## CONTENTS

Forew	vord	xi
Prefac	ce	xiii
Ackno	owledgments	XV
Abou	t the CFA Investment Series	xvii
CHAI	PTER 1	
Equ	uity Valuation: Applications & Processes	1
	Learning Outcomes	1
1.	Introduction	
2.	Value Definitions and Valuation Applications	2 2 2 5 7
	2.1. What Is Value?	2
	2.2. Applications of Equity Valuation	5
3.	The Valuation Process	7
	3.1. Understanding the Business	8
	3.2. Forecasting Company Performance	17
	3.3. Selecting the Appropriate Valuation Model	18
	3.4. Converting Forecasts to a Valuation	25
	3.5. Applying the Valuation Conclusion: The Analyst's Role and Responsibilities	
4.	8	28
	4.1. Contents of a Research Report	28
	4.2. Format of a Research Report	30
_	4.3. Research Reporting Responsibilities	32
5.	Summary	33
	References	34
	Problems	35
CHAI	PTER 2	
Ret	turn Concepts	39
	Learning Outcomes	39
1.	Introduction	40
2.	Return Concepts	40

vi Contents

	2.1. Holding Period Return	40
	2.2. Realized and Expected (Holding Period) Return	41
	2.3. Required Return	41
	2.4. Expected Return Estimates from Intrinsic Value Estimates	43
	2.5. Discount Rate	45
	2.6. Internal Rate of Return	46
3.	The Equity Risk Premium	47
	3.1. Historical Estimates	48
	3.2. Forward-Looking Estimates	57
4.	The Required Return on Equity	60
	4.1. The Capital Asset Pricing Model	60
	4.2. Multifactor Models	68
	4.3. Build-Up Method Estimates of the Required Return on Equity	75
	4.4. The Required Return on Equity: International Issues	79
5.		80
6.	Discount Rate Selection in Relation to Cash Flows	82
7.	Summary	82
	References	84
	Problems	85
	, OX	
	Summary References Problems  PTER 3	
Int	roduction to Industry and Company Analysis	91
	Learning Outcomes	91
1	Introduction	92
	Uses of Industry Analysis	92
3.		12
٥.		93
		93 93
	3.1. Products and/or Services Supplied	93
	<ul><li>3.1. Products and/or Services Supplied</li><li>3.2. Business-Cycle Sensitivities</li></ul>	93 94
4.	<ul><li>3.1. Products and/or Services Supplied</li><li>3.2. Business-Cycle Sensitivities</li><li>3.3. Statistical Similarities</li></ul>	93 94 95
4.	<ul> <li>3.1. Products and/or Services Supplied</li> <li>3.2. Business-Cycle Sensitivities</li> <li>3.3. Statistical Similarities</li> <li>Industry Classification Systems</li> </ul>	93 94 95 96
4.	<ul> <li>3.1. Products and/or Services Supplied</li> <li>3.2. Business-Cycle Sensitivities</li> <li>3.3. Statistical Similarities</li> <li>Industry Classification Systems</li> <li>4.1. Commercial Industry Classification Systems</li> </ul>	93 94 95
4.	<ul> <li>3.1. Products and/or Services Supplied</li> <li>3.2. Business-Cycle Sensitivities</li> <li>3.3. Statistical Similarities</li> <li>Industry Classification Systems</li> <li>4.1. Commercial Industry Classification Systems</li> <li>4.2. Governmental Industry Classification Systems</li> </ul>	93 94 95 96
4.	<ul> <li>3.1. Products and/or Services Supplied</li> <li>3.2. Business-Cycle Sensitivities</li> <li>3.3. Statistical Similarities</li> <li>Industry Classification Systems</li> <li>4.1. Compercial Industry Classification Systems</li> <li>4.2. Governmental Industry Classification Systems</li> <li>4.3. Strengths and Weaknesses of Current Systems</li> </ul>	93 94 95 96 96
4. 5.	<ul> <li>3.1. Products and/or Services Supplied</li> <li>3.2. Business-Cycle Sensitivities</li> <li>3.3. Statistical Similarities</li> <li>Industry Classification Systems</li> <li>4.1. Commercial Industry Classification Systems</li> <li>4.2. Governmental Industry Classification Systems</li> <li>4.3. Strengths and Weaknesses of Current Systems</li> <li>4.4. Constructing a Peer Group</li> </ul>	93 94 95 96 96 100
	<ul> <li>3.1. Products and/or Services Supplied</li> <li>3.2. Business-Cycle Sensitivities</li> <li>3.3. Statistical Similarities</li> <li>Industry Classification Systems</li> <li>4.1. Commercial Industry Classification Systems</li> <li>4.2. Governmental Industry Classification Systems</li> <li>4.3. Strengths and Weaknesses of Current Systems</li> <li>4.4. Constructing a Peer Group</li> <li>Describing and Analyzing an Industry</li> </ul>	93 94 95 96 96 100 101 102
	<ul> <li>3.1. Products and/or Services Supplied</li> <li>3.2. Business-Cycle Sensitivities</li> <li>3.3. Statistical Similarities</li> <li>Industry Classification Systems</li> <li>4.1. Commercial Industry Classification Systems</li> <li>4.2. Governmental Industry Classification Systems</li> <li>4.3. Strengths and Weaknesses of Current Systems</li> <li>4.4. Constructing a Peer Group</li> <li>Describing and Analyzing an Industry</li> </ul>	93 94 95 96 96 100 101 102
	<ul> <li>3.1. Products and/or Services Supplied</li> <li>3.2. Business-Cycle Sensitivities</li> <li>3.3. Statistical Similarities</li> <li>Industry Classification Systems</li> <li>4.1. Commercial Industry Classification Systems</li> <li>4.2. Governmental Industry Classification Systems</li> <li>4.3. Strengths and Weaknesses of Current Systems</li> <li>4.4. Constructing a Peer Group</li> <li>Describing and Analyzing an Industry</li> <li>5.1. Principles of Strategic Analysis</li> <li>5.2. External Influences on Industry Growth, Profitability, and Risk</li> </ul>	93 94 95 96 96 100 101 102 106
5.	<ul> <li>3.1. Products and/or Services Supplied</li> <li>3.2. Business-Cycle Sensitivities</li> <li>3.3. Statistical Similarities</li> <li>Industry Classification Systems</li> <li>4.1. Commercial Industry Classification Systems</li> <li>4.2. Governmental Industry Classification Systems</li> <li>4.3. Strengths and Weaknesses of Current Systems</li> <li>4.4. Constructing a Peer Group</li> <li>Describing and Analyzing an Industry</li> <li>5.1. Principles of Strategic Analysis</li> <li>5.2. External Influences on Industry Growth, Profitability, and Risk</li> </ul>	93 94 95 96 96 100 101 102 106 109
5.	<ul> <li>3.1. Products and/or Services Supplied</li> <li>3.2. Business-Cycle Sensitivities</li> <li>3.3. Statistical Similarities</li> <li>Industry Classification Systems</li> <li>4.1. Commercial Industry Classification Systems</li> <li>4.2. Governmental Industry Classification Systems</li> <li>4.3. Strengths and Weaknesses of Current Systems</li> <li>4.4. Constructing a Peer Group</li> <li>Describing and Analyzing an Industry</li> <li>5.1. Principles of Strategic Analysis</li> <li>5.2. External Influences on Industry Growth, Profitability, and Risk Company Analysis</li> </ul>	93 94 95 96 96 100 101 102 106 109 129
5.	<ul> <li>3.1. Products and/or Services Supplied</li> <li>3.2. Business-Cycle Sensitivities</li> <li>3.3. Statistical Similarities</li> <li>Industry Classification Systems</li> <li>4.1. Commercial Industry Classification Systems</li> <li>4.2. Governmental Industry Classification Systems</li> <li>4.3. Strengths and Weaknesses of Current Systems</li> <li>4.4. Constructing a Peer Group</li> <li>Describing and Analyzing an Industry</li> <li>5.1. Principles of Strategic Analysis</li> <li>5.2. External Influences on Industry Growth, Profitability, and Risk Company Analysis</li> <li>6.1. Elements That Should be Covered in a Company Analysis</li> <li>6.2. Spreadsheet Modeling</li> </ul>	93 94 95 96 96 100 101 102 106 109 129 135
5.	<ul> <li>3.1. Products and/or Services Supplied</li> <li>3.2. Business-Cycle Sensitivities</li> <li>3.3. Statistical Similarities</li> <li>Industry Classification Systems</li> <li>4.1. Commercial Industry Classification Systems</li> <li>4.2. Governmental Industry Classification Systems</li> <li>4.3. Strengths and Weaknesses of Current Systems</li> <li>4.4. Constructing a Peer Group</li> <li>Describing and Analyzing an Industry</li> <li>5.1. Principles of Strategic Analysis</li> <li>5.2. External Influences on Industry Growth, Profitability, and Risk Company Analysis</li> <li>6.1. Elements That Should be Covered in a Company Analysis</li> <li>6.2. Spreadsheet Modeling</li> </ul>	93 94 95 96 96 100 101 102 106 109 129 135 136

Contents

CHAI	PTER 4	
Ind	lustry and Company analysis	147
	Learning Outcomes	147
1.	Introduction	148
2.	Financial Modeling: An Overview	148
	2.1. Income Statement Modeling: Revenue	148
	2.2. Income Statement Modeling: Operating Costs	154
	2.3. Income Statement Modeling: Non-Operating Costs	167
	2.4. Income Statement Modeling: Other Items	172
	2.5. Balance Sheet and Cash Flow Statement Modeling	172
	2.6. Scenario Analysis and Sensitivity Analysis	174
3.	The Impact of Competitive Factors on Prices and Costs	176
4.	Inflation and Deflation	184
	4.1. Sales Projections with Inflation and Deflation	184
	4.2. Cost Projections with Inflation and Deflation	190
5.	Technological Developments	192
6.	Long-Term Forecasting	203
7.	Building a Model	209
	7.1. Industry Overview	209
	7.2. Company Overview	210
	7.3. Construction of Pro Forma Income Statement	211
	7.4. Construction of Pro Forma Cash Flow Statement and	
	Balance Sheet	217
	7.5. Valuation Inputs	223
8.	Summary	223
	References	224
	Problems	224
	7.5. Valuation Inputs Summary References Problems  PTER 5	
	PTER 5	
Dis	scounted Dividend Valuation	231
	Learning Outcomes	231
1.	Introduction	232
2.	Present Value Models	233
	2.1. Valuation Based on the Present Value of Future Cash Flows	233
	2.2. Streams of Expected Cash Flows	235
3.	The Dividend Discount Model	241
	3.1. The Expression for a Single Holding Period	241
	3.2. The Expression for Multiple Holding Periods	242
4.	The Gordon Growth Model	244
	4.1. The Gordon Growth Model Equation	245
	4.2. The Links Among Dividend Growth, Earnings Growth, and Value	
	Appreciation in the Gordon Growth Model	252
	4.3. Share Repurchases	252
	4.4. The Implied Dividend Growth Rate	253
	4.5. The Present Value of Growth Opportunities	254
	4.6. Gordon Growth Model and the Price-to-Earnings Ratio	256

viii Contents

	4.7. Estimating a Required Return Using the Gordon Growth Model	259
	4.8. The Gordon Growth Model: Concluding Remarks	259
5.	Multistage Dividend Discount Models	260
	5.1. Two-Stage Dividend Discount Model	261
	5.2. Valuing a Non-Dividend-Paying Company	264
	5.3. The H-Model	265
	5.4. Three-Stage Dividend Discount Models	267
	5.5. Spreadsheet (General) Modeling	272
	5.6. Estimating a Required Return Using Any DDM	274
	5.7. Multistage DDM: Concluding Remarks	276
6.	The Financial Determinants of Growth Rates	276
	6.1. Sustainable Growth Rate	276
	6.2. Dividend Growth Rate, Retention Rate, and ROE Analysis	278
	6.3. Financial Models and Dividends	281
7.	Summary	283
	References	286
	Problems	287
	$c^{Q^{\gamma}}$	
CHAI	PTER 6	
Free	References Problems  PTER 6  The Cash Flow Valuation  Learning Outcomes Introduction to Free Cash Flows FCFF and FCFE Valuation Approaches  2.1. Defining Free Cash Flow  2.2. Present Value of Free Cash Flow  2.3. Single-Stage (Constant-Growth) FCFF and FCFE Models Forecasting Free Cash Flow  3.1. Computing FCFF from Net Income	295
	Learning Outcomes	295
1.	Introduction to Free Cash Flows	296
2.	FCFF and FCFE Valuation Approaches	296
	2.1. Defining Free Cash Flow	297
	2.2. Present Value of Free Cash Flow	298
	2.3. Single-Stage (Constant-Growth) FCFF and FCFE Models	299
3.	Forecasting Free Cash Flow	301
		301
	3.2. Computing FCFF from the Statement of Cash Flows	305
	3.3. Noncash Charges	307
	3.4. Computing FCFE from FCFF	312
	3.5. Finding FCFF and FCFE from EBIT or EBITDA	318
	3.6. FCFF and FCFE on a Uses-of-Free-Cash-Flow Basis	320
	3.7. Forecasting FCFF and FCFE	322
,	3.8. Other Issues in Free Cash Flow Analysis	327
4.	Free Cash Flow Model Variations	333
	4.1. An International Application of the Single-Stage Model	333
	4.2. Sensitivity Analysis of FCFF and FCFE Valuations	334
	4.3. Two-Stage Free Cash Flow Models	336
_	4.4. Three-Stage Growth Models	343
5.	Nonoperating Assets and Firm Value	345
6.	Summary	346
	References	348
	Problems	348

Contents

	PTER 7 rket-Based Valuation: Price and Enterprise Value Multiples	361
	Learning Outcomes	361
1.	Introduction	362
2.	Price and Enterprise Value Multiples in Valuation	363
	2.1. The Method of Comparables	363
	2.2. The Method Based on Forecasted Fundamentals	365
3.	Price Multiples	366
	3.1. Price to Earnings	366
	3.2. Price to Book Value	399
	3.3. Price to Sales	410
	3.4. Price to Cash Flow	417
	3.5. Price to Dividends and Dividend Yield	422
4.	1	426
	4.1. Enterprise Value to EBITDA	426
	4.2. Other Enterprise Value Multiples	432
	<ul><li>4.3. Enterprise Value to Sales</li><li>4.4. Price and Enterprise Value Multiples in a Comparable Analysis: Some</li></ul>	433
	Illustrative Data	433
5.		435
6.		437
7.	Valuation Indicators: Issues in Practice	442
, •	7.1. Averaging Multiples: The Harmonic Mean	442
	7.2. Using Multiple Valuation Indicators	444
8.		449
	References	452
	Problems	454
CHAF	Summary References Problems  PTER 8	
Res	idual Income Volvation	463
	Learning Outcomes	463
1.	Introduction	464
2.	Residual Income	464
	2.1. The Use of Residual Income in Equity Valuation	467
	2.2. Commercial Implementations	468
3.	The Residual Income Model	469
	3.1. The General Residual Income Model	472
	3.2. Fundamental Determinants of Residual Income	477
	3.3. Single-Stage Residual Income Valuation	478
,	3.4. Multistage Residual Income Valuation	480
4.	Residual Income Valuation in Relation to Other Approaches	484
	4.1. Strengths and Weaknesses of the Residual Income Model	487
5	4.2. Broad Guidelines for Using a Residual Income Model	487
5.	Accounting and International Considerations 5.1. Violations of the Clean Surplus Relationship	488 489
	5.2. Balance Sheet Adjustments for Fair Value	498
	7.2. Daniel Orietta justificities for Fair Value	170

x Contents

	5.3. Intangible Assets	498
	5.4. Nonrecurring Items	501
	5.5. Other Aggressive Accounting Practices	501
	5.6. International Considerations	502
	Summary	503
	References	504
	Problems	506
CHAI	PTER 9	
	vate Company Valuation	513
	Learning Outcomes	513
1.	Introduction	514
2.	The Scope of Private Company Valuation	514
	2.1. Private and Public Company Valuation: Similarities and Contrasts	514
	2.2. Reasons for Performing Valuations	516
3.	Definitions (Standards) of Value	518
4.	Private Company Valuation Approaches	520
	4.1. Earnings Normalization and Cash Flow Estimation Issues	521
	4.2. Income Approach Methods of Private Company Valuation	527
	4.3. Market Approach Methods of Private Company Valuation	537
	4.4. Asset-Based Approach to Private Company Valuation	545
	4.5. Valuation Discounts and Premiums	546
	4.6. Business Valuation Standards and Practices	553
5.	Summary	555
	References	556
	Problems	556
Gloss	References Problems  ary	563
About	t the Editors and Authors	573
About	t the CFA Program	577
Index		579