

25 L#7

LIFE ANNUITIES

Extra Randomness in Certain Annuity Models, by John A. Beekman and Clinton P. Fuelling (Ball State University)

An alternative model is presented which can be used when interest rates and future lifetimes are random, for certain annuities. The Wiener stochastic process is a major component in the model, and provides much more randomness than an earlier model. Expressions for the mean values and the standard deviations of the present values of future payment streams are obtained and illustrated. Extensive boundary crossing probabilities for the Wiener stochastic process are given. Numerical comparisons with the earlier model are provided. *Insurance: Mathematics and Economics*, Vol. 10, No. 3 (December 1991), pp. 275-87. (Reprinted with permission of the North-Holland Publishing Company).

26 L#9

INSURER MANAGEMENT

An Empirical Analysis of Sales-Force Compensation Plans, by Anne T. Coughlan (Northwestern University) and Chakravarthi Narasimhan (Washington University)

Among the array of direct and indirect methods of motivation and control available to the sales manager is sales-force compensation. In this article, we summarize theoretical predictions from the economics, marketing, finance, and accounting literatures on the structure of optimal sales-force compensation plans. Guided by these insights, we then construct empirical models to quantify the effect of various sales-force factors, firm and product factors, and market factors on compensation. Using data from 286 firms in 39 industries, we examine determinants of incentive components and total pay and the optimal horizon for incentive pay. *Journal of Business*, Vol. 65, No. 1 (January 1992), pp. 93-121. (Reprinted with permission of the *Journal of Business*).

Executive Compensation in the Life Insurance Industry, by David Mayers (Ohio State University) and Clifford W. Smith, Jr. (University of Rochester)

Alternative theories imply differential compensation levels between executives of mutual and stock insurance companies. Evidence from the life insurance industry indicates (1) the compensation of mutual executives is lower than that of stock executives, (2) the compensation of mutual-subsidary executives is lower than that of stock-subsidary executives, and (3) the compensation of mutual executives is less responsive to firm performance than that of stock executives. This evidence is consistent with the existence of differences in corporate investment opportunity sets and resulting differences in required managerial discretion between mutual and

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