Preface

This book grew out of an introduction to portfolio choice problems presented in Chapados (2010). This problem has a long history: Markowitz's 1952 treatment of the subject now known as "Modern Portfolio Theory" is close to reaching the venerable age of sixty. In the intervening years, notions such as mean-variance efficiency have had enormous impact in the theory and practice of finance, not only on the "mundane" task of asset allocation but as models of the general trade-off between risk and return in financial markets, as well as portfolio performance measurement and attribution.

For newcomers to the field, it has been increasingly difficult to obtain a broad yet concise coverage of the subject. On the one hand, the practitioner-oriented literature focuses, by and large, on single-period models and the techniques[1] needed do fix the deficiencies in Markowitz's simple quadratic programming formulation. On the other hand, more academic treatments address the elegant generalization to the multiperiod case, but have been far less accessible. Moreover, the substantial body of research outside the field of financial economics has largely been scattered, with no work attempting to bring a unified treatment to the topic.

This book aims to fill this gap by offering a broad coverage of portfolio choice, containing both application-oriented and academic results, along with abundant pointers to the literature for further study. It tries to cut through many strands of the subject, presenting not only the classical results from financial economics but also approaches originating from information theory, machine learning and operations research.

As such, it should prove useful to students entering the field as well as practitioners looking for a broad coverage of the topic.

[1] Which some would respecfully dub "hacks".

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