Chapters 5-8

Risk Assessment: Tools and Techniques

Risk management begins with the assessment of risk. In the last 50 years, the confluence of developments in economic and financial theory with computing and data advancements has allowed us to develop new tools for assessing risk and improve existing ones. On the one hand, portfolio theory and risk and return models (such as the capital asset and arbitrage pricing models) have allowed us to become more sophisticated in adjusting the expected value of risky assets for that risk. Chapter 5 provides a broad overview of the choices when it comes to risk adjusting the value. The decision sciences and statistics have contributed their own tools to risk assessment with scenario analysis, decision trees and simulations. Chapter 6 examines these approaches and why you may choose one over the other and how probabilistic approaches relate to the risk adjusted values in chapter 5. Chapters 7 and 8 cover two relatively new tools in risk assessment, Value-at-Risk or VaR, focused primarily on dowside risk and with a particular focus on financial service firms, and real options, more oriented towards upside risk and its payoff, with roots in the mining and technology businesses.

To the extent that risk assessment has to grapple with numbers and put a value on risk, these chapters are the most quantitative in the book. While many risk managers do not do risk assessments themselves, they use risk assessments done by others. These chapters should provide some insight into how the risk assessment tools differ in what they do and the types of follow-up questions you should have with each one.

Chapter	*Questions for Risk Management*
5	What are the different ways of adjusting the value of arisky asset for risk?
	Which approach should you use and why?
6	How do probabilistic approaches help us get a handle on risk?
	How do these approaches differ from each other?
7	What is VaR and how does it relate to other assessment approaches?
	When does it make sense to use VaR?
8	How do real options differ from other risk assessment tools?
	When is it appropriate to use real options?