Preface

A journey of a thousand miles must begin with a single step.

Lao Tsu

The first step in the creation of this book was the in-house development of a software application. The objective of this application was to provide decision-support analytics to a group of portfolio managers. Decision support means, in this context, the comparison of portfolios along a wide range of dimensions, the simulation of portfolio trades, the computation and attribution of risk and performance, and the provision of some optimization tools. We came, over the course of the project, to describe this collection of methods and techniques as *portfolio analytics*.

The portfolios in question were, and still are, comprised of a relatively wide range of high-credit fixed-income instruments including principally sovereign, supranational, agency, and highly rated corporate bonds. The portfolios also included a range of ancillary instruments such as foreign-exchange swaps, bond and rate futures, inflation-linked bonds, and interest-rate swaps. In other words, these portfolios hold the typical fixed-income instruments found in the tool-kit of a reserve-portfolio manager in a central bank, a sovereign-wealth fund, a pension fund, an insurance company, an endowment, or an international institution.

When one sets out to build such a system, the first step involves the establishment of a consistent framework for the classification, comparison, and analysis of different portfolios relative to their benchmark. Such a framework necessarily involves taking explicit decisions and making assumptions about the treatment of a wide range of instruments. I found this task to be particularly challenging given the relative dearth of detailed reference books describing methods for fixed-income portfolio analytics—there were references on fixed-income risk, performance, and exposure, but relatively little combining them in a single setting. The learning curve was steep, but the reward was an in-depth and practical understanding of a number of related ideas that are reasonably well described by the term, fixed-income portfolio analytics. Given the nature and mandate of my employer—the Bank of International Settlements (BIS), which is an international institution serving global central banks—it was naturally decided to share this knowledge with our

customers. I consequently began to design presentations for various knowledge-sharing seminars, with central-bank reserve managers, hosted by the BIS.

Presentations can, however, be dangerous. With presentations, participants tend to forget exactly what the speaker said and later, in the comfort of their office, tend to re-interpret the meaning of a slide or a comment in a manner that the speaker did not actually intend. Moreover, an oral presentation rarely has the time—nor do listeners typically have the patience—to go sufficiently deep into the mathematical details. The appreciation of these facts was the genesis of this book.

What the reader might find appealing about this work is that it is *not* an academic work. Instead, it is written for practitioners by a practitioner. The techniques in the following pages are not theoretical—they are used daily in a living, working fixed-income portfolio analytic system. The ideas in this text are inputs to internal and external reports used to take decisions on large fixed-income portfolios. This does not mean that this book has no academic value. On the contrary, many academic concepts and references are employed. What it does mean, however, is that is a practical document intended to help solve practical problems.

Having made this point, the development in the following chapters does not represent the only, nor even the best, approach for the analysis of fixed-income portfolios. Our philosophy in the construction of the application—and the preparation of this book—was the development of a relatively simple, robust, and transparent framework. The advantage of such an approach is that one's computations and analysis are subsequently easier to explain to managers, senior management, and one's analyst colleagues. A clear disadvantage is that the system is always open to criticism that the techniques used are not sufficiently complex and that some of the approximations lack accuracy—we accept this critique and, moreover, encourage others to both challenge and improve upon the methods presented in this text.

Basel, Switzerland
September 2014

David Jamieson Bolder

http://www.springer.com/978-3-319-12666-1

Fixed-Income Portfolio Analytics
A Practical Guide to Implementing, Monitoring and Understanding Fixed-Income Portfolios

Bolder, D.J.

2015, XXVII, 544 p. 170 illus., 15 illus. in color.,
Hardcover
ISBN: 978-3-319-12666-1