

Preface to the Second Edition

Books are written for use, and the best compliment that the community in the field could have paid to the first edition of 1998 was to buy out the print run, and that of the corrected printing, as happened. Meanwhile, the fast-developing field of mathematical finance had moved on, as had our thinking, and it seemed better to recognize this and undertake a thorough-going rewrite for the second edition than to tinker with the existing text.

The second edition is substantially longer than the first; the principal changes are as follows. There is a new chapter (the last, Chapter 9) on credit risk – a field that seemed too important to exclude. We have included continuous-time processes more general than the Gaussian processes of the Black-Scholes theory, in order in particular to model driving noise with jumps. Thus we include material on infinite divisibility and Lévy processes, with hyperbolic models as a principal special case, in recognition of the growing importance of ‘Lévy finance’. Chapter 5 is accordingly extended, and new material on Lévy-based models is included in Chapter 7 on incomplete markets. Also on incomplete markets, we include more material on criteria for selecting one equivalent martingale measure from many, and on utility-based approaches. However, arbitrage-based arguments and risk-neutral valuation remain the basic theme.

It is a pleasure to record our gratitude to the many people who have had a hand in this enterprise. We thank our students and colleagues over the years since the first edition was written at Birkbeck – both Nick (Brunel and Sheffield) and Rüdiger (London School of Economics and Ulm). Special thanks go to Holger Höfling, Torsten Kleinow and Matthias Scherer. In particular, we thank Stefan Kassberger for help with Sections 8.5 and 8.6, and with parts of Chapter 9. We are grateful to a number of sharp-eyed colleagues in the field who have pointed out errors (of commission or omission) in the first edition, and made suggestions. And we thank our editors at Springer-Verlag for bearing with us gracefully while the various changes (in the subject, our jobs and lives etc.) resulted in the second edition being repeatedly delayed.

Again: last, and most, we thank our families for their love, support and forbearance throughout.

August 2003 *Nick, Brunel and Sheffield* *Rüdiger, Ulm and LSE*

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