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Adil Reghai

Financial Models in Production

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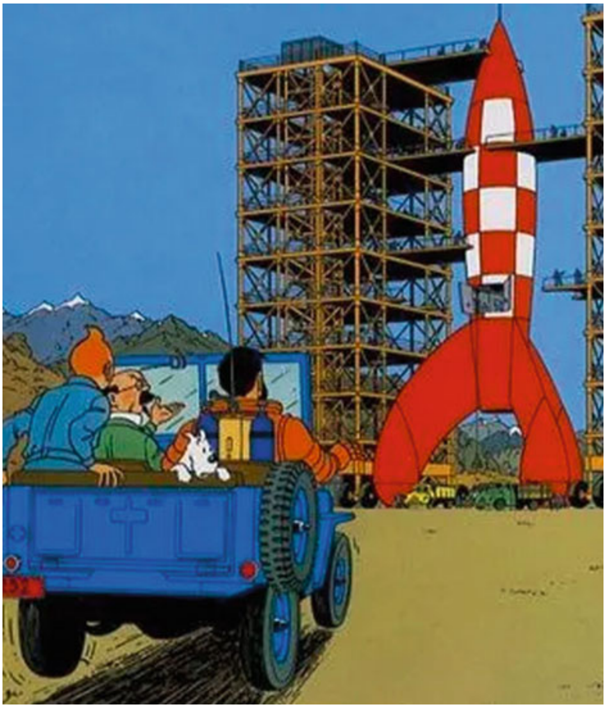

Foreword

Options theory has come to us in so many ways. Beyond numerous technicalities, one is faced with unknown, possibly time varying, data generating processes and hedging issues in possibly incomplete markets. Extensive work has been done in these directions, but it is seldomly applicable in a real-world context. Therefore, over the years, an engineering approach has emerged, aiming at reconciling practicalities and rigorous approaches. Rigour derives from brevity, clarity and precise descriptions of pricing and risk management procedures. Leveraging on Adil Reghai's "Quantitative Finance: Back to Basic Principles", this book provides a self-contained investigation of volatility dynamics and the intersection of option pricing and risk management, including an explanation of P&L. This work has unique and quite distinctive features: it takes the reader straight to the points addressed. Being built on real-life experience, it is full of innovative views and practical results not easily accessible elsewhere. Last but not least, it is a testimony to the vibrant intellectual climate within the quantitative finance community. For the above reasons, Adil Reghai and Othmane Kettani's book will be of interest to a wide audience, ranging from students in mathematical finance programmes to seasoned academics and quantitative engineers. Besides being useful and helpful, it sparks curiosity and brings the pleasure of learning as one moves through its different chapters. I had the opportunity to meet with Adil and Othmane in recent years. It is my honour and privilege to once more enjoy their expertise.

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Preface

In this book, we show how to put in production models with important features at the minimum cost of implementation and the maximum robustness and control.

The idea is that one can implement production level models based on elementary and robust building blocks.

The main building blocks for equity derivatives, which are our subject here, are the following:

- Black–Scholes formula,
- Implied volatility calculator,
- Local volatility pricer,
- A new breed of stochastic volatility.

With these blocks and a lot of astute, one can build all the necessary models in order to risk manage all the costs involved in the options fabrication within the world of equity derivatives and hybrids.

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Contents