

REVIEWS OF PUBLICATIONS

FRANK HARWAYNE, Book Review Editor

Allen L. Mayerson, *Introduction to Insurance*, The Macmillan Company, New York, 1962, pp. XIII, 443.

The first six chapters of this book are exactly what the title indicates, an introduction to insurance. The remainder is as detailed a consideration of the various kinds of insurance as the available space permits.

It is stated in the Preface that the book is addressed to "the consumer or businessman who wants to learn enough about the elements of insurance to be able to plan his own insurance program intelligently." He can learn much about the details of the business (happily, the author prefers "business" to "industry").

A person subject to risk who approaches his problem needs, first, to be equipped to analyze it, and second, to evaluate the methods of solving it. To the extent that he is to consider insurance he must be able to determine what insurance he wants, and to compare the various promises of protection or service available and their comparative costs. This book, with his eyes wide open, will give him a good background, from which to take off rather than to apply directly. While it contains a great deal of information and suggestions for dealing with the many covers, there is little discussion of the principles of risk management.

There is a tendency to make general statements that imply a uniformity of practice which does not exist, and it seems often to be assumed that usual practices are necessary. A healthy scepticism is a useful tool for the "consumer." If an ill-informed person reads this volume he should acquire a good general idea of the principles and practices of insurance, but it is not a work of reference.

The author has not been so careful about many particulars as could be desired. For example: Lloyd's is not an insurer (p. 12); anti-selection is not only exercised consciously by intending insureds (p. 15); the first fire insurer was established in Charleston (p. 26); war risks are not uninsurable (pp. 111, 361); the appraisal clause of the Standard Fire Insurance Policy cannot, in most jurisdictions, be enforced by the insured (p. 209); a proof of a fire loss need not, in some jurisdictions, be furnished on the initiative of the insured (p. 212); there is no reserve fund in life insurance, nor are the reserve amounts "policyholder funds, held in trust by the insurer" (p. 338); the distinction between "accidental means" and "accidental injury" has disappeared in New York and is largely eroded elsewhere (p. 375).

It is not extraordinary that these and other individual points, small or important, should be subject to correction in a volume in which it is intended to cover the entire insurance field; they do call for careful checking.

RALPH H. BLANCHARD

J. Aitchison and J. A. C. Brown, *The Lognormal Distribution*, New York; Cambridge University Press, 1957.

The authors intend that this book be used by practicing statisticians and their method of presentation helps toward achieving that objective. The book brings together information published on the lognormal distribution from

1879 onward. The typical chapter opens with a review of what will be discussed, then proceeds to discuss it and, where necessary, ends with a summary.

The lognormal distribution has been found to exist in a number of places. Small particles often occur in nature or as the result of a grinding process in the form of a lognormal distribution. Distributions of incomes, household size, length of life in endurance tests and certain features of consumer behavior can be described by this distribution. The authors do not refer to the fact that insurance claims by size are often distributed in this fashion but mention was made of this as early as 1942 in these *Proceedings*. It is observed by the authors that the number of individuals in various census occupation classes seems to be distributed in this fashion. Is this possibly true of our insurance classification system also?

In the short span of ten pages, the reader is given a clear presentation of the general properties of the distribution and the discussion of the special cases of the three-parameter distribution. The chapter on the genesis of lognormal distributions is particularly interesting. It is shown that if the change in the variant at any step of the process is a random proportion of the previous value of the variant, then for large n the variant is distributed in the lognormal form.

Testing lognormality can be done by special tests described in the book or by the customary Chi-square test. However, this latter is less sensitive and, therefore, not too satisfactory. Chapter 8 treats the t-test, the f-test and analysis of variance for samples from a lognormal population in the short space of only two pages. Nevertheless, the treatment is clear and complete enough for the typical reader. A good portion of the book is allocated to discussing the problems of estimation for the mean and the variance, both in terms of the original values and in terms of the logarithm. The statistical difficulties associated with truncated and censored distributions mount rapidly but the authors' treatment will be very helpful for problems involving franchises or deductibles in the insurance field.

Little direct value seems to come from the chapters on economic problems and on probit analysis although this latter has an insurance analogy. Probits are principally used in an attempt to describe the tolerance levels of organisms to drug dosages of varying sizes. Perhaps there is an opportunity to analyze the insurance situation in terms of various "dosages" (of mileage driven, for example) in relationship to the tolerance for accidents.

This book makes a valuable addition to the actuary's store of mathematical models which will be helpful in describing the insurance process in abstract terms. From such abstractions, perhaps we can build a complete model of individual risk behavior which will give us a clearer insight into the underlying processes.

LEROY J. SIMON