

ARTICLES AND PAPERS OF ACTUARIAL INTEREST

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ROYAL STATISTICAL SOCIETY

Journal, Series A

Vol. CXVI, Part 1, 1953

KENDALL, M. G. *The Analysis of Economic Time Series—Part I: Prices.*

This paper is the first stage of an inquiry into the problem of whether the so-called trend in a series of index numbers is in fact separable from the short-term movements, or whether it should be regarded as generated by a set of forces which also give rise to the short-term movements.

The author analyses twenty-two series, nineteen of which are taken from the Actuaries' Index of Industrial Share Prices. In the case of share prices both serial correlations and cross-correlations were calculated. All the serial correlations are small, those for series based on a combination of groups tending to be highest.

It is concluded that the series behave almost like wandering series, that trend and model fitting are highly hazardous undertakings, and that unless the prices of individual stocks behave differently from the average price of similar stocks, it is impossible to predict movements on the stock exchange for a week ahead without extraneous information.

Applied Statistics

Vol. II, No. 1, March 1953

BARTLETT, M. S. *Stochastic Processes or the Statistics of Change.*

An elementary introduction to the subject using only simple mathematics, and showing how stochastic processes arise in physics and communication engineering, industry, economics, biology and medicine. The article concludes with a stochastic model of a series of fictitious 'measles epidemics'.

Vol. II, No. 2, June 1953

SHANKLEMAN, E. *Economic Forecasting in Great Britain.*

The paper deals with attempts to forecast general economic conditions. A brief account is given of the various 'business barometers' (charts showing the movement of a few selected index numbers assumed to be symptomatic of the major factors causing change in economic conditions) that have been used in the U.S.A. and in the U.K. He attributes their failure to changes in the importance of the constituent factors.

The author next considers National Income forecasts. He shows that Mr Colin Clark's attempts during 1937-39 were more successful than those resulting from earlier attempts with the 'barometers', but the method depends on the assumption of a stability in certain economic relationships which does not exist. The post-war attempts by government departments in the U.S.A. and in the U.K. are considered. The method depends on the construction of a model consisting of a series of equations which represent how chosen variables interact to determine the behaviour of the economic

system. The values of the constants of the equations are found by regression analysis applied to past data. Again the relationships lack the stability required for reliable forecasting, and some of the data are based on little more than a guess.

Finally, the author gives an account of the recent survey made by the Study Section of the Royal Statistical Society of the opinions of economists who were asked to predict the movement of five economic index numbers over a specified year.

ASSOCIATION OF INCORPORATED STATISTICIANS

Journal

Vol. IV, No. 1, March 1953

TURNER, N. C. *The Statistical Function in a Distributive Organization.*

The author considers the statistics which are available from government departments, trade associations and private market research organizations, and explains how these figures enable a firm to compare its own level of trade with that of others in the same line of business. He also gives his own method of obtaining a comparison of the volume of trade of individual branches with that of the company as a whole. The problem of the integration of financial accounts and financial statistics is also considered.

MIND ASSOCIATION

Mind

Vol. LXII, No. 245, January 1953

TOULMIN, S. *Logical Foundations of Probability.*

A review article of 'Logical foundations of probability' by Rudolf Carnap. Carnap draws a sharp distinction between two concepts of probability. They are respectively a logical concept—the degree of support which a body of evidence gives to an hypothesis; and an empirical or frequency concept—the relative frequency of events or things having one property among the members of the class of events or things having another property.

Prof. Toulmin does not accept this distinction. He points out that in the case of mortality rates, for example, we are not obliged to give the ratios any one name. 'What we shall in fact call them will depend on our reasons for being interested in them, and in particular on the sort of moral we wish to draw from them.' If the morals are of a forward looking kind we call them probabilities. A relative frequency, however, is then only a measure of the probability, and being only a measure it is the concern of logic. Thus both concepts are the concern of logic. It is argued that much confusion would have been avoided if Carnap's logical concept of probability and the corresponding relations had been labelled 'support-relations' and not 'probability-relations'.

The article also criticizes Prof. Carnap's treatment of natural laws. The author argues that Carnap is wrong to construe laws of nature on the model of factual generalizations; they operate rather as principles of inference. Physicists do not discuss whether this law is true, or how probable that one is; rather they concern themselves with the range of circumstances for which a law holds.