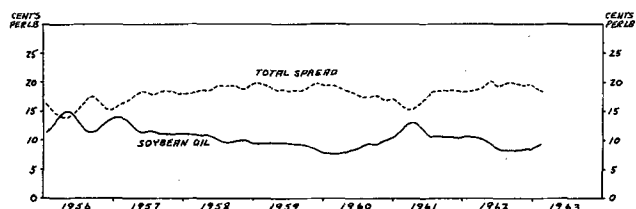
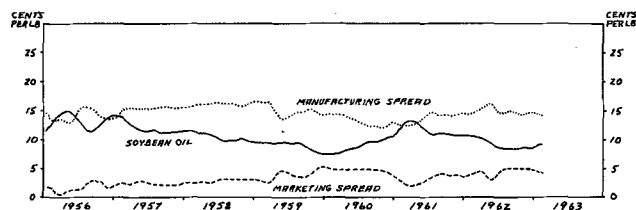


Spread Spreads

A CYNIC ONCE DEFINED a statistician as "a seeker after imaginary relationships between unreliable numbers." Sometimes I'm afraid that all parts of the definition have merit. This, however, does not stop statisticians from manipulating numbers. Of all of the statistical problems, the one of reliability of price quotations is often the most severe. Sellers may depart from quoted prices, particularly on the downside, before the quotations are changed; retail prices and market prices might be taken from too small a sample; average prices for a period can mask more violent ups and downs. These problems are all inherent in the subject under review here, relationships between prices of oil in various stages of manufacture. For lack of a better word, I call these relationships "spreads" to avoid certain connotations that the word "margins" might carry. The objective was to try to assess how these spreads were influenced (if at all) by movements in the cash market prices of the crude oil. Theory on the marketing of many, if not most, agricultural products tells us that middlemen's margins remain rather stable over the longer term, through periods of high price and low prices resulting from fluctuations in supplies. Theory, however, also tells us that elasticities are different for the products in various stages of finish.

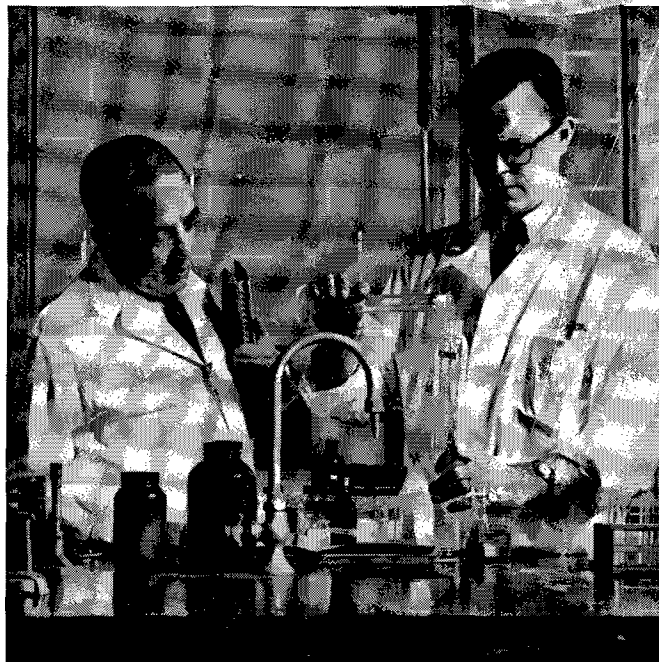
Using the quoted prices in Table 1 of the "Fats and Oils Situation," I separated the difference between the monthly B.L.S. retail margarine price and the average monthly Midwest crude oil price into two presumably comparable components. The first was the difference between the crude price and the Chicago white margarine price; for discussion purposes let us call this the "manufacturing spread." The second was the difference between the Chicago white bulk margarine price and the retail margarine price; for discussion purposes let us call this the "marketing spread." Then, separately and in total, these "spreads" were plotted against Midwest crude prices.

Certain interesting relationships seem to appear. It seems clear that the retail price of margarine does not follow crude prices faithfully, that consequently, rallies in crude oil prices put pressure on the dollars available to refine, transport, package, advertise, inventory, wholesale, and retail the product. It also seems that the processes in this channel of marketing other than the manufacturing are more susceptible to profit squeeze on account of high crude prices than is the manufacturing (higher fixed costs?) function. Although the magnitudes of the charted shifts in both sections of the total spread are not greatly different, the percentage changes in the "marketing" section are much greater than percentage changes in the "manufacturing" section. Although the two "spreads" show occasional tendencies to move in opposite directions, notably early 1959 and early 1962, in general there is a



(Continued on page 38)

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LECTURES ON GAS CHROMATOGRAPHY by H. A. Szymanski (Plenum Press, Inc., 227 West 17th Street, New York 11, N. Y., pp. 282, 1962, \$10.00). This book

NEW BOOKS

is based upon a series of lectures presented at the Advanced Sessions of the Fourth Annual Gas Chromatography Institute held at Canisius College in April of 1962. In all, thirteen lectures are presented, as well as 18 pages of questions and answers from a panel discussion. Without listing the individual lecture titles the following topics were discussed by one or more of the lecturers: introductory theory, sample injection, columns and column packings, detectors, programmed temperature runs, special techniques, use of gas chromatography with other analytical techniques, a preparative gas chromatograph and a new gas chromatographic technique.

For the laboratory worker involved in the practice of gas chromatography much of value can be gained from this series of lectures. Those chapters which this reviewer found most interesting and full of practical working information were: (1) Columns and Column Support Materials, by W. R. Supina of Applied Science Laboratories and (2) Systematic Calculation of Gas Chromatography Temperature Programs, by J. D. McCallum of Beckman Instruments, Inc. The newest information in the field was presented in the chapter, "A New Approach to Gas Chromatography," by H. A. Szymanski, which discusses the use of iron powder as a portion of the packing and an induction furnace for column heating. The author states in summary that this technique may be quite valuable in improving resolution due to the ability to use very large programming rates with the inductive heating. The chapters on "Gas Chromatograph Detectors" by R. E. Johnson of Barber-Colman Co. and "Ionization Detectors and Capillary Columns" by Albert Zlatkis, University of Houston, are excellent reviews of the subject.

The panel discussion section left a great deal to be desired. Neither the questioners nor the respondents were identified and there was little effort made to relate questions and answers to the lectures. The absence of an index is lamentable, but in line with other publications of this type. Physically the book is serviceably put together with a good binding and thick but light paper stock for the pages.

For the practitioner of gas chromatography, this book has a good deal of value.

C. H. ORR
Miami Valley Laboratories
The Procter & Gamble Co.
Cincinnati, Ohio

NOMOGRAPHY AND EMPIRICAL EQUATIONS, Second Edition, by D. S. Davies (Reinhold Publishing Corp., New York, 261 pp., 1962, \$8.00). Those who are interested in curve fitting or the preparation of nomographs will find this book a very good manual to have at hand. Written primarily for undergraduate course work, and secondarily for self-teaching, the book contains well thought out illustrative problems and describes the procedures in almost cook-book fashion. The use of mathematical derivations has been reduced to the barest minimum consistent with the purposes of the book and adequate references are given for those who wish to dig deeper into the theory.

The text is divided into sections on empirical equations and on nomography. Part I starts with curve fitting and plotting methods for the common forms of equations and ends with 3-variable correlation methods. Included are techniques for handling "bumped" data and sigmoid curves. Usually, several techniques are given for each type of function and each technique illustrated with a typical problem.

Part II is an excellent description of nomograph construction ending with chapters on graphical anamorphosis (the construction of nomograms without the use of derived equations) and special slide rules.

The text is well written and is easy to read and follow. It is not without humor as illustrated by the construction of a logarithmic scale by the "mosquito" method and the

illustration involving the alcohol content of blood.

This book should be most valuable to those who handle data but are unfamiliar with graphical correlation techniques.

R. O. CRISLER
The Procter & Gamble Co.
Cincinnati, Ohio

MACROMOLECULAR CHEMISTRY. International Union of Pure and Applied Chemistry, Special Lectures of the International Symposium, Montreal, 1961. Reprinted from *Pure and Applied Chemistry*, Vol. 4, Nov. 2-4. (Butterworth, Inc., Washington, D. C., 540 pp., 1962, \$9.50). The series of lectures (by various authors) compiled for this book have been separated into 4 sections: (1) Properties of Polymers, (2) Free Radical Initiated Polymerization, (3) Ionically Initiated Polymerization, and (4) Chemistry of High Polymers. The first section is concerned with the morphology of crystalline polymers such as polyethylene and polystyrene. The next two sections discuss various polymerization reactions, stressing mechanisms and thermodynamic and kinetic concepts. The last section deals with degradation of polymers, end group analysis, polysaccharide synthesis and various protein polymeric reactions.

The entire presentation is of first quality. The writing is uniformly excellent as is the overall organization of the material. Much of the work was reported for the first time at the symposium. Background material for each lecture is thorough and accompanied by numerous references. A clear, concise summary follows each lecture.

On the whole, this book will have very limited appeal, being written primarily for the theoretical chemist with an interest in polymerization. While little of the work reported was carried out directly on fatty polymers, the techniques and theories can no doubt be related to them or at least should be able to stimulate thought.

T. J. WEISS,
Swift & Co.,
Chicago, Ill.

Spreads

(Continued from page 13)

tendency to work together. The tendency for the spreads to be squeezed is most apparent in very strong crude oil markets such as those of 1956 and 1961.

The tendency of these spreads to suffer in rising markets for raw material is similar to observed experience in some other economic and commodity fields, where semi-manufactured and fully manufactured product prices often display much more price stickiness than do the prices of the component raw materials. It is an oversimplification to say that rising oil prices throw margarine margins into a classic cost-price squeeze but it resembles it in some respects.

It appears then that although the middlemen's margins in this case may be stable over the long term they are susceptible to squeezing over the short term. Note that it does not appear that it is simply a question of a lag in quotations. If this were the case, it seems to me that when the oil rally is over, the time lag in raising retail prices would result in a widening of either or both margins over "normal" to the extent that they were depressed under "normal" during the bulge. Inspection of the charts implies that such is not the case.

Of course, a certain amount of the relative movements of the spreads is more apparent than real since there is a considerable amount of vertical integration within the industry. Also it is probable that both buyers and sellers watch these same spreads very closely and the volume of bookings and aggressiveness of selling is greatly different at different levels of spread. When the total spreads are at their lowest, it is obvious that the consumer is getting a considerable bargain at retail margarine prices. It's too bad she can't load up the house with margarine and hedge it in short futures, staying "long the basis." This way, of course, she would have on a spread in the spread spreads.

JAMES E. MCHALE
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