TITLE: RISK CLASSIFICATION STANDARDS

AUTHOR: Mr. Michael A. Walters

Mr. Walters is Senior Vice President and Actuary for Insurance Services Office. He received his B. S. degree from Fordham University, his M. S. degree from the University of Notre Dame and his FCAS in 1972. Mike is Treasurer of the CAS and is on the CAS Board of Directors. He has served on the Education Committee (Chairman), Finance Committee, Committee on Government Statistics and Joint Committee on Review of Education and Examination. He has authored a paper entitled "Homeowners Insurance Ratemaking" which appeared in the 1974 PCAS. Mike is also a member of the American Academy of Actuaries.

REVIEWER: Mr. Robert A. Bailey

Mr. Bailey is an Actuary for the National Association of Insurance Commissioners. He has earned his B.S. and M.S. degrees in Actuarial Science from State University of Iowa. Bob received his FCAS in 1955 and is a member of the American Academy of Actuaries. Perhaps no one has authored more papers or reviews of papers for the CAS than Mr. Bailey. Over the years, he has written numerous articles dealing primarily with insurance finance and pricing. Bob has also served on many CAS committees including the Board of Directors of both the CAS and the American Academy of Actuaries.

INTRODUCTION

The escalating inflation of the past decade spawned complaints about more than just overall insurance rate increases. Unlike most other products, insurance costs depend upon buyer characteristics, so questions of fairness have naturally arisen as some insureds were confronted with four digit auto insurance prices along with double digit inflation. "Affordability", "availability", and "social acceptability" all became buzz-words of the late seventies. In particular, regulators, legislators, and other consumer advocates have focussed increasing concern on the third requisite of virtually every state's mandate on insurance rates, that they "not be unfairly discriminatory".

Some critics have claimed that insurance rating methods, and classifications specifically, should be sensitive to consumer perceptions about what is fair. They suggest that classifications possess qualities of reliability, causality, controllability, separation and incentive value. Some of these proposals might be essential to the insurance process, while others may be merely sound business advice, and still others might only be consumerist rhetoric.

A search through insurance and actuarial literature does not find an abundance of historical resource material relevant to, or in the language of, these current issues. Some of the more persuasive reformers have, in fact, coined new phrases and fashioned new literature as the basis for change. From a social standpoint, some of the espoused changes may be genuine attempts to solve affordability problems in what is intended to be a "fair" manner, but if the resulting mechanism violates the principles of insurance, it is not an insurance program. Therefore, it might not be under the jurisdiction of a state's insurance regulation.

A recent insurance monograph by Professor John Long elaborates on the problem.[1]

> "It is fashionable to be critical of insurance theory and to blame the ills of the insurance marketplace on the shortcomings of insurance theory. For example, one point of view is that the purpose of the insurance industry is to serve the needs of the public and that any inability of the industry to do so means that something is wrong with the underlying insurance theory... This point of view is questionable, whatever concept one holds about the nature of theory...
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> "A case in point has to do with exposure to flood loss... The Congress has seen fit to provide a subsidy to eligible people who participate in what is called the national flood insurance program. This program raises the question of how much 'non-fortuitous' transfer of funds can occur in a transaction without causing the transaction to be something other than insurance... In the author's judgment, the federal flood program exceeds such limit and, therefore, is a type of welfare rather than a type of insurance. This classification is not to imply that because the flood program is not insurance it is 'bad'. The only point being made is that the subsidy for all participants by the taxpayers as a whole is so large that the arrangement is not insurance. Calling something insurance does not necessarily imbue it with the characteristics associated with insurance."

It is important therefore to distinguish those qualities which some would like to see an insurance classifiction system possess to achieve alternative goals, from those which are necessary and sufficient conditions, or standards, which flow from the nature of insurance. The purpose of this paper is to develop a set of these standards for insurance classifications, which have been implicitly used, or should be used, to evaluate compliance with insurance statutes.

NATURE OF INSURANCE

The purpose of insurance is to protect an insured from a large and fortuitous financial loss. It is achieved by contractually transferring the insured's uncertainty of loss to the insurer for the certainty of a smaller payment called the premium. This uncertainty of loss is called risk.

[1] John D. Long, "Soft Spots in Insurance Theory", Issues in Insurance, Vol. II, 1978, P. 444.

Since the insurer assumes the individual insured's risk of loss, the premium should be fundamentally based upon the expected value of the insured's loss. The expected loss for an insured is the probability of his having an accident or a claim times the average cost of that claim. The premium should also include the expense of servicing the policy plus a margin for profit and contingency as a reward for the risk taking. The amount of this profit margin should depend upon two basic factors, the ability of the insurer to estimate the expected (or average) loss of the individuals insured;[2] and, second, the amount of overall reduction of uncertainty accomplished by the pooling process.

Insurers are not, of course, trying to predict the actual losses of each insured, only the expected loss. It is the variation of an individual's actual losses from his expected loss that motivates his purchase of insurance, while the variation of expected losses from individual to individual that motivates insurers to price insureds differently.

Although from an insured's standpoint, the essence of insurance is the transfer of risk, a further value of insurance for society is the reduction of overall risk or uncertainty by pooling many insureds independently exposed to loss.

Now, these risks in the pool do not have to be exactly the same types of risks for insurance to work, as witnessed by the success of Lloyd's of London, with a multiplicity of risks no two of whom may have been the same over the years. And certainly, insureds who are inherently different risks should not have to pay the same for the insurance

[2] There is obviously more risk involved to the insurer than distinguishing one insured from another. The uncertainty of next year's inflation level, for example, affects the expected cost of individuals, but more or less to the same degree.

process to work. But pooling works especially well within a given line of insurance, like private passenger auto insurance, when enough independent risks are pooled such that it is virtually impossible that they all will have accidents in the same year. In fact, the more risks that are written, the closer reality comes to the expected. This intuitively expresses the "law of large numbers".[3] Its first and perhaps best known application allows insurers to have more confidence that, once each risk has been reasonably priced, the actual losses on all those risks combined or pooled will come reasonably close to the combined expected losses at the end of the year.

This does not say that the pooling of risks is the same as pooling of losses. This latter term somehow may connote that everyone should share the costs equally. Insurance can work just as well even if every risk had a different expected loss, as long as you can reasonably estimate the expected losses.

Likewise insurance does not require that each classification must be large enough to stand on its own. This fallacy says that individual classes cannot share the risk among other classes.[4] It would also deny the ability to summarize across classes to gain additional information about other classes, such as pooling classification information within territory to determine territory rates, or territories within state to determine statewide rate levels.

[3] See D. B. Houston, "Risk, Insurance, and Sampling", The Journal of Risk and Insurance, XXXI No. 4, 526-530.

[4] See Stanford Research Institute, The Role of Risk Classifications in Property and Casualty Insurance, Final Report, May 1976, p. 63: "Confusion surrounding the term 'classification' stems also from an association with the concept of pooling of risks to reduce the aggregate risk. Many people feel that the essence of classification lies in having large classes, the members of which share the total risk of the class (and supposedly do not share the risk of any other class). According to this incorrect view, classes must each have many members to pool risks; classes with too few members are therefore not 'credible' and are assumed to violate the basic principle of risk sharing."

Furthermore, some may believe that insurance is an instrument of social policy to compensate victims. This view treats the premiums as merely a means of accumulating funds to pay out losses in ways possibly fundamentally different from the relative risk that each insured presents to the pool. But trying to do something noble via the premium collection facilities of insurers does not make the resultant mechanism insurance, (as earlier cited). Insurance is what it is - the transfer and reduction of risk; it is not a tax to redistribute wealth.

Thus, the expected loss of the individual is important to the pricing of insurance. But, being inherently unknowable, even by the insured himself, how do insurers infer this vital quantity? There are three basic methods.

First, they may use wisdom and experience as an underwriter in exercising informed judgment about the nature of the insured and the exposure to loss and attendant hazards. This is not the most accurate method but it is sometimes the only one available. From an insured's standpoint, with a complicated risk desired to be transferred, as long as both parties agree on a price, the insurance mechanism is working.

The second method of inferring individual expected loss is to observe the insured's actual losses over a long period of time. This gains certain additional information, picking up more of the subtleties of the risk that could not be obtained by logical, informed judgment. (This is analogous to experience rating versus

schedule rating.) However, once obtained this information may be outdated, as the risk to be insured next year may have changed substantially. Furthermore, depending on the frequency of accidents, it may take twenty to thirty years of observation to infer correctly, given the dominance of randomness in the accident occurrence process.

The third method of inferring expected losses is to observe the experience of a group of similar risks over a much shorter and more recent period of time. These groups of similar risks are called classifications. Furthermore, the group observation process also involves the second use of the Law of Large Numbers. The first use was that if you know the expected losses in advance, then the actual losses will tend to approximate the expected at the end of the year for the insurance enterprise as a whole.

However, by observing a smaller number of similar risks over a short period of time you have more confidence you have closely estimated the expected losses of the individuals in advance. This is especially important if the set of insureds can change from one year to the next. (This process of classifying is analogous to using stratified random sampling to gain more information when the size of the total sample is limited.[5])

There are some who feel that group inference for an individual member of a group is unfair per se, no matter how the groups are defined. This would seem to prohibit the use of any statistical based knowledge throughout society, and is contradicted by all

[5] Houston, p. 534. Author's Note: If the classes are fairly stable over time, they do not even need to have similar expected losses for the individuals within in order to gain a good estimate of the class average expected losses. Merely the variance of actual losses from the mean for each individual insured in the class should be similar. This results from the fact that insurance classification reviews use all the risks insured in each calss.

insurance statutes which allow, or even mandate, the use of classifications. The SRI also clearly addressed this:

> "...the opinion that distinctions based on sex, or any other group variable, necessarily violate individual rights reflects ignorance of the basic rules of logical inference in that it would arbitrarily forbid the use of relevant information. It would be equally fallacious to reject a classification system based on socially acceptable variables because the results appear discriminatory. For example, a classification system may be built on use of car, mileage, merit rating, and other variables, excluding sex. However, when verifying the average rates according to sex one may discover significant differences between males and females. Refusing to allow such differences would be attempting to distort reality by choosing to be selectively blind."[6]

CLASSIFICATION STANDARDS

So insurance classifications are seen as needed in the pricing of many kinds of insurance, helping to reduce overall risk, as well as enabling insureds to pay in proportion to their relative hazard of loss. If there were no reflection of these relative costs by an insurer, it could risk insolvency if the distribution of exposures changed substantially. At a minimum, such an insurer will require a larger margin for profit and contingency to offset the much greater chance of adverse underwriting results.

At this point, it is important to distinguish risk classification from risk selection. Risk selection determines both the general (via marketing) and a more specific (via underwriting) set of insureds with whom the insurer decides to enter into a contractual relationship [7] and whom the classification system must price according to its predetermined criteria.

[6] SRI (1976), p. 91.

[7] In some lines and states, a shared (or so called involuntary) market exists which requires participation by insurers in order to write voluntary business. This helps solve an availability problem for those not "selected" by insurers under usual markets.

Given the preceding, the variables comprising a classification system should be chosen so that a set of general standards or conditions are met (in addition, of course, to any expressed statutory requirements regarding fair discrimination).

1) Similar risks should be assigned to the same class with respect to each variable; coversely, dissimilar risks should be assigned to different classes, so that there are no clearly identifiable subsets with a significantly different loss potential or expected loss in the same class.[8]

2) The common characteristics used to identify insureds as similar should reasonably relate to the potential for, or hazard of, loss.[9]

3) Next, the classes should be exhaustive and mutually exclusive; that is, an individual should belong to at least one, but only one class with respect to each rating variable.

4) There should be clear and objective phraseology in the definition of classes, so that there exists no ambiguity as to what class an individual insured belongs.

5) An insured should not be able to easily misrepresent or manipulate his classification.

[8] It is important to stress the words "clearly identifiable" when dealing with the alleged overlap or heterogeneity of certain classes.

[9] This is different from, and yet related to, what some others have used as the notion of causality, and will be covered in the section on Non-Standards.

6) The cost of administering a rating variable should be reasonable in relation to the benefits received.

7) And finally, to the extent possible, the class rating factors should be susceptible to measurement by actual insurance data.

These seven standards actually fall into three broader categories which can describe a set of necessary and sufficient conditions for insurance classifications: i.e., homogeneous, well-defined, and practical.

Homogeneous

More homogeneous classes will take fewer risks to obtain reasonable estimates of expected costs, and will minimize the ability of competition to skim off better than average risks thus changing the ultimate costs.

The "reasonable relationship" standard is also a way of avoiding spurious measures which likely have potentially identifiable subsets. Of course, if a strong statistical correlation persists over time, with no emergence of practical subdivisions, then the degree of perceived reasonableness may be enhanced over time, as well.

Homogeneity is also undergoing some current debate as to the possibility of statistical measurement.[10] While the scope of this paper precludes entering that debate, it is helpful to recall that one of the reasons for classification is the impossiblility of knowing a risk's true expected loss or accident likelihood. Given

[10] See Richard G. Woll, "A Study of Risk Assessment", PCAS LXVI, 1979.

the randomness of accident and loss occureence, and the fact that statistical tests must use actual loss distributions for individuals, it may be difficult to gain more than a glimpse or an insight into possible distributions of accident likelihoods within class. This is especially true since assumptions must also be made about the functional form of the accident likelihood model (as well as of the loss severity model).

Furthermore, the real test of homogeneity is in the most refined classification cell, not in the separate variables used in combination to classify the risk. It is also not necessary (or even likely) for a classification to have identical expected losses for all risks within the class, even if true individual risk accident likelihood were "knowable". Finally, even if inferences can be made about a possible distribution of expected losses within a classification, the lower expected loss insureds deduced to exist are not in any way identified (or identifiable) to the insurer or even known by the risks themselves. Therefore, it is bordering on a philosphical game to assert that such a class is too heterogeneous, and is therefore not permissible.

The SRI spoke to that fallacy as follows:

> "Indeed, the rationale that proscribing the use of certain rating variables is in the public interest because, under imperfect risk assessment systems, actuarial fairness is not achieved for some -- albeit unidentifiable - individuals is fundamentally contradictory. It promotes a remedy for unfairness to some that increases the unfairness overall (by the same actuarial yardstick) and redistributes it."[11]

[11] SRI International, Choice of a Regulatory Environment for Automobile Insurance, May 1979, p. 58.

Well-Defined

The second broad standard is that of being well-defined, and helps to ensure that each risk is actually placed in the right classification and to avoid unequal application of the classification system. The "exhaustive" quality allows more risks to be accepted and, once accepted, gives a complete method of rating them. "Exclusivity" precludes two different rates for the exact same risk. "No ambiguity" also prevents unequal treatment of the same risk, while protection from misrepresentation by insureds will keep the statistical data consistent as well as enhancing the equal treatment of insureds.

Practical

The dictionary definition of practical refers to "workable, useable, and sensible" and the final two standards deal with these goals. Being cost-effective is important because an inefficient system (or even attempts to be too precise) could increase total costs beyond the value of the information to be obtained. If, for example, it costs an insurer ten dollars on each policy to find only a small portion of risks who could save twenty dollars, it is not worth the effort.

In final perspective, one of the advantages of classifying was to use the Law of Large Numbers on actual observed experience of the past instead of relying on pure business judgment. If there is no method or attempt to test class average prices by actual data, the system is tantamount to schedule rating. Of course, whether or not a classification rating factor is tested frequently depends upon the likelihood of change in a short period of time, and the relative size and importance of the rating factor.

NON-STANDARDS

In this paper, the word "standards" has been used to denote a set of necessary and sufficient conditions for insurance classifications, consistent with the nature of insurance as well as insurance statutes. However, the dictionary definition also includes "a basis of comparison in measuring or judging... quality." It is possible or indeed likely that other characteristics of classification may be desirable. Failure to include these in the basic standards means that it is felt that their presence is not required to render the classification system valid and appropriate.

Two different qualities that have been recently espoused are actually correlatives - controllability and incentive value. By controllability is meant the ability of an insured to determine by his own efforts (presumably consciously) the class to which he is assigned. If that quality is present, it is argued, the insured will have the incentive to change to a lower rated class and thus reduce his own losses as well as the losses of the overall system.

One can sympathize with a risk that presents a much higher hazard, over which it has little or no control, but to deny use of that criterion, and make others with lower inherent risk subsidize the higher risk is, in effect, a denial of reality. In workers' compensation insurance, for example, the logging or lumbering industry has an inherently higher risk of injury to workers than clerical office type work. Not to charge for that difference would be to contradict the essence of classification. Similarly, age in life insurance is an essential classification, yet is obviously uncontrollable. Controllability therefore is an extraneous add-on, which has benefits primarily in the area of public understanding.

Incentive value also has public appeal, and in its obverse may be important to the overall insuring process. Whether it be classifications or exposure base, or indeed the existence of insurance, the presence of an insurance contract should not encourage a laxity towards loss control or create a moral hazard of exaggerated or false claims.[12]

While incentive value could be a noble addition to a rating system, it is not a necessary one, nor should classification plans be judged by it as a standard. Personal lines risks, for example, cannot be easily subjected to loss prevention measures like large commercial risks. Even so-called "merit rating" in automobile insurance may be nothing more than a theoretical incentive to prevent accidents. Few drivers wear seat belts despite the life saving evidence, so the prospect of saving a few dollars of insurance surcharge certainly will not induce the modification of driving behavior. In a DOT Study, a major conclusion in this area was also reached: "As long as deterrent measures concentrate on a punitive approach to the correction of 'driver error,' they are likely to remain relatively ineffective."[13] (Of course, once an accident occurs, the fear of a surcharge may affect the reporting of accidents and submission of collision claims, but that may be in conflict with the liability insurance policy "condition" requiring notification of accidents).

[12] C.A. Williams et.al., Principles of Risk Management and Insurance, Vol. I, 1978, p. 128.

[13] U.S. Department of Transportation, Causality, Culpability and Deterrence in Highway Crashes, 1970, p. 245.

Causality is also recently cited as a desired quality for classifications to possess, defined as follows: "the actual or implied behavioral relationship between a particular rating factor and loss potential."[14] The use of the term "behavioral" makes this difficult to accept as a standard, because living in the river valley does not cause the river to flood, yet certainly increases the hazard involved in flood insurance.

Merit rating in auto insurance is almost totally non-causal. The fact that an insured has been involved in a past accident does not behaviorally cause him to get in the next one or even to have become a worse driver. And yet the same critics of current rating cite past accident record as an ideal rating variable.

Instead, a reasonable relationship to the hazard of loss, without such a rigid chain of causality or behavior, is more appropriate. As the earlier mentioned DOT Study concluded: "...driver responsibility for crashes is rarely unilateral and is often impossible to isolate from the multiplicity of causes involved in almost every crash."[15]

By classifying risks, an insurer does not seek to determine the cause of the accidents. To the extent high risk insureds are identified, society may benefit by focussing attention on the need for possible remedies.

[14] "Final Report of the Rates and Rating Procedures Task Force" of the (NAIC) Automobile Insurance (D-3) Subcommittee, November 1978, p. 5.

[15] DOT, p. 209.

Separation has been defined as "a measure of whether classes are sufficiently different in their expected losses to warrant the setting of different premium rates."[16] This deals with the so-called "overlap" question where it is felt that if one class rate were close to another, some insureds in the first class would have accident likelihoods close to those in the second class, and therefore may be mis-classified.

This is related to the homogeneity question. If the insureds who supposedly deserve to be in the second class are not identifiable, then it is questionable whether you can call them mis-classified. Secondly, classifications with mean rates close together are not undesirable, if the hazard being reflected is a gradual one. Finally, even if some insureds in a $300 rated class truly deserve to be in a $305 class, the system is still working well from a cost/benefit standpoint. Therefore, the concept of separation does not appear very useful in the context of classification standards.

Reliability has also been a term which includes qualities that are objective, clearly defined, and easy to verify,[17] all of which are consistent with the standards earlier mentioned, and about which there is little or no controversy.

However, social acceptability and admissibility are terms which connote a variety of meanings and contexts regarding the use of insurance classifications. By way of perspective, it is one thing to give advice as to the public's view of certain rating variables among alternatives of equal value. It is quite something else

[16] Division of Insurance, Commonwealth of Massachusetts, Automobile Insurance Risk Classification: Equity and Accuracy, 1978, p. 3.

[17] Massachusetts, p. 3.

to say that the unpopularity of some variables, as perceived subjectively by some, or even through public opinion polls, pre their use. Rate adequacy and public acceptability are often in conflict.

The earlier cited SRI Report suggested that insurers choose vari among the set of possible ones, without loss of precision, that a clearly explainable to the public, provide incentives for loss prevention, and are adjusted to social mores. [18] That this was meant as sound business advice, rather than a set of necessary conditions, is illustrated by their comments on the very next page:

> "On the other hand, the opinion that distinctions based on sex, or any other group variable, necessarily violate individual rights reflects ingnorance of the basic rules of logical inference in that it would arbitrarily forbid the use of relevant information. It would be equally fallacious to reject a classification system based on socially acceptable variables because the results appear discriminatory. For example, a classification system may be built on use of car, mileage, merit rating, and other variables, excluding sex. However, when verifying the average rates according to sex one may discover significant differences between males and females. Refusing to allow such differences would be attempting to distort reality by choosing to be selectively blind.
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> "The use of rating territories is a case in point. Geographical divisions, however designed, are often correlated with sociodemographic factors such as income level and race because of natural aggregation or forced segregation according to these factors. Again we conclude that insurance companies should be free to delineate territories and assess territorial differences as well as they can. At the same time, insurance companies should recognize that it is in their best interest to be objective and use clearly relevant factors to define territories lest they be accused of invidious discrimination by the public". [19]

Moreover, in a later work, the SRI clearly stated: "The regulator's determination of what is unfairly discriminatory should relate only to the use of variables whose predictive validity cannot be

[18] SRI Report, 1976, pp. 89-90.
[19] SRI Report, 1976, p. 91.

substantiated and to unequal application of a classification system."[20] Furthermore, they put the context of extreme social intolerability in the legislative arena:

> "One possible standard does exist for exception to the counsel that particular rating variables should not be proscribed. What we have called 'equal treatment' standard of fairness may precipitate a societal decision that the process of differentiating among individuals on the basis of certain variables is discriminatory and intolerable. This type of decision should be made on a specific, statutory basis. Once taken, it must be adhered to in private and public transactions alike and enforced by the insurance regulator. This is, in effect, a standard for conduct that by design transcends and preempts economic considerations. Because it is not applied without economic cost, however, insurance regulators and the industry should participate in and inform legislative deliberations that would ban the use of particular rating variables as discriminatory." [21]

Admissibility, as per the Massachusetts definition, begins with federal and state statutory requirements regarding discrimination and privacy, but continues in the social acceptability vein:

> "There are also distinctions that, while not clearly illegal, are being increasingly questioned. These include sex, income, and marital status. Clearly, it is preferable to avoid such distinctions. Distinctions are best able to meet the text of admissibility if they are within an individual's ability to control and are causally related to the probability of loss. It would be undesirable, for example, to charge higher rates for redheads than brunettes even if it could be shown statistically that people with red hair have more accidents than those with brown hair." [22]

Use of the words "preference" and "desirability", from a perception of the public's view and using popular intuition about controllability and causality, again confirms that this characteristic is in the form of business marketplace advice. Insurers who can combine

[20] SRI International, Choice of a Regulatory Environment for Automobile Insurance, May 1979, p. 93.

[21] SRI, 1979, p. 94.

[22] Massachusetts, 1978, p. 4.

sound and relevant rating variables with the public's view of what is better will obviously be more successful. However, unless or until possible substitute variables are found which do not sacrifice accuracy and do not create subsidies, the failure to use appropriate, though unpopular, variables will only cause some individuals availability problems and still others to be overcharged relative to their risk.

REGULATION VERSUS COMPETITION

Given that insurance regulators must enforce the rate regulatory laws, a logical question to be asked is whether natural competitive forces will reinforce or conflict with the standards for insurance classifications.

Regarding homogeneity, it is obvious that the essence of competition will be to try to find rateable subsets of existing classifications to price more accurately and equitably (prices matching costs).

If classes are too broad, underwriters will tend to select risks out. However, it takes more discipline to define objective and practical new classifications to maximize the number of risks to be written voluntarily. If several different companies are licensed in a group under the same management control, the competitive drive for more homogeneity can be partially met by a different set of underwriting standards for each company in the group.

If there is only a strong statistical correlation for a particular variable, without an obvious relationship to hazard of loss, competitive forces will definitely strive to find a closer link. If no closer link is found over an extended period of time, as mentioned earlier, the reasonableness of the relationship becomes much more established.

There is an analogy here with the statistical correlation between lung cancer and cigarette smoking which for many years was not held to be a health hazard. In fact, there has yet to be found in human medicine a cause and effect link showing lung cancer resulting from tobacco smoking. Conceivably (but unlikely), cigarette smokers could have other characteristics related with carcinogens that are also less prevalent in non-smokers. The answer, of course, is not to avoid the use of statistical information until better data is found. Indeed, the U.S. Surgeon General and others have taken strong steps based mainly (and reasonably) on the statistical evidence. Even though the actual risk of death from lung cancer among the heaviest smokers is very small, it is many times that of non-smokers. Stated another way, most heavy smokers will not contract lung cancer; yet all of them have had certain privileges revoked and rights modified.

One can normally expect marketplace rewards for those who use well-defined class plans allowing equal treatment for all risks. However, there is a temptation to allow some ambiguity or subjectivity as a trade-off for additional costs needed to gain consistent information.

Regarding practicality, competitive forces will place a natural restraint on overspending to attain rating information. However, part of the workability of classifications involves testing the rating factors with actual data to minimize the subjectivity of pricing. There is a potentially conflicting instinct, however, to rely on judgment and assumptions to avoid the cost of truly testing for the appropriate price relationships. Of course, to the extent

that other insurers find cost-effective ways of better measuring class relativities, then as long as there is the ability to exchange information, any pricing inequities will be short term.

Some examples of potentially unfair discrimination in insurance classifications might include the following:

The use of occupation as a rating variable for auto liability insurance may be a problem with regard to ambiguity in splitting the population into exhaustive categories, as well as not all cells likely being reasonably related to the hazard of loss.

Similarly, national origin (if not already proscribed by law) would have problems with the mutually exclusive and exhaustive categories.

Use of unverifiable criteria or too subjective wording, such as with psychological profiles would also present major problems. The use of characteristics which are easily circumvented by some insureds and not others can favor the pricing of some to the detriment of others.

Another example of possible unfair discrimination would be the failure to reflect premium differences for identifiable and rateably different subsets of broader classifications, unless some overriding reason existed such as the cost of determining the necessary information being too high for the overall system.

The pricing impact of not subdividing depends upon the size of the subsets and the resulting differences in price for each of the subclasses. It may be that only a small amount of premium can be

saved by refinement, if one of the subclasses is very large and also the lowest priced (such as rating by past accident record in auto insurance where accident-free or claim-free drivers usually save at most five percent over the cost of not having such a program).

If, however, lower risk insureds were identified in a system and were useable as a rating classification, the failure to reflect those differences would constitute a subsidy. But, if the set of insureds are not identifiable in advance, then there is no subsidy. For example, some have alleged that all of insurance is a subsidy since, as the reasoning goes, those who do not have accidents are subsidizing those who do. This is fallacious because you cannot identify in advance those who will have accidents. That is why people buy insurance. However, you can identify those with a higher likelihood of an accident which is what classification is all about. Failure to classify would therefore be a subsidy by those with a lower loss likelihood of those with higher loss expectancy.

Some also allege that it is a cruel disservice to identify the high risk insureds in advance through refined classification plans. However, insurers should not be blamed for the existence of high risks in society. In a report from the Federal Trade Commission to the U.S. Department of Transportation in 1970, it concluded: "Regardless of law and underwriting systems, high risk drivers exist. The present system identifies them; it does not create them." [23] In fact what insurers do by keeping track of the sources of accidents is to help identify those segments of the population

[23] Report of the Division of Industry Analysis, Bureau of Economics, Federal Trade Commission to the Department of Transportation, Price Variablility in the Automobile Insurance Market, August 1970, p. 144.

when loss prevention may be the answer rather than risk pooling. "In the interests of loss control and prevention, this high-risk group must be identified and treated before the accidents occur."[24] In other words, if high risk driving in high density areas produces an inordinate amount of loss, perhaps more stringent licensing should be considered, or mass transportation improvements, or other alternatives, but do not hide the information. Until such time as the source of the problem is solved, to paraphrase the SRI Report on Risk Classification, society should not legislate against the use of knowledge in a free society. [25]

SUMMARY

The purpose of this paper was to view the issue of reasonable classifications from the perspective of the nature of insurance itself. In this way perhaps the qualities that many have felt classifications ought to possess could be distinguished between the essential and the non-essential.

Much has been written in the past few years about what is fair or unfair, but this evaluation should not take place without an understanding of what classifications are designed to do in insurance. Affordability is one example of a quality which society might like insurance rates to have, but the essence of classifications serves to highlight high-risk, high-cost segments of the population. Unfortunately in that instance and in possibly others the solution to the problem may lie outside the scope of insurance classifications or even the insurance mechanism itself.

[24] DOT, p. 144.

[25] SRI, The Role of Risk Classification in Property and Casualty Insurance, 1976, Executive Summary Report, p. 25.

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