Financ Mark Portf Manag (2009) 23: 329–330
DOI 10.1007/s11408-009-0110-5

BOOK REVIEW

C. Skiadas: Asset Pricing Theory

Princeton University Press, 2009

Evert Wipplinger

Published online: 17 July 2009

Asset Pricing Theory by Costis Skiadas is a self-contained mathematical treatment of the foundations of discrete asset pricing. The book is unique in this field in that it familiarizes the reader not only with the core principles of theoretical asset pricing but also with a formal mathematical approach. Its exposition features the definition-proposition-proof structure common to mathematical texts, and it is arguably the most rigorous textbook on the subject, on par with research articles. All assumptions and definitions are made explicit, which reveals that the author's intended audience comprises engineers or mathematicians who want exposure to asset pricing and finance academics requiring a detailed treatment even in an introductory book.

Asset Pricing Theory is structured into three main parts. The first part treats single period cash flows in four chapters. Chapter 1 introduces basic definitions of financial markets and Arrow-Debreu securities along with the fundamental theorems of asset pricing. Chapter 2 focuses on mean variance analysis. In Chapter 3, the author introduces equilibrium pricing in the context of representative agents and utility functions. Chapter 4 concludes the first part with a focus on expected utility.

The second part of the book extends the results of the first part to a multi-period setting. The author's approach is presented, which allows the reader to find analogies to continuous time asset prices. Chapter 5 provides a dynamic arbitrage pricing framework by extending Chapter 1. In the last chapter Skiadas presents basic properties of optimal consumption, chiefly in the setting of Kreps-Porteus utility.

A large part of the book is devoted to mathematical appendices, the third part of the book, which make it self-contained. The author suggests reading the first appendix on linear algebra concurrently with Part I of the text and the second appendix on discrete probability theory with Part II. It is especially important to read the second appendix

E. Wipplinger (✉)
University of St. Gallen, Rosenbergstr. 52, 9000 St. Gallen, Switzerland
e-mail: evert.wipplinger@unisg.ch

along with, or preferably before, reading Part II as it includes notational definitions. The mathematical foundations covered in this book are, of course, also covered in standard textbooks, but this book provides added value by combining and linking the mathematical background to theoretical asset pricing. Each chapter includes a brief literature review pointing the reader to the research articles that underlie the results presented. Moreover, the book includes exercises at the end of each chapter, mainly consisting of additional proofs.

The overall scope of the book is narrower than that of some other textbooks in the field, such as *Dynamic Asset Pricing Theory* by Darrell Duffie (Princeton University Press, 2001) or *Theory of Asset Pricing* by George Pennacchi (Pearson Education, 2008), but larger than that of others, for example, LeRoy and Werner's *Principles of Financial Economics* (Cambridge University Press, 2000). The results in the book are largely left undiscussed, meaning that the reader needs to either consult one of the books mentioned above, or an accompanying lecture, for matters such as economic implications and applied models. However, this design is justified by the book's purpose of providing a rigorous treatment of the basics of discrete asset pricing. Even though the book takes a formal stance, its concise style makes it accessible to one willing to work through it. I, personally, enjoyed the book's style.

Costis Skiadas has successfully created a truly self-contained reference on the foundations of asset pricing theory. I recommend it to those interested in a thorough introduction to this subject that proceeds from the bottom up.