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BOOK REVIEW

Errors

Maria E. Gonzalez, Jack L. Ogus, Gary Shapiro and Benjamin J. Tepping, *Standards for Discussion and Presentation of Errors in Survey and Census Data,* American Statistical Association, Washington, D.C., 1975, $2.00.

by Robert J. Johansen

A set of guidelines for consideration in presenting and interpreting survey results was recently published by the American Statistical Association. This was developed by the Bureau of the Census as part of its responsibility to inform its data users of limitations due to sampling errors and to response and other non-sampling errors. The material will be of interest to actuaries and of help in preparing their own study reports. The guidelines discuss some relatively simple means of presenting error estimates for published data.

The following excerpt is one of many thought-provoking points raised, "The practice of saying nothing when an observed difference is not 'statistically significant' is not an adequate solution. It may reduce the attention given to important results, e.g., at turning points in a series, or it may encourage an interpretation of no change when, in fact, the band of uncertainty is large and an economically or sociologically important shift could have occurred. If all that can validly be said about an important figure is that the change lies within the range −0.2 to +0.3 percent, with the specified confidence of being correct, it would be desirable to say precisely that."

The guidelines were intended not as a comprehensive guide to error estimates in sample surveys, but to indicate the information about errors that should be included in reports containing survey data and to suggest the types of information on errors to be looked for in order to evaluate the data properly. The guidelines are considered by the Census Bureau to be work-in-progress and comments and suggestions are welcome.

A copy of the guidelines can be obtained by writing to American Statistical Association, 806 15th Street, N.W., Washington, D.C. 20005, requesting JASA Volume 70, Number 351, Part II, enclosing a check for $2.00. □

Group Medical Expense

(*Continued from page* 1)

there has been an increase in the number of insurers "withdrawing" from the market. One beneficial effect of this withdrawal is that those insurers which remain are more easily able to market their individual insurance on a successful basis. They can properly underwrite new business and adequately price new and renewing business. Unfortunately, this apparently is not the situation in group medical expense insurance and the bulk of medical expense insurance coverage is provided through group insurance. For obscure reasons, far too many group insurers either tolerate financial losses in medical expense insurance or are naively optimistic in their underwriting and pricing. The managements of these insurers may deny this but the financial results, the losses, speak for themselves. Furthermore, the competitive presence of the Blue's and the threat of socialization of medical expense insurance appear to compound the problem. One consequence of this loss toleration is that it is becoming a formidable task for an insurer to market and manage successfully group medical expense insurance even during normal economic circumstances. When this loss toleration is combined with an adverse economic environment such as exists today, even the managements of those few insurers which have historically been successful in group medical expense insurance are not maintaining their "success" postures.

Increase in Average Age

One of the consequences of the recent economic dislocations is that the economy has experienced a slow-down. As with all slow-downs, the country's unemployment has increased because of lay-offs, business failures, and the natural termination of employees without replacement. A consequence of any increase in unemployment is that the average age of the remaining employees of a group tends to increase. The young employee more times than not is "victimized" by lay-offs because he has the least tenure and experience. Further, the young employee is the one most likely to voluntarily terminate his present employment. Both of these facts result in an increase in the average age of the remaining employee group and thus in an increase in the claim frequency rates.

The increase in average age by itself, does not completely explain the current level of claim frequency rates. Analysis indicates that the increase in average age has been between two and three years and this, translated into an increase in benefit costs, represents an increase of 10% to 15%. The average benefit costs over the last 12 months have increased by at least as much as 35% on many groups, an increase far greater than that expected from the combined effect of the average age increase and inflation.

"Deflux" of New and Younger Employees

All group insurance, to be successful, requires that there be a normal influx of new and younger members into the insured group. The financial reality of this important consideration is well known by those insurers which have unsuccessfully insured members of the various railroad employee associations and groups. An influx of new and younger members has two important consequences. One consequence is that the average age and composition of the group is maintained.

A second and equally important consequence is that an element of "select" morbidity is injected into the experience of a group. "Select" morbidity results from the employment process of hiring generally only healthy people. This element of "select" morbidity is relatively constant under normal circumstances of employee influx and is inherent in the price structure of group insurance.

The recent increase in unemployment and the related "deflux" of new and younger employees has resulted in an increase in the average age of a group which has had an adverse effect on the "select" morbidity element inherent in the groups. These together have resulted in higher claim frequency rates which have undermined the price structure of group medical expense insurance.

Probable Future

It has been observed that the potential work force available ten years fr[illegible] now will be no greater than the w[illegible] force which is available today. Two basic demographic considerations sup-

(*Continued on page* 7)

Group Medical Expense

(*Continued from page 6*)

port this observation. The first is that the number of persons becoming eligible for the labor market will not increase significantly due to the baby bust of the 1950's and 1960's. Even today fertility rates are decreasing. The second is that the number of people retiring in the next ten years is expected to continue increasing relatively in comparison to the total population.

If these demographic forecasts are realized, the increase in the demand for labor over the next ten years resulting from even "depressed" economic growth can be met only from the ranks of the currently unemployed. A decrease in the ranks of the unemployed, necessarily coupled with a return to a more normal movement of employees into and out of the active work force, can have only a favorable impact on group claim frequency rates over the long term.

What Can Be Expected Over the Short Term?

Group claim frequency rates over the short term will likely be dependent upon what happens to the economy over the same term. It is worthwhile examining the several possibilities, each of which has a different implication for group insurers.

The most optimistic but least likely of the possibilities is that the economy will recover over the next six months. If the economy were to upturn, the demand for labor would increase, the ranks of the unemployed would decrease, and the normal influx of new and younger employees and the average age of employees would be restored. Obviously, a beneficial impact on group claim frequency rates would result.

A more moderate viewpoint is that the economy's recovery will take longer than six months, anywhere from 18 to 24 months. The consequent increase in demand for labor would take longer, and thus the realization of the resulting favorable impact on group claim frequency rates would be deferred.

A pessimistic viewpoint is that the economy will not really improve, that it will worsen after an apparent recovery. In such event, the consequent impact on group claim frequency rates would likely be adverse.

Management Decisions

What group medical expense insurance management decisions are being made during these difficult times and what are their likely financial consequences?

It can be said that *all* insurers are significantly increasing their group medical expense insurance premiums. These increases are generally ranging from 20% to 40%. If the pessimistic viewpoint of the future economy materializes, these premium increases should prove to be inadequate, and group insurers in the aggregate should continue over the short term to sustain losses. If the moderate viewpoint of the future economy materializes, these premium increases *could* prove to be adequate, and the financial posture of group insurers *could* improve to a generally satisfactory level. If the optimistic viewpoint of the future economy materializes, group insurers should realize excess funds over and above those normally considered satisfactory.

In addition to increasing premiums, a number of the traditional and necessary management actions are required. Among these are (1) quality salesmanship, (2) proper selection, classification, and pricing of the group risks, (3) efficient administration, and (4) frequent and meaningful financial feedback. However, the management task in the future for success (survival) will require more than these. Foremost, an industry commitment to financial responsibility is mandatory. This commitment can be realized in part by each insurer's recognition and acceptance of a national economy dominated by Governmental interference with its consequent adverse effect on group medical expense insurance.

It should be evident that the insurance industry is being forced to underwrite the financial impact on its products of changes in the economy. The industry may not appreciate this infringement, but if it is to be successful, if it is to survive, it must accept the reality of its consequences.

Contrary to some opinion, insurance is not a risk capital venture in the usual sense. Nor is insurance gambling, although many insurers without realizing it enter into what might well be called *gambling contracts without the necessary* load in their premiums and then, when the losses appear, wonder what went wrong.

Insurance is a sharing of the financial consequences of a reasonably predictable risk by a large number of people who have a reasonably homogeneous exposure to that risk. An insurer functions as the financial intermediary by which this sharing is realized. To the extent that an insurable risk is subject to forces extrinsic to itself, the financial impact of those forces must be anticipated and incorporated into the pricing of the risk. For group medical expense insurance what does this mean?

The two important forces extrinsic to group medical expense insurance are inflation and severe economic slowdown. In many group policies, premiums are guaranteed for the policy year. Although many of these premiums have anticipated to varying degrees the impact of inflation, few have provided for the effect which results from adverse changes in the rates of inflation. Further, few, if any, of these premiums have provision for the adverse effect of an economic slow-down.

Many insurers in adjusting their group pricing to anticipate the impact of inflation do so on a relatively undynamic basis and thus are always "catching up." For most of today's managements the adverse effect of a severe economic slow-down is a new experience. Its acceptance as a recurring reality generally will be slow and thus costly to many insurers, as acceptance of increasing inflation as a reality has proven to be slow and costly.

The economic climate for the future is uncertain. Group medical expense insurance over the short-term should be materially affected by and dependent on that climate. In order to succeed, insurers (1) will have to be able to react unilaterally to the effects of any adverse changes in the economy, and can do so only by removing from their contracts any legal incapacity to so react (that is, by eliminating the premium guarantees) or (2) will have to load their premiums against the risk of adverse changes in the economy; a less desirable choice because of the uncertainty of these changes. □