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CORPORATE FINANCE

A FOCUSED APPROACH 7E

Corporate Finance

A Focused Approach

7e

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Brief Contents

Preface xi

PART 1 THE COMPANY AND ITS ENVIRONMENT 1

CHAPTER 1 An Overview of Financial Management and the Financial Environment 3

Web Extension **1A:** An Overview of Derivatives

CHAPTER 2 Financial Statements, Cash Flow, and Taxes 55

Web Extension **2A:** The Federal Income Tax System for Individuals

CHAPTER 3 Analysis of Financial Statements 101

PART 2 FIXED INCOME SECURITIES 137

CHAPTER 4 Time Value of Money 139

Web Extension **4A:** Derivation of Annuity Formulas

4B: Continuous Compounding

CHAPTER 5 Bonds, Bond Valuation, and Interest Rates 195

Web Extension **5A:** A Closer Look at Zero Coupon, Other OID Bonds, and Premium Bonds

5B: A Closer Look at TIPS: Treasury Inflation-Protected Securities

5C: A Closer Look at Bond Risk: Duration

5D: The Pure Expectations Theory and Estimation of Forward Rates

PART 3 STOCKS AND OPTIONS 241

CHAPTER 6 Risk and Return 243

Web Extension **6A:** Continuous Probability Distributions

6B: Estimating Beta with a Financial Calculator

CHAPTER 7 Corporate Valuation and Stock Valuation 295

Web Extension **7A:** Derivation of Valuation Equations

CHAPTER 8 Financial Options and Applications in Corporate Finance 343

PART 4 PROJECTS AND THEIR VALUATION 371

CHAPTER 9 The Cost of Capital 373

Web Extension **9A:** The Cost of Equity in the Nonconstant Dividend Growth Model with Repurchases

CHAPTER 10 The Basics of Capital Budgeting: Evaluating Cash Flows 411

CHAPTER 11 Cash Flow Estimation and Risk Analysis 451

Appendix 11A Depreciation for Tax Purposes

PART 5 CORPORATE VALUATION AND GOVERNANCE 497

CHAPTER 12 Corporate Valuation and Financial Planning 499

CHAPTER 13 Corporate Governance 537

PART 6 CASH DISTRIBUTIONS AND CAPITAL STRUCTURE 559

CHAPTER 14 Distributions to Shareholders: Dividends and Repurchases 561

CHAPTER 15 Capital Structure Decisions 601

Web Extension **15A:** Capital Structure Theory: Arbitrage Proofs of the Modigliani-Miller Theorems

15B: Bond Refunding

PART 7 MANAGING GLOBAL OPERATIONS 647

CHAPTER 16 Supply Chains and Working Capital Management 649

Web Extension **16A:** Secured Short-Term Financing

CHAPTER 17 Multinational Financial Management 697

APPENDICES

Appendix A Solutions to Self-Test Problems 745

Appendix B Answers to End-of-Chapter Problems 777

Appendix C Selected Equations 789

GLOSSARY AND INDEXES

Glossary 803

Name Index 845

Subject Index 849

Contents

Preface xi

PART 1 THE COMPANY AND ITS ENVIRONMENT 1

CHAPTER 1
An Overview of Financial Management and the Financial Environment 3

The Five-Minute MBA 4
Finance from 40,000 Feet Above 4
The Corporate Life Cycle 5
Governing a Corporation 10
Box: Be Nice with a B-Corp 11
Box: Taxes and Whistleblowing 14
An Overview of Financial Markets 14
Claims on Future Cash Flows: Types of Financial Securities 16
Claims on Future Cash Flows: The Required Rate of Return (the Cost of Money) 18
The Functions of Financial Institutions 23
Financial Markets 28
Overview of the U.S. Stock Markets 31
Trading in the Modern Stock Markets 33
Finance and the Great Recession of 2007 41
Box: Anatomy of a Toxic Asset 47
The Big Picture 51
e-Resources 51
Summary 52
Web Extension
1A: An Overview of Derivatives

CHAPTER 2
Financial Statements, Cash Flow, and Taxes 55

Box: Intrinsic Value, Free Cash Flow, and Financial Statements 56
Financial Statements and Reports 56
The Balance Sheet 57
The Income Statement 60
Box: A Matter of Opinion 62
Statement of Stockholders' Equity 63
Box: Financial Analysis on the Web 64
Statement of Cash Flows 64
Box: Filling in the GAAP 68
Net Cash Flow 69
Free Cash Flow: The Cash Flow Available for Distribution to Investors 69
Box: Financial Statement Fraud 74
Performance Evaluation 77
Corporate Income Taxes 82
Personal Taxes 87
Summary 88
Web Extension
2A: The Federal Income Tax System for Individuals

CHAPTER 3
Analysis of Financial Statements 101

Box: Intrinsic Value, Free Cash Flow, and Financial Statements 102
Financial Analysis 102
Profitability Ratios 104
Box: The World Might Be Flat, but Global Accounting Is Bumpy! The Case of IFRS versus FASB 106
Asset Management Ratios 108
Liquidity Ratios 111
Debt Management Ratios 113
Market Value Ratios 117
Trend Analysis, Common Size Analysis, and Percentage Change Analysis 121
Tying the Ratios Together: The DuPont Equation 123

Comparative Ratios and Benchmarking 124
Uses and Limitations of Ratio Analysis 126
Box: Ratio Analysis on the Web 126
Looking Beyond the Numbers 127
Summary 127

PART 2 FIXED INCOME SECURITIES 137

CHAPTER 4
Time Value of Money 139
Box: Corporate Valuation and the Time Value of Money 140
Time Lines 140
Future Values 141
Box: Hints on Using Financial Calculators 145
Box: It's a Matter of Trust 150
Present Values 150
Finding the Interest Rate, I 153
Finding the Number of Years, N 154
Perpetuities 155
Annuities 156
Future Value of an Ordinary Annuity 157
Future Value of an Annuity Due 159
Box: The Power of Compound Interest 159
Present Value of Ordinary Annuities and Annuities Due 160
Finding Annuity Payments, Periods, and Interest Rates 162
Box: Variable Annuities: Good or Bad? 163
Box: Using the Internet for Personal Financial Planning 165
Uneven, or Irregular, Cash Flows 165
Future Value of an Uneven Cash Flow Stream 169
Solving for I with Irregular Cash Flows 170
Semiannual and Other Compounding Periods 171
Fractional Time Periods 175
Amortized Loans 176
Box: What You Know Is What You Get: Not in Payday Lending 177
Growing Annuities 181
Summary 183
Web Extensions
4A: Derivation of Annuity Formulas
4B: Continuous Compounding

CHAPTER 5
Bonds, Bond Valuation, and Interest Rates 195
Box: Intrinsic Value and the Cost of Debt 196
Who Issues Bonds? 196
Key Characteristics of Bonds 197
Box: Betting With or Against the U.S. Government: The Case of Treasury Bond Credit Default Swaps 198
Box: You Can Take That to the Bank 200
Bond Valuation 202
Changes in Bond Values over Time 207
Box: Chocolate Bonds 210
Bonds with Semiannual Coupons 210
Bond Yields 211
The Pre-Tax Cost of Debt: Determinants of Market Interest Rates 214
The Risk-Free Interest Rate: Nominal (r_{RF}) and Real (r*) 215
The Inflation Premium (IP) 216
The Maturity Risk Premium (MRP) 218
The Default Risk Premium (DRP) 221
Box: Insuring with Credit Default Swaps: Let the Buyer Beware! 223
Box: The Few, the Proud, the . . . AAA-Rated Companies! 226
The Liquidity Premium (LP) 227
The Term Structure of Interest Rates 228
Financing with Junk Bonds 229
Bankruptcy and Reorganization 230
Summary 231
Web Extensions
5A: A Closer Look at Zero Coupon, Other OID Bonds, and Premium Bonds
5B: A Closer Look at TIPS: Treasury Inflation-Protected Securities
5C: A Closer Look at Bond Risk: Duration
5D: The Pure Expectations Theory and Estimation of Forward Rates

PART 3 STOCKS AND OPTIONS 241

CHAPTER 6
Risk and Return 243
Box: Intrinsic Value, Risk, and Return 244
Investment Returns and Risk 244
Measuring Risk for Discrete Distributions 245
Risk in a Continuous Distribution 249

Box: What Does Risk Really Mean? 251
Using Historical Data to Estimate Risk 251
Box: The Historic Trade-Off between Risk and Return 254
Risk in a Portfolio Context 254
The Relevant Risk of a Stock: The Capital Asset Pricing Model (CAPM) 258
The Relationship between Risk and Return in the Capital Asset Pricing Model 265
Box: The Benefits of Diversifying Overseas 265
Box: Another Kind of Risk: The Bernie Madoff Story 273
The Efficient Markets Hypothesis 274
The Fama-French Three-Factor Model 278
Behavioral Finance 282
The CAPM and Market Efficiency: Implications for Corporate Managers and Investors 284
Summary 285
Web Extensions
6A: Continuous Probability Distributions
6B: Estimating Beta with a Financial Calculator

CHAPTER 7
Corporate Valuation and Stock Valuation 295
Box: Corporate Valuation and Stock Prices 296
Legal Rights and Privileges of Common Stockholders 296
Classified Stock and Tracking Stock 297
Stock Market Reporting 298
Valuing Common Stocks—Introducing the Free Cash Flow (FCF) Valuation Model 299
The Constant Growth Model: Valuation When Expected Free Cash Flow Grows at a Constant Rate 303
The Multistage Model: Valuation When Expected Short-Term Free Cash Flow Grows at a Nonconstant Rate 307
Application of the FCF Valuation Model to MicroDrive 311
Do Stock Values Reflect Long-Term or Short-Term Cash Flows? 318
Value-Based Management: Using the Free Cash Flow Valuation Model to Identify Value Drivers 319
Why Are Stock Prices So Volatile? 322
Dividend Valuation Models 323
The Market Multiple Method 328
Comparing the FCF Valuation Model, the Dividend Growth Model, and the Market Multiple Method 329
Preferred Stock 330
Summary 331
Web Extension
7A: Derivation of Valuation Equations

CHAPTER 8
Financial Options and Applications in Corporate Finance 343
Box: The Intrinsic Value of Stock Options 344
Overview of Financial Options 344
The Single-Period Binomial Option Pricing Approach 347
The Single-Period Binomial Option Pricing Formula 353
The Multi-Period Binomial Option Pricing Model 355
The Black-Scholes Option Pricing Model (OPM) 358
The Valuation of Put Options 363
Applications of Option Pricing in Corporate Finance 366
Summary 367

PART 4 PROJECTS AND THEIR VALUATION 371

CHAPTER 9
The Cost of Capital 373
Box: Corporate Valuation and the Cost of Capital 374
The Weighted Average Cost of Capital 374
Choosing Weights for the Weighted Average Cost of Capital 376
The Cost of Debt 377
Cost of Preferred Stock, r_{ps} 382
Cost of Common Stock: The Market Risk Premium, RP_M 383
Using the CAPM to Estimate the Cost of Common Stock, r_s 386
Using the Dividend Growth Approach to Estimate the Cost of Common Stock 389
The Weighted Average Cost of Capital (WACC) 391
Box: Global Variations in the Cost of Capital 393
Adjusting the Cost of Equity for Flotation Costs 393
Privately Owned Firms and Small Businesses 395
The Divisional Cost of Capital 396

Estimating the Cost of Capital for Individual Projects 398
Managerial Issues and the Cost of Capital 399
Summary 402
Web Extension
9A: The Cost of Equity in the Nonconstant Dividend Growth Model with Repurchases

CHAPTER 10
The Basics of Capital Budgeting: Evaluating Cash Flows 411
Box: Corporate Valuation and Capital Budgeting 412
An Overview of Capital Budgeting 412
The First Step in Project Analysis 414
Net Present Value (NPV) 415
Internal Rate of Return (IRR) 417
Modified Internal Rate of Return (MIRR) 424
Profitability Index (PI) 427
Payback Period 428
How to Use the Different Capital Budgeting Methods 430
Other Issues in Capital Budgeting 433
Summary 439

CHAPTER 11
Cash Flow Estimation and Risk Analysis 451
Box: Project Valuation, Cash Flows, and Risk Analysis 452
Identifying Relevant Cash Flows 452
Analysis of an Expansion Project 456
Box: Mistakes in Cash Flow Estimation Can Kill Innovation 465
Risk Analysis in Capital Budgeting 465
Measuring Stand-Alone Risk 466
Sensitivity Analysis 466
Scenario Analysis 469
Monte Carlo Simulation Analysis 473
Project Risk Conclusions 476
Replacement Analysis 476
Phased Decisions and Decision Trees 478
Other Real Options 482
Summary 483
Appendix
11A: Depreciation for Tax Purposes

PART 5 CORPORATE VALUATION AND GOVERNANCE 497

CHAPTER 12
Corporate Valuation and Financial Planning 499
Box: Corporate Valuation and Financial Planning 500
Overview of Financial Planning 500
Financial Planning at MicroDrive Inc. 502
Forecasting Operations 504
Evaluating MicroDrive's Strategic Initiatives 508
Projecting MicroDrive's Financial Statements 510
Analysis and Selection of a Strategic Plan 515
The CFO's Model 517
Additional Funds Needed (AFN) Equation 519
Forecasting When the Ratios Change 523
Summary 526

CHAPTER 13
Corporate Governance 537
Box: Corporate Governance and Corporate Valuation 538
Agency Conflicts 538
Corporate Governance 541
Box: The Dodd-Frank Act and "Say on Pay" 548
Box: The Sarbanes-Oxley Act of 2002 and Corporate Governance 549
Box: International Corporate Governance 550
Employee Stock Ownership Plans (ESOPs) 552
Summary 555

PART 6 CASH DISTRIBUTIONS AND CAPITAL STRUCTURE 559

CHAPTER 14
Distributions to Shareholders: Dividends and Repurchases 561
Box: Uses of Free Cash Flow: Distributions to Shareholders 562
An Overview of Cash Distributions 562
Procedures for Cash Distributions 564
Cash Distributions and Firm Value 567
Clientele Effect 571
Signaling Hypothesis 572
Implications for Dividend Stability 573

Setting the Target Distribution Level: The Residual Distribution Model 574
The Residual Distribution Model in Practice 576
A Tale of Two Cash Distributions: Dividends versus Stock Repurchases 577
The Pros and Cons of Dividends and Repurchases 586
Box: Dividend Yields around the World 587
Other Factors Influencing Distributions 588
Summarizing the Distribution Policy Decision 589
Stock Splits and Stock Dividends 590
Dividend Reinvestment Plans 593
Summary 594

CHAPTER 15
Capital Structure Decisions 601
Box: Corporate Valuation and Capital Structure 602
An Overview of Capital Structure 602
Business Risk and Financial Risk 604
Capital Structure Theory: The Modigliani and Miller Models 608
Box: Yogi Berra on the MM Proposition 610
Capital Structure Theory: Beyond the Modigliani and Miller Models 613
Capital Structure Evidence and Implications 618
Estimating the Optimal Capital Structure 623
Anatomy of a Recapitalization 629
Risky Debt and Equity as an Option 633
Managing the Maturity Structure of Debt 637
Summary 639
Web Extensions
15A: Capital Structure Theory: Arbitrage Proofs of the Modigliani-Miller Theorems
15B: Bond Refunding

PART 7 MANAGING GLOBAL OPERATIONS 647

CHAPTER 16
Supply Chains and Working Capital Management 649
Box: Corporate Valuation and Working Capital Management 650
Overview of Supply Chain Management 650
Using and Financing Operating Current Assets 652
The Cash Conversion Cycle 656
Box: Some Firms Operate with Negative Working Capital! 662
Inventory Management 662
Receivables Management 663
Accruals and Accounts Payable (Trade Credit) 667
The Cash Budget 670
Cash Management and the Target Cash Balance 674
Cash Management Techniques 675
Managing Short-Term Investments 678
Short-Term Bank Loans 679
Commercial Paper 683
Use of Security in Short-Term Financing 684
Summary 685
Web Extension
16A: Secured Short-Term Financing

CHAPTER 17
Multinational Financial Management 697
Box: Corporate Valuation in a Global Context 698
Multinational, or Global, Corporations 698
Multinational versus Domestic Financial Management 700
Box: Meet Me at the Car Wash 701
Exchange Rates 701
The Fixed Exchange Rate System 707
Floating Exchange Rates 708
Government Intervention in Foreign Exchange Markets 713
Other Exchange Rate Systems: No Local Currency, Pegged Rates, and Managed Floating Rates 715
Forward Exchange Rates and Risk Management 718
Interest Rate Parity 719
Purchasing Power Parity 721
Box: Hungry for a Big Mac? Go to Ukraine! 722
Inflation, Interest Rates, and Exchange Rates 723
International Money and Capital Markets 723
Box: Stock Market Indexes around the World 726
Multinational Capital Budgeting 728
International Capital Structures 733
Multinational Working Capital Management 734
Summary 737

APPENDICES

Appendix A Solutions to Self-Test Problems 745

Appendix B Answers to End-of-Chapter Problems 777

Appendix C Selected Equations 789

GLOSSARY AND INDEXES

Glossary 803

Name Index 845

Subject Index 849

Preface

resource

Students: *Access the* Corporate Finance: Theory and Practice (7th Edition) *MindTap (**www.cengage.com/login**).*

Instructors: *Access the* Corporate Finance: A Focused Approach (7th Edition) *instructor resource center by going to **www.cengage.com/login**, logging in with your faculty account username and password, and using ISBN 9781337909747 to reach the site.*

When we wrote the first edition of *Corporate Finance: A Focused Approach*, we had four goals: (1) to create a text that would help students make better financial decisions; (2) to provide a book that covers the core material necessary for a one-semester introductory MBA course but without all the other interesting-but-not-essential material that is contained in most MBA texts; (3) to motivate students by demonstrating that finance is both interesting and relevant; and (4) to make the book clear enough so that students could go through the material without wasting either their time or their professors' time trying to figure out what we were saying. We have an additional goal for this edition: to explain and apply the 2017 Tax Cuts and Jobs Act to the topics in this book.

We accomplish our goals through the structure and material in the textbook. In addition, MindTap™ for *Financial Management* is a fully integrated online portfolio of teaching tools and learning solutions that facilitate our objectives.

Intrinsic Valuation as a Unifying Theme

Our emphasis throughout the book is on the actions that a manager can and should take to increase the intrinsic value of the firm. Structuring the book around intrinsic valuation enhances continuity and helps students see how various topics are related to one another.

An understanding of finance theory is essential for anyone developing and/or implementing effective financial strategies. But theory alone isn't sufficient, so we provide numerous examples in the book and the accompanying *Excel* spreadsheets to illustrate how theory is applied in practice. Indeed, we believe that the ability to analyze financial problems using *Excel* also is essential for a student's successful job search and subsequent career. Therefore, many exhibits in the book come directly from the accompanying *Excel* spreadsheets. Many of the spreadsheets also provide brief "tutorials" by way of detailed comments on *Excel* features that we have found to be especially useful, such as Goal Seek, Tables, and many financial functions.

The book begins with fundamental concepts, including background on the economic and financial environment, financial statements (with an emphasis on cash flows), the time value of money, bond valuation, risk analysis, and stock valuation. With this background, we go on to discuss how specific techniques and decision rules can be used to help maximize the value of the firm. This organization provides four important advantages:

1. Managers should try to maximize the intrinsic value of a firm, which is determined by cash flows as revealed in financial statements. Our early coverage of financial statements helps students see how particular financial decisions affect the various parts of the firm and the resulting cash flow. Also, financial statement analysis provides an excellent vehicle for illustrating the usefulness of spreadsheets.

2. Covering the time value of money early helps students see how and why expected future cash flows determine the value of the firm. Also, it takes time for students to digest TVM concepts and to learn how to do the required calculations, so it is good to cover TVM concepts early and often.
3. Most students—even those who do not plan to major in finance—are interested in investments. The ability to learn is a function of individual interest and motivation, so *Financial Management*'s early coverage of securities and security markets is pedagogically sound.
4. Once basic concepts have been established, it is easier for students to understand both how and why corporations make specific decisions in the areas of capital budgeting, raising capital, working capital management, mergers, and the like.

Intended Market and Use

Corporate Finance is designed primarily for use in the introductory MBA finance course and as a reference text in follow-on case courses and after graduation. There is enough material for two terms, especially if the book is supplemented with cases and/or selected readings. The book can also be used as an undergraduate introductory text for exceptionally good students.

Improvements in the 7th Edition

As in every revision, we updated and clarified materials throughout the text, reviewing the entire book for completeness, ease of exposition, and currency. We made hundreds of small changes to keep the text up to date, with particular emphasis on updating the real-world examples and including the latest changes in the financial environment and financial theory. In addition, we made a number of larger changes. Some affect all chapters, some involve reorganizing sections among chapters, and some modify material covered within specific chapters.

Changes That Affect All Chapters

Following are some of the changes that affect all chapters.

THE 2017 TAX CUT AND JOBS ACT (TCJA)

This is a corporate finance book, and corporate taxes affect many topics. We have fully integrated the 2017 Tax Cut and Jobs Act (TCJA) into the text and all ancillaries.

CHANGES IN MICRODRIVE

For many editions we have used a hypothetical company, MicroDrive, as a running example. This provides continuity in the examples from chapter to chapter and helps students apply the material more quickly. When we changed MicroDrive's tax rate to reflect the TCJA, we lost many of the learning points we had built into MicroDrive. To retain those learning points after incorporating the TCJA, we had to revise several other items in MicroDrive's financial statements.

CONTINUED INTEGRATION WITH *EXCEL*

We have continued to integrate the textbook and the accompanying *Excel* ***Tool Kit*** spreadsheet models for each chapter. Many figures in the textbook show the appropriate area from the chapter's *Excel* ***Tool Kit*** model. This makes the analysis more transparent to the students and better enables them to follow the analysis in the *Excel* model.

Notable Changes within Selected Chapters

We made too many small improvements within each chapter to mention them all, but some of the more notable ones are discussed here.

CHAPTER 1: AN OVERVIEW OF FINANCIAL MANAGEMENT AND THE FINANCIAL ENVIRONMENT

We added a brief discussion of income-wealth inequality in Section 1-4b (Intrinsic Stock Value Maximization and Social Welfare). We rewrote much of Section 1-4c (Ethics and Intrinsic Stock Value Maximization), including discussion of illegal actions, alleged unethical actions, and whistleblower protections. In Section 1-6a we describe upcoming changes in the London Interbank Offering Rate (LIBOR) due to recent scandals in how it was reported. Also, we describe the Federal Reserve Board's new alternative to LIBOR, the Secured Overnight Financing Rate (SOFR).

CHAPTER 2: FINANCIAL STATEMENTS, CASH FLOW, AND TAXES

We added two new boxes. The first box, "A Matter of Opinion," highlights the leeway companies have in choosing how to present results and how that leeway complicates comparison. The second box, "Financial Statement Fraud," describes the SEC's Financial Reporting and Audit (FRAud) Group, including a recent case.

CHAPTER 4: TIME VALUE OF MONEY

We replaced the opening vignette with one focused on purchasing a car and how time value of money concepts are vital when getting an auto loan. In Section 4-17c we now show how to determine directly the remaining balance on an amortizing loan without building an entire amortization schedule. We added Section 4-17e to explain how the calculation of monthly interest expenses for many auto loans differs from that of mortgages.

CHAPTER 5: BONDS, BOND VALUATION, AND INTEREST RATES

We added a new box describing a 1648 perpetual bond, "You Can Take That to the Bank."

CHAPTER 7: CORPORATE VALUATION AND STOCK VALUATION

We added a section, 7-7d, showing how to calculate the value of operations at each year, not just at the horizon and at t = 0. We also added several new end-of-chapter problems on free cash flow valuation that will be ideal for homework assignments using the algorithmic feature in MindTap.

CHAPTER 9: THE COST OF CAPITAL

We added Section 9-3c, which discusses the difference between the yield to maturity and the expected rate of return based on projected default rates, showing that the difference between the yield and the expected rate of return is so small that it can be ignored for the vast majority of bonds. Sections 9-3d and 9-3e describe how to estimate the after-tax cost for newly issued debt that has large flotation costs.

CHAPTER 11: CASH FLOW ESTIMATION AND RISK ANALYSIS

We revised the example company so that it reflects the TCJA but retains key learning points. We added a description of bonus depreciation to Appendix 11A and used the Scenario Manager to create scenarios in the ***Tool Kit*** showing the impact of

different depreciation methods. We also added bonus depreciation to the Mini-Case and *PowerPoint* show because it is part of the TCJA.

CHAPTER 15: CAPITAL STRUCTURE DECISIONS

We describe the impact that the TCJA's reduced corporate tax rate has on the value of the tax shield with respect to the M&M models and the Miller model. We incorporated the new tax rate into Section 15-6 and our discussion of the optimal capital structure. Due to the TCJA's lower corporate tax rate and its limitation on interest expense deductions, the optimal capital structure will have less debt than before the TCJA. We moved our discussion of bond refunding operations to the new ***Web Extension 15B***.

CHAPTER 16: SUPPLY CHAINS AND WORKING CAPITAL MANAGEMENT

We added a new opening vignette focusing on the companies that are best at managing the cash conversion cycle.

CHAPTER 17: MULTINATIONAL FINANCIAL MANAGEMENT

We added a new box, "Meet Me at the Car Wash," describing international bribery by several Brazilian companies. We reorganized and rewrote much of Section 17-3, "Exchange Rates," to explicitly describe exchanges among all combinations of direct and indirect currencies. Section 17-5a, "Determinants of Floating Exchange Rates," now includes Table 17-3 showing U.S. trade balances with key trading partners.

Digging Deeper with *Web Extensions*

Many chapters have Adobe PDF "appendices" that provide more detailed coverage of specialized topics related to the chapter's content. For example, ***Web Extension 9A*** explains how to estimate the required rate of return for stocks that have nonconstant dividends and repurchases prior to the forecast horizon.

Digital Course Solutions for Instructors and Students

MindTap is Cengage Learning's fully online, highly personalized learning experience that combines readings, assessments, multimedia, and activities into a singular Learning Path. Using MindTap, an instructor can easily organize a course that guides students through the class with ease and engagement. Instructors can personalize the Learning Path for their students by customizing the robust suite of *Corporate Finance's* resources and adding their own content via apps that integrate into the MindTap framework seamlessly with Learning Management Systems.

Instructors: You can access all resources by going to **www.cengage.com/login**, logging in with a faculty account username and password, and using ISBN 9781337902601 to search for and add resources to your account.

Enriching the Student Learning Experience

MindTap provides multiple learning resources that enable students to understand each chapter's concepts and financial applications.

MBA Refresher Pre-/Post-Test

These diagnostic multiple-choice questions will allow students to review specific topics within key prerequisite disciplines—finance, accounting, statistics, economics, and

algebra/math—while testing skills in using *Excel* and a financial calculator. Once feedback from the pre-test is reviewed, the post-test will confirm mastery of key topics.

ConceptClips

Available in MindTap and its eBook, finance ConceptClips present fundamental key topics to students in an entertaining and memorable way via short animated video clips. Developed by Mike Brandl of The Ohio State University, these vocabulary animations provide students with a memorable auditory and visual representation of the important terminology for the course.

Excel Tool Kits

Proficiency with spreadsheets is an absolute necessity for all MBA students. With that in mind, we created *Excel* spreadsheets for each chapter, called ***Tool Kits***, that calculate all numerical examples, tables, and figures. In addition to greater transparency within numerical examples, the ***Tool Kits*** explain in detail many of *Excel*'s most useful features and functions that students will find invaluable in their courses and careers.

Excel Online

In addition to the *Excel* ***Tool Kit*** files that directly explain examples in the text, **Microsoft® *Excel* Online** activities provide students with an opportunity to work auto-gradable, algorithmic homework problems directly in their browser. Students receive instant feedback on their *Excel* work, including the "by hand" calculations and a solution file containing a recommended way of solving the problem. Students' *Excel* work is saved in real time in the cloud; is platform, device, and browser independent; and is always accessible with their homework without cumbersome file uploads and downloads. This unique integration represents a direct collaboration between Cengage and Microsoft to strengthen and support the development of Microsoft Office education skills for success in the workplace.

Blueprint Problems

Blueprint Practice Problems available in MindTap teach students finance concepts and their associated building blocks—going beyond memorization. By going through the problem step by step, they reinforce foundational concepts and allow students to demonstrate their understanding of the problem-solving process and business impact of each topic. Blueprints include rich feedback and explanations, providing students with an excellent learning resource to solidify their understanding.

Exploring Finance

Exploring Finance offers instructors and students interactive visualizations that engage with "lean forward" interactivity. Instructors can use these visual, interactive tools to help students "see" the financial concept being presented directly within MindTap.

Problem Walk-Through Videos

Nearly 260 **Problem Walk-Through** videos are embedded in the online homework. Each video walks students through solving a problem from start to finish, and students can play and replay the tutorials as they work through homework assignments or prepare for quizzes and tests, almost as though they had an instructor by their side the whole time.

Adaptive Test Prep (ATP)

Adaptive Test Prep allows students to create practice quizzes covering multiple chapters in a low-stakes environment. Students receive immediate feedback so they know where they need additional help. In addition, the questions have the same formats as those in the actual test bank, prepare students for what to expect on an exam. With many questions offered per chapter, students can create multiple unique practice quizzes within MindTap.

Classroom Activities

Many of the preceding resources provide an excellent basis for classroom discussions. In addition, each chapter has a Mini Case describing a business situation spanning the chapter's topics. Some professors choose to assign the Mini Cases as graded assignments due at the beginning of class, whereas others use the Mini Cases to provide structure for class discussions or lectures.

Mini Case *PowerPoint* Slides

Each chapter has a set of *PowerPoint* slides that present graphs, tables, lists, and calculations for use in lectures. Although the slides correspond to the Mini Cases at the end of the chapter, the slides are completely self-contained in the sense that they can be used for discussions and lectures regardless of whether students have read the Mini Cases. In fact, we often don't assign the Mini Case, but we do use the *PowerPoint* slides.

Instructors can easily customize the slides and convert them quickly into any *PowerPoint* Design Template.[1] If you add some of your own slides or modify the existing slides to better illustrate important concepts, please share your changes with us—many of our best learning points have come from instructors, and we appreciate all suggestions for ways to improve learning experiences for students.

Mini Case *Excel* Spreadsheets

In addition to the *PowerPoint* slides, we also provide *Excel* spreadsheets that perform the calculations required in the Mini Cases. These spreadsheets are similar to the ***Tool Kits*** but with two differences. (1) The numbers correspond to the Mini Cases rather than to the chapter examples. (2) We added some features that enable what-if analysis on a real-time basis in class.

We usually begin class with the *PowerPoint* presentation, but after we have explained a basic concept, we "toggle" to the Mini Case *Excel* file and show how the analysis can be done in *Excel*.[2] For example, when teaching bond pricing, we begin with the *PowerPoint* show and cover the basic concepts and calculations. Then we toggle to *Excel* and use a sensitivity-based graph to show how bond prices change as interest rates and time to maturity vary. We encourage students to bring their laptops to class so that they can follow along and do the what-if analysis for themselves.

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[1]To convert into a different design template in *PowerPoint* for Office 365, select Design, Theme, and choose a theme. Always double-check the conversion; some templates use fonts of different sizes, which can cause some slide titles to run over their allotted space.

[2]To toggle between two open programs, such as *Excel* and *PowerPoint*, hold the Alt key down and hit the Tab key until you have selected the program you want to show.

Evaluating the Student Learning Experience

MindTap provides multiple resources enabling instructors to measure student learning. Some are ideal for online assignments, and others are best as hand-graded cases and exercises.

Algorithmic Homework Assignments That Are Unique to Each Student

One of our favorite MindTap features allows us to quickly create a homework assignment drawn from end-of-chapter problems and test bank problems. We usually include numerical fill-in-the-blank problems that algorithmically generate different inputs for each student.

When our primary objective is to foster learning, we enable students to check their answer for a problem before moving on to the next problem. We allow either three attempts or unlimited attempts, depending on the problem's difficulty. Sometimes we allow a problem to provide hints and feedback if the student's answer is wrong.

When our primary objective is assessment, we disable the multiple attempts feature. We always allow feedback on each question after the assignment's due date.

MindTap automatically grades the assignment and posts grades to the MindTap gradebook. MindTap can also post grades to learning management systems such as Canvas.

We assign homework early and often: Each assignment covers only several class periods and is due shortly after covering those classes. We find that this encourages students to keep up with the course, which enhances their learning experience.

Finance in Action

MindTap offers a series of Finance in Action analytical cases that assess students' ability to perform at a higher level of understanding, critical thinking, and decision making.

End-of-Chapter Spreadsheet Problems

Each chapter has a *Build a Model* problem, where students start with a spreadsheet that contains financial data plus general instructions for solving a specific problem. The *Excel* model is available in MindTap and is partially completed, with headings but no formulas—the student must literally build a model. This structure guides the student through the problem, minimizes unnecessary typing and data entry, and also makes it easy to grade the work because all students' answers are in the same locations on the spreadsheet.

The completed solutions to the *Build a Model*s are located in the Instructor Resource Center.

Cognero™ Test Bank and Testing Software

Cengage Learning Testing Powered by Cognero™ is a flexible online system that allows you to author, edit, and manage test bank content from multiple Cengage Learning solutions; create multiple test versions in an instant; deliver tests from your LMS, your classroom, or wherever you want. The Cognero™ Test Bank contains the same questions that are in the Microsoft *Word* Test Bank. All question content is now tagged according to Tier I (Business Program Interdisciplinary Learning Outcomes) and Tier II (finance-specific) standards topic, Bloom's Taxonomy, and difficulty level.

CengageCompose

More than 100 cases, written by Eugene F. Brigham, Linda Klein, and Chris Buzzard, are available via CengageCompose, Cengage Learning's online case library. These cases are in a customized case database that allows instructors to select cases and create their own customized casebooks. Most of the cases have accompanying spreadsheet models that, while not essential for working the case, do reduce number crunching and thus leave more time for students to consider conceptual issues. The models also show students how computers can be used to make better financial decisions. Cases that we have found particularly useful for the different chapters are listed in the end-of-chapter references. The cases, case solutions, and spreadsheet models can be previewed and ordered by professors at **http://compose.cengage.com.**

Cengage Learning Custom Solutions

Whether you need print, digital, or hybrid course materials, Cengage Learning Custom Solutions can help you create your perfect learning solution. Draw from Cengage Learning's extensive library of texts and collections, add your own original work, and/or create customized media and technology to match your learning and course objectives. Our editorial team will work with you through each step, allowing you to concentrate on the most important thing—your students. Learn more about all our services at **www.cengage.com/custom.**

Solutions Manual

This comprehensive manual contains worked-out solutions to all end-of-chapter questions and problems. It also includes additional explanatory notes with its answers to the end-of-chapter Mini Cases. It is available at the Instructor Resource Center.

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This book reflects the efforts of a great many people over a number of years. In addition to our immediate colleagues, we appreciate very much the many helpful comments and suggestions we receive from professors who use our book in their classes. Professors Greg Faulk, Anthony Gu, Andrew Mose, Chee Ng, John Stieven, and Serge Wind have been especially helpful, providing many hints and tips for improving the learning points in our textbook.

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Errors in the Text

At this point, authors generally say something like this: "We appreciate all the help we received from the people just listed, but any remaining errors are, of course, our own responsibility." And in many books, there are plenty of remaining errors. Having experienced difficulties with errors ourselves, both as students and as instructors, we resolved to avoid this problem in *Corporate Finance*. As a result of our error-detection procedures, we are convinced that the book is relatively free of mistakes.

Partly because of our confidence that few such errors remain, but primarily because we want to detect any errors in the textbook that may have slipped by so that we can correct them in subsequent printings, we decided to offer a reward of $10 per error to the first person who reports a textbook error to us. For purposes of this reward, errors in the textbook are defined as misspelled words, nonrounding numerical errors, incorrect statements, and any other error that inhibits comprehension. Typesetting problems such as irregular spacing and differences in opinion regarding grammatical or punctuation conventions do not qualify for this reward. Also, given the ever changing nature of the Internet, changes in Web addresses do not qualify as errors, although we would appreciate reports of changed Web addresses. Finally, any qualifying error that has follow-through effects is counted as two errors only. **Please report any errors to Michael C. Ehrhardt at the e-mail address shown next in the Conclusion.**

Conclusion

Finance is, in a real sense, the cornerstone of the free enterprise system. Good financial management is therefore vitally important to the economic health of business firms, hence to the nation and the world. Because of its importance, corporate finance should be thoroughly understood. However, this is easier said than done—the field is relatively complex, and it is undergoing constant change in response to shifts in economic conditions. All of this makes corporate finance stimulating and exciting but also challenging and sometimes perplexing. We sincerely hope that *Corporate Finance: A Focused Approach* will help readers understand and solve the financial problems businesses face today.

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Corporate Finance

A Focused Approach

PART 1

The Company and Its Environment

CHAPTER 1
An Overview of Financial Management and the Financial Environment 3

CHAPTER 2
Financial Statements, Cash Flow, and Taxes 55

CHAPTER 3
Analysis of Financial Statements 101

CHAPTER 1

An Overview of Financial Management and the Financial Environment

WWW

See **http://fortune.com/worlds-most-admired-companies** *for updates on the rankings.*

In a global beauty contest for companies, the winner is . . . Apple.

Or at least Apple is the most admired company in the world, according to *Fortune* magazine's annual survey. The others in the global top ten are Amazon.com, Starbucks, Berkshire Hathaway, Disney, Alphabet (formerly Google), General Electric, Southwest Airlines, Facebook, and Microsoft. What do these companies have that separates them from the rest of the pack?

Based on a survey of executives, directors, and security analysts, these companies have very high average scores across nine attributes: (1) innovativeness, (2) quality of management, (3) long-term investment value, (4) social responsibility, (5) people management, (6) quality of products and services, (7) financial soundness, (8) use of corporate assets, and (9) effectiveness in doing business globally. After culling weaker companies, the final rankings are then determined by over 3,800 experts from a wide variety of industries.

What makes these companies special? In a nutshell, they reduce costs by having innovative production processes, they create value for customers by providing high-quality products and services, and they create value for employees by training and fostering an environment that allows employees to utilize all of their skills and talents. As you will see throughout this book, the resulting cash flow and superior return on capital also create value for investors.

resource

The textbook's Web site has tools for teaching, learning, and conducting financial research.

This chapter should give you an idea of what financial management is all about, including an overview of the financial markets in which corporations operate. Before going into details, let's look at the big picture.

1-1 The Five-Minute MBA

Okay, we realize you can't get an MBA in five minutes, but we can sketch the key elements of an MBA education. The primary objective of an MBA program is to provide managers with the knowledge and skills they need to run successful companies, so we start there.

First, *successful companies have skilled people* at all levels inside the company, including leaders, managers, and a capable workforce. Skilled people enable a company to identify, create, and deliver products or services that are highly valued by customers—so highly valued that customers choose to purchase from them rather than from their competitors.

Second, *successful companies have strong relationships* with groups outside the company. For example, successful companies develop win–win relationships with suppliers and excel in customer relationship management.

Third, *successful companies have enough funding* to execute their plans and support their growing operations. Companies can reinvest a portion of their earnings, but most growing companies also must raise additional funds externally by some combination of selling stock and/or borrowing in the financial markets. To do this, a company must provide investors with high enough returns to compensate them for the use of their money and their exposure to risk.

To help your company succeed, you must have the skills necessary to evaluate any proposal or idea, whether it relates to marketing, supply chains, production, strategy, mergers, or any other area. In a nutshell, that is what we will do in this book.

SELF-TEST

What are three attributes of successful companies?

What financial skills must every successful manager have?

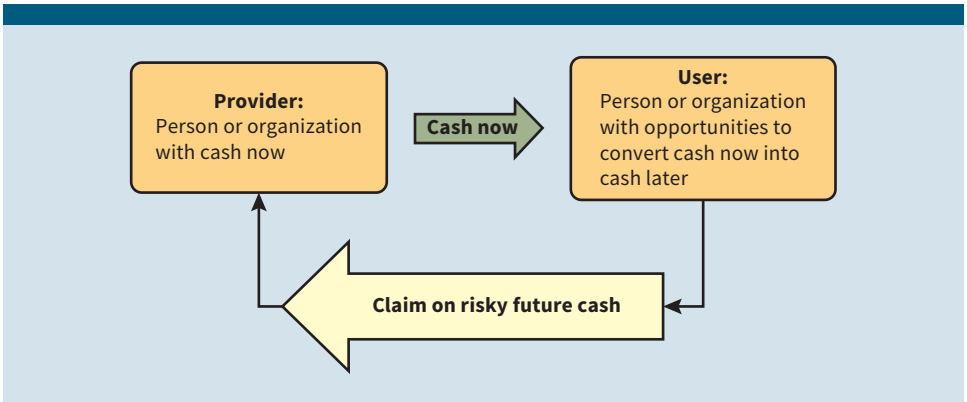
1-2 Finance from 40,000 Feet Above

A bird's-eye view showing the big picture of finance will help you keep track of its individual components. It all starts with individuals or organizations that have more cash than they presently want to spend (i.e., providers of cash now) and others with opportunities to generate cash in the future (i.e., users of cash now). For example, providers of cash include individuals who are saving for retirement, banks willing to make loans, and many other types of investors. Users of cash include: (1) students wishing to borrow money for tuition and planning to repay it with future earnings after graduating, (2) entrepreneurs with ideas, and (3) corporations with growth plans.

Figure 1-1 shows the relationship between providers and users.

Two problems immediately present themselves. First, how do the providers and users identify one another and exchange cash now for claims on risky future cash? Second, how can potential providers evaluate the users' opportunities? In other words, are the claims on risky future cash flows sufficient to compensate the providers for giving up their cash today? At the risk of oversimplification, **financial markets** are simply ways of connecting providers with users, and **financial analysis** is a tool to evaluate risky opportunities.

FIGURE 1-1
Providers and Users: Cash Now versus Claims on Risky Future Cash



We cover many topics in this book, and it can be easy to miss the forest for the trees. As you read about a particular topic, think about how the topic is related to the role played by financial markets or the tools used to evaluate claims on future cash flows.

We begin with an especially important type of user: companies that are incorporated.

SELF-TEST

What do providers supply? What do providers receive?

What do users receive? What do users offer?

What two problems are faced by providers and users?

1-3 The Corporate Life Cycle

Apple began life in a garage, and Facebook started in a dorm room. How is it possible for such companies to grow into the giants we see today? The following sections describe some typical stages in the corporate life cycle.

1-3a Starting Up as a Proprietorship

Many companies begin as a **proprietorship**, which is an unincorporated business owned by one individual. Starting a business as a proprietor is easy—obtain any required city or state business licenses and begin business operations. The proprietorship has three important advantages: (1) It is easy and inexpensive to start. (2) Relatively few government regulations affect it. (3) It pays no corporate income tax on profits—instead, they are included in the proprietor's personal taxable income.

However, the proprietorship also has three important limitations: (1) It may be difficult for a proprietorship to obtain the funding needed for growth. (2) The proprietor has unlimited personal liability for the business's debts, which can result in losses that exceed the money invested in the company. (Creditors may even be able to seize a proprietor's house or other personal property!) (3) The life of a proprietorship is limited to the life of its founder. Therefore, usually only small businesses operate as sole proprietorships. In fact, about 73% of all companies are proprietorships, accounting for less than 5% of all sales revenue.

1-3b More Than One Owner: A Partnership

Some companies start with more than one owner, and some proprietors decide to add a partner as the business grows. A **partnership** exists whenever two or more persons or entities associate to conduct a noncorporate business for profit. Partnerships may operate under different degrees of formality, ranging from informal, oral understandings to formal agreements filed with the secretary of the state in which the partnership was formed. Partnership agreements define the ways any profits and losses are shared between partners. A partnership's advantages and disadvantages are similar to those of a proprietorship.

Regarding liability, partners potentially can lose all of their personal assets in the event of bankruptcy because each partner is liable for the business's debts. To avoid this, the liabilities of some of the partners can be limited by establishing a **limited partnership**. **Limited partners** can lose only the amount of their investment in the partnership, but the **general partners** have unlimited liability. However, the limited partners typically have no control—which rests solely with the general partners—and their returns are likewise limited. Limited partnerships are common in real estate, oil, equipment-leasing ventures, and venture capital. However, they are not widely used in other businesses because usually no partner is willing to be the general partner due to the risk, and no partners are willing to be limited partners with no control.

In regular and limited partnerships, at least one partner is liable for the partnership's debts. However, in a **limited liability partnership (LLP)** and a **limited liability company (LLC)**, all partners' (or members') potential losses are limited to their investment in the LLP. Of course, this arrangement increases the risk faced by an LLP's lenders, customers, and suppliers.

1-3c Many Owners: A Corporation

Most partnerships have difficulty attracting substantial amounts of capital to support growth. Thus, many growth companies begin as a proprietorship or partnership but subsequently convert to a corporation. Other companies, in anticipation of growth, actually begin as corporations.

A **corporation** is a legal entity created under state laws, and it is separate and distinct from its owners and managers. This separation gives the corporation three major advantages: (1) *unlimited life*—a corporation can continue after its original owners and managers are deceased; (2) *easy transfers of ownership interests*—ownership is divided into shares of stock, which can be transferred far more easily than ownership in a proprietorship or partnership; and (3) *limited liability*—losses are limited to the actual funds invested.

To illustrate limited liability, suppose you invested $10,000 in a partnership that then went bankrupt and owed $1 million. Because partners are liable, you could be held liable for the entire $1 million if your partners could not pay their shares. However, if you invested $10,000 in a corporation's stock, your potential loss in a bankruptcy would be limited to your $10,000 investment.

Unlimited life, easy transfers of ownership, and limited liability make it much easier for corporations to raise money in the financial markets and grow into large companies. Although the corporate form offers significant advantages relative to proprietorships and partnerships, it has two disadvantages: (1) Corporate earnings may be subject to double taxation—the earnings of the corporation are taxed at the corporate level, and then earnings paid out as dividends are taxed again as income to the stockholders. (2) Setting up a corporation involves preparing a charter, writing a set of bylaws, and filing the many

required state and federal reports, which is more complex and time-consuming than creating a proprietorship or a partnership.

The **charter** includes the following information: (1) name of the proposed corporation, (2) types of activities it will pursue, (3) amount of capital stock, (4) number of directors, and (5) names and addresses of directors. The charter is filed with the secretary of the state in which the firm will be incorporated, and when it is approved, the corporation is officially in existence.[1] After the corporation begins operating, quarterly and annual employment, financial, and tax reports must be filed with state and federal authorities.

The **bylaws** are a set of rules drawn up by the founders of the corporation. Bylaws specify: (1) how directors are to be elected (all elected each year or perhaps one-third each year for 3-year terms), (2) whether the existing stockholders will have the first right to buy any new shares the firm issues, and (3) procedures for changing the bylaws themselves, should conditions require it.

There are several different types of corporations. Professionals such as doctors, lawyers, and accountants often form a **professional corporation (PC)** or a **professional association (PA)**. These types of corporations do not relieve the participants of professional (malpractice) liability. Indeed, the primary motivation behind the professional corporation was to provide a way for groups of professionals to avoid certain types of unlimited liability yet still be held responsible for professional liability.

Finally, some corporations can elect to be taxed as if the business were a proprietorship or partnership if the corporation meets certain requirements regarding size and number of stockholders. Such firms are called **S corporations**.

1-3d Growing a Corporation: Going Public

After a company incorporates, how does it evolve? When entrepreneurs start a company, they usually provide all the financing from their personal resources, which may include savings, home equity loans, or even credit cards. A fast-growing business must continue to invest in buildings, equipment, technology, and employees. Such investments usually deplete the founders' resources, so they turn to external financing. Many young companies are too risky for banks, so the founders must sell stock to outsiders, including friends, family, private investors (often called "angels"), or venture capitalists.

WWW

For updates on IPO activity, see **www.renaissancecapital.com/IPO-Center**. *Also, see Professor Jay Ritter's Web site for additional IPO data and analysis,* **https://site.warrington.ufl.edu/ritter/ipo-data/**.

Any corporation can raise funds by selling shares of its stock, but government regulations restrict the number and type of investors who can buy the stock. Also, the shareholders cannot subsequently sell their stock to the general public. Due to these limitations, the shares are called **closely held stock** and the company is a **closely held corporation**.

As it continues to grow, a thriving private corporation may decide to seek approval from the **Securities and Exchange Commission (SEC)**, which regulates stock trading, to sell shares in a public stock market.[2] It does so by filing a **prospectus** with the SEC, which provides relevant information about the company to investors and regulators. In addition to SEC approval, the company applies to be a **listed stock** on

[1]About 64% of major U.S. corporations are chartered in Delaware, which has, over the years, provided a favorable legal environment for corporations. It is not necessary for a firm to be headquartered or even to conduct operations in its state of incorporation or even in its country of incorporation.

[2]The SEC is a government agency created in 1934 to regulate matters related to investors, including the regulation of stock markets.

an SEC-registered stock exchange. For example, the company might list on the **New York Stock Exchange (NYSE)**, which is the oldest registered stock exchange in the United States and is the largest exchange in the world when measured by the market value of its listed stocks. Or perhaps the company might list on the **NASDAQ Stock Market**, which has the most stock listings, especially among smaller, high-tech companies.

Going public is called an **initial public offering (IPO)** because it is the first time the company's shares are sold to the general public. In most cases, an **investment bank**, such as Goldman Sachs, helps with the IPO by advising the company. In addition, the investment bank's company usually has a **brokerage firm**, which employs **brokers** who are registered with the SEC to buy and sell stocks on behalf of clients.[3] These brokers help the investment banker sell the newly issued stock to investors.

Most IPOs raise proceeds in the range of $90 million to $140 million. However, some IPOs are huge, such as the $21.7 billion raised by Alibaba when it went public on the NYSE in 2014. Not only does an IPO raise additional cash to support a company's growth, but the IPO also makes it possible for the company's founders and investors to sell some of their own shares, either in the IPO itself or afterward as shares are traded in the stock market. For example, in Facebook's 2012 IPO, the company raised about $6.4 billion by selling 180 million new shares, and the owners received almost $9.2 billion by selling 241 million of their own shares.

Most IPOs are underpriced when they are first sold to the public, based on the initial price paid by IPO investors and the closing price at the end of the first day's trading. For example, in 2017 the average first-day return was around 15%.

Even if you are able to identify a "hot" issue, it is often difficult to purchase shares in the initial offering. In strong markets, these deals generally are oversubscribed, which means that the demand for shares at the offering price exceeds the number of shares issued. In such instances, investment bankers favor large institutional investors (who are their best customers), and small investors find it hard, if not impossible, to get in on the ground floor. They can buy the stock in the aftermarket, but evidence suggests that if you do not get in on the ground floor, the average IPO underperforms the overall market over the long run.[4]

Before you conclude that it isn't fair to let only the best customers have the stock in an initial offering, think about what it takes to become a best customer. Best customers are usually investors who have done lots of business in the past with the investment banking firm's brokerage department. In other words, they have paid large sums as commissions in the past, and they are expected to continue doing so in the future. As is so often true, there is no free lunch—most of the investors who get in on the ground floor of an IPO have, in fact, paid for this privilege.

After the IPO, it is easier for a public firm to raise additional funds to support growth than it is for a private company. For example, a public company raises more funds by selling (i.e., issuing) additional shares of stock through a **seasoned equity offering**, which is much simpler than the original IPO. In addition, publicly traded companies also have better access to the debt markets and can raise additional funds by selling bonds.

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[3]For example, stockbrokers must register with the **Financial Industry Regulatory Authority (FINRA)**, a nongovernment organization that watches over brokerage firms and brokers. FINRA is the biggest, but there are other self-regulatory organizations (SROs). Be aware that not all self-advertised "investment advisors" are actually registered stockbrokers.

[4]See Jay R. Ritter, "The Long-Run Performance of Initial Public Offerings," *Journal of Finance*, March 1991, pp. 3–27.

1-3e Managing a Corporation's Value

How can managers affect a corporation's value? To answer this question, we first need to ask, "What determines a corporation's value?" In a nutshell, it is *a company's ability to generate cash flows now and in the future*.

In particular, a company's value is determined by three properties of its cash flows: (1) The *size* of the expected future cash flows is important—bigger is better. (2) The *timing* of cash flows counts—cash received sooner is more valuable than cash that comes later. (3) The *risk* of the cash flows matters—safer cash flows are worth more than uncertain cash flows. Therefore, managers can increase their firm's value by increasing the size of the expected cash flows, by speeding up their receipt, and by reducing their risk.

The relevant cash flow is called **free cash flow (FCF)**, not because it is free, but because it is available (or free) for distribution to a company's investors, including creditors and stockholders. You will learn how to calculate free cash flows in Chapter 2, but for now you should know that free cash flow is:

$$\text{FCF} = \begin{matrix}\text{Sales}\\\text{revenues}\end{matrix} - \begin{matrix}\text{Operating}\\\text{costs}\end{matrix} - \begin{matrix}\text{Operating}\\\text{taxes}\end{matrix} - \begin{matrix}\text{Required investments}\\\text{in new operating capital}\end{matrix}$$

A company's value depends on its ability to generate free cash flows, but a company must spend money to make money. For example, cash must be spent on R&D, marketing research, land, buildings, equipment, employee training, and many other activities before the subsequent cash flows become positive. Where do companies get this cash? For start-ups, it comes directly from investors. For mature companies, some of it comes directly from new investors, and some comes indirectly from current shareholders when profit is reinvested rather than paid out as dividends. As stated previously, these cash providers expect a rate of return to compensate them for the timing and risk inherent in their claims on future cash flows. This rate of return from an investor's perspective is a cost from the company's point of view. Therefore, the rate of return required by investors is called the **weighted average cost of capital (WACC)**.

The following equation defines the relationship between a firm's value, its free cash flows, and its cost of capital:

$$\text{Value} = \frac{\text{FCF}_1}{(1+\text{WACC})^1} + \frac{\text{FCF}_2}{(1+\text{WACC})^2} + \frac{\text{FCF}_3}{(1+\text{WACC})^3} + \cdots + \frac{\text{FCF}_\infty}{(1+\text{WACC})^\infty} \quad \textbf{(1-1)}$$

We will explain how to use this equation in later chapters, but for now it is enough to understand that a company's value is determined by the size, timing, and risk of its expected future free cash flows.

If the expected future free cash flows and the cost of capital incorporate all relevant information, then the value defined in Equation 1-1 is called the **intrinsic value**; it is also called the **fundamental value**. If investors have all the relevant information, the **market price**, which is the price that we observe in the financial markets, should be equal to the intrinsic value. Whether or not investors have the relevant information depends on the quality and transparency of financial reporting for the company and for the financial markets. This is an important issue that we will address throughout the book.

SELF-TEST

What are the key differences between proprietorships, partnerships, and corporations? Be sure to describe the advantages and disadvantages of each.

What are charters and bylaws?

Describe some special types of partnerships and corporations, and explain the differences among them.

What does it mean for a company to "go public" and "list" its stock?

What are some differences between the NYSE and the NASDAQ stock market?

What roles are played by an investment bank and its brokerage firm during an IPO?

What is IPO underpricing? Why is it often difficult for the average investor to take advantage of underpricing?

Differentiate between an IPO and a seasoned equity offering.

What three properties of future cash flows affect a corporation's value?

How is a firm's intrinsic (or fundamental) value related to its free cash flows and its cost of capital? Write out the free cash flow equation and explain what it means.

What is required for the market price to equal the fundamental value?

1-4 Governing a Corporation

For proprietorships, partnerships, and small corporations, the firm's owners determine strategy and manage day-to-day operations. This is usually not true for a large corporation, which often has many different shareholders who each own a small proportion of the total number of shares. These diffuse shareholders elect directors, who then hire senior executives, who then hire other managers to run the corporation on a day-to-day basis. These **insiders** are elected or hired to work on behalf of the shareholders, but what is to prevent them from acting in their own best interests? This is called an **agency problem** because managers are hired as agents to act on behalf of the owners. Agency problems can be addressed by a company's **corporate governance**, which is the set of rules that control the company's behavior toward its directors, managers, employees, shareholders, creditors, customers, competitors, and community. We will have much more to say about agency problems and corporate governance throughout the book, especially in Chapters 13, 14, and 15.

It is one thing to say that managers should act on behalf of owners, but how can managers put this into practice?

1-4a The Primary Objective of a Corporation: Maximizing Stockholder Wealth

A company's decisions matter to many different **stakeholders**, such as shareholders, employees, local communities, and others who are affected by the company's environmental impact. How should managers address and prioritize stakeholders' different concerns?

First, managers are entrusted with shareholders' property and should be good stewards of this property. Second, good stewardship implies that managers should seek to increase the entrusted property's value. In other words, the primary goal of the corporation should be to maximize stockholder wealth unless the company's charter states differently. This does *not* mean that managers should break laws or violate ethical considerations. This does *not*

mean that managers should be unmindful of employee welfare or community concerns. But it does mean that managers should seek to maximize stockholder wealth.

In fact, maximizing shareholder wealth is a fiduciary duty for most U.S. corporations. If companies fail in this duty, they can be sued by shareholders. For example, suppose several different companies make simultaneous offers to acquire a target company. The target's board of directors probably will be sued by shareholders if they don't vote in favor of the highest offer, even if the takeover means that the directors will lose their jobs. Companies can even be sued for maintaining social initiatives (such as purchasing environmentally friendly or locally sourced supplies at higher costs than equivalent imports) if shareholders believe they are too costly to the company.

The situation is different for many non-U.S. companies. For example, many European companies' boards have directors who specifically represent the interests of employees and not just shareholders. Many other international companies have government representatives on their boards or are even completely owned by a government. Such companies obviously represent interests other than shareholders.

In a recent development, some U.S. corporations are choosing a new corporate form called a **benefit corporation (B-corp)**, which expands directors' fiduciary responsibilities to include interests other than shareholders' interests (see the box "Be Nice with a B-Corp").

1-4b Intrinsic Stock Value Maximization and Social Welfare

If a firm attempts to maximize its intrinsic stock value, is this good or bad for society? In general, it is good. Aside from illegal actions such as making or taking bribes, fraudulent accounting, exploiting monopoly power, violating safety codes, or failing to meet environmental standards, *the same actions that maximize intrinsic stock values usually benefit society.*

Be Nice with a B-Corp

In 2010, Maryland became the first state to allow a company, The Big Bad Woof, to be chartered as a benefit corporation (B-corp). As of early 2015, there were more than 1,000 B-corps in 27 states, with legislation pending in 14 other states. B-corps are similar to regular for-profit corporations but have charters that include mandates to benefit the environment and society even if this might not maximize shareholder wealth. For example, The Big Bad Woof, which sells products for companion pets, seeks to purchase merchandise from small, local, minority-owned businesses even if their prices are a bit higher.

B-corps are required to report their progress in meeting the charters' objectives. Many self-report, but some choose to be certified by an independent third party, in much the same way that an independent accounting firm certifies a company's financial statements.

Why would a company become a B-corp? Patagonia founder Yvon Chouinard said, "Benefit corporation legislation creates the legal framework to enable mission-driven companies like Patagonia to stay mission-driven through succession, capital raises, and even changes in ownership, by institutionalizing the values, culture, processes, and high standards put in place by founding entrepreneurs."[a]

Does being a B-corp help or hurt a company's value? Advocates argue that customers will be more loyal and that employees will be prouder, more motivated, and more productive, which will lead to higher free cash flows and greater value. Critics counter that a B-corp will find it difficult to raise cash from additional investors because maximizing shareholder wealth isn't its only objective.

There isn't yet enough data to draw a conclusion, but it will be interesting to see whether B-corps ultimately produce a kinder, gentler form of capitalism.

Note: [a]See **www.patagonia.com/us/patagonia.go?assetid=68413**.

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The Federal Reserve Board conducts surveys of consumer finances every three years. For updates, go to **https://www.federalreserve.gov/econres/scfindex.htm**.

ORDINARY CITIZENS AND THE STOCK MARKET

About 52% of U.S. households own stock, either directly or indirectly through mutual funds or retirement plans. Therefore, when a manager takes actions to maximize intrinsic value, this increases wealth and quality of life for millions of citizens.

Note that about 48% of households *don't directly* benefit from higher stock prices. Even for the stock-owning households, most of the wealth accrues to the rich: (1) 1% of stock-owning households own about 39% of the wealth, (2) the next 9% own about 38%, and (3) the bottom 90% own about 23% (a substantial decrease from the bottom group's 33% share in 1989). If you ask someone whether wealth and income inequality are good or bad for our country, the answer probably depends on the person's political views.

EMPLOYEES AT VALUE-MAXIMIZING COMPANIES

Sometimes a company's stock price increases when it announces plans to lay off employees, but viewed over time, this is the exception rather than the rule. In general, companies that successfully increase stock prices also grow and add more employees, thus benefiting society. Note, too, that many governments across the world, including U.S. federal and state governments, are privatizing some of their state-owned activities by selling these operations to investors. Perhaps not surprisingly, the sales and cash flows of recently privatized companies generally improve. Moreover, studies show that newly privatized companies tend to grow and thus require more employees when they are managed with the goal of stock price maximization.

CONSUMERS AND COMPETITIVE MARKETS

Value maximization requires efficient, low-cost businesses that produce high-quality goods and services at the lowest possible cost. This means that companies must develop products and services that consumers want and need, which leads to new technology and new products. Also, companies that maximize their stock price must generate growth in sales by creating value for customers in the form of efficient and courteous service, adequate stocks of merchandise, and well-located business establishments. Therefore, consumers benefit in competitive markets when companies maximize intrinsic value.

1-4c Ethics and Intrinsic Stock Value Maximization

A firm's commitment to business ethics can be measured by the tendency of its employees, from the top down, to adhere to laws and regulations. But ethical behavior also includes a commitment to (1) appropriate use of confidential information (i.e., not for personal gain), (3) attention to product safety and quality, (3) fair employment practices, (4) fair marketing and selling practices, and (5) community involvement.

The intrinsic value of a company ultimately depends on all of its expected future cash flows, and making a substantive change requires hard work to increase sales, cut costs, or reduce capital requirements. There are very few, if any, *legal and ethical* shortcuts to making significant improvements in the stream of future cash flows, as illustrated by the following examples.

ILLEGAL ACTIONS

Unfortunately, managers at some companies have taken illegal actions to make intrinsic values seem much higher than warranted. For example, ForceField Energy Inc. claimed to be a wholesale distributor of efficient LED lighting products. However, its Chairman of the Board, Richard St. Julien, was arrested in 2015 on charges of security fraud.

Nine others, including brokers and fund managers, were charged in 2016 for taking kickbacks from ForceField in exchange for encouraging investors to purchase the stock even though they knew that the company was in dire financial straits. St. Julien pled guilty and cooperated with investigators in exchange for the possibility of a sentence of less than 40 years. As of mid-2018, five of the others have been sentenced to prison and four have pled guilty. The perpetrators are being punished, but that doesn't restore the $130 million lost by shareholders.

ALLEGED UNETHICAL ACTIONS

Other companies have been accused of unethical actions. For example, Mylan N.V. purchased exclusive rights in 2007 to sell EpiPens, which deliver a dose of epinephrine to reduce the impact of a sudden dangerous allergic reaction. Mylan subsequently increased the price 17 times from $100 per pair to $600 by May 2016. In late August 2016, Mylan was selling about $1 billion in EpiPens and its stock was trading close to $50 per share. However, the steep price increases had touched off outrage from parents and the news media. By fall of 2017, Mylan's stock price had fallen to about $32, a 36% decline. Part of that decline was due to (1) reputational damage, (2) lower revenues because Mylan introduced a generic version of the EpiPen (at $300 per pair), (3) a $467 million settlement with the Justice Department to resolve claims that Mylan had misclassified the EpiPen to avoid paying rebates to Medicaid, and (4) a still unresolved (as of early 2018) class action lawsuit alleging racketeering. As this example shows, even alleged unethical behavior can significantly reduce a company's value.

WHISTLEBLOWER PROTECTIONS

Most illegal or unethical schemes are difficult to hide completely from all other employees. But an employee who believes a company is not adhering to a law or regulation might be hesitant to report it for fear of being fired or otherwise punished by the company. To help address this problem, federal and state governments have created a variety of whistleblower protection programs corresponding to different types of corporate misdeeds.

With respect to financial misdeeds, the Sarbanes-Oxley (SOX) Act of 2002 and the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 strengthened protection for whistleblowers who report financial wrongdoing. Under SOX, employees who report corporate financial wrongdoing and subsequently are penalized by the company can ask the Occupational Safety and Health Administration (OSHA) to investigate the situation. If the employee was improperly penalized, the company can be required to reinstate the person, along with back pay and a sizable penalty award. In addition, SOX made it a criminal act for a CEO or CFO to knowingly falsely certify a company's financial position.

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For current information from OSHA, see **www.osha.gov/index.html** *and search for "whistleblower investigation data."*

Have these provisions in SOX been successful? There were 202 SOX-related employee complaints in 2017. Only 23% were settled in the employee's favor—the others were withdrawn, dismissed, or kicked out by OSHA. No executives have been jailed for falsely certifying financial statements, even though a significant number of executives have lost their jobs due to their companies' financial misreporting.

The Dodd-Frank Act's establishment of the SEC Office of the Whistleblower has led to dozens of announced awards for reporting wrongdoing by financial firms. In 2017, 13 whistleblowers received a total of $43 million, with one of them receiving $20 million. The awards can be very large because they are based on a percentage of the amount that the SEC fines the wrongdoing corporation. The largest award to an individual was $33 million in 2018.

Taxes and Whistleblowing

The Internal Revenue Service (IRS) has a program to reward whistleblowers for information leading to the recovery of unpaid taxes, and sometimes the rewards are huge. The largest reward was $104 million to Bradley C. Birkenfeld, who discovered schemes that UBS, a large Swiss bank, was using to help its clients avoid U.S. taxes. UBS settled with the U.S. Department of Justice in 2009 by paying $780 million in fines and providing account information for over 4,000 U.S. clients to the IRS. This caused thousands of additional U.S. taxpayers to fear similar exposure and to enter an IRS amnesty program, leading to over $5 billion in collections of unpaid taxes.

Despite the record-setting payout, Birkenfeld and the U.S. government do not have an amicable relationship. The government alleged that Birkenfeld learned about the UBS tax evasion schemes while using them to shelter one of his own clients from taxes. Birkenfeld refused to divulge information about this client during the investigation, so the United States convicted him of fraud. Birkenfeld served 30 months in a medium-security federal prison but still received the $104 million reward.

How much is freedom worth? About $115,000 per day, based on Birkenfeld's reward and prison time served.

Although not a substitute for high individual moral standards, it appears that large and visible rewards to whistleblowers help ethical employees rein in actions being considered by less ethical employees. This leads to less financial misreporting, which in turn helps keep market prices in line with intrinsic value.

SELF-TEST

What is an agency problem? What is corporate governance?

What is the fiduciary duty (i.e., the primary goal) for most U.S. corporations?

How does a benefit corporation's charter differ from that of a typical U.S. corporation?

Explain how individuals, customers, and employees can benefit when a company seeks to maximize its intrinsic value.

What is a whistleblower?

Compare the Sarbanes-Oxley (SOX) Act of 2002 and the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 with respect to their impact on whistleblowing.

1-5 An Overview of Financial Markets

At the risk of oversimplification, we can classify providers and users of cash into four groups: individuals, financial organizations (like banks and insurance companies), nonfinancial organizations (like Apple, Starbucks, and Ford), and governments. The following sections explain how these groups interact to allocate capital from providers to users.

1-5a The Net Providers and Users of Capital

In spite of William Shakespeare's advice, most individuals and firms are both borrowers and lenders. For example, an individual might borrow money by having a car loan but might also lend money by having a bank savings account. In the aggregate, however, *individuals are net providers (i.e., savers)* of most funds ultimately used by nonfinancial corporations. In fact, individuals provide a net amount of about $62 *trillion* to users.

Although most nonfinancial corporations own some financial securities, such as short-term Treasury bills, *nonfinancial corporations are net users (i.e., borrowers)* in the aggregate.

In the United States, federal, state, and local *governments are also net users (i.e., borrowers)* in the aggregate, although many foreign governments, such as those of China and oil-producing countries, are actually net providers.

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For current information, see the Federal Reserve Bank of St. Louis's FRED® Economic Data. Take the total financial assets of households (and nonprofit organizations serving households), found at **https://fred.stlouisfed.org/series/TFAABSHNO**. *Then subtract the financial liabilities, found at* **https://fred.stlouisfed.org/series/TLBSHNO**.

Banks and other financial corporations raise money with one hand and invest it with the other. For example, a bank might raise money from individuals in the form of savings accounts and then lend most of that money to business customers. In the aggregate, *financial corporations are net users (i.e., borrowers)* by a slight amount.

1-5b Getting Cash from Providers to Users: The Capital Allocation Process

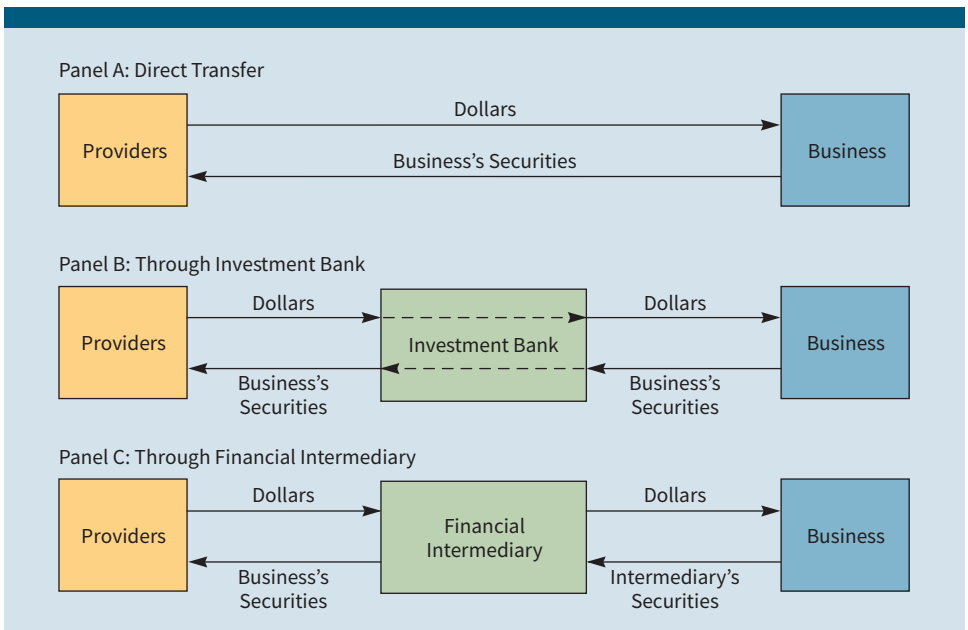
Because users invest the cash received from providers, it is called "capital." Transfers of capital from providers to users take place in three different ways. Direct transfers of money and securities, as shown in Panel A of Figure 1-2, occur when a business (or government) sells its securities directly to providers. Providers purchase the securities with cash and the business delivers the securities to the providers. For example, a privately held company might sell shares of stock directly to a new shareholder, or the U.S. government might sell a Treasury bond directly to an individual investor.

As shown in Panel B, indirect transfers may go through an investment bank, which *underwrites* the issue. An underwriter serves as a middleman and facilitates the issuance of securities. The company sells its stocks or bonds to the investment bank, which in turn sells these same securities to savers. Because new securities are involved and the corporation receives the proceeds of the sale, this is a "primary" market transaction.

Transfers also can be made through a **financial intermediary** such as a bank or mutual fund, as shown in Panel C. The intermediary obtains funds from providers in exchange for its own securities or ownership of savings accounts. The intermediary then uses this money to purchase the business's securities. For example, an individual might provide dollars to a bank and receive a certificate of deposit; the bank then might lend to a small business, receiving in exchange a legal document from the borrower promising to repay the loan. Thus, intermediaries literally create new types of securities.

There are three important features of the capital allocation process. First, new financial securities are created. Second, different types of financial institutions often act as intermediaries

FIGURE 1-2
Diagram of the Capital Allocation Process



between providers and users. Third, the activities occur in a variety of financial markets. The following sections describe each of these topics, beginning with financial securities.

SELF-TEST

What are the four major groups of providers and users? For each group, state whether it is a net provider or a net user.

Identify three ways that capital is transferred between savers and borrowers.

Distinguish between the roles played by investment banks and financial intermediaries in exchanging cash now for claims on future cash.

1-6 Claims on Future Cash Flows: Types of Financial Securities

Any claim on a future cash flow is called a **financial instrument**. Providers exchange cash for a financial instrument only if they expect an acceptable rate of return. We begin with an overview of financial instruments and then discuss expected returns.

1-6a Type of Claim on Future Cash Flows: Debt and Equity

A **financial security** is a claim that is standardized and regulated by the government (the legal definition is a bit longer). The variety of financial securities is limited only by human creativity, ingenuity, and governmental regulations. At the risk of oversimplification, we can classify most financial securities by the type of claim and the time until maturity.

DEBT

Financial securities are simply documents with contractual provisions that entitle their owners to specific rights and claims on specific cash flows or values. Debt instruments typically have specified payments and a specified maturity. For example, an Alcoa bond might promise to pay $30 semiannually for 30 years, at which time it promises to make a $1,000 principal payment.

If debt matures in more than a year, it is called a *capital market security*. Thus, the Alcoa bond in this example is a capital market security. If the debt matures in less than a year, it is a *money market security*. For example, Google might expect to receive $200,000 in 75 days, but it needs cash now. Google might issue commercial paper, which is essentially an IOU. In this example, Google might agree to pay $200,000 in 75 days in exchange for $199,200 today. Thus, commercial paper is a money market security.

EQUITY

Equity instruments are a claim upon a residual value. For example, Alcoa's stockholders are entitled to the cash flows generated by Alcoa after its bondholders, creditors, and other claimants have been satisfied. Because stock has no maturity date, it is a capital market security.

RATES AND MATURITY OF CLAIMS

Table 1-1 provides a summary of the major types of financial instruments, including risk, original maturity, and rate of return. Three rates of return are especially important. First, the **prime rate** is the rate U.S. banks charge to their most creditworthy customers. Second, **LIBOR** (London Interbank Offered Rate) is the rate that U.K. banks report for loans made to other U.K. banks. Third, the **Secured Overnight Financing**

Rate (SOFR) was introduced by the U.S. Federal Reserve and began trading on April 2, 2018. The SOFR is based on actual overnight loans that use Treasury securities as collateral. The first two rates are important because many financial instruments have returns based on these rates. For example, the rate on a loan might be specified as LIBOR + 2%. Although many loans are tied to LIBOR, the U.K. authority responsible for regulating LIBOR announced in 2016 that it would cease to regulate LIBOR at the end of 2021. As a potential replacement, the U.S. Federal Reserve created the third rate, SOFR, which the Fed began publishing in April, 2018.[5]

TABLE 1-1
Summary of Major Financial Instruments

Instrument	Major Participants	Risk	Original Maturity	Rates of Return on April 4, 2018
U.S. Treasury bills	Sold by U.S. Treasury	Default-free	91 days to 1 year	1.68%
Commercial paper	Issued by financially secure firms to large investors	Low default risk	Up to 270 days	1.90%
Money market mutual funds	Invested in short-term debt; held by individuals and businesses	Low degree of risk	No specific maturity (instant liquidity)	1.72%
Commercial loans	Loans by banks to corporations	Depends on borrower	Up to 7 years	Tied to prime rate (4.75%) or LIBOR (2.31%)
U.S. Treasury notes and bonds	Issued by U.S. government	No default risk, but price falls if interest rates rise	2 to 30 years	2.30% to 3.07%
Mortgages	Loans secured by property	Risk is variable	Up to 30 years	4.4%
Municipal bonds	Issued by state and local governments to individuals and institutions	Riskier than U.S. government bonds, but exempt from most taxes	Up to 30 years	3.01%
Corporate bonds	Issued by corporations to individuals and institutions	Riskier than U.S. government debt; depends on strength of issuer	Up to 40 years (although a few go up to 100 years)	4.64%
Preferred stocks	Issued by corporations to individuals and institutions	Riskier than corporate bonds	Unlimited	4% to 9%
Common stocks	Issued by corporations to individuals and institutions	Riskier than preferred stocks	Unlimited	8% to 15%

Notes:

1. Data for the prime rate and U.S. Treasury bills, notes, and bonds are from the *Federal Reserve Statistical Release* (**www.federalreserve.gov/releases/H15/update**).
2. Data for LIBOR, mortgages, and corporate bonds are from the Federal Reserve Bank of St. Louis's FRED® Economic Data (**https://fred.stlouisfed.org/series/USD3MTD156N**, **https://fred.stlouisfed.org/series/MORTGAGE30US**, and **https://fred.stlouisfed.org/series/BAA**).
3. Data for money market mutual funds are from Vanguard: **https://personal.vanguard.com/us/funds/snapshot?FundIntExt=INT&FundId=0030&funds_disable_redirect=true**.
4. Data for municipal bonds are from Bloomberg at **www.bloomberg.com/markets/rates-bonds/government-bonds/us**.
5. Common stocks are expected to provide a "return" in the form of dividends and capital gains rather than interest. Of course, if you buy a stock, your *actual* return may be considerably higher or lower than your *expected* return.

[5]There are two related reasons for the demise of LIBOR. First, it is the average of *reported* rates rather than *actual* rates. Second, there were several scandals involving manipulation of the reported rate by U.K. banks. This is why the Fed began publishing SOFR. The transition from LIBOR to SOFR will be gradual, but futures contracts on SOFR began trading on the Chicago Mercantile Exchange not long after the Fed began publishing SOFR rates. We expect rates on most financial securities will be tied to SOFR before 2022.

1-6b Type of Claim on Future Cash Flows: Derivatives and Hybrids

resource

*For an overview of derivatives, see **Web Extension 1A** on the textbook's Web site.*

Debt and equity represent claims upon the cash flows generated by real assets, such as the cash flows generated by Alcoa's factories and operations. In contrast, **derivatives** are securities whose values depend on, or are *derived* from, the values of some other traded assets. For example, an option on Alcoa stock and a futures contract to buy wheat are derivatives. We discuss options in Chapter 8 and in ***Web Extension 1A***, which provides a brief overview of options and other derivatives.

Some securities are a mix of debt, equity, and derivatives. For example, preferred stock has some features like debt and some like equity, while convertible debt has both debt-like and option-like features. We discuss hybrids in subsequent chapters.

1-6c Type of Claim on Future Cash Flows: Securitized Financial Assets

Some securities are created from packages of other financial assets, a process called **securitization**. The misuse of securitized assets is one of the primary causes of the most recent global financial crisis, so every manager needs to understand the process of securitization.

The details vary for different asset classes, but the processes are similar. For example, a bank might loan money to an individual who purchases a car. The individual signs a loan contract, which entitles the bank to receive future payments from the borrower. The bank can put a large number of these individual contracts into a portfolio (called a *pool*) and transfer the pool into a trust (a separate legal entity). The trust then creates new financial instruments that pay out a prescribed set of cash flows from the pool. The trust registers these new securities and sells them. The bank receives the proceeds from the sale, and the purchasers receive a new financial security that has a claim on the cash flows generated by the pool of auto loans.

Consider the benefits. First, because the bank received cash when it sold the securitized car loans, the bank now has replenished its supply of lendable funds and can make additional loans. Second, the bank no longer bears the risk of the borrowers defaulting. Instead, the securities' purchasers choose to bear that risk in expectation of earning an appropriate return. Third, the purchaser of a security has greater liquidity than the bank had when it owned the loan contract because there is an active secondary market for the securities.

Almost any class of financial assets can be securitized, including car loans, student loans, credit card debt, and home mortgages. We have more to say about securitized mortgages and the Great Recession of 2007 later in this chapter, but first let's take a look at the cost of money.

SELF-TEST

What is a financial instrument? What is a financial security?

What are some differences among the following types of securities: debt, equity, and derivatives?

Describe the process of securitization.

1-7 Claims on Future Cash Flows: The Required Rate of Return (the Cost of Money)

Providers of cash expect more cash back in the future than they originally supply to users. In other words, providers expect a positive rate of return on their investment. We call this a **required rate of return** because the prospect of more money in the future is *required* to

induce an investor to give up money today. Keep in mind that an investor's rate of return is a user's cost. For debt, we call this cost the **interest rate**. For equity, we call it the **cost of equity**, which consists of the dividends and capital gains stockholders expect. Therefore, the required rate of return is also called the *cost of money* or the *price of money*.

Notice in Table 1-1 that a financial instrument's rate of return generally increases as its maturity and risk increase. We will have much more to say about the relationships among an individual security's features, risk, and required rate of return later in the book, but first we will examine some fundamental factors and economic conditions that affect all financial instruments.

1-7a Fundamental Factors That Affect the Required Rate of Return (the Cost of Money)

The four most fundamental factors affecting the supply and demand of capital and the resulting cost of money are: (1) production opportunities, (2) time preferences for consumption, (3) risk, and (4) inflation.

PRODUCTION OPPORTUNITIES

Production opportunities are activities that require cash now but have the potential to generate cash in the future. For example, a company might sell stock to build a new factory, or a student might borrow to attend college. In both cases, there are prospects of future cash flows: The company might increase sales, and the new graduate might get a high-paying job. Notice that the size and likelihood of the future cash flows put an upper limit on the amount that can be repaid. All else held equal, improvements in production opportunities will increase this upper limit and create more demand for cash now, which will lead to higher interest rates and required returns.

TIME PREFERENCE FOR CONSUMPTION

Providers can use their current funds for consumption or saving. By saving, they choose not to consume now, expecting to consume more in the future. If providers strongly prefer consumption now, then it takes high interest rates to induce them to trade current consumption for future consumption. Therefore, the time preference for consumption has a major impact on the cost of money. Notice that the time preference for consumption varies for different individuals, for different age groups, and for different cultures. For example, people in Japan have a lower time preference for consumption than those in the United States, which partially explains why Japanese families tend to save more than U.S. families even though interest rates are lower in Japan.

RISK

If an opportunity's future cash flows are very uncertain and might be much lower than expected, providers require a higher expected return to induce them to take the extra risk.

EXPECTED INFLATION

Suppose you just paid $100 for a pair of running shoes that will last a year. If inflation is 3%, then a new pair of running shoes next year will cost $103, assuming shoe prices go up at the same rate as inflation. If you could invest $100 today at 5%, then you would have $105 next year from your investment, could buy new shoes for $103, and still have $2 left for other uses. Notice that part of your $5 return was "used up" by inflation: You will pay $103 for shoes next year instead of today's price of $100, so $3 out of your $5 return simply

covered inflation. In terms of additional purchasing power, you gained only $2 from your $100 investment. Therefore, $2 is your real increase in purchasing power, and 2% is your **real rate of return (r_r)** in terms of purchasing power.[6] The 5% return on your investment is called the **nominal rate of return (r_n)** because it is the stated rate shown at the time you make your investment. We will have much more to say about inflation in later chapters, but for now it is enough to understand that if expected inflation goes up, then the nominal interest rate also must go up to maintain the real interest rate.

1-7b Economic Conditions and Policies That Affect the Required Rate of Return (the Cost of Money)

Economic conditions and policies also affect required rates of return. These include: (1) Federal Reserve policy, (2) the federal budget deficit or surplus, (3) the level of business activity, and (4) international factors.

FEDERAL RESERVE POLICY

WWW

The home page for the Board of Governors of the Federal Reserve System can be found at **www.federalreserve.gov**. *You can access general information about the Federal Reserve, including press releases, speeches, and monetary policy.*

If the Federal Reserve Board wants to stimulate the economy, it most often uses open market operations to purchase Treasury securities held by banks. Because banks are selling some of their securities, the banks will have more cash, which increases their supply of loanable funds, which in turn makes banks willing to lend more money at lower interest rates. In addition, the Fed's purchases represent an increase in the demand for Treasury securities. As with anything for sale, increased demand causes Treasury securities' prices to go up and interest rates to go down. The net result is a reduction in interest rates, which stimulates the economy by making it less costly for companies to borrow for new projects or for individuals to borrow for major purchases or other expenditures.

Unfortunately, there is a downside to stimulation by the Fed. When banks sell their holdings of Treasury securities to the Fed, the banks' reserves go up, which increases the money supply. A larger money supply ultimately leads to an increase in expected inflation, which eventually pushes interest rates up. Thus, the Fed can stimulate the economy in the short term by driving down interest rates and increasing the money supply, but this creates longer-term inflationary pressures. This was exactly the dilemma facing the Fed in mid-2018.

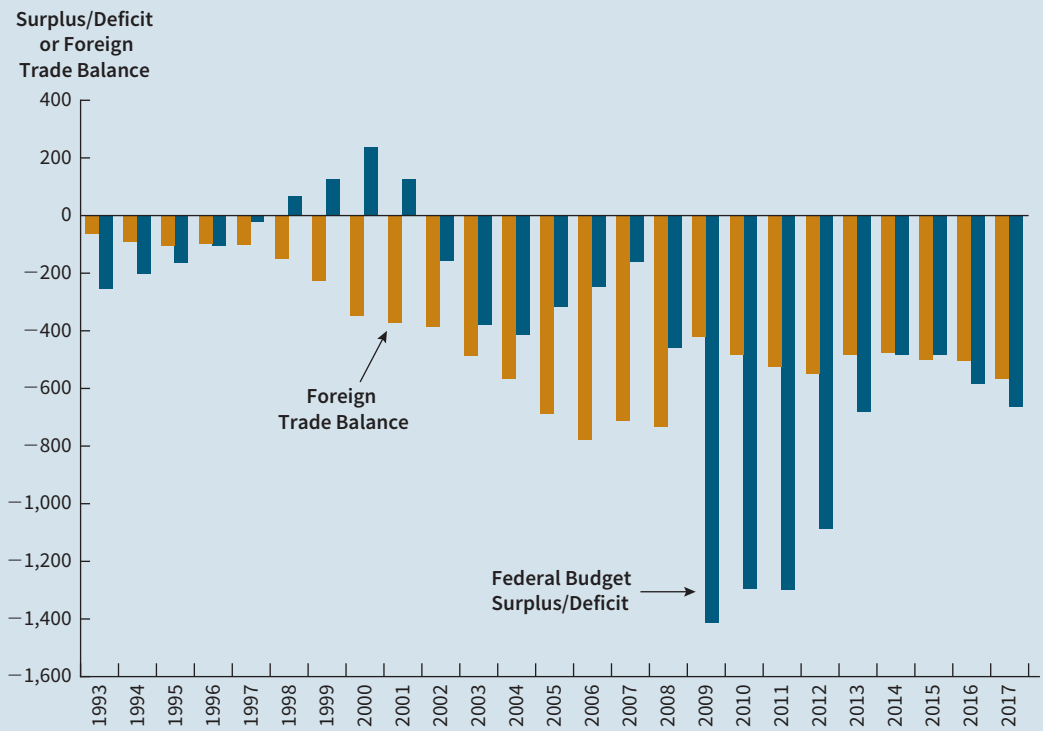
On the other hand, if the Fed wishes to slow down the economy and reduce inflation, the Fed reverses the process. Instead of purchasing Treasury securities, the Fed sells Treasury securities to banks, which reduces banking reserves and causes an increase in short-term interest rates but a decrease in long-term inflationary pressures.

FEDERAL BUDGET DEFICITS OR SURPLUSES

If the federal government spends more than it takes in from tax revenues, then it runs a deficit, and that deficit must be covered either by borrowing or by printing money (increasing the money supply). The government borrows by issuing new Treasury securities. All else held equal, this creates a greater supply of Treasury securities, which leads to lower security prices and higher interest rates. Federal government actions that increase the money supply also increase expectations for future inflation, which drives up

[6]The real rate of return is actually found by solving this equation: $(1.05) = (1.03)(1 + r_r)$. With a little algebra, $r_r = (1.05)/(1.03) - 1 = 0.0194 = 1.94\%$. For illustrative purposes, we approximated the calculation as $5\% - 3\% = 2\%$.

FIGURE 1-3
Federal Budget Surplus/Deficits and Foreign Trade Balances (Billions of Dollars)



Sources: The raw data are from the Federal Reserve Bank of St. Louis's FRED® Economic Data for fiscal years: **http://research.stlouisfed.org/fred2/series/FYFSD** and **http://research.stlouisfed.org/fred2/series/BOPGSTB?cid=125**.

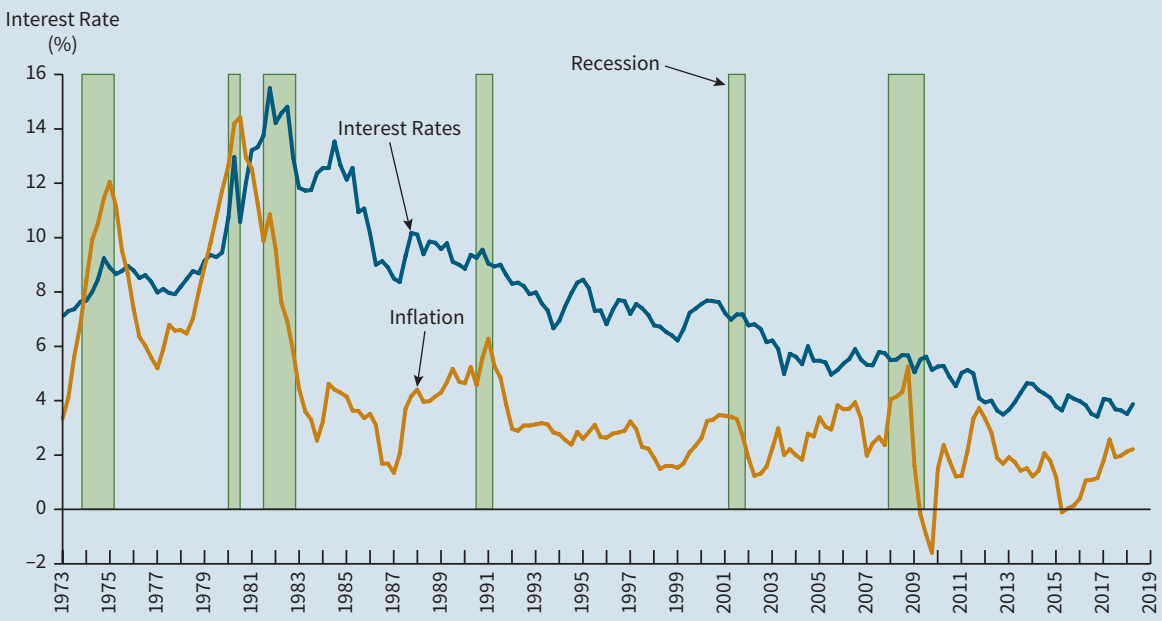
interest rates. Thus, the larger the federal deficit, other things held constant, the higher the level of interest rates. As shown in Figure 1-3, the federal government has run deficits in 20 of the past 24 years. Annual deficits in the mid-1990s were in the $250 billion range, but they ballooned to well over a trillion dollars in the past recession and are now about $585 billion.

LEVEL OF BUSINESS ACTIVITY

Figure 1-4 shows interest rates, inflation, and recessions. First, notice that interest rates and inflation are presently (late 2017) very low relative to the past 40 years. However, you should never assume that the future will be like the recent past!

Second, notice that interest rates and inflation typically rise prior to a recession and fall afterward. There are several reasons for this pattern. Consumer demand slows during a recession, keeping companies from increasing prices, which reduces price inflation. Companies also cut back on hiring, which reduces wage inflation. Less disposable income causes consumers to reduce their purchases of homes and automobiles, reducing consumer demand for loans. Companies reduce investments in new operations, which reduces their demand for funds. The cumulative effect is downward pressure on inflation and interest rates. The Federal Reserve is also active during recessions, trying to stimulate the economy by driving down interest rates.

FIGURE 1-4
Business Activity, Interest Rates, and Inflation



Notes:

1. Tick marks represent January 1 of the year.
2. The shaded areas designate business recessions as defined by the National Bureau of Economic Research; see **www.nber.org/cycles**.
3. Interest rates are for AAA corporate bonds; the source is: Moody's, Moody's Seasoned Aaa Corporate Bond Yield [AAA], retrieved from FRED, Federal Reserve Bank of St. Louis; **https://fred.stlouisfed.org/series/AAA**, April 8, 2018. These rates reflect the average rate during the quarter ending on the date shown.
4. Inflation is measured by the annual rate of change for the Consumer Price Index (CPI) for the preceding 12 months; the source is U.S. Bureau of Labor Statistics, Consumer Price Index for All Urban Consumers: All Items [CPIAUCSL], retrieved from FRED, Federal Reserve Bank of St. Louis; **https://fred.stlouisfed.org/series/CPIAUCSL**, April 8, 2018.

FOREIGN TRADE BALANCE: DEFICITS OR SURPLUSES

Businesses and individuals in the United States buy from and sell to people and firms in other countries. The **foreign trade balance** describes the level of imports relative to exports. If we buy more than we sell (that is, if we import more than we export), we are said to be running a *foreign trade deficit.* When trade deficits occur, they must be financed, and the main source of financing is debt. In other words, if we import $200 billion of goods but export only $90 billion, we run a trade deficit of $110 billion. That $110 billion in the hands of foreign companies won't just sit there as currency. It will be invested, frequently in U.S. Treasury securities, which means those dollars are lent back to the U.S. government. That is, we will probably borrow the $110 billion.[7] Therefore, the larger our trade deficit, the more we must borrow, and the increased borrowing drives up interest rates. Also, international investors are willing to hold U.S. debt only if the risk-adjusted rate paid on this debt is competitive with interest rates in other countries. Therefore, if the Federal

[7]The foreign trade deficit could also be financed by selling assets, including gold, corporate stocks, entire companies, and real estate. The United States has financed its massive trade deficits through all of these means in recent years, but the primary method has been by borrowing from foreigners.

Reserve attempts to lower interest rates in the United States, causing our rates to fall below rates abroad (after adjustments for expected changes in the exchange rate), then international investors will sell U.S. bonds, which will depress bond prices and result in higher U.S. rates. Thus, if the trade deficit is large relative to the size of the overall economy, it will hinder the Fed's ability to reduce interest rates and combat a recession.

WWW

If it won't depress you too much, you can see the current value of the national debt at **http://treasurydirect.gov/NP/debt/current**.

The United States has been running annual trade deficits since the mid-1970s; see Figure 1-3 for recent years. The cumulative effect of trade deficits and budget deficits is that the United States has become the largest debtor nation of all time. In fact, the federal debt exceeds *$21 trillion*! As a result, our interest rates are influenced by interest rates in other countries around the world. Some of the factors that affect foreign interest rates are international changes in tax rates, regulations, currency conversion laws, and currency exchange rates. Foreign investments also include the risk that property will be expropriated by the host government. We discuss these issues in Chapter 17.

Recall that financial markets connect providers and users: Providers supply cash now in exchange for claims on risky future cash. The next section describes financial institutions connect providers and users.

SELF-TEST

What is a "required rate of return"? Why is it called the "cost of money" or the "price of money"?

What is debt's cost of money called?

What two components make up the cost of money for equity?

What four fundamental factors affect required rates of return (i.e., the cost of money)?

How does Federal Reserve policy affect interest rates now and in the future?

What is a federal budget deficit or surplus? How does this affect interest rates?

What is a foreign trade deficit or surplus? How does this affect interest rates?

1-8 The Functions of Financial Institutions

Direct transfers of funds from individuals to businesses are relatively uncommon in developed economies. Instead, businesses usually find it more efficient to enlist the services of one or more financial institutions to raise capital. Most financial institutions don't compete in a single line of business but instead provide a wide variety of services and products, both domestically and globally. The following sections describe the major types of financial institutions and services, but keep in mind that the dividing lines among them are often blurred.

1-8a Investment Banks and Brokerage Activities

Investment banks help companies raise capital. Such organizations underwrite security offerings, which means they (1) advise corporations regarding the design and pricing of new securities, (2) buy these securities from the issuing corporation, and (3) resell them to investors. Although the securities are sold twice, this process is really one primary market transaction, with the investment banker acting as a facilitator to help transfer capital from savers to businesses. An investment bank often is a division or subsidiary of a larger company. For example, JPMorgan Chase & Co. is a very large financial services firm, with over $2.6 trillion in managed assets. One of its holdings is J.P. Morgan, an investment bank.

In addition to security offerings, investment banks also provide consulting and advisory services, such as merger and acquisition (M&A) analysis and investment management for wealthy individuals.

Most investment banks also provide brokerage services for institutions and individuals (called "retail" customers). For example, Merrill Lynch (acquired in 2008 by Bank of America) has a large retail brokerage operation that provides advice and executes trades for its individual clients. Similarly, J.P. Morgan helps execute trades for institutional customers, such as pension funds.

At one time, most investment banks were partnerships, with income generated primarily by fees from their underwriting, M&A consulting, asset management, and brokering activities. When business was good, investment banks generated high fees and paid big bonuses to their partners. When times were tough, investment banks paid no bonuses and often fired employees. In the 1990s, however, most large investment banks were reorganized into publicly traded corporations (or were acquired and then operated as subsidiaries of public companies). For example, in 1994 Lehman Brothers sold some of its own shares of stock to the public via an IPO. Like most corporations, Lehman Brothers was financed by a combination of equity and debt.

A relaxation of regulations in the 2000s allowed investment banks to undertake much riskier activities than at any time since the Great Depression. The new regulations allowed investment banks to use an unprecedented amount of debt to finance their activities—Lehman used roughly $30 of debt for every dollar of equity. In addition to their fee-generating activities, most investment banks also began trading securities for their own accounts. In other words, they took the borrowed money and invested it in financial securities. If you are earning 12% on your investments while paying 8% on your borrowings, then the more money you borrow, the more profit you make. But if you are leveraged 30 to 1 and your investments decline in value by even 3.33%, your business will fail. This is exactly what happened to Bear Stearns, Lehman Brothers, and Merrill Lynch in the fall of 2008. In short, they borrowed money, used it to make risky investments, and then failed when the investments turned out to be worth less than the amount they owed. Note that it was not their traditional investment banking activities that caused the failure, but the fact that they borrowed so much and used those funds to speculate in the market.

1-8b Deposit-Taking Financial Intermediaries

Some financial institutions are **financial intermediaries** because they take deposits from savers and then lend most of the deposited money to borrowers. Following is a brief description of such intermediaries.

SAVINGS AND LOAN ASSOCIATIONS (S&Ls)

Savings and loan associations (S&Ls) accept deposits from many small savers and then lend this money to home buyers and consumers. **Mutual savings banks (MSBs)** are similar to S&Ls, but they operate primarily in the northeastern states. Today, most S&Ls and MSBs have been acquired by banks.

CREDIT UNIONS

Credit unions are cooperative associations whose members have a common bond, such as being employees of the same firm or living in the same geographic area. Members' savings are loaned only to other members, generally for auto purchases, home-improvement loans, and home mortgages. Credit unions are often the cheapest source of funds available to individual borrowers.

COMMERCIAL BANKS

Commercial banks raise funds from depositors and by issuing stock and bonds to investors. For example, someone might deposit money in a checking account. In return, that person can write checks, use a debit card, and even receive interest on the deposits. Those who buy the banks' stocks and bonds expect to receive dividends and interest payments. Unlike nonfinancial corporations, most commercial banks are highly leveraged in the sense that they owe much more to their depositors and creditors than they raised from stockholders. For example, a typical bank has about $90 of debt for every $10 of stockholders' equity. If the bank's assets are worth $100, we can calculate its equity capital by subtracting the $90 of liabilities from the $100 of assets: Equity capital = $100 − $90 = $10. But if the assets drop in value by 5% to $95, the equity drops to $5 = $95 − $90, a 50% decline.

Banks are vitally important for a well-functioning economy, and their highly leveraged positions make them risky. As a result, banks are more highly regulated than nonfinancial firms. Given the high risk, banks might have a hard time attracting and retaining deposits unless the deposits were insured, so the Federal Deposit Insurance Corporation (FDIC), which is backed by the U.S. government, insures up to $250,000 per depositor. As a result of the great recession of 2007, this insured amount was increased from $100,000 in 2008 to reassure depositors.

Without such insurance, if depositors believed that a bank was in trouble, they would rush to withdraw funds. This is called a "bank run," which is exactly what happened in the United States during the Great Depression of 1929, causing many bank failures and leading to the creation of the FDIC in an effort to prevent future bank runs. Not all countries have their own versions of the FDIC, so international bank runs are still possible. In fact, a bank run occurred in September 2008 at the U.K. bank Northern Rock, leading to its nationalization by the government.

Most banks are small and locally owned, but the largest banks are parts of giant financial services firms. For example, JPMorgan Chase Bank, commonly called Chase Bank, is owned by JPMorgan Chase & Co., and Citibank is owned by Citicorp.

1-8c Investment Funds

At some financial institutions, savers have an ownership interest in a pool of funds rather than owning a deposit account. Examples include mutual funds, hedge funds, and private equity funds.

MUTUAL FUNDS

Mutual funds are organizations that accept money from savers and then pool these funds to buy financial instruments. Most mutual funds belong to a larger company's family of funds. For example, Franklin Resources Inc. is a publicly traded company and manages over $400 billion in more than 200 different mutual funds. Such mutual fund providers achieve economies of scale in analyzing securities, managing portfolios, and buying/selling securities.

Different funds are designed to meet the objectives of different types of savers. Hence, there are bond funds for those who desire safety and stock funds for savers who are willing to accept risks in the hope of higher returns. There are literally thousands of different mutual funds with dozens of different purposes and styles. For example, the Franklin Equity Income fund invests in stocks with high dividends, whereas the Franklin Growth Opportunities fund invests in stock with high growth potential.

Passively managed funds hold a group of stocks in a particular category and then minimize expenses by rarely trading. **Index funds** are passive funds designed to replicate the returns on a particular market index, such as the S&P 500. **Actively managed funds** have higher fees but seek to invest in undervalued securities within a particular category, such as growth stocks.

Money market funds invest in short-term, low-risk securities, such as Treasury bills and commercial paper. Many of these funds offer interest-bearing checking accounts with rates that are greater than those offered by banks, so many people invest in money market funds as an alternative to depositing money in a bank. Note, though, that money market funds are not required to be insured and so are riskier than bank deposits.[8]

Most traditional mutual funds allow investors to redeem their share of the fund only at the close of business. A special type of mutual fund, the **exchange-traded fund (ETF)**, allows investors to sell their share at any time during normal trading hours. ETFs usually have very low management expenses and are rapidly gaining in popularity.

HEDGE FUNDS

Most **hedge funds** are private limited partnerships whose purpose is to raise money from investors and engage in a variety of investment activities. Unlike typical mutual funds, which can have thousands of investors, hedge funds are limited to institutional investors and a relatively small number of high-net-worth individuals. Because these investors are supposed to be sophisticated, hedge funds are much less regulated than mutual funds. Many hedge funds literally try to hedge their bets by forming portfolios of conventional securities and derivatives in such a way as to limit potential losses without sacrificing too much of potential gains. However, many other hedge funds don't hedge as much and instead chase larger but riskier potential returns.

PRIVATE EQUITY FUNDS

Private equity (PE) funds are similar to hedge funds but PE funds own stock (equity) in other companies and often control those companies, whereas hedge funds usually own many types of securities. In contrast to a mutual fund, which might own a small percentage of a publicly traded company's stock, a private equity fund typically purchases the entire company. Before the purchase, the stock may have been privately held or publicly traded. Either way, it is not traded in the public markets after the purchase so it is called "private equity." For example, Staples, Inc. traded on the NASDAQ Stock Market until Sycamore Partners purchased it in 2017 for about $6.9 billion.

The private equity funds' general partners usually sit on their companies' boards and guide their strategies with the goal of later selling the companies for a profit, often through an initial public offering. For example, in 2007 two large private equity firms (Clayton, Dubilier & Rice LLC and KKR & Co LP) jointly purchased U.S. Foodservice, a subsidiary of a publicly traded company (Royal Ahold N.V.). In 2016, the PE firms took the company public as US Foods Holding Corp. in an IPO by selling $1.02 billion in stock.

Most hedge funds and private equity funds belong to a larger company's family of funds. For example, The Blackstone Group manages funds with over $350 billion in assets and Apollo Global Management, LLC, has over $200 billion under management.

[8]The U.S. Treasury sold deposit insurance to eligible money market funds between September 2008 and September 2009 to help stabilize the markets during the height of the financial crisis.

1-8d Life Insurance Companies and Pension Funds

Life insurance companies take premiums, invest these funds in stocks, bonds, real estate, and mortgages, and then make payments to beneficiaries. Life insurance companies also offer a variety of tax-deferred savings plans designed to provide retirement benefits.

Traditional **pension funds** are retirement plans funded by corporations or government agencies. Pension funds invest primarily in bonds, stocks, mortgages, hedge funds, private equity, and real estate. Most companies now offer self-directed retirement plans, such as 401(k) plans, as an addition to or substitute for traditional pension plans. In traditional plans, the plan administrators determine how to invest the funds; in self-directed plans, all individual participants must decide how to invest their own funds. Many companies are switching from traditional plans to self-directed plans, partly because this shifts the risk from the company to the employee.

1-8e Regulation of Financial Institutions

In 1933, the **Glass-Steagall Act** was passed with the intent of preventing another great depression. In addition to creating the FDIC to insure bank deposits, the law imposed constraints on banking activities and separated investment banking from commercial banking. The regulatory environment of the post-Depression era included a prohibition on nationwide branch banking, restrictions on the types of assets the institutions could buy, ceilings on the interest rates they could pay, and limitations on the types of services they could provide. Arguing that these regulations impeded the free flow of capital and hurt the efficiency of our capital markets, policymakers took several steps from the 1970s to the 1990s to deregulate financial services companies, culminating with the Gramm–Leach–Bliley Act of 1999, which "repealed" Glass-Steagall's separation of commercial and investment banking.

One result of deregulation was the creation of huge **financial services corporations**, which own commercial banks, S&Ls, mortgage companies, investment-banking houses, insurance companies, pension plan operations, and mutual funds. Many are now global banks with branches and operations across the country and around the world.

WWW

For current bank rankings, go to Global Finance Magazine's Web site, **www.gfmag.com**, *and use the search for "biggest global banks."*

For example, Citigroup combined one of the world's largest commercial banks (Citibank), a huge insurance company (Travelers), and a major investment bank (Smith Barney), along with numerous other subsidiaries that operate throughout the world. Bank of America also made numerous acquisitions of many different financial companies, including Merrill Lynch, with its large brokerage and investment banking operations, and mortgage giant Countrywide Financial.

These conglomerate structures are similar to those of major institutions in China, Europe, Japan, and elsewhere around the globe. Though U.S. banks grew dramatically as a result of recent mergers, they are still relatively small by global standards. The world's largest bank is the Industrial and Commercial Bank of China. Among the world's ten largest world banks, based upon total assets, only one (JPMorgan Chase) is headquartered in the United States.

The great recession of 2007 and continuing global economic weakness caused regulators and financial institutions to rethink the wisdom of deregulating conglomerate financial services corporations. To address some of these concerns, the Dodd-Frank Wall Street Reform and Consumer Protection Act was passed in 2010. As we write this in 2018, Congress is undoing many of the Dodd-Frank's regulations, allowing financial institutions to take on more risk. We discuss Dodd-Frank and other regulatory changes in Section 1-12, where we explain the events leading up to the great recession of 2007.

SELF-TEST

What were the traditional roles of investment banks prior to the 1990s? What types of activities did investment banks add after that?

Describe the different types of deposit-taking institutions.

What are some similarities and differences among mutual funds, hedge funds, and private equity funds?

Describe a life insurance company's basic activities.

What are traditional pension funds? What are 401(k) plans?

1-9 Financial Markets

Financial markets serve to connect providers of funds with users for the purpose of exchanging cash now for claims on future cash (e.g., securities such as stocks or bonds). In addition, they provide a means for trading securities after they have been issued. We describe different types of markets and trading procedures in the following sections.

1-9a Types of Financial Markets

There are many different ways to classify financial markets, depending upon the types of instruments, customer, or geographic locations. You should recognize the big differences among types of markets, but keep in mind that the distinctions are often blurred.

PHYSICAL ASSETS VERSUS FINANCIAL ASSETS

Physical asset markets (also called "tangible" or "real" asset markets) are those for such products as wheat, autos, real estate, computers, and machinery. **Financial asset markets**, on the other hand, deal with stocks, bonds, notes, mortgages, derivatives, and other financial instruments.

TIME OF DELIVERY: SPOT VERSUS FUTURE

Spot markets are markets where assets are being bought or sold for "on-the-spot" delivery (literally, within a few days). **Futures markets** are for assets whose delivery is at some future date, such as 6 months or a year into the future.

MATURITY OF FINANCIAL ASSET: SHORT VERSUS LONG

Money markets are the markets for short-term, highly liquid debt securities, while **capital markets** are the markets for corporate stocks and debt maturing more than a year in the future. The New York Stock Exchange is an example of a capital market. When describing debt markets, "short term" generally means less than 1 year, "intermediate term" means 1 to 5 years, and "long term" means more than 5 years.

PURPOSE OF LOANS TO INDIVIDUALS: LONG-TERM ASSET PURCHASES VERSUS SHORTER-TERM SPENDING

Mortgage markets deal with loans on residential, agricultural, commercial, and industrial real estate, while **consumer credit markets** involve loans for autos, appliances, education, vacations, and so on.

PRIVATE VERSUS PUBLIC

Private markets are where transactions are worked out directly between two parties. The transactions are called **private placements**. For example, bank loans and private placements of debt with insurance companies are examples of private market transactions. Because these transactions are private, they may be structured in any manner that appeals to the two parties.

Public markets are where standardized contracts are traded on organized exchanges. Because securities that are traded in public markets (for example, common stock and futures contracts) are ultimately held by a large number of individuals, they must have fairly standardized contractual features.

Private market securities are more tailor-made but less liquid, whereas public market securities are more liquid but subject to greater standardization.

GEOGRAPHIC SCOPE

World, national, regional, and local markets also exist. Thus, depending on an organization's size and scope of operations, it may be able to borrow or lend all around the world, or it may be confined to a strictly local, even neighborhood, market.

PRIMARY MARKETS VERSUS SECONDARY MARKETS

Primary markets are the markets in which corporations raise new capital. For example, if a private company has an IPO or if a public company sells a new issue of common stock to raise capital, this would be a primary market transaction. The corporation selling the newly created stock receives the proceeds from such a transaction.

Secondary markets are markets in which existing, already outstanding securities are traded among investors. Thus, if you decided to buy 1,000 shares of Starbucks stock, the purchase would occur in the secondary market. Secondary markets exist for many financial securities, including stocks and bonds.

It is important to remember that the company whose securities are being traded is not involved in a secondary market transaction and thus does not receive any funds from such a sale. However, secondary markets are vital for a well-functioning economy because they provide liquidity and foster entrepreneurship.

1-9b Why Are Secondary Markets Important?

Secondary markets provide liquidity for investors who need cash or who wish to reallocate their investments to potentially more productive opportunities. For example, a parent who owns stock might wish to help pay for a child's college education. Or consider an investor who owns stock in a coal-mining company but who wishes to invest in a manufacturer of solar panels. Without active secondary markets, investors would be stuck with the securities they purchase.

Secondary markets also foster entrepreneurship. For example, it might take a very long time before an entrepreneur can use a start-up company's cash flow for personal spending because the cash flow is needed to support the company's growth. In other words, the company might be successful, but the entrepreneur feels "cash poor." However, if the company goes public, its stock can be traded in the secondary market. The entrepreneur then can sell some personal shares of stock and begin to enjoy the financial rewards of having started a successful company. Without this prospect, entrepreneurs have diminished incentives to start companies.

Secondary markets also provide a measure of value as perceived by buyers and sellers, making it easy to quickly compare different investments.

1-9c Trading Procedures in the Secondary Markets

A **trading venue** is a site (geographical or electronic) where secondary market trading occurs. Although there are many trading venues for a wide variety of securities, we classify their trading procedures along two dimensions: location and method of matching orders.

PHYSICAL LOCATION VERSUS ELECTRONIC NETWORK

In a **physical location exchange** traders actually meet and trade in a specific part of a specific building. For example, the New York Stock Exchange and the London Metals Exchange conduct some trading at physical locations.

In contrast, traders do not physically meet in a **computer/telephone network**. For example, the markets for U.S. Treasury bonds and foreign exchange primarily operate via telephone and/or computer networks. Most stock markets, including the NASDAQ Stock Market, do not have face-to-face trading.

MATCHING ORDERS: OPEN OUTCRY AUCTIONS, DEALER MARKETS, AND AUTOMATED TRADING PLATFORMS

The second dimension is the way orders from sellers and buyers are matched. This can occur in a face-to-face open outcry auction, through dealers, or by automated matching engines.

Open Outcry Auctions An **open outcry auction** occurs when traders actually meet face-to-face and communicate with one another through shouts and hand signals. When a seller and buyer agree on the price and quantity, the transaction is finalized and reported to the organization that manages the auction.

Dealer Markets and Market Makers In a **dealer market**, there are *market makers* who keep an inventory of the stock (or other financial instrument) in much the same way that any merchant keeps an inventory of goods. These dealers list **bid quotes** and **ask quotes**, which are the prices at which they are willing to buy or sell. In a traditional dealer market, computerized quotation systems keep track of all bid and ask quotes, but they don't actually match buyers and sellers. Instead, traders must contact a specific dealer to complete the transaction.

Automated Trading Platforms with Automated Matching Engines An **automated matching engine** is part of a computer system in which buyers and sellers post their orders and then let the computer automatically determine whether a match exists. If a match exists, the computer automatically executes and reports the trade. The entire system is called an **automated trading platform**.

For example, suppose Trader B ("B" is for buyer) places an order to buy 500 shares of GE, but only if the sale occurs within the next hour and at a price of no more than $24.99 per share. The $24.99 is the **bid price** because the buyer is "bidding" $24.99 for a share of GE. The order itself is a **limit order** because the buyer specifies limits with respect to the order's price and duration. The computer will put the information into its **order book**, which is a record of all outstanding orders. Suppose all other bid prices in the order book are less than $24.99. When the computer ranks bids in the order book *from high to low,* Trader B's $24.99 bid will be at the top of the book. In other words, it is the highest bid price of any orders in the book, which is the most anyone currently is willing to pay for GE.

Now suppose Trader S ("S" is for seller) places a limit order to sell 500 shares of GE at a price of at least $25.15. The $25.15 is the **ask price** because the seller is asking for $25.15 per share. Let's suppose that all other ask prices in the computer's order book are greater than $25.15. When the computer ranks ask prices *from low to high*, Trader S's $25.15 ask price will be at the top of the book because it is the *lowest* ask price of any orders in the book. In other words, it is the lowest at which anyone is willing to sell GE.

In this situation, the computer won't find a match—all sellers want at least $25.15, but no buyers will pay more than $24.99. No transactions will occur until sellers reduce their ask prices or buyers increase their bids. The difference between the ask price and the bid price is called the **bid-ask spread**. In this example, it is:

$$\text{Bid-ask spread} = \text{Ask price} - \text{Bid price} = \$25.15 - \$24.99 = \$0.16$$

The order book is updated each time a new order arrives or a limit order expires. New orders arrive frequently, and many times there will be a match.

For example, suppose Trader S worries that prices will fall and would rather sell at $24.99 than wait and hope that prices will come up to the original ask price of $25.15. In this case, Trader S would send in an order to sell at the market price—this is called a **market order** because it asks to transact at the current market price. In this case, the computer would automatically match Trader S and Trader B, execute the trade of 500 shares of GE at $24.99, and notify both participants that the trade has occurred.[9]

Automated trading systems are rapidly replacing face-to-face trading in the secondary stock markets, as we describe in the next section.

SELF-TEST

What is the basic function of a financial market?

Distinguish between (1) physical asset markets and financial asset markets, (2) spot and futures markets, (3) money and capital markets, (4) mortgage and consumer credit markets, (5) private and public markets, and (6) primary and secondary markets.

List three reasons why secondary markets are important.

What is a trading venue?

What are the major differences between physical location exchanges and computer/telephone networks?

What are the differences among open outcry auctions, dealer markets, and automated trading platforms with automated matching engines?

What is a limit order? What is an order book? What is a market order?

1-10 Overview of the U.S. Stock Markets

Because stock markets are so large and important, all managers should have a basic understanding of what the stock markets are and how they function. Before 1970, there was just one major U.S. stock exchange, the NYSE, where the vast majority of stocks were listed and traded. Today, however, the situation is much more fragmented for both listing and trading.

Recall that a publicly traded company first registers with the SEC, applies to be listed at a stock exchange, and then has an IPO, after which its stock can be traded in public

[9]Most exchanges have 10 or more types in addition to limit orders and market orders.