

mini-computer to give the expected average excess claim amount and hence the risk premium for any particular retention. Two basic approaches have been used to model hull total loss business.

- (1) A random number generator is used to simulate the experience of a fleet of aircraft for a large number of years of experience.
- (2) Multinominals are used to obtain the exact distribution.

### *Conclusion*

Considerable data are available on aircraft experience from such sources as Airclaims Service. This data can be used to determine guide rates for Fleet rating and excess of loss business although a lot more research is required particularly in the areas of partial losses and passenger liabilities for which additional data will be required.

### *Appendices*

- (1) Tables of exposures, losses and loss rates
- (2) Graphs of loss rates by calendar year
- (3) Example of historical development of claims and settlements: DC10 crash near Paris in 1974
- (4) Table of fatalities for all jet aircraft.

## ***SOME TRENDS IN INVESTMENT MARKETS***

by

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*(Synopsis of a paper presented to the Society on 31 March 1981)*

THIS paper was originally presented to the Manchester Actuarial Society in December 1979. It was particularly appropriate at that time to look forward to a new decade. The three previous decades had shown that different factors can dominate the movements in interest rates and stockmarkets. In the 1950's assessment of the risks involved in equity investment resulted in ordinary shares showing higher yields than on fixed interest investments. The 1960's brought the reverse yield gap but in the 1970's it was the levels of and trends in interest rates which dominated movements in the ordinary share market.

The first section of the paper considers the trends in interest rates to higher but more variable levels. During the 1950's Bank Rate (Minimum Lending Rate in recent years) averaged 3.96%; rising to 5.93% in the next decade and to 9.59% in the 1970's. Coupons on U.K. Government securities which had been as low as  $1\frac{3}{4}\%$  in 1952 rose to over 15% in 1976 and 1979. Bank rate changed 14 times in the 1950's, 24 times in the 1960's and 87 times in the 1970's. These trends were not only a U.K. phenomenon. The use of pragmatic monetarism with high borrowing requirements produced similar effects elsewhere but even the excellent U.K. gilt market was hard pressed to meet the Government's borrowing needs without innovations such as partly-paid and variable coupon stocks.

As the expectations of investors are an important influence on share prices, the second section deals with the nature of investors in U.K. ordinary shares and how they have changed over the 1970's. Total personal wealth has moved from stocks and shares into physical assets, mainly dwellings. Savings have increased as a percentage of personal income with much of it directed through institutions including pension funds. Insurance companies and pension funds have increased their holdings as a proportion of total U.K. listed ordinary shares from one-third in 1970 to over half by 1979. Such growth has wrought changes in stockbroking to serve the new breed of investment manager. Firms of stockbrokers have reduced in number but increased in size so as to provide the economic advice and investment analysis required by the institutions.

The final section of the paper speculates on changes which might take place in the 1980's. Despite numerous forecasts of the increasing importance of the institutions, there are a number of reasons for their cash flow to moderate as a percentage of GDP in the next decade. Movements towards fiscal neutrality can be expected but not direction of investment. The measurement of investment performance is becoming more extensive but despite its substantial benefits, it does have disadvantages as investment horizons are shortened and some conformity of investment policy can occur. Index funds may result but they are expected to have only a short period in vogue. Index-linked securities are not expected to be issued to any great extent but the corporate debenture market should re-open. The reward of stockbrokers by commissions alone may change with separate charges for economic and company research replacing the present commission system.