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Damages for Personal Injuries and Death. By John Munkman, LL.B.

The Third Edition of this legal textbook was reviewed in the Journal by the late William Phillips in 1966 (J.I.A. 1966, 92, 209).

In this new edition large portions of the text have been rewritten, in particular the section on estimating loss of future earnings. It is disappointing to note therefore that the errors in the author's mathematical exposition and notation when dealing with the value of an annuity certain, to which William Phillips drew attention, have not been corrected. It is even more disappointing to find that against the background of growing acceptance of the relevance of an actuarial approach to the assessment of damages, the author has not modified his view that 'there cannot be many cases where it is helpful to add an actuary to the technical and medical experts. Even with a large loss of earnings by a professional man or trader, a chartered accountant is likely to be a better choice' (p. 63).

It is remarkable that although the Law Commission's first published Working Paper on the assessment of damages appeared too late for consideration by the author (Working Paper No. 27, 18 March 1970), no mention at all is made in this book of the Law Commission's current examination of this field of the law. It may be useful to note here that this Working Paper recommends legislation to require the itemization of awards by the Courts, expresses general support for an actuarial approach to the valuation of pecuniary loss, and publishes specimen actuarial tables prepared by a joint Working Party of the Institute and Faculty.

One of the chief areas of controversy in the assessment of damages for future loss of earnings is the extent to which any account should be taken of future inflation. The author is not one of those (including many learned judges) who think it right to ignore this aspect, but seems content to accept the 'Lord Diplock method' of making no direct allowance for inflation but taking it into account by using an annuity table calculated at a low interest rate. He states categorically that in the U.K. 'the Courts will in future follow the advice of Lord Diplock' (p. 60), but it is interesting to note that a more direct and realistic approach to the problem was advanced by several of their Lordships in the recent appeal to the House of Lords in the case of Taylor v. O'Connor.

The author's comments on the idea that the right to claim damages for personal injuries should be replaced by a system of State insurance will be of interest to many more actuaries than those few currently concerned in advising litigants. These comments are contained in a lengthy footnote (pp. 45–6) and express the view that the recommendation of a State insurance scheme made by the Woodhouse Commission in New Zealand may be workable there but not in this country. The author does, however, favour law reform with the purpose of ensuring that damages should not be dependent on proof of negligence.

J. H. PREVETT


This book is basically the fifth edition of Sir William Elderton's well known work Frequency Curves and Correlation, which was first published in 1906. As such, it is the successor to a classic work that has been familiar to generations of statisticians and
actuaries. Whilst the new work is still written in the same style as the original work, and some of the classic pieces of data, such as the Manchester Unity data, reappear, there are big differences in content. The whole of the material on correlation, which never fitted particularly well with the work on frequency curves, has been removed, and the work now concentrates virtually exclusively on frequency curves.

The original edition contained what was, at the time, the most lucid description of the Pearson system of frequency curves: indeed it was almost certainly this facet of the original work that enabled it to retain its appeal to statistical practitioners for so many years. This still takes up over half the book (Chapters 1 to 5). Chapter 6 deals with the representation of curves by series expansions. Of such systems, three are discussed. The first uses the normal curve and its derivatives, the second is the Gram–Charlier series which uses the normal curve as a generating function, and the third is the Edgeworth series, which is a small modification of the first system. Chapter 7 discusses the derivation of alternative frequency curves through translation systems, drawing heavily on Prof. Johnson's own work. It discusses in detail the log-normal system, a bounded system denoted by $S_B$ and an unbounded system denoted by $S_U$. Chapter 8 deals with bivariate frequency surfaces. Whilst the discussion is couched in general terms, the main results of utility given there are related to the normal bivariate distribution and a modification of it that is based on a series expansion involving the derivatives of the normal distribution. Chapters 9 and 10, on standard errors and tests of goodness of fit, are not quite so clearly in the main line of development of the book, and could well be omitted from future editions as the material is adequately covered in the book.

One final comment, that is of a personal nature. In many years of statistical work, this reviewer has only rarely had to fit a frequency curve or surface beyond the simple ones given in any basic statistical or actuarial text. The development of computers has made the need to carry out such fittings even rarer than it was a decade ago. Yet the lure and mystique of curve fitting still remains. Why is this? Do we really believe that phenomena naturally follow these complex systems if only we could get enough data to demonstrate the fit? Or do we feel that it is necessary to summarize data in this way so as to be able to carry out mathematical manipulations of the parameters which describe the data?

P. G. MOORE

Business Forecasting for Finance and Industry. BY JAMES MORRELL.


Mr James Morrell, who is well known as the head of a group of economic consultants, has, in this book, attempted to achieve five specific objectives in the field of business economics:

(1) To present the case for making formal forecasts by showing that such an exercise is both possible and desirable.

(2) To explain in direct and practical terms the elements of macro-economics.

(3) To show the relevance of macro-economic analysis to the more intimate problems of the individual company.

(4) To demonstrate the interrelation between the U.K. money system and the security markets.

(5) To demonstrate a particular technique of security analysis.

This is an ambitious programme for what is really quite a short book: that Mr Morrell has managed to cover such a wide canvas is in itself a tribute to the admirable conciseness and clarity with which he has presented his material. His case for forecasting is
wholly convincing since, as he points out, all decisions (even those resulting in no action) are based, however intuitively, on forecasting of some kind, whether or not such forecasting has been formally enumerated. The author’s analysis merely aids the decision-maker to identify the areas of uncertainty, to put numbers to his problems and thereby to put some measure on the risks involved.

The second and third objectives are similarly achieved thanks to the lucid and direct presentation and the skilful use made of charts to replace what would otherwise take pages to demonstrate. The businessman is rightly recommended to isolate those factors in a firm’s operating environment over which it has control (e.g. marketing) from those in which it has not. It is at this point that the reader, having been led by the hand so painlessly through the economic undergrowth, suddenly finds himself left on his own. The most important of the uncontrollable factors is probably Government policy and here the book’s precise analysis has to be replaced by political speculation. Unfortunately the financial weight of the political factor is so great as to harden the heart of the cynical reader, particularly if he is an industrialist, deeply marked by the economic vicissitudes of the past 20 years.

The forecasting methods themselves inevitably make use of extrapolatory techniques based on well-defined trends and relationships. A particularly interesting chapter in this section shows an economic model based on certain assumptions regarding the sociological and economic environment over the next 30 years. The assumptions are speculative and can be changed at will; the tools and the technique remain the same and the investment analyst as well as the company planner will find this section well worth studying in his quest to anticipate changes in future patterns of spending in both the personal and public sectors of the economy.

The interrelation of the U.K. money and security markets is covered briefly and lucidly but this very brevity may mislead in places. The reader may, for example, be lured into deducing from the text that ‘velocity of circulation’ is so correlated with interest rates as to provide a ready-made weather vane for investment policy decisions in the gilt-edged market. He may also be tempted to an assessment of the level of the equity market by relating the current dividend yield with the dividend growth rate and bond yield on too mechanical a basis without fully appreciating the factors, other than tax, which require this relationship to be very considerably refined and adjusted before use.

The final section of the book demonstrates a technique for analysing a company’s performance. The yardstick advocated is the profitability of assets, irrespective of whether the investigator is the company planner seeking out ways of improving performance or the security analyst who is interested in the investment parameters of this and comparable companies. Mr Morrell’s advocacy of the use of marginal profitability, i.e. profitability of new capital investment vis-à-vis the rate earned on the existing capital employed, is clearly very useful but again this tool needs completely up-to-date, homogeneous and comparable data particularly when wielded by the hand of the security analyst.

The unity of aim of the company planner and the security analyst is one of the underlying themes which run threadlike throughout this work. The book is therefore intended for, and will be of considerable interest to, those in financial management both within and without the company. The clear presentation (including an excellent index) and the absence of platitudinous cant, make the book necessary reading also within the corridors of power, one remove from the financial planner, i.e. in the company boardroom and pension fund committee room. From the point of view of the actuarial student this book
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is not intended to be a textbook and its very wide scope and (intended) simplification of the subject matter suggests a postgraduate (rather than undergraduate) perusal. The life office or pension fund actuary, however, particularly one engaged on problems relating to the liabilities side of the balance sheet, is, of course, very much a financial planner: he is strongly recommended to read this book if only to deepen his appreciation and understanding of the many factors which affect the long-term rate of interest which is the most important of the elements he employs and perhaps also the element to which he may in the past have given least personal thought.

C. BRILL


This book sets out to 'describe the generally accepted principles, practices and procedures applied by U.S. and Canadian Life Insurance companies in preparing the comprehensive financial statements required by the supervisory authorities', and to be 'both a textbook and a reference book on the statements'. The book is purely descriptive, and an account of its contents will probably be useful.

After a brief introduction to the elements of accounting, Part II takes the reader through the individual transactions which take place in life assurance and shows how these relate to the entries in the accounts.

Part III, headed 'assets', deals with the difference between ledger assets and admitted assets, and describes the rules used to obtain admitted asset values, and also covers the mandatory securities valuation reserve. The tests used by the National Association of Insurance Commissioners in grading assets and establishing the 'Association' values are also described.

Part V deals with the policy reserve liabilities. After describing the various types of insurance for which reserves are required, and the minimum reserve standards required by Statute, the results of a model office project are given, showing the effect of holding inadequate reserves, or of variations in the experience. The remainder of this part sets out the basic formulae used for various different types of policy, and brief details of the practical methods used in the valuation. Health insurance is included—this comprises disability and accident policies together with medical expense plans which are not normally subject to actuarial valuation in the U.K.

Parts VI and VII deal with the statutory returns (the 'Association Blank'). A definition is given of each item in the main financial statements, and it is shown how these arise from the annual accounting cycle. The chapters on the exhibits, analyses and schedules show how these are related to the entries in the financial statements.

Part VIII deals with the Canadian Life Blank, dealing particularly with the differences between the U.S. and Canadian accounts.

A final chapter discusses criticisms which have been made of life assurance accounting.

The appendices include a model set of annual statements, and the official instructions for completing the Association Blank. A copy of the Canadian Life Blank is also included, together with copies of old editions of the U.S. and Canadian returns, to demonstrate their history. There is also a key to the 1964 Commissioner's disability table, and a reprint of the 1964 report of the Industry Advisory Committee on health insurance reserves, and of the National Association of Insurance Commissioners' booklet on valuation of securities. The index is adequate.

The book is factual and detailed, and avoids discussion of the merits of the methods it expounds. On the whole it achieves the objects quoted earlier, and can be recommended
to anyone who is concerned with the accounts of American or Canadian companies. However, the reader who is interested only in Canadian accounts will have to absorb a good deal of material related to the U.S. system before the chapters on Canadian accounting can be used.

E. A. JOHNSTON

Computers. BY G. M. PHILLIPS and P. J. TAYLOR.

The authors state in the preface that their intention is to give a bird's-eye view of the computer and they have presented what they considered the more important facts and ideas on the subject. In an attempt to cover widely ranging aspects of the computer in a short book, the description has become sketchy in some areas, e.g. programming and computer languages. A large proportion of readers are likely to be interested in the basic concepts and applications of computers, rather than their electronics, and they are most likely to skip some of the pages describing the circuits of the components.

The book starts with the consideration of a simple problem in day-to-day life, such as calculating a bank balance, and by analogy introduces the basic operations of a simple computer. The basic arithmetic instructions and exercise of control are then described and the concept of the stored programme is introduced. Chapter 2 deals with algorithms and flow charts and enters the domain of numerical analysis by dealing with methods for finding square roots. Different number systems are discussed in Chapter 3 and reasons for choosing binary arithmetic for computers are given.

Chapter 4 introduces concepts of Boolean algebra and describes half-adders and full-adders. The 'physics' in Chapter 5 is perhaps helpful if one already has some knowledge of the subject. Logical circuits, various storage and input-output devices form part of the sixth chapter. While the physics involved has been dealt with fairly elaborately, the practical aspects such as a comparative description of capacities, speeds and disadvantages, if any, could have been dealt with in greater detail.

The 'programming' aspect of computers has not perhaps received a fair treatment. The description of ALGOL is anything but sketchy, but more pages could have been devoted to elaborating the basic concepts of programming. A brief description of mathematical models forms the subject matter for Chapter 9, while Analogue computers are described in Chapter 10. Perhaps the authors expect that not all readers will find this latter chapter of interest. A concise description of the various stages in the use of a computer in various applications will be found in the following two chapters. The description of Turing machines in Chapter 13 is interesting and leads to the definition of an algorithm as a Turing machine.

The concluding chapter traces the history of computers, starting with the abacus, and describes logarithms and Charles Babbage's 'analytical engine'. A reference is made on page 147, to the binary automatic digital computer prepared by William Phillips, O.B.E., F.I.A. He presented a paper 'Binary calculation' to the Institute on 27 January 1936 (J.I.A. 67, 187). The binary machine, which was purely mechanical (and did not use electronic valves as the authors suggest), can be seen in the Science Museum, South Kensington.

On balance it would appear that the authors have attempted to cater for as wide a class of readers as possible and have produced an introduction to the subject which should prove useful within the limitations inherent in a small volume.

The following errors were noticed:
(a) On page 11 it is stated that the contents of the instruction register are increased by 1 'after' an instruction is executed; but this addition of 1 is ignored when considering the 'SET n' instruction on page 12.

(b) On page 77, while dealing with for statements, the test 'if i > N' is shown to be stage 4, while it should be stage 2, i.e. just after setting the value of i.

(c) In the flow diagram on page 134, the box at the bottom should read i: = h.

S. P. MULGUND