

Contents

Preface	xi
Acknowledgments	xiii
CHAPTER 1	
Time Value of Money Toolbox	1
Introduction	1
Cash Flows	1
Future Value	2
The Impact of Compounding Frequency on Future Value	8
Equivalent Interest Rate	9
Continuously Compounded Interest	11
Present Value	12
Formulas for Present Value and Future Value	14
Conclusion	17
Questions	18
CHAPTER 2	
Statistics for Finance	19
Introduction	19
The Meaning of Mean or Average	19
Median as a Substitute for Mean	20
Standard Deviation Measures the Noise	20
Annualizing Variance and Standard Deviation Estimates	27
The Normal Curve Is a Probability Distribution	29
The Cumulative Density Function	31
Measures of Dependency	32
Measuring Covariance and Correlation	36
Calculating Statistics in Practice	37
Combining Normal Distributions	37
Conclusion	42
Questions	43

CHAPTER 3	
Core Finance Theories and the Cost of Capital	45
Introduction	45
Risk Reduction from Diversification	45
Systematic versus Unsystematic Risk	48
The Market Portfolio	49
The Capital Asset Pricing Model	49
Using Beta to Determine the Required Return for a Stock	51
Other Factor Models	51
Cost of Debt	52
Weighted Average Cost of Capital	52
Modigliani and Miller	53
Patterns of Debt and Equity in Capital Structures	54
Conclusion	54
Questions	55
CHAPTER 4	
Capital Budgeting Tools	57
Introduction	57
Three Ways to Evaluate Investments	57
Calculating Net Present Value	58
Net Present Value Example	59
Calculating Internal Rate of Return	60
Calculating Years to Payback	62
Financial Decision Making	63
The Annuity Formula	64
Valuing an Annuity with More Frequent Cash Flows	65
Using the Present Value Formula and the Annuity Formula to Value a Bond	67
Using the Annuity Formula to Value a Mortgage	67
NPV Using the Annuity Formula	67
Valuing a Perpetuity	69
Valuing a Growth Perpetuity	71
Introduction to Uncertainty	72
Conclusion	74
Questions	75
CHAPTER 5	
Techniques for Handling Uncertainty	77
Introduction	77
Using Scenario Analysis	77

*Contents***ix**

Using Monte Carlo Simulation	79
Uniform Random Numbers	83
Transforming Uniform Distributions	83
Adding and Multiplying Two Random Numbers	91
Using Random Numbers in Budget Analysis	92
Using Random Numbers in a Capital Budgeting Analysis	94
Conclusion	96
Questions	97
CHAPTER 6	
Real Option Analysis of Capital Investments	99
Introduction	99
Why Study Options?	100
What Is a Real Option?	101
Types of Real Options	102
Methods for Valuing Real Options	105
Conclusion	117
Questions	118
APPENDIX:	
Day Counting for Interest Rate Calculations	119
Introduction	119
The 30/360 Method	120
The Actual/Actual Method	121
The Actual/360 Method	121
The Actual/365 Method	122
Example and Comparison of 30/360 and Actual/Actual	122
Impact of Day Counting over Longer Intervals	123
Calculating Calendar Intervals over Long Periods	123
A Note about Continuous Compounding	124
Conclusion	125
Questions and Answers	127
About the Author	167
Index	169

<http://www.pbookshop.com>