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1996 INVESTMENT CONFERENCE

26-28 JUNE 1996

The second annual investment conference organised by the Institute and the Faculty of Actuaries was held at the Heathrow Marriott Hotel from 26 to 28 June 1996. Delegates from the United Kingdom, Ireland and further afield met to hear reports from several of the investment working parties set up after the previous investment conference, as well as investment research papers and two keynote addresses.

The conference was wide-ranging in its coverage of investment topics, from the practical application of investment techniques to more theoretical developments in analysing derivatives and modelling financial data. In view of the fairly large number of papers presented, only a very brief synopsis of each will be given, grouped together under broad headings.

1. KEYNOTE TALKS

The first of the keynote addresses was by Professor Gordon Pepper on market efficiency, entitled *The Liquidity Theory of Asset Prices: How to Beat the Efficient Market Hypothesis*. His contention was that persistent liquidity trades in the market resulted in 'extrapolative expectations'. He suggested that the momentum set up by these expectations would, in turn, lead to persistent price movements which were not offset by speculative trading.

The second keynote address was by Professor Geoffrey Wood on the *The Investment Implications of EMU*. He explained that European monetary union (EMU) would almost certainly proceed for a 'core' of countries, despite the substantial difficulties experienced by some in meeting the conditions of the Maastricht treaty. He outlined a scenario in which the run up to EMU would be characterised by struggles to meet inflation and deficit targets. He suggested that the early years of EMU would be turbulent, primarily because of reliability and measurement problems in determining such basic quantities as inflation and monetary indicators. In the longer term, Professor Wood suggested that there would be price stability as long as political interference was kept to a minimum and the proper accountability for the Central Bank was determined.

2. APPLICATIONS OF INVESTMENT TECHNIQUES

2.1 *Pension Funds*

Three papers dealing specifically with pension schemes were presented in a plenary session. *Investment Strategies for Defined Contribution Pension Schemes* was presented by Mr Graeme Charters of the Investment Policy for Defined

Contribution Pensions Schemes Working Party. The paper contained a brief survey of the issues involved in investing for such pensions schemes, and suggested various approaches which could be further analysed to address this growing area of interest. Mr Malcolm Kemp then presented his paper entitled *Asset/Liability Modelling (ALM) for Pension Schemes*. In it he commented on the applicability of different stochastic investment models for carrying out ALM, particularly when the investment strategies being tested include derivatives or dynamic investment strategies. The author suggested that testing strategies using some of the existing models could be misleading, and proposed an alternative, more robust, model. Messrs Jon Exley and Shyam Mehta of the Stochastic Investment Modelling Working Party then presented their paper *Asset Strategy for Defined Benefit Pension Schemes*. The paper contained a review and critique of existing actuarial approaches before presenting a mathematical model for determining optimal investment according to key inputs such as initial funding levels, bankruptcy risk and the relationship between the minimum funding requirement (MFR) and the final salary liabilities.

2.2 *General Insurance*

Two of the papers presented in parallel sessions dealt primarily with investment in general insurance applications. Mr John Ryan of the Asset Liability Modelling in General Insurance Working Party presented a paper on *Asset Liability Modelling in General Insurance*, and Mr Stavros Christofides of the General Insurance Study Group (GISG) Working Party a paper entitled *Exposure, Risk and Uncertainty for a General Insurer*. In the latter paper the authors discussed the concepts of risk, exposure and uncertainty in relation to management objectives in general insurance. They then introduced and described a model office (GISMO) for general insurance stochastic modelling.

2.3 *Life Insurance*

There were two papers in this area. First Mr Peter Rains presented a paper discussing the considerations involved in *Investment for Life Assurance*. The paper outlined how life funds had underperformed pension funds, and suggested ways in which this situation might be changed. Then Mr Roger Harvey presented his paper on *The Assessment of Life Assurance Shares*, in which he outlined the processes involved in obtaining embedded values and appraisal values for life assurance companies.

2.4 *Investment Products*

Mr Brett Robinson presented his paper on *The Inefficiency Cost of Guaranteed Investment Contracts*. He demonstrated how investors who were concerned about their terminal wealth at the end of an investment horizon could buy more cheaply the same distribution of outcomes as those offered by path-dependent strategies encompassed in ‘guaranteed bond’ policies. Messrs Iain Allen, Philip Booth and Shyam Mehta of the Banking Working Party presented a paper entitled *Retail*

Deposits and Mortgage Lending: An Appraisal of Analytical Techniques. The authors examined the current state of the market for retail deposits and mortgage lending, and considered how actuarial techniques could be used in pricing and valuing loan portfolios. They also looked at whether neural networks could be usefully applied to bad debt identification.

3. DERIVATIVES AND OTHER INVESTMENTS

The first paper on derivative instruments was *How Effective is Dynamic Hedging?* by Mr Malcolm Kemp of the Derivatives Working Party. The author constructed a model to demonstrate that dynamic hedging is indeed better than not adopting an 'insured' position, but suggested that some work needed to be done in incorporating allowances for jump risks and possible 'experience rating' of the actual volatilities experienced. Mr Eric Warner presented his paper *Notes towards Measuring and Managing Derivative Credit Risk.* He emphasised that derivative risk encompasses both market risk and credit risk. He suggested methods for measuring both of these types of risk, and concluded that the management of risk has to be performed continually and systematically to be effective. Mr Tim Pettit presented a paper on *The Use of Swaps in Investment Management.* Mr Martin Cumberworth and other members of the Property Investment Committee presented their paper on *Securitisation and Institutional Property Investment.* They explored trends in levels of investment in property, and considered whether securitisation of the market would affect these levels.

4. MODELLING

Messrs Jon Exley, Shyam Mehta and Andrew Smith presented a paper entitled *Market Efficiency.* In the paper they discussed the concept of market efficiency, arguing that investment managers should support the efficient market hypothesis, as testimony to their skill and expertise, rather than rejecting it. They described various tests of market efficiency, and proposed a modelling framework within the efficient market context which could explain some of the 'evidence' proffered against efficiency. Mr Andrew Smith, Ms Julie Griffiths and Mr Fahim Imam-Sadeque presented the Quant Techniques Working Party report on *Multi-Factor Techniques in Active Quant Models.* This paper was largely expository in nature, and included a description of two types of analysis/model which are often confused, namely regression forecasting techniques and arbitrage pricing theories. The first-mentioned are cross-sectional analyses often used for detecting anomalous pricing in the market, whereas the latter are asset pricing theories based on the assumption of an arbitrage-free market. Mr Shyam Mehta presented *The Development of an Inflation Model*, which detailed a candidate model of inflation which could be used for stochastic investment modelling. He cautioned that such a model is difficult to construct because of the shifts in regime which

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occur from time to time, but suggested that historic data could still assist in finding desirable properties for the model. Dr Andrew Cairns presented his paper *Parameter and Model Risk in Stochastic Investment Modelling*. In the paper a methodology for assessing the impact of the three sources of uncertainty in a stochastic investment model was described; the sources of uncertainty being identified as (1) that arising out of the stochastic element in the model; (2) the uncertainty arising from the particular parameter values in the model; and (3) the uncertainty in the model underlying the observation of the quantity of interest.

5. RISK

Mr Andy Adams presented *Components of Risk for Investment Trusts*. In the paper he showed how the total variance of returns to shareholders of an investment trust could be decomposed into three parts. The relative sizes of these components were estimated using historical data, and revealed that the investor's time horizon determined which components of risk were of importance. Messrs Philip Booth and Chris Sandford of the Portfolio Risk Control Working Party presented a paper on *Portfolio Risk Measurement*. In the paper several different methods used for measuring portfolio risk in practice were appraised. It was concluded that the risk/return ranking measures which relied on the variance and mean of short-term historical returns were inadequate and lacked theoretical backing. Alternative measures of risk were regarded as potentially informative, although subjective factors, such as the quality and stability of management and investor-specific benchmarks, would help determine individual risks.

6. INDICES

Two papers focused on equity indices. The first, *An Exploratory Analysis of the FT-SE 100 Index*, by Dr David Bowie and Professor Robert Clarkson of the Portfolio Performance Working Party, analysed the relative sizes of the constituents of the FT-SE 100 Index, with a view to using this information to explain any differences in the performance of the FT-SE 100 and All-Share Indices. The focus of this initial investigation was on the 'gap factors' between the sizes of stocks which occupied contiguous size ranks, although some evidence on the more dynamic aspects of the index was also considered. The second paper, *Global Equity Indices*, by Messrs Daniel Gardner and Peter Whitehead of the Global Equity Indices Research Working Party, discussed the many issues which are often ignored in the compilation of indices, indicating some quite marked differences in indices purporting to measure the same performance. The authors suggested that the area of index compilation was ready for some form of standardisation and of rationalisation, given its importance in the investment and actuarial arenas.

7. TERM STRUCTURE

Two papers were focused specifically on the term structure of interest rates. Dr Geoff Chaplin of the Fixed Interest Working Party presented a review paper entitled *A Review of Term Structure Models and their Applications*. The paper included a detailed description of the models commonly used in term structure modelling. Arising out of the review, the author concluded that the selection of the model should be driven by its application; for example, if arbitrage-free pricing of derivatives is required, then an arbitrage-free term structure model is required. Dr Andrew Cairns, also of the Fixed Interest Working Party, presented his paper on *Modelling Bond Yield and Forward-Rate Curves for the* Financial Times *Actuaries British Government Securities Yield Indices*. In the paper the author reviewed the existing approaches to fitting the U.K. gilt yield curves used by the *Financial Times*, and demonstrated that the estimated curves were subject to fairly frequent 'catastrophic jumps'. A new, more robust, method, based on forward rates, was proposed as an alternative.

8. MISCELLANEOUS

The paper, *Manager Selection and Style Analysis*, was presented by Mr Brian St John Hall of the Manager Selection and Style Analysis Working Party. The paper began with a review of the process of investment management and a presentation of the various roles and responsibilities of those concerned. The style features of management were then discussed, and the problems and misconceptions of the various quantitative and qualitative methods for manager selection, monitoring and assessment were highlighted. Mr Andy Adams presented a paper on *The New Insider Dealing Legislation — A Confusing Outcome*. The paper assessed the impact of new insider dealing legislation on companies, analysts, fund managers and investors. The main conclusions drawn by the authors are that the probability of successful conviction under the new code is negligible, and that it may have damaged the efficiency of the market in the process of making it fairer.

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