Book review

*Real Options: Managing Strategic Investment in an Uncertain World; Martha Amram, Nalin Kulatilaka; Harvard Business School Press, Boston, MA, 1999, 246 pages ($35.00)*

The purpose of this text is to understand the circumstances where option methodology is applicable to strategic investment. In other words, it is a manual to teach decision-makers how to think in a real-options framework. Although the text makes reference to some option-pricing techniques, no true option-pricing training is given. However, wherever computational rigor exists, the reader is referenced to the book’s website: www.real-options.com for downloadable spreadsheets. The book also carefully notes the relevant academic research.

The text is refreshing in that it does create a method of logic for the study of real options without an excessive amount of new vocabulary. In a sense, the method is a standardization of real-options thought. However, it is disappointing to need a second reference to actually do the computational work to find the value of a real option. Although I am delighted by this text’s contribution, I am also disappointed in that it only gives me half of what I really need to apply real-options techniques.

The text consists of three parts: the real-options potential, the real-options solution process, and a portfolio of applications. A concluding chapter summarizes the text. The first part has six chapters and behaves as an extended introduction. The second part, with three chapters, produces the standardized technique for implementing a real-options framework. Each of the 10 chapters in part three provides a mini case study of particular real-options techniques.

More specifically, Chapters 1–3 introduce the concept of a real option. The reader is made aware that ‘uncertainty creates opportunity’ and how an option-pricing framework captures this issue. Chapter 3 does a nice job of explaining option payoffs and option pricing without the aid of an equation. The presentation is clear and particularly good for a novice.

Chapters 4–6 further develop the use of option techniques to real assets. Chapter 4 discusses ‘tracking error’ in relation to using a tracking portfolio to replicate an option. Since a real option is generally not an exchange-traded security nor does it have an underlying security that is exchange-traded, the issue of tracking error is significant. Chapters 5 and 6 shape the actual focus of
the text. The book is not about techniques of real-options pricing but how to think in a real-options framework. Given the sentiment of these two chapters, the second part of the text launches into a solution process without mathematical solutions.

Chapter 7 develops the solution process as essentially four steps: frame the application, implement the option-valuation model, review the results, and redesign. The fourth step, ‘Redesign’, is to determine if you need to repeat steps one through three again. The chapter mainly focuses on the first, third and fourth steps. The third and fourth steps essentially make the reader aware that one generally does not get an appropriate solution on the first attempt. When an inappropriate solution occurs, it is usually step one that needs to be adjusted.

Chapters 8 and 9 are devoted entirely to step 2: implement an option-valuation model. The techniques discussed are covered in a cursory manner making an option-pricing reference text necessary for complete understanding. However, the end-of-chapter notes are rather good in directing the reader to such reference material. Again, the treatment is appropriate for developing intuition, which is the goal of the book.

Chapters 10–19 are a set of mini cases involving real-options concepts. The calculations are scant at best but the framing of the context in which real options emerge is clear. In essence, the authors bring the reader through step one of the solution process in each case. As with Chapters 8 and 9, the end-of-chapter notes provide the reference material necessary for a more rigorous treatment of the given case. As to the subject matter of each mini case, the chapter titles tell the story: Valuing a Start-up, Investing in a Start-up, Exploring for Oil, Developing a Drug, Investing in Infrastructure, Valuing Vacant Land, Buying Flexibility, Combining Real and Financial Flexibility, Investing to Preempt Competitors, and Writing a License.

Although the main issue of the text is to get the manager to think in a real-options framework, a second aspect extends this notion to developing corporate strategy by using the real-options framework. This second notion emerges in Chapter 5 but really comes alive in the latter mini cases. Chapter 20 echoes these two aspects to conclude the text.

Overall, this book does accomplish its goal of developing a framework for attacking corporate decisions using real options. However, if the reader desires a text that explains the mathematical rigor of finding a real-options solution, this text is not sufficient. The text is recommended for the classroom at the graduate level but a second text for actual option pricing is necessary to produce a full treatment of the subject matter.

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