Preface to Mathematics of Finance. A theme issue published by the Royal Society

The Royal Society

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Preface

Quantitative finance has been one of the major growth areas for research in mathematics over the past decade. Arguably, the subject started in 1900 with the groundbreaking thesis of Louis Bachelier. His work was largely ignored, for being too different from that of his contemporaries. Fischer Black, Myron Scholes and Robert Merton used some of Bachelier's ideas together with some of their own, and published in 1973 the famous work that would earn two of them the Nobel Prize for Economics, Black having died and therefore not being eligible. From this work on equity options followed similar work on interest rate modelling, credit risk and a whole academic subject.

Despite apparent advances in the subject over the past 25 years, there continue to be major financial disasters almost every year; one of the most recent was that of Long Term Capital Management, two of whose partners were Scholes and Merton. As we move into a new millennium, it is becoming increasingly clear that there is still much work to be done in understanding and modelling the financial markets. One of the most noteworthy trends of the last few years has been the influx of applied mathematicians and physicists into the field, drawn partly by the rewards and partly for the intellectual stimulation of a new subject. Many of them are responsible for the exciting new directions of the subject, away from the traditional naive probabilistic models to more innovative and more realistic models.

This volume is a collection of the work of some of the new breed of mathematical modellers working in finance. The whole of quantitative finance is covered here with the uniting theme of innovation and radical new thought. We enjoyed compiling this work and we hope that you enjoy reading it.

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