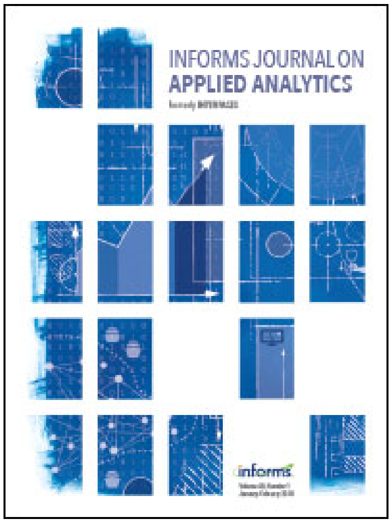

Interfaces

Book Reviews

To cite this article:
(1974) Book Reviews. Interfaces 4(4):54-56. https://doi.org/10.1287/inte.4.4.54

INTERFACES
Vol. 4, No. 4
August 1974

Book Reviews

MALCOLM McRAE

Inside the Yield Book (Homer and Leibowitz) .... Donald L. Tuttle
The Design of Inquiring Systems: Basic Concepts of Systems and Organization (Churchman) .... George H. Haines, Jr.

HOMER, SIDNEY and LEIBOWITZ, MARTIN L., *Inside the Yield Book*. Englewood Cliffs, N. J.: Prentice-Hall, Inc., and New York: New York Institute of Finance, 1972, 205 pp., $12.95.

On its own merits this is an important contribution to the finance literature, providing valuable knowledge to individuals such as those responsible for making decisions in managing bond portfolios. Homer and Leibowitz (H-L) have put on paper, in systematic fashion, important finance concepts that are either new or have not before been clearly identified with bond investment strategies.

The book is also very timely. It appears at a time when interest rates fluctuated more and at significantly higher levels, giving rise to potential capital gains and losses as expected holding periods for debt securities shortened materially. It also appeared at a time of discouragement with equities in terms of their unlimited but unfulfilled growth potential.

The book is organized into two parts. The first part is the narrative of the story the authors wish to tell. The latter part is essentially a mathematical appendix that explains in detail the concepts and principles defined and used in the narrative.

Inside the Yield Book begins with the introduction of the concept of "interest-on-interest," the rate at which receipts from coupons on bonds are assumed reinvested in the future. The purpose of the introduction of this concept is to point out the limitation of the traditional use of "yield books" for evaluating prospective long term debt issues. That is, the yield to maturity on a long term debt contract measured today is not necessarily the actual "total realized compound yield" (H-L's terminology) over the holding period of the contract, even if the contract is held to maturity. The reason why is because yield to maturity assumes holding to maturity *and* reinvestment of coupons received over the life of the instrument at the yield at which the bond was bought. Both assumptions are, of course, unrealistic. Homer and Leibowitz show that even if one holds to maturity, the total realized compound yield on a long term instrument will vary greatly as will the proportion of the total coupon income accounted for by interest-on-interest. On a 20-year, 8 per cent coupon non-callable bond bought at par to yield 8 per cent, for example, the total yield varies from 4.84 to 9.01 per cent and the interest-on-interest from 41 to 67 per cent of total return as the assumed rate for reinvestment of income varies from 5 to 10 per cent.

With the importance of the principle of interest-on-interest firmly established, the authors then look at two radically different forms of bonds with respect to the timing and source of dollar returns. They are perpetual bonds with finite coupons but infinite lives and pure discount bonds with zero coupons and finite maturities. The authors contrast the volatility of price of each type of bond for equal basis point changes and for equal percentage changes in yield for various initial yield levels and (for pure discount bonds) various maturities.

The purpose of their investigation is to lay the groundwork for the volatility characteristics of contrasting bonds commonly available to investors: premium or "cushion-and-ceiling" bonds and deep discount bonds. The first type of bond exhibits less volatility for specified percentage changes in yields while the second affords better call protection and capital gain potential.

The last part of Part I deals with the various types of bond swaps and their advantages and disadvantages. The discussion begins with a development of the concept of "workout time." On the assumption that the underpriced bond proposed for purchase in the swap converges to the fully priced bond currently held, workout time is the period it takes for the former's price to move to the latter's. It is a concept directly comparable to our rapidity of convergence concept.

H-L then examine four types of swaps, two under conditions of "relative" certainty and two under conditions of "relative" uncertainty. Among the first two is the "substitution swap," based on a capital market imperfection, where two similar risk bonds have a momentarily aberrant spread in yields to maturity and the relatively expensive bond is swapped for the relatively cheap bond. The other is the "yield pickup swap," where one bond is sold and another bought to simply increase yield (and incur a capital loss along the way).

The relative uncertain swaps include the "rate anticipation swap" where swapping takes place to lengthen or shorten maturities in anticipation of lower or higher long term rates (thereby minimizing capital losses or maximizing capital gains). The "intermarket swap" is the other, relatively uncertain swap; like the substitution swap, it is based on a capital market imperfection: yield spreads between different risk classes of bonds that are too large or too small. Homer and Leibowitz's discussion of the various types of bond swaps is the first definitive, systematic discussion of the subject that I have encountered.

The authors close with a discussion of tax considerations in bond portfolio management, but they stop short of discussing in full the tax aspects of swapping, the most complex swap situation of all. I understand they have done a considerable amount of work in the area; hopefully it will be included in a supplement to or revised edition of their book. Another welcome addition would be the integration of the concept of duration which has gained considerable attention in the recent finance literature.

In sum, the authors have broken new ground, synthesizing and organizing a body of knowledge that has heretofore been the intuitive tools of good bond portfolio managers.

Donald L. Tuttle
Chairman, Finance Department
Indiana University

CHURCHMAN, C. WEST, *The Design of Inquiring Systems: Basic Concepts of Systems and Organization.* New York, New York: Basic Books, Inc., 1971, 288 + IX pp., $10.00

The world in which people work is made up of systems. This must be so, for all men and women are systems designers. Some of these systems are inquiring systems. Most inquiring systems can be categorized into one of five types: Leibnitzian, Lockian, Kantian, Hegelian, or Singerian. These five types are distinguishable in terms of the general characterization of an inquiring system they provide, the basic units of information requisite to the information system, the process which occurs when inquiry is initiated, and the guarantor of the validity of the results.

The Singerian system is the most virtuous. It alone attempts multiple representations of reality. It is also the most difficult for mortals to understand and the most costly to implement. Yet, some kinds of problems are probably best attacked with a Singerian inquiring system. These are wicked problems. For example, social problems can only be solved in a Singerian fashion. Many different points of view must be examined to reach a solution.

Less demanding problems require less demanding information systems. Very well structured problems, such as those posed by classical economic theory or operations research, can be examined with a Liebnitzian inquiry system. Such a system may not be the simplest, but it is certainly the oldest. Problems arise, however, when any old inquiring system is applied to any and all problems. The wrong questions may be asked, or too much money spent in getting a right answer. Worst of all, the answer may not only be wrong, it may be implemented with the inquiring system itself protecting the decision maker from knowledge of his or her error.

This book is designed to help protect against such mistakes. It is designed to allow an information system designer to design, ahead of time, the right kind of information system. True, those who most need such help will not read this book: to do so would violate their own personal inquiring system. But even others can peruse this volume for joy and profit.

Nothing is perfect, or so it seems at any rate. For all its strengths, this book is weak when it comes to implementation. It ignores completely the well developed literature on the diffusion of innovations, which contains much valuable advice on how to carry a design for an information system into an actual operating information system. Despite this flaw, it is a good book.

It is surely a useful book in courses on the design of information systems. It is surely a useful book for those who must decide on what kind of information systems should exist in "their" organization. It is surely a thought provoking book for anyone concerned with such systems. If you have resolved to make management, information, and system your business, this is a book you should read.

George H. Haines, Jr.
University of Toronto