

---

Angelo Corelli

# Analytical Corporate Finance

Second Edition

 Springer

---

# Contents

<b>1</b>	<b>Basic Concepts</b> . . . . .	1
1.1	The Corporation . . . . .	2
1.1.1	Organizational Forms . . . . .	2
1.1.2	The Corporate Objective . . . . .	6
1.2	Financial Statement Analysis . . . . .	10
1.2.1	Balance Sheet . . . . .	10
1.2.2	Income Statement . . . . .	15
1.2.3	Cash Flow Statement . . . . .	22
1.2.4	Pro Forma Statements . . . . .	25
1.3	Arbitrage . . . . .	30
1.3.1	The Law of One Price . . . . .	30
1.3.2	Forms of Arbitrage . . . . .	33
1.4	Summary . . . . .	37
	Problems . . . . .	38
	Case Study: Pro Forma Statements . . . . .	38
	References . . . . .	39
<b>2</b>	<b>Valuation Tools</b> . . . . .	41
2.1	The Time Value of Money . . . . .	42
2.1.1	The Rules of Time Travel . . . . .	42
2.1.2	Valuation of Cash Flow Streams . . . . .	47
2.1.3	Annuities and Perpetuities . . . . .	48
2.2	Interest Rates . . . . .	52
2.2.1	Types of Interest Rates . . . . .	52
2.2.2	Compounding Frequencies . . . . .	55
2.2.3	The Drivers of Interest Rates . . . . .	56
2.3	Present Value Calculation . . . . .	59
2.3.1	Net Present Value . . . . .	59
2.3.2	Internal Rate of Return . . . . .	60
2.3.3	Growing Cash Flows . . . . .	62
2.4	Summary . . . . .	66
	Problems . . . . .	67

---

Case Study: Time Value of Money . . . . .	69
References . . . . .	71
<b>3 The Relationship Between Risk and Return . . . . .</b>	<b>73</b>
3.1 Expected Return and Volatility . . . . .	74
3.1.1 The Portfolio Return . . . . .	74
3.1.2 Volatility and Correlation . . . . .	77
3.1.3 Maximum Likelihood Methods . . . . .	83
3.2 Modern Portfolio Theory . . . . .	87
3.2.1 The Risk/Return Trade-Off . . . . .	87
3.2.2 Optimal Portfolios . . . . .	92
3.2.3 The Market Price of Risk . . . . .	99
3.3 The Capital Asset Pricing Model . . . . .	102
3.3.1 Model Assumptions . . . . .	102
3.3.2 The Security Market Line . . . . .	106
3.3.3 Beyond CAPM . . . . .	110
3.4 Summary . . . . .	112
Problems . . . . .	113
Appendix: Liquidity CAPM . . . . .	116
Case Study: Risk and Return . . . . .	117
References . . . . .	119
<b>4 Business Analysis . . . . .</b>	<b>121</b>
4.1 Capital Budgeting Decision Rules . . . . .	122
4.1.1 The Net Present Value Rule . . . . .	122
4.1.2 The Internal Rate of Return Rule . . . . .	125
4.1.3 The Payback Rule . . . . .	126
4.1.4 The Profitability Index Rule . . . . .	127
4.2 Project Valuation . . . . .	130
4.2.1 Scenario Analysis . . . . .	130
4.2.2 Decision Trees . . . . .	132
4.2.3 Simulations . . . . .	134
4.3 Sub-disciplines of Business Analysis . . . . .	137
4.3.1 Enterprise Analysis . . . . .	137
4.3.2 Business Requirements Analysis . . . . .	140
4.3.3 Analysis Techniques . . . . .	143
4.4 Summary . . . . .	144
Problems . . . . .	145
Case Study: Net Present Value . . . . .	146
References . . . . .	148

<b>5</b>	<b>Debt Valuation</b> . . . . .	149
5.1	Bond Markets . . . . .	150
5.1.1	Bond Fundamentals . . . . .	150
5.1.2	Types of Bonds . . . . .	151
5.1.3	Knowing the Risks . . . . .	153
5.2	The Price/Yield Relationship . . . . .	156
5.2.1	Bond Prices and Yields . . . . .	156
5.2.2	The Yield Curve . . . . .	162
5.2.3	Duration and Convexity . . . . .	165
5.3	The Term Structure of Interest Rates . . . . .	169
5.3.1	The Brownian Motion . . . . .	169
5.3.2	Single-Factor Models . . . . .	172
5.3.3	Multifactor Models . . . . .	177
5.4	Summary . . . . .	179
	Problems . . . . .	179
	Appendix: Principal Component Analysis of the Term Structure . . . . .	181
	References . . . . .	183
<b>6</b>	<b>Equity Valuation</b> . . . . .	185
6.1	The Stock Market . . . . .	186
6.1.1	Market Microstructure . . . . .	186
6.1.2	Price Formation . . . . .	190
6.1.3	Funding vs. Market Liquidity . . . . .	192
6.2	Common Equity . . . . .	194
6.2.1	Dividend Discount Models . . . . .	194
6.2.2	Discounted Free Cash Flow Models . . . . .	202
6.2.3	Relative Valuation Models . . . . .	206
6.3	Special Issuances . . . . .	208
6.3.1	Preferred Stocks . . . . .	208
6.3.2	Warrants . . . . .	213
6.3.3	Convertibles . . . . .	216
6.4	Summary . . . . .	218
	Problems . . . . .	219
	References . . . . .	220
<b>7</b>	<b>Capital Structure</b> . . . . .	223
7.1	The Modigliani–Miller Theorems . . . . .	224
7.1.1	The Irrelevance of Capital Structure . . . . .	224
7.1.2	The Weighted Average Cost of Capital . . . . .	228
7.2	Payout Policy . . . . .	234
7.2.1	Dividends vs. Share Repurchase . . . . .	234
7.2.2	Modigliani–Miller Revisited . . . . .	239
7.3	Modern Theories of Capital Structure . . . . .	241
7.3.1	Static Trade-Off Theory and the Pecking Order Hypothesis . . . . .	241
7.3.2	The Adjusted Present Value . . . . .	244
7.3.3	Tax-Based Theories of Capital Structure . . . . .	246

7.4	Summary . . . . .	249
	Problems . . . . .	250
	Appendix: Risk-Adjusted Return on Capital . . . . .	252
	Case Study: Capital Structure . . . . .	253
	References . . . . .	254
<b>8</b>	<b>Company Valuation . . . . .</b>	<b>257</b>
8.1	CAPM Parameters Estimation . . . . .	258
8.1.1	The Risk-Free Rate . . . . .	258
8.1.2	The Risk Premium . . . . .	260
8.1.3	The Beta . . . . .	262
8.2	Valuation of Private Firms . . . . .	265
8.2.1	The Cost of Capital . . . . .	265
8.2.2	Beta Estimation . . . . .	270
8.2.3	Growth and Terminal Value . . . . .	273
8.3	A Real Case: The IPO of Facebook™ . . . . .	281
8.3.1	The Road to the IPO . . . . .	281
8.3.2	The Firm's Fundamentals . . . . .	284
8.3.3	After the IPO . . . . .	288
8.4	Summary . . . . .	291
	Problems . . . . .	292
	Case Study: Company Valuation . . . . .	293
	References . . . . .	294
<b>9</b>	<b>Financial and Real Options . . . . .</b>	<b>297</b>
9.1	Basic Concepts . . . . .	298
9.1.1	Financial Derivatives . . . . .	298
9.1.2	Option Structure and Payout . . . . .	304
9.1.3	Strategies and Combinations . . . . .	306
9.2	Option Valuation . . . . .	310
9.2.1	Binomial Trees . . . . .	310
9.2.2	Black-Scholes-Merton Model . . . . .	314
9.2.3	The Greeks . . . . .	317
9.3	Real Options . . . . .	320
9.3.1	Types of Real Options . . . . .	320
9.3.2	Valuation Methods . . . . .	327
9.4	Summary . . . . .	333
	Problems . . . . .	333
	References . . . . .	336
<b>10</b>	<b>Long-Term Financing . . . . .</b>	<b>339</b>
10.1	Early-Stage Funding . . . . .	340
10.1.1	Angel Investors . . . . .	340
10.1.2	Venture Capital . . . . .	342
10.1.3	Private Equity . . . . .	346

---

10.2	Initial Public Offering . . . . .	348
10.2.1	Types of Offering . . . . .	348
10.2.2	IPO Underpricing . . . . .	351
10.3	Debt Financing . . . . .	353
10.3.1	Types of Debt . . . . .	353
10.3.2	Loans Vs. Bonds . . . . .	361
10.3.3	Leasing . . . . .	364
10.4	Summary . . . . .	368
	Problems . . . . .	369
	References . . . . .	369
<b>11</b>	<b>Working Capital Management . . . . .</b>	<b>371</b>
11.1	Structure of Working Capital . . . . .	372
11.1.1	Current Assets and Liabilities . . . . .	372
11.1.2	Conversion Cycles . . . . .	376
11.1.3	Significance of Short-Term Financing . . . . .	380
11.2	Receivables and Payables . . . . .	383
11.2.1	Accounts Receivable . . . . .	384
11.2.2	Accounts Payable . . . . .	387
11.3	Inventory Management . . . . .	390
11.3.1	Definition and Purpose . . . . .	391
11.3.2	Inventory Models . . . . .	394
11.4	Cash and Liquidity Management . . . . .	397
11.4.1	The Management of Cash . . . . .	397
11.4.2	Float Management and Collection . . . . .	400
11.5	Summary . . . . .	405
	Problems . . . . .	406
	Case Study: Conversion Cycles . . . . .	406
	References . . . . .	408
<b>12</b>	<b>Financial Planning . . . . .</b>	<b>409</b>
12.1	The Birth of a Business . . . . .	410
12.1.1	Business Start-Up . . . . .	410
12.1.2	Rights . . . . .	413
12.2	Growth Management . . . . .	415
12.2.1	The Life Cycle of the Firm . . . . .	416
12.2.2	Short-Term Financial Planning . . . . .	418
12.3	Planning and Forecasting . . . . .	422
12.3.1	Basic Planning Rules . . . . .	422
12.3.2	The Process of Strategic Planning . . . . .	423
12.4	Summary . . . . .	427
	Problems . . . . .	428
	References . . . . .	428

<b>13</b>	<b>International Corporate Finance</b> . . . . .	431
13.1	Internationalization . . . . .	432
13.1.1	International Trade . . . . .	432
13.1.2	Multinational Corporations . . . . .	433
13.1.3	Globalization and the Cost of Capital . . . . .	438
13.2	The Variables Involved . . . . .	442
13.2.1	Exchange Rate . . . . .	442
13.2.2	Purchasing Power Parity . . . . .	445
13.2.3	Interest Rate Parity . . . . .	447
13.3	Foreign Exchange Markets . . . . .	450
13.3.1	Background . . . . .	450
13.3.2	Foreign Exchange Risk . . . . .	453
13.3.3	International Capital Budgeting . . . . .	455
13.4	Summary . . . . .	460
	Problems . . . . .	460
	References . . . . .	461
<b>14</b>	<b>Special Topics</b> . . . . .	463
14.1	Mergers and Acquisitions . . . . .	464
14.1.1	Reasons for a Merger . . . . .	464
14.1.2	The Process of Merging and Acquiring . . . . .	469
14.1.3	Hostile Takeovers and Defense Strategies . . . . .	470
14.2	Corporate Governance . . . . .	478
14.2.1	Management Failures . . . . .	478
14.2.2	Remuneration and Incentive Systems . . . . .	481
14.2.3	Postcrisis Perspectives . . . . .	483
14.3	Risk Management . . . . .	484
14.3.1	Corporate Risk . . . . .	484
14.3.2	From Identification to Mitigation . . . . .	488
14.3.3	Response Strategies . . . . .	490
14.4	Summary . . . . .	492
	Problems . . . . .	492
	References . . . . .	493
	<b>Index</b> . . . . .	495