higher tax rates and lower premiums producing lower amounts at the higher income levels. Since the amounts are somewhat sensitive to the premium level, I would prefer to use three ranges spanning the allowable degrees of substandard issue, to vary the amounts considered appropriate.

TABLE 1

MAXIMUM AMOUNT (IN THOUSANDS) UNDER MODIFIED 20 PER CENT RULE

Gross Income	20% of After-Tax (Modified)	Age Range			
		18–37	43–47	53–57	63–67
$ 4,000	$ 720 (180)	$ 18	$ 10	$ 5	$ 3
5,000	850 (210)	21	12	6	4
10,000	1,600 (960)	96	53	29	15
15,000	2,250	225	125	68	35
20,000	2,870	287	160	87	45
25,000	3,510	351	195	105	55
30,000	4,000	400	222	121	63
50,000	6,100	610	339	185	95
75,000	8,400	840	467	255	131
100,000	10,400	1,040	578	315	163
100,000+	10,400 +8% of excess over 100,000				
Composite premiums		$ 10	$ 18	$ 33	$ 64

Under the Canadian income tax, capital gains are brought into income for an amount equal to one-half the realized gain, and this amount attracts tax at regular marginal rates. This simplifies greatly the treatment of any capital gains component. It also suggests a treatment for situations involving capital gains that are not sufficiently well established as to level or frequency, namely, that only one-half of such gains be used for this component of income.

It is also required that unrealized capital gains be brought into income on death, and a small but growing number of insurance sales are being made on this basis. This is simply personal insurance similar to insurance for succession duties or estate taxes. To the extent that a reasonably documented projection of the liability is available, treatment paralleling that suggested for estate taxes seems appropriate.

Under the Ontario Succession Duty Act, no duty is payable on the first $500,000 of property passing to a spouse. This leads most often to requests for insurance payable on the second death of husband and wife. This situation requires an inside limit equal to one-half the estimated liability; in addition, the amount should come within the guidelines for personal insurance on the spouse who holds the property.

The use of income as the prime determinant of an individual's worth seems to me a logical extension of ideas applied daily in society, in the courts, and in the appraisal of life insurance risks, either consciously or unconsciously. The extension of this concept to include unearned and attributed components gives suitable recognition to the value of assets held and does so in a way that permits a comprehensive treatment of different insurance needs. Some of these elements often are required for insurance; others seem more elusive and difficult to determine in the specific case—for example, the substantial benefit from an expense account.

The chronic problem of trying to obtain adequate documentation is relieved only slightly by the availability of outside estimates of income. Generally, we have found that the more adamant the refusal to provide documentation, the less likely the existence of an adequate financial basis. The same confidentiality that governs the handling of medical information can be applied to financial information made available directly to offices at the head office. When such documentation is refused consistently, more stringent treatment than might otherwise be contemplated by the guidelines is the only prudent course.

One potential problem of this system, as opposed to the straight "insurance needs" approach, is that it puts the standards of approval or rejection on a different basis from that used in making the sale. Sales personnel are trained to identify certain consumer needs that can be met by life insurance; risk appraisal often requires a less optimistic evaluation of the actual need. The use of a different over-all basis, however, has a built-in potential for additional conflict between these two phases of company activity. This can, of course, be turned to advantage in that it seems to impose stricter requirements for clearer communication of limitations, and greater consistency in the application of the underwriting guidelines. The singular advantage of the approach outlined in the paper is the degree of consistency with which it seems capable of being applied.

The role of the actuary, in helping to determine appropriate underwriting guidelines, is to identify areas of adverse experience and to suggest pragmatic solutions that will produce the desired financial results. This the authors have done in a comprehensive, unified way. Other actuaries may be influenced by their competitive situation, agency con-

siderations, or practical limitations to adopt other sets of guidelines. Coming from a relatively conservative financial underwriting background, I believe that the approach outlined here has much to offer in the way of comprehensiveness, consistency, and the capability of coping with applications for substantial amounts. Most important, the authors have dealt with a problem area that actuaries cannot disregard prudently. Hopefully, we may now look forward to seeing further discussion of this and other selection problems in our literature.

KENNETH A. BALAY* AND CHARLES N. WALKER:

This paper will, we think, fulfill the authors' expectations for it to "prove useful as a reference point for actuaries designing their own set of financial underwriting rules or in modifying existing rules." Their studies and experience obviously have produced a feel for underwriting norms which they have ably expressed numerically in their guidelines.

In Appendix I the authors do an admirable job of assembling virtually every value increment that can be attributed to an individual. These are combined and regarded as a man's income and "basic measure of his value . . . for all such (business and personal) purposes." There is actually no such thing as a single insurable value, so summing all these value increments is something in the nature of adding apples and oranges; for the purpose of producing simple numerical guidelines, however, such a consolidation is not without merit. Yet there is one prominent disadvantage in the assembly of values via income totaling: it discourages the articulation and use of financial underwriting thinking tools. The authors seem to handle problems in thinking by referring to "top-level underwriting officers" those cases that do not pass the 25 per cent rule screening.

In our opinion, financial underwriting concepts (thinking tools), are conspicuous by their near-absence from this paper. The authors present the primary purpose of financial underwriting as being "to establish an insurable interest consistent with the amount of insurance applied for." They use "insurable interest" here with a quantitative connotation, as meaning the same thing as insurable value. They then assert "that income is generally the best available measure of an individual's worth for most insuring purposes."

The authors finally complete a discussion of this premise by declaring that "under the income approach the maximum amount of personal insurance permissible is a direct function of the proportion of income deemed

* Mr. Balay, not a member of the Society, is second vice-president of the Lincoln National Life Insurance Company.

allocable to the purchase of insurance." Thus they declare that there is a link between ability to pay premiums and insurable interest (value). This is true enough to justify the creation of a frame of reference, as they have done here, and is very useful. But it leaves unattended other questions that deal with relationships among insurable value, insurance uses, and amounts of insurance for the various purposes of insurance, the understanding of which is essential to the underwriter, junior or senior, in making his judgment decisions. The financial underwriting concepts essential to thinking are buried in the arithmetic.

The authors further declare that income is a prime determinant of an adult individual's worth "for most insuring purposes[4]" They assert "that it is possible to supplement the personal insurance limits to accommodate certain business insurance needs without necessarily introducing undue financial risk." In order to produce guidelines for limiting business insurance, the proportion of the individual's net income after taxes that may be used to purchase insurance is merely increased from 25 to 35 per cent, but with the additional constraint that "the balance of the 35 per cent factor must come from sources other than the individual's own personal income"! We find it difficult to see the insurable value in business insurance purposes as an invariant function of the individual's personal income. Indeed, the authors declare that business insurance situations have "certain unique characteristics which operate to define the amounts of insurance appropriate for the situation." The discussion of business insurance purposes that follows indicates that the amount of insurance is judged on "certain unique characteristics" presented but that the 35 per cent rule serves as a ceiling. Where are the guides to making judgment decisions? We have built for us secure fences which will show us when we are not in left field but which do little to tell us what to do when we find ourselves there.

The thinking that is done in the paper on various purposes for life insurance is not always helpful. When they state that "life insurance is frequently requested to cover the loss of valuable keyman services," they are encouraging a confusion of long standing about keyman coverage. Life insurance on a keyman can be expected in most cases to be used in a fashion that will forestall a reduction in earnings. Why labor, then, over determination of a proper ratio between amount of keyman insurance and personal income when it is the uses of the insurance, together with considerations of ability to pay premiums and the economy of the alternative of self-insurance, that will have as much, if not more, to do with the amount of insurance warranted as will the size of personal income?

In the discussion of partnership, stock purchase, and stock retirement

insurance there are some assertions difficult to understand. The authors declare that "any amount of insurance equivalent to the value of the insured's share of the business should not be charged against his personal insurance limits." What about estate tax coverage? The normal purpose of life insurance coverage for death taxes is to provide liquidity for payment of such costs and thereby to forestall financial loss due to forced liquidation of assets. Liquidity is furnished by the stock purchase policy and thus fulfills the need for such a personal purpose.

In this section they also argue that stock purchase coverage on a keyman should be "charged against" any keyman insurance amounts. They allege that the value of keyman services would otherwise be counted twice, "once as keyman value and once under the guise of partnership or stock purchase." It seems to us that the insurable values for these respective coverages are neither identical nor overlapping. Although in actual practice it is difficult to assess such values and to separate them, they can be identified, which is useful in understanding their relationship. Also, keyman insurance normally is *used* in ways that are expected to forestall loss (conserve value).

That portion of the keyman's value to the business regarded as insurable is derived from the exercise of his occupational duties and its influence on profits. The source of the insurable value for stock purchase coverage is the owner's co-operative participation in control of the business. The real basis of the authors' conclusion is possibly the following kind of thinking: Although the operation of stock purchase coverage ordinarily permits a gain to survivors, which has to be accepted, if the gain can be reduced by the extent of the keyman loss, an underwriter should require it by denying keyman coverage. But should keyman value be permitted to die with the insured if it is economically feasible to forestall it with life insurance coverage?

In the section on sole proprietor coverage for benefit of employees, the authors treat a difficult subject skillfully but fail to point out the fact that such insurance essentially is personal. Such coverage has multiple purposes, but the central one is personal. To conserve the value of this business for the benefit of his family, the owner needs to ensure that there is a buyer at his death. If the employees were to purchase the business, they would be expected to use funds which would almost certainly be derived from the business income. Disregarding the lack of guarantees and certain tax implications, the employer could accomplish the same purpose by buying a life insurance policy for the benefit of his family and transferring the business to the employees by bequest. The insurable value here is actually derived from the insured's ability to produce in-

come, the measure of which, together with appraisal of ability to pay premiums, consideration of self-insurance alternatives, and a thorough analysis of factors influencing motivation, should help to decide about approval of such a policy.

In all the discussions in the paper and appendixes about income, we find no reference to or discussion on the subject of availability of cash to pay premiums. Cash flow and income frequently do not coincide. In the process of looking at income sources, the underwriter must consider regular sources of cash flow, since this can differ sharply from "income." Related to this is the consideration that in some cases observation of cash flow may yield a better measurement of value increments than do income figures. If an underwriter is going to look at income, he must also have a systematic approach for simultaneous consideration of cash flow.

Previous reference was made to the stock purchase situation where survivors can profit from the death of the insured. Of course, declination is not necessarily in order. An underwriter equipped with a system of thinking tools should approach such a case somewhat as follows: Aware of the basic concept that life insurance works in two ways to do its indemnification job, (1) in replacement of value destroyed and (2) applied to certain uses so as to forestall a loss, he would recognize that stock purchase insurance used to fund a stock purchase agreement indemnifies the corporation for loss, on death of an owner, arising from an unfavorable shifting of control. In this situation the loss is kept from materializing, and the policy proceeds represent a gain to the surviving stockholders. The underwriter will consider that there is no other way for life insurance to do the job. If he approves such a case, it will be because he considers that (1) the basic motivation is so compelling as to exclude speculative intent; (2) the motivation may include the central indemnification purpose of the applicant as well as potent personal purposes of the insured, such as provision of liquidity for payment of death costs and a guaranteed selling price for his shares of stock; (3) there is adequate cash flow to take care of premium payments; and (4) there is an obvious economic advantage of life insurance over self-insurance, as demonstrated in a comparison of life insurance costs with the adverse effect on profits of reserving borrowing power or building a cash fund.

There is, indeed, a need for a systematic presentation of basic understandings and concepts in financial underwriting that will facilitate the judgments that must be made in the framework of guides of the kind presented in this paper.

The authors have, in the main, presented a commendable development

of a basic framework for financial underwriting but have done little to guide the thinking of the underwriter who is daily faced with the problem of making considered, consistent decisions in situations which fail to "fit" the routine framework developed.

CHARLES A. STUCK, JR.,* AND ROBERT E. HUNSTAD:

The authors have made a significant contribution to the actuarial literature by presentation of a simple screening device and by clarifying true values in various "business insurance" situations. It is on the latter point that we have comments to add:

1. The key questions which the underwriter must seek to answer are, "*Who* will lose, and *how much*, on the insured's death?" We believe that this is the general approach that led Baskin and Marshall to identify areas of double counting of income, lack of visible interest, and lack of need. It will be an effective approach for the evaluation of other creative sales approaches.
2. Development of the total picture relies, in large part, on the ability of the underwriter to ask the right question. To assist us, we have often involved our advanced underwriting, investment, and legal departments to provide translation of financial statements. We would state, in opposition to Baskin and Marshall, that the underwriter and the actuary are not alone in the area of financial underwriting.
3. Many large-amount applications deal with the potential of the proposed insured. While occasional risks may be acceptable, the underwriter cannot place his company in the position of guaranteeing return to investors in a highly speculative venture. To those more inclined to liberality, we would pose the question: "How long a period of overinsurance will you permit?"

COURTLAND C. SMITH:

Recently we studied the early lapse and mortality rates on a block of business placed by a large group of ordinary insurance field men. About half the business was written by personnel under age 35 and over half by field men with less than three years of service. We found disturbingly high first-year lapse rates but satisfactory first- and second-year mortality. The experience was reviewed by age, applicant income, and proportion that policy premium bears to income for indications of "overselling" and of speculative "overinvestment" in insurance.

Cases

The block of issues included some 210,000 policies for almost $2.0 billion of insurance written at policy amounts $5,000 and over between

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mid-1968 and mid-1970. The average size was $9,400. Through mid-1971, there were 71,716 lapses in policy year 1 (in fact, thirteen months) and 453 deaths in policy years 1-2 (twenty-five months). Originally obtained for market analysis purposes, the data did not permit identification of group conversions and other business issued without evidence of insurability.

Main Findings

Using the experience on standard males as the basis for expected, we found seemingly low over-all first-year lapse ratios for preferred and for substandard business and broadly satisfactory policy years 1-2 mortality (see Table 1 of this discussion).

TABLE 1

LAPSE AND MORTALITY RATIOS OF ACTUAL TO EXPECTED BY RATING GROUP AND SEX

(Certain Metropolitan Issues of 1968-70 Traced to Mid-1971; Policy Amounts $5,000 and Over)

Rating Group and Sex	Policy Year 1, Lapses (13 Months)		Policy Years 1-2, Deaths (25 Months)	
	No. of Policies	A/E for Amount	No. of Policies	A/E for Amount
Preferred—total	13,783	0.8	69	0.7
Males	2,011	0.6	18	0.7
Females	11,772	1.0	51	0.7
Standard—total	53,418	1.0	312	1.0
Males	51,102	1.0*	308	1.0†
Females	2,316	1.1	4	‡
Substandard—total	4,515	0.9	72	1.5
Males	4,048	0.9	67	1.5
Females§	467	1.0	5	‡

* Rate in this cell used as basis for expected.
† Rates by age in this category used as basis for expected.
‡ Not shown—less than 10 policy terminations.
§ Excludes the highest rating class, which is often used for experimental business.

By issue age, the standard male year 1 lapse rates increased to a maximum of 1.2 times expected at the young adult ages 16-29 and then decreased at the older ages, as shown in Table 2 below. The standard male mortality by age approximated that assumed in premiums.

The lapse ratios for standard males increased with advance in income to a high of 1.3 at annual incomes of $5,000-$7,999 and then decreased at the larger incomes. Where applicant income figures were unavailable, a year 1 lapse ratio of 0.9 was found. The mortality ratios were relatively

level by income category, but the "not determined" category showed a mortality ratio for years 1–2 of 3.1, with sixty-two deaths. However, of the sixty-two deaths, most were conversions from group and small group business, and according to the claim files only eleven were regular issues. Of these eleven, four were found to be suicides, suggesting some antiselection.

TABLE 2

LAPSE AND MORTALITY RATIOS OF ACTUAL TO EXPECTED, BY AGE, BY INCOME, AND BY POLICY PREMIUM TO INCOME

(Standard Males; Certain Metropolitan Issues of 1968–70 Traced to Mid-1971; Policy Amounts $5,000 and Over)

	Policy Year 1, Lapses (13 Months)		Policy Years 1–2, Deaths (25 Months)	
	No. of Policies	A/E for Amount	No. of Policies	A/E for Amount
Standard males—total	51,102	1.0*	308	1.0
Issue age:				
0–15	932	0.5	3	†
16–29	36,737	1.2	120	1.0*
30–49	12,639	0.8	123	1.0*
50 and over	794	0.4	62	1.0*
Annual income:				
Not determined‡	3,160	0.9	62	3.1
$ 1,000–$ 4,999	3,888	1.1	6	†
5,000– 7,999	22,852	1.3	89	1.0
8,000– 11,999	16,041	0.9	84	0.8
12,000– 19,999	4,370	0.7	52	0.8
20,000– 24,999	314	0.5	5	†
25,000– 49,999	263	0.5	10	1.0
50,000 and over	214	0.6	0	†
Ratio of policy premium to income:				
0.01– 1.99%	10,647	0.7	84	0.9
2.00– 2.99	16,203	1.1	68	0.8
3.00– 4.99	15,518	1.2	67	0.9
5.00– 9.99	4,892	1.0	24	0.8
10.00–14.99	420	0.8	2	†
15.00 and over	262	0.8	1	†
Not determined‡	3,160	0.9	62	3.1
Not determined‡				
Conversions of group, etc., business	....	....	50	§
Regularly underwritten business	....	....	11	§
Type of business undetermined	....	....	1	§

* Rate in this cell used as basis for expected.
† Not shown—less than 10 policy terminations.
‡ Income given as $0,000 or not reported.
§ Not available.

The standard male lapse ratios increased with increase in ratio of premium to income to a maximum of 1.2 for cases where 3.00–4.99 per cent of income was spent on the policy premium, and decreased in higher premium/income categories. For standard males with known income, the mortality ratios were relatively flat by premium/income category.

Age

The peaking of early lapse ratios by ages 16–29 was not surprising. It suggested that many sales were to young adults—possibly including relatives of the field men—whose needs for insurance were questionable or at least not deeply felt and whose income and spending habits had not yet stabilized.

The findings also suggested that the use of a single rate as the basis for expected might be unrealistic. As Table 3 of this discussion indicates, the

TABLE 3

LAPSE AND MORTALITY RATIOS OF ACTUAL TO EXPECTED BY RATING, SEX, AND AGE GROUPING

(Certain Metropolitan Issues of 1968–70 Traced to Mid-1971; Policy Amounts $5,000 and Over)

Rating, Sex, and Age Grouping	Policy Year 1, Lapses (13 Months)			Policy Years 1–2, Deaths (25 Months)	
	No. of Policy Lapses	A/E for Amount		No. of Policy Deaths	A/E for Amount
		Expected as a Rate	Expected by Age		Expected on Male Tabular*
Standard males—total	51,102	1.0†	1.0	308	1.0
Issue age:					
0–15	932	0.5	1.0†	3	‡
16–29	36,737	1.2	1.0†	120	1.0
30–49	12,639	0.8	1.0†	123	1.0
50 and over	794	0.4	1.0†	62	1.0
Substandard§ males—total	4,048	0.9	1.1	67	0.8
Issue age:					
0–15	3	‡	‡	1	‡
16–29	1,538	1.2	1.1	3	‡
30–49	1,993	0.8	1.1	26	0.7
50 and over	514	0.6	1.4	37	0.8

* Expected based on mortality tables used to obtain class premiums and dividends.

† Rate in this cell used as basis for expected.

‡ Not shown—less than 10 policy terminations.

§ Excludes the highest rating class, which is often used for experimental business.

early lapse ratios for *substandard* males also peaked at the young adult ages, decreasing at the older ages. However, the ratios were slightly higher than for standard males within each age group of substandard males and were especially high at ages 50 and over. Because more of the substandard male business was concentrated at the older ages, the crude lapse ratio was misleadingly low at 0.9, while the age-adjusted lapse ratio was 1.1. Early mortality on the substandard males seemed generally satisfactory.

Income

For standard males with known income, the lapse ratios decreased with advance in income level, except at incomes under $5,000 (Table 2). The relatively low lapse ratios at the smaller incomes were surprising to us, but they may have resulted from other factors. The monthly mode of premium payment is generally not available on smaller-size policies—the ones usually issued to applicants with limited income. Therefore, these applicants usually obtain quarterly, semiannual, and annual premium policies, which have been found in all our studies to have comparatively low lapse rates. Thus the low lapse ratios at the smaller incomes may be a function of policy size and premium mode rather than of income.

Policy Premium/Income

The rise in standard male early lapse ratios with the ratio of policy premium to income up to about 3.00–4.99 per cent pointed to overselling (Table 2). However, the decrease in lapse ratios at higher premium/income proportions and in the "not determined" category was unanticipated. The findings suggested possible antiselection in these categories, but the early mortality ratios were not elevated for the few cases in the premium/income categories 5.00 per cent and over. Mortality was high only in the "not determined" category; but most of the claims were from group-type conversions, and the eleven regularly underwritten cases gave only a suggestion of antiselection in the cause-of-death analysis.

Table 4 below compares the mortality experience by proportion of policy premium/income for preferred females, standard males, and substandard males; these were the three largest segments of the experience. The preferred female mortality experience was small and gave no hint of antiselection. The substandard male ratios were relatively satisfactory in all premium/income categories except for 15.00 per cent and over, where claim amounts ran 4.5 times standard experience and 2.3 times substandard tabular expected (the basis of premiums and dividends), with

TABLE 4

MORTALITY RATIO OF ACTUAL TO EXPECTED, BY RATIO OF POLICY PREMIUM TO INCOME

(Policy Years 1–2, Deaths in Selected Categories; Certain Metropolitan Issues of 1968–70 Traced to Mid-1971; Policy Amounts $5,000 and Over)

Ratio of Policy Premium to Income	Preferred Females		Standard Males		Substandard Males*		
	No. of Policy Deaths	A/E for Amount on Standard Male Experience	No. of Policy Deaths	A/E for Amount on Standard Male Experience	No. of Policy Deaths	A/E for Amount: Standard Male Experience	A/E for Amount: Substandard Male Tabular†
0.01– 1.99%	19	0.8	84	0.9	5	(0.5)	(0.3)
2.00– 2.99	9	(0.5)	68	0.8	12	1.0	0.5
3.00– 4.99	13	0.7	67	0.9	20	1.2	0.6
5.00– 9.99	5	(0.9)	24	0.8	14	0.8	0.4
10.00–14.99	0	(0.0)	2	(0.6)	5	(1.1)	(0.6)
15.00 and over	0	(0.0)	1	(0.3)	10	4.5	2.3
Not determined‡	5	(0.8)	62	3.1	1	(0.5)	(0.2)
All cases	51	0.7	308	1.0	67	1.5	0.8
Not determined:‡							
Conversions of group, etc.	...	...	50	§	...	...	...
Regular issues	...	...	11	§	...	...	...
Type of business unknown	...	...	1	§	...	...	...

NOTE.—A/E ratios involving fewer than 10 policy deaths shown in parentheses.
* Excludes highest rating class, which is often used for experimental business.
† Expected based on mortality tables used to obtain class premiums and dividends.
‡ Income given as $0,000 or not reported.
§ Not available.

ten policy deaths. Although not definitive, these figures are strongly suggestive of speculative overinvestment in life insurance by substandard applicants putting 15 per cent or more of their gross income into the premiums for a single policy.

Conclusions

We believe that this experience has a number of implications for marketing, pricing, and financial underwriting:

1. Early lapse rates tend to vary by age, peaking at ages 16–29 and running relatively low at ages 50 and over. This pattern has been noted in other experiences and suggests that many life insurance sales are to young adults whose available income and spending habits have not yet stabilized. Thus we might expect that, if we could distinguish between more and less stable applicants at the young adult ages, we would find lower lapse rates among the former.
2. It may be misleading to ignore the peaking of lapse rates at ages 16–29, especially in experience studies of business largely written at the older ages, since the all-ages lapse rate may appear low while the age-adjusted rate actually may be high. To ignore this pattern in pricing may be self-defeating in producing insufficient margins for early surrenders at the young adult ages and redundant margins at the older ages.
3. In a system where the proportion of policy premium to income is screened carefully and controlled in underwriting, a limited number of cases nonetheless may be accepted with undetermined incomes or seemingly high premium outlays. The early experience may be satisfactory for some of this business but unsatisfactory elsewhere; therefore, all this business should be monitored carefully.
4. Where 15 per cent or more of gross income is spent on premiums for a life insurance policy, we may observe high early mortality, particularly on substandard business where the usual financial underwriting multiples relating total coverage to income may indicate legitimate needs for insurance.

(AUTHORS' REVIEW OF DISCUSSION)

MAXWELL BASKIN AND ALEXANDER MARSHALL:

We are very pleased that the foregoing discussions were submitted. They add to the paper, and they give further clear indication of the kinds of concern and the difficulties which attach to the task of determining sound and practical financial underwriting guidelines. We can only comment on some of the principal points covered in the discussions; to give the full discussion the comments warrant would almost lead to another paper.

Mr. Gummere notes that the latest mortality experience on large amounts (*1970 Reports*) was quite favorable, but both he and Mr. Webster comment on the effect that certain large claims, not included in the study, might have had. We also believe that it is important not to overlook the adverse experience which was encountered in certain categories identified in the large-amount study. A number of the comments made in the discussion (*TSA*, XXIII, D489) to which Mr. Webster refers also suggest that, while over-all results may have been considered satisfactory, certain situations demand extra care in underwriting.

The differences which are perceived to exist between the "needs ap-

proach" and the "income approach" are touched on in varying degree by several of those commenting on the paper. The term "needs" seems to have a rather elusive quality and to mean different things to different people, and none of the discussions appears to offer much definition of precisely what this concept means to the respective writers. Mr. Gummere and Mr. Woodman both mention the multiple of gross income approach in measuring maximum needs but do not indicate how they determine objectively what the maximum multiple of income should be in order to measure loss reasonably and consistently to the beneficiary and still not result in an unmanageable overinsurance situation. Mr. Hale pits the "straight insurance needs approach" against the "income approach," as moving in a different direction, and comments on the need to reconcile the two.

The basic problem we have encountered in practice is that differences lie not so much in the "needs approach" of the salesman as opposed to the "income" evaluation of the underwriter as they do in the financial information made available to the salesman compared with that which the underwriter is able to develop. The "traditional multiple of gross income approach" mentioned by Mr. Woodman is a present value measure of the loss presumed to occur on death of an insured, based on what he may be expected to have earned had he lived. It is usually expressed as a multiple of income, current or potential, and varies by age group. The 20 per cent rule also can be translated into a "times" rule, as can the 25 per cent and the 35 per cent rules. Both methods reach similar end results, but we believe that our approach has an advantage in that it identifies more clearly the boundaries for the various categories of coverage which the underwriter is called on to evaluate, and that it defines a more precise and consistent picture of the insurable value of the proposed insured.

We do not believe that insurance value can be measured by looking only—or even primarily—at "needs," as some of the discussions seem to suggest, any more than it can be measured by looking only at "income." Both are essential ingredients and must be used together. The need must be identified, and the amount of insurance applied for must be reasonably related to the need. The income of the proposed insured must also be documented, and it must be sufficient to justify the amount of insurance sought—partly as a measure of ability to pay the insured's portion of the resulting total premium load, but more importantly as a measure of the proposed insured's economic value. Finally, the multiple (however defined), applied to the income used as a base, must be subject to comparison with and to control by some well-defined standard of reference.

The Balay and Walker discussion is useful because it sets forth certain approaches which are diametrically opposed to the basic concepts we advanced. Thus it offers the reader a set of sharply different considerations to examine in deciding which approach seems most likely to produce consistently satisfactory and acceptable results.

There appear to be two principal areas of difference between Balay and Walker and us. The first revolves around their flat statement that "there is actually no such thing as a single insurable value." Presumably it is their contention that each need may be identified separately and insured for its full amount regardless of all other coverage in force and applied for; that is just the opposite of our opinion that any life finally does have a maximum insurance value even if purposes or "needs" for additional insurance can be found beyond that point. Mr. Webster suggests, too, that he believes that there is an amount limit on any life, irrespective of finances, and that, while the insurance industry exists to take risks, "surely the risk should meet some standard of reasonableness." That is all we have attempted to do in the paper—establish a standard of reasonableness against which requests for large amounts of insurance can be measured. Mr. Woodman, in the "Business Loans" paragraphs of his discussion, also appears to see merit in providing a ceiling on overlapping needs and to find it unrealistic to provide insurance to cover each need separately.

The other area of difference revolves around our belief that the beneficiary should have an insurable interest consistent with the amount of insurance applied for. In contrast to that, Balay and Walker appear to consider the "need" as the primary and dominant factor, without too much regard as to who is enriched thereby. Indeed, it is they who would seem to use "insurable interest" with the quantitative connotation, as meaning the same thing as "insurable value"; we are quite clear as to the distinction between the two, and we do not substitute the one for the other as they say we do. This is illustrated in their discussion of insurance for stock purchase. There they concede that the policy proceeds represent a gain to the surviving stockholders, but, because such gain is not the central purpose for the insurance, it should be ignored; they go on to plead that the keyman value should not "be permitted to die with the insured if it is economically feasible to forestall it with life insurance coverage." We too recognize that the central purpose of stock purchase insurance is to effect a transfer of the deceased's interest to his family in the form of cash, but we also believe that the advantages of increased ownership and control for the surviving associates already constitute substantial reimbursement for loss of key services of the deceased and

should be counted toward the total keyman value for which insurance on him may be sought during his lifetime. It really comes down to how much should the survivors be enriched by the death of a business associate. If it reaches the point where there is financial advantage to having him die, we have a less than desirable situation.

The same principle appears to be followed by Balay and Walker with respect to sole proprietorship insurance, which they correctly categorize as essentially personal insurance. They define the central purpose as that of providing a so-called guaranteed buyer which is presumed to override the near-absence or even complete absence of insurable interest on the part of the surviving employees. Again, in a situation where the earlier the death of the insured the sooner is the enrichment of the beneficiary, we believe that it is not reasonable to expect normal mortality results.

Messrs. Balay and Walker appear to have misunderstood our approach with respect to the effect of stock purchase insurance on over-all personal limits available under our rules. Since we regard insurance proceeds equal to the deceased's share in the business flowing to his family as being merely a change of assets from one form (property) to another (cash), we do not routinely count this toward personal insurance limits. In other words, we will issue the full amount available as personal insurance, in addition to an amount equal to the deceased's share of the business, subject only to our over-all limit on any one life under the 35 per cent rule.

Mr. Woodman also appears to have a misunderstanding on this subject in that he seems to have taken our stock purchase paragraphs to mean that we measure it routinely as a keyman transaction. We count stock purchase insurance as keyman insurance only to the extent of the insured's ownership interest in the firm *and* only if there is keyman insurance already in force on the insured or if keyman insurance on him is subquently applied for; otherwise, the "keyman" question does not need to be considered.

Mr. Woodman describes how financial guidelines to measure insurance needs tend to "break down" when applied to a young man of significant but undefined potential, particularly one who is just getting started in his own business or in a new field. That is a most difficult question for the underwriter to evaluate with the right blend of optimism and conservatism. A certain number of such expected future needs, if they materialize, perhaps can be handled best by using a guarantee insurability device rather than risking immediate overinsurance when there is no real and present need for the coverage—the burden of the cost of which, if granted, might be just the extra burden that causes the individual to fail financially. The question posed by Messrs. Stuck and Hunstad—

"How long a period of overinsurance will you permit?"—is pertinent to this point.

Mr. Woodman's remarks on the legal implications of insurable interest are worth careful reading. He surmises correctly that our remarks on insurable interest apply equally to the case where the proposed insured is purchasing insurance on his own life. The underwriter must remain ever alert that such a purchase is not a "cover" for some other unsound purpose. Mr. Webster's distinctions between the "legal" insurable interest and the "insurable" insurable interest supplement and complement Mr. Woodman's comments. Mr. Webster's "even longer vigilance" comment and his statement that "there is no price high enough to overcome antiselection" are worth remembering; they are in the same vein as the statement—aimed primarily at group insurance underwriting temptations but equally applicable to individual large-amount underwriting—attributed to Mr. R. A. Hohaus of the Metropolitan: "Never let the perfume of the premium overcome the odor of the risk."

Messrs. Stuck and Hunstad and Mr. Woodman mention the valuable services and advice the underwriter can obtain from the investment department of his company in financial underwriting matters. In many cases the underwriter must make his decision on many fewer financial data than the investment department is accustomed to receive. However, even though investment departments can be helpful to the underwriter in interpreting financial statements or in offering an opinion as to the possibilities of success of a business venture being undertaken by the proposed insured, they will not participate in the underwriting decision and cannot be "pulled in" when needed as a reference authority as can the medical officers and physician underwriters. It was with that in mind that we spoke of the underwriter as standing alone in financial underwriting matter but standing somewhat less alone in medical underwriting matters.

Mr. Woodman's comments on insurance on children and students are nicely put. He suggests that a "two times" rule may offer too much of a straitjacket for the deferred estate tax and other problems. Again, we would suggest that many such problems can be accommodated by a guaranteed insurability device which protects the child's insurability to a large extent but which does not operate to put into immediate effect large amounts of insurance constituting a gross overinsurance situation which may extend for many years into the future.

Mr. Woodman's comments on estate tax problems generally appear to follow along the line of our analysis except, possibly, in the case of nonliquid assets. In that instance, it sounds as if he would move closer to

100 per cent coverage. We would remind the reader, however, that even on the nonliquid estate, ownership of segments of the estate can often be moved around to get large parts of it out of the proposed insured's estate. Even if insurance is available to pick up all or most of the tax due on death of the insured, we believe that there is a continuing reluctance on the part of the insured and his family and his tax counselors to merely sit still and let the tax be paid if, by prudent prior arrangement, the tax liability can be reduced. For similar reasons, the 50 per cent "discount" rule is applicable to the estimated death liability before including insurance proceeds, since ownership of the insurance can often be arranged to place the proceeds outside the estate of the insured.

There is probably no area in financial underwriting where as much difference of opinion exists as in attempting to establish guidelines to measure key value. Balay and Walker tell us that they relate the amount of insurance on keymen to what is needed to forestall a reduction in earnings, to considerations of ability to pay premiums, and to the alternative of self-insurance. Unfortunately, they have given no clue as to how these factors may be converted into realistic amounts of insurance.

The more traditional method has been to use a multiple (usually five times) of the total earnings of the keyman (including bonuses, options, and so on). The amount of insurance so arrived at has been rationalized to be reimbursement to the owner for loss of profits during the period needed to train a new keyman or to recover from the loss. Mr. Webster suggests that the "ten times" multiple for exceptional keymen under age 55 might produce excessive amounts. However, many in the industry appear to have discarded the "five times income" multiple as inadequate, and we occasionally see twenty, thirty, and even greater multiples of income being issued as keyman insurance. Certainly, if there is some way to measure the loss which will be suffered in the event of the death of a keyman in a given case, that should be utilized. Most of the time there is no objective method of determining the amount. In such cases there is much to be said for the income multiple method. It has withstood the test of time. It does reflect generally the value which the employer places on the keyman's services. It is usually subject to documentation. It can accommodate potential increases in future key value by injecting a projected increase in the income base used. It probably is the most practical approach for most cases if realistic multiples are used and the result tempered by the underwriter's judgment with respect to pertinent outside factors.

Mr. Woodman's desire to avoid "harsh and cruel punishment of the agent" on cases involving overinsurance is understandable. In a situa-

tion where it appears that the amount being sought in all companies cannot be controlled and for which we recommend declining action, we are, of course, speaking about gross overinsurance. If we believe that such overinsurance begets extra mortality, then it does not matter whether it is in one company or in ten—we are concerned about the inability to control either early lapse or extra mortality. His suggestion that the whole risk be laid off with a reinsurer on a nonrefund basis is worth noting, provided that it can be done with minimum extra expense; that is not a practice we follow, as a matter of policy. The admonition set out in the last sentence of the "Insurable Interest" section of his discussion should be borne in mind, however, because, if an improper amount of insurance is placed in force on the life of an insured by utilizing the facilities of a reinsurer, and if the presence of that insurance eventually is held to have been an important contributing cause leading to the early demise of the insured by unnatural means, it is the direct writer who may be held to account in any liability suit for damages. Not only can such a suit cause financial damage to the direct writer, but also, to quite an appreciable extent, it can affect adversely the direct writer's reputation.

Mr. Hale's comments on the Canadian picture provide an excellent supplement to the paper. Our colleagues in our Canadian head office advise us that they could not improve on Mr. Hale's report of the Canadian tax picture. The figures in his Table 1 are very close to those in our Canadian Table I used on Metropolitan's Canadian business, so there is no advantage in showing excerpts from our Canadian table; his discussion is more than adequate.

Mr. Smith's discussion reaffirms that financial underwriting considerations ought to be directed not only toward larger incomes and larger amounts of insurance; they are pertinent also to smaller policies and lower incomes. The down-turn in lapse ratios as the ratio of premium to income rises above 5 per cent may be another indicator of financial antiselection by applicants for insurance, although adverse mortality is not identified conclusively in this study with ratios of premium to income of 5 per cent and over. The study does, however, identify an adverse mortality result where 15 per cent or more of gross income is spent for a substandard life insurance policy and where a standard policy was issued with "income not determined."

In reply to Mr Gummere's and Mr. Webster's specific questions as to the content of the income factors: The "tax bite" questioned by Mr. Webster does not include anything for state income taxes. They vary so widely that we do not find it practical to include anything for them in our screening tables. However, in estate tax liability matters, we do

consider the size and effect of state taxes. To Mr. Gummere's comment regarding the lower incomes, the set of figures and footnote immediately preceding Table 1 of our paper do show the extent to which we scale down the permissible percentages for incomes under $15,000 per year.

In closing, there are two other general comments that we would like to include. The first relates to the general absence of material pertinent to the art of case underwriting, which several of the discussions noted. This can be explained best by mentioning how we came to develop the background material which led to the paper and by restating our purpose in submitting this paper.

The background material was developed in connection with the decision of Metropolitan to transfer most of its case underwriting to service centers which will be located geographically closer to the areas which they serve, meanwhile retaining over-all responsibility for the underwriting function at the home office.

Up to the time of that decision, we had traditionally trained our underwriters from scratch, guiding them through a rather extensive promotional ladder and through specialized underwriting functions until eventually they handled the top underwriting assignments. Under the new organizational setup, we were faced with the need to develop a method whereby we would continue to pass on to our less experienced people at remote points the know-how and experience of our top underwriters, which heretofore had been available on a close, personalized basis. Accordingly, we assembled a rather comprehensive "living" "Manual on Financial Underwriting," to serve both as a training medium and as a ready reference for all underwriters in their daily handling of cases with financial problems. The manual includes not only the formal rules and principles but also advice on how to analyze and resolve many problems met in practice. It is designed to accommodate new thoughts and discussions of unusual situations which come up from time to time.

The stated purpose of our paper, in contrast, was to outline a system of comprehensive guidelines to financial underwriting and the rationale on which it was built. We believed that it would be useful as a reference point for actuaries designing their own set of financial underwriting rules or in modifying existing rules. Accordingly, our large body of material was tailored to meet this specific objective. Any material not pertinent to the central theme was omitted. The effect of this may have been to give some of our readers the erroneous impression that we have reduced financial underwriting to an exercise in numbers without any regard to the thought processes used by experienced underwriters everywhere in reaching decisions. This was unintentional on our part.

Our charts are not intended to be a substitute for good judgment. Our paper stresses analysis of the purposes or "needs" to which the insurance applied for is to be put, and it acknowledges that "judgment is a necessary and precious ingredient for the underwriter working on individual cases" and that "the underwriter must rely on judgment tempered by long personal experience in assessing the financial characteristics of the applicant." The purpose and need for the amount applied for must be capable of rationalization by the underwriter in every case. The charts then tell the underwriter where the case fits within our financial limits for acceptable risks. Thus in no way does our paper imply that the underwriter can lay aside his "thinking tools," as charged by Messrs. Balay and Walker.

The other area referred to relates to those who commented that our approach to financial underwriting produced liberal amounts of insurance. It was designed to do just that—to meet realistic, competitive conditions existing in our industry but still to impose rational upper limits which lend themselves to objective, quantitative evaluation and beyond which we find it most risky to go. The upper limits permitted by our rules in some instances stretch rationalization processes to the utmost. However, despite this, very often we see amounts of insurance being offered by fine companies which have the effect of making our approach appear quite conservative by comparison. This in itself reinforces our belief that there is need for a disciplined frame of reference if any meaningful degree of consistency in a company's underwriting practice is to be achieved.