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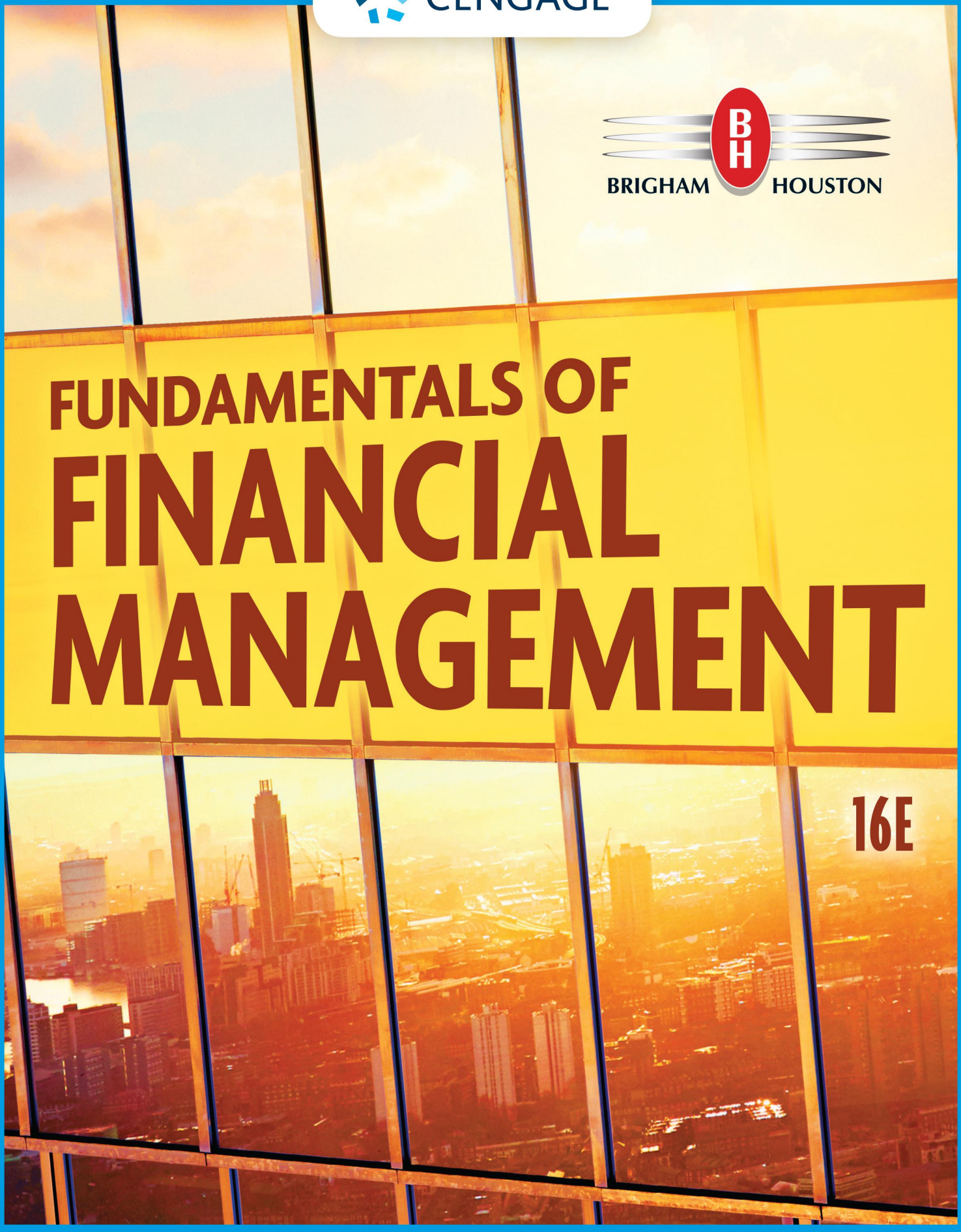

BRIGHAM HOUSTON

FUNDAMENTALS OF FINANCIAL MANAGEMENT

16E

Fundamentals of FINANCIAL MANAGEMENT 16e

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University of Florida

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CENGAGE

Australia • Brazil • Canada • Mexico • Singapore • United Kingdom • United States

CENGAGE

***Fundamentals of Financial Management*, Sixteenth Edition**
Eugene F. Brigham and Joel F. Houston

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MindTap for ***Fundamentals of Financial Management***

MindTap, featuring all-new Excel Online integration powered by Microsoft, is a complete digital solution for the corporate finance course. It has enhancements that take students from learning basic financial concepts to actively engaging in critical-thinking applications, while learning valuable Excel skills for their future careers.

MINDTAP
From Cengage

EVERYTHING YOU NEED IN ONE PLACE.

Cut prep time with MindTap preloaded, organized course materials. Teach more efficiently with interactive multimedia, assignments, quizzes, and more.

EMPOWER YOUR STUDENTS TO REACH THEIR POTENTIAL.

Built-in metrics provide insight into student engagement. Identify topics needing extra instruction. Instantly communicate with struggling students to speed progress.

YOUR COURSE. YOUR CONTENT.

MindTap gives you complete control over your course. You can rearrange textbook chapters, add your own notes, and embed a variety of content—including Open Educational Resources (OER).

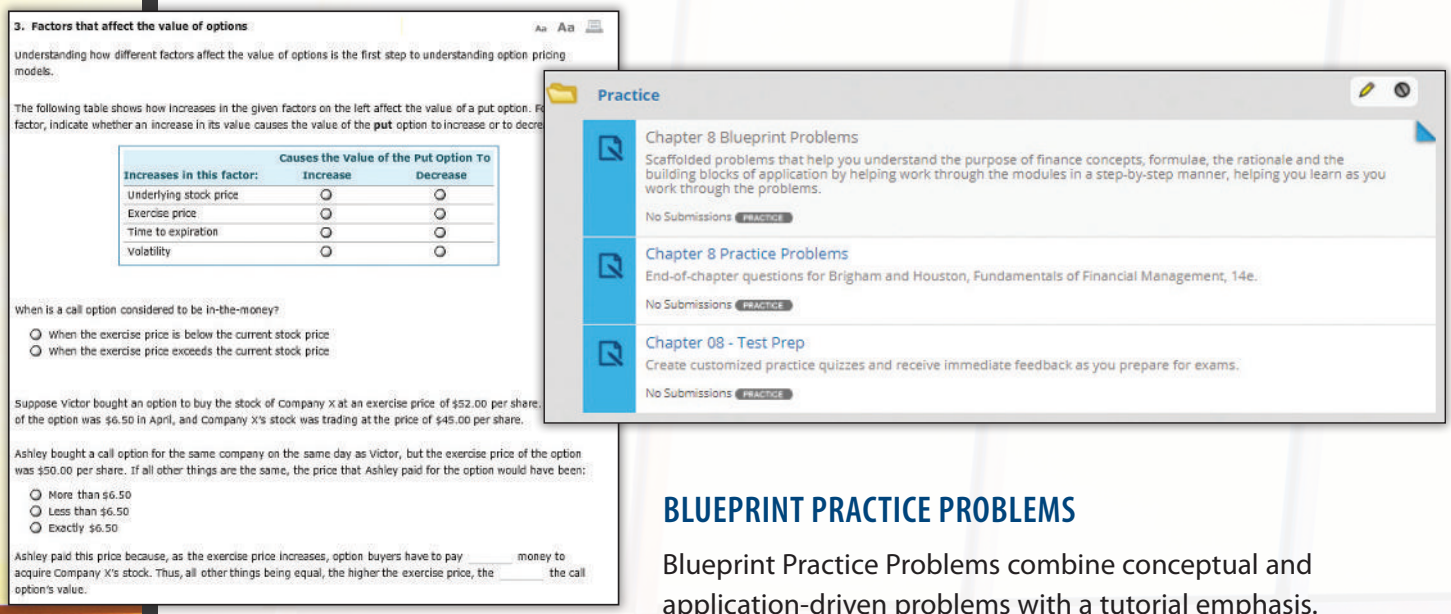
A DEDICATED TEAM, WHENEVER YOU NEED IT.

MindTap is backed by a personalized team eager to help you every step of the way. We'll help set up your course, tailor it to your specific objectives, and stand by to provide support.

Elevate Critical Thinking through a variety of unique assessment tools

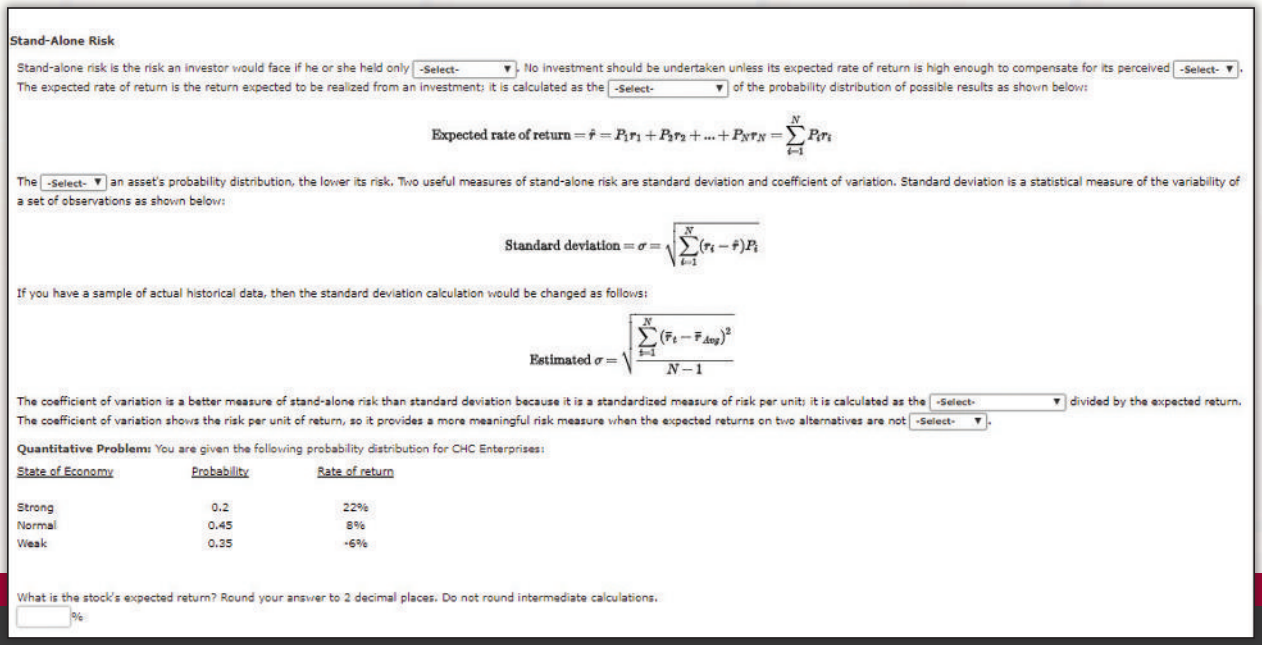
PRACTICE PROBLEMS

All of the end-of-chapter problems are available in algorithmic format for either student practice of applying content presented in the chapter or alternative graded assignment. MindTap is a highly customizable assessment delivery platform, so you can pick and choose from a large bank of algorithmic problem sets to assign to your students.



BLUEPRINT PRACTICE PROBLEMS

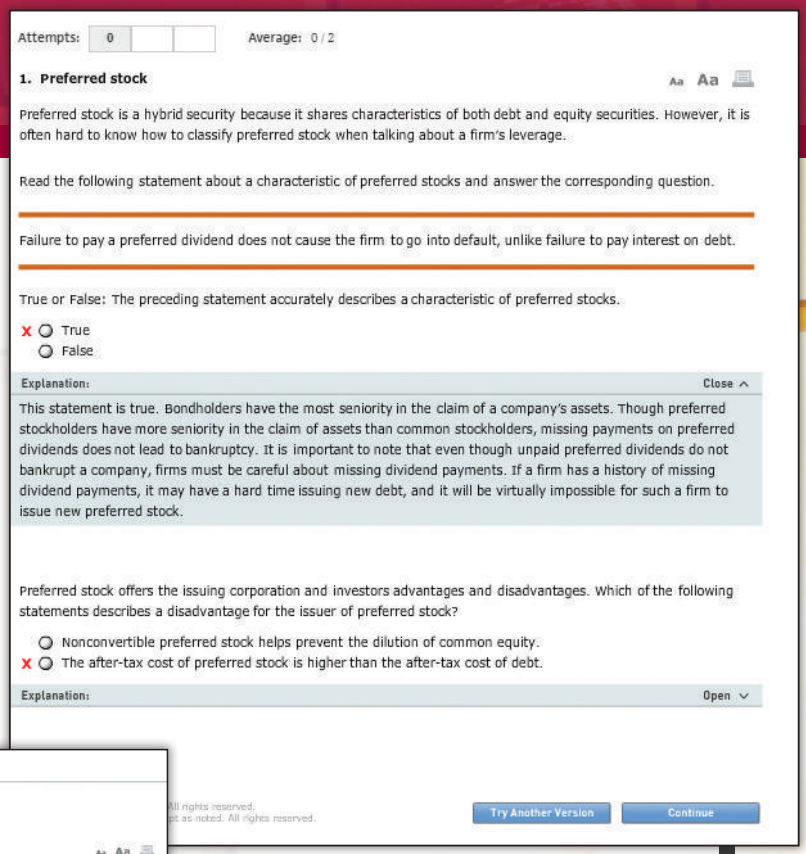
Blueprint Practice Problems combine conceptual and application-driven problems with a tutorial emphasis. Students will know with certainty their level of competency for every chapter, which will improve course outcomes.

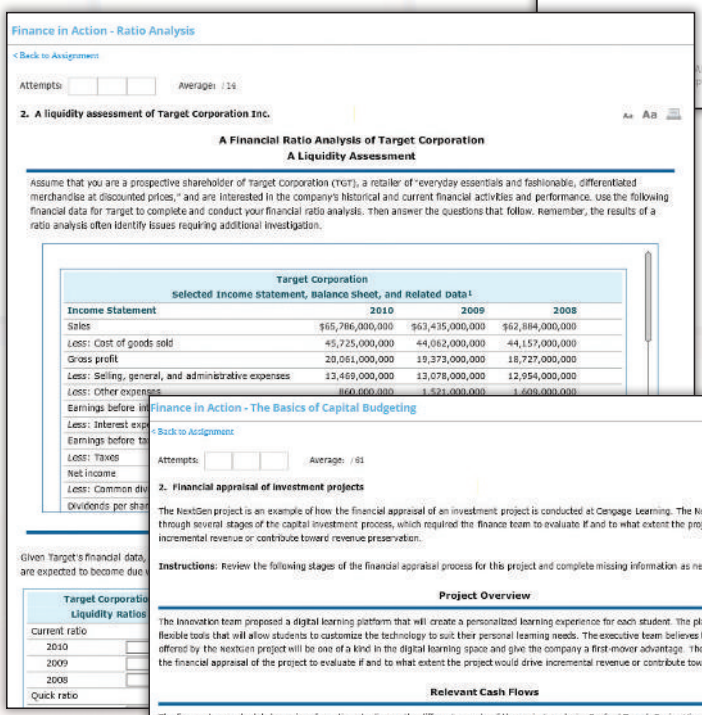


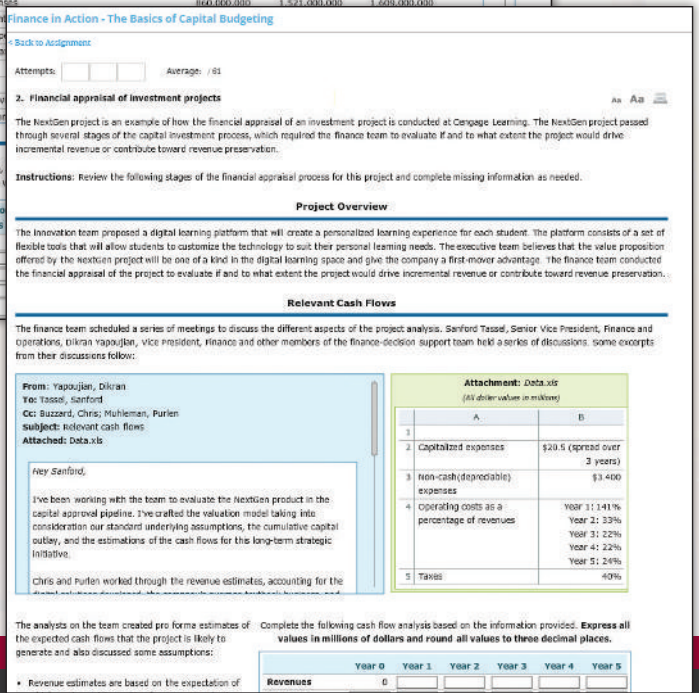
GRADED HOMEWORK

MindTap offers an assignable, algorithmic homework tool that is based on our proven and popular Aplia product for Finance. These homework problems include rich explanations and instant grading, with opportunities to try another algorithmic version of the problem to bolster confidence with problem solving.

aplia™







FINANCE IN ACTION CASES

MindTap offers a series of Finance in Action analytical cases that assess students' ability to perform higher-level problem solving and critical thinking/ decision making.

TESTING

Mindtap offers the ability to modify existing assignments and to create new assignments by adding questions from the Test Bank.

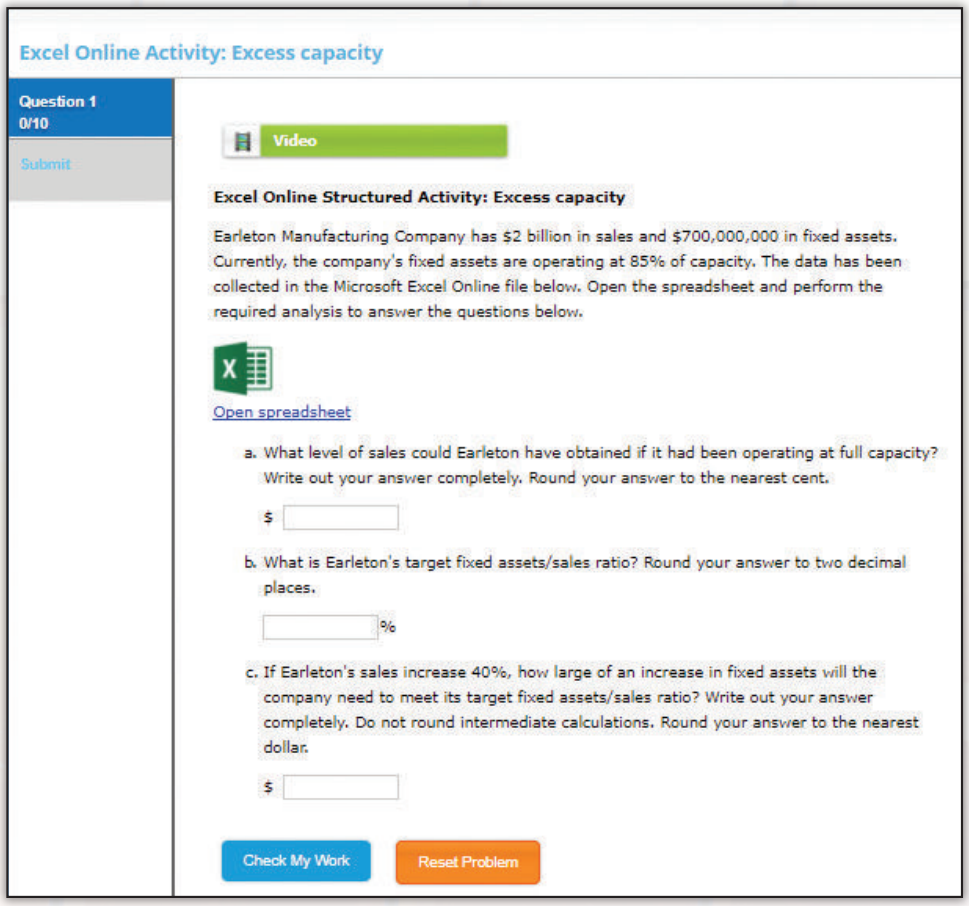
Building valuable Excel skills for future business careers **while making data-driven decisions**

Cengage Learning and Microsoft have partnered in MindTap to provide students with a uniform, authentic Excel assignment experience. It provides instant feedback, built-in video tips, and easily accessible spreadsheet work. These features allow you to spend more time teaching finance applications and less time teaching and troubleshooting Excel.

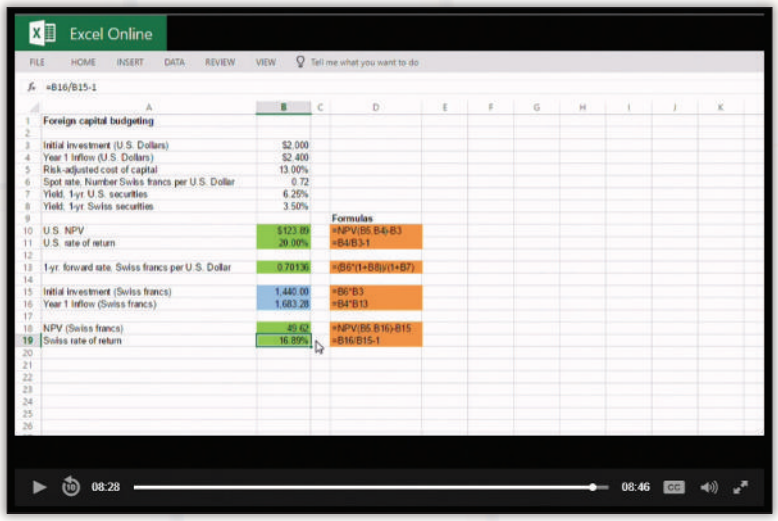
These new algorithmic activities offer pre-populated data directly in Microsoft Excel Online, which runs seamlessly on all major platforms and browsers. Students each receive their own version of the problem data in order to use Excel Online to perform the necessary financial analysis calculations. Their work is constantly saved in Cengage cloud storage as part of homework assignments in MindTap. It's easily retrievable so students can review their answers without cumbersome file management and numerous downloads/uploads.

Access to Excel Online as used in these activities is completely free for students as part of the MindTap course for *Fundamentals of Financial Management, 16e*. It is not in any way connected to personal Office 365 accounts/ local versions of Excel, nor are Microsoft accounts required to complete these activities in MindTap.

Microsoft Excel Online activities are aimed at meeting students where they are with unparalleled support and immediate feedback.



Microsoft Excel Online activities aimed at meeting students where they are with unparalleled support and immediate feedback

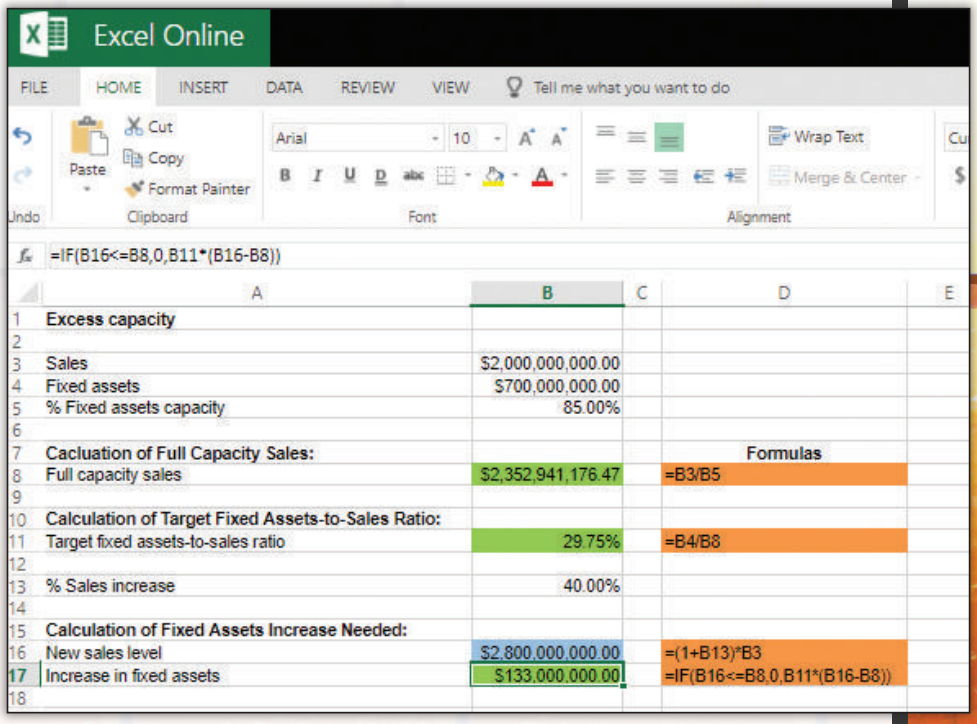


EXCEL VIDEO TIPS

Each activity includes a walk-through video of a similar problem being worked in Excel Online to offer suggested formulas to use for solving the problem. It also offers tips and strategies, which assist in understanding the underlying financial concepts while working within Excel.

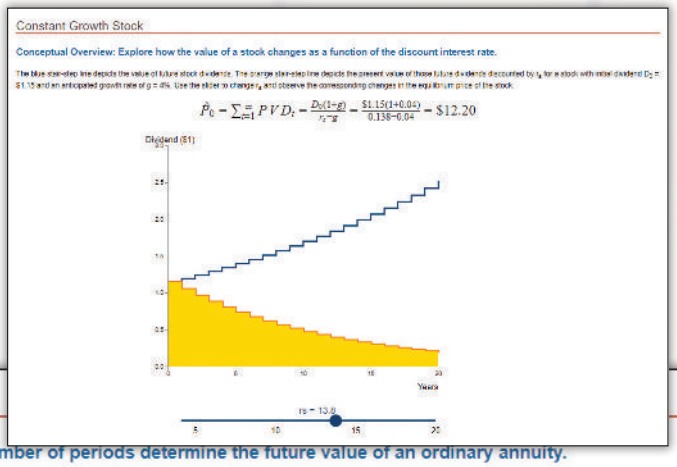
CALCULATION STEPS AND EXCEL SOLUTIONS

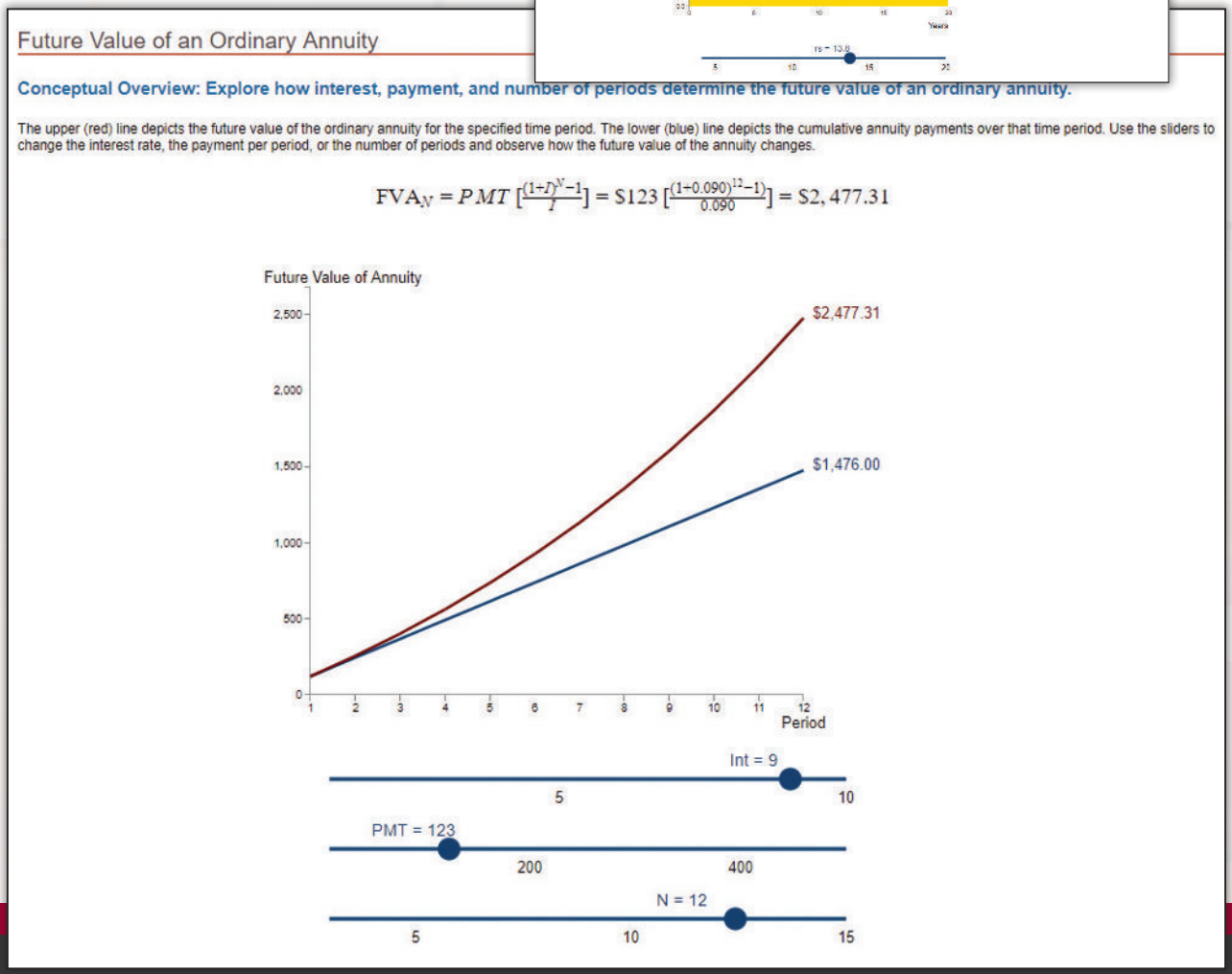
Each activity offers configurable displays that include the correct answers, the manual calculation steps, and an Excel solution (with suggested formulas) that matches the exact version of the problem the student received. Students can check their work against the correct solution to identify improvement areas. Instructors always have access to review the student's answers and Excel work from the MindTap progress app to better assist in error analysis and troubleshooting.



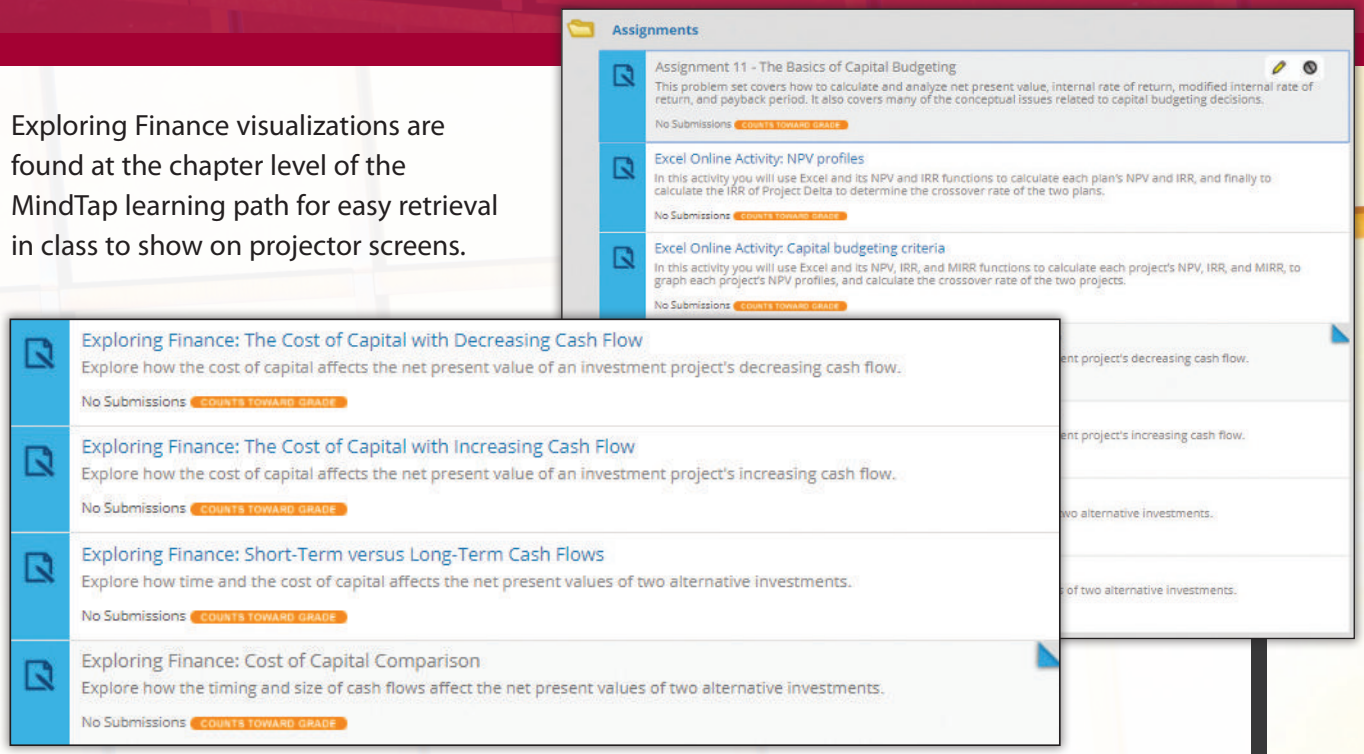
Encouraging those 'Aha!' moments with all new Exploring Finance visualizations

All-new in MindTap for *Fundamentals of Financial Management, 16e,* Exploring Finance activities offer instructors and students interactive visualizations that engage with "lean forward" interactivity. Exploring Finance activities provide instructors visual, interactive tools that can be used to help students "see" the statistical concept being presented directly within MindTap.

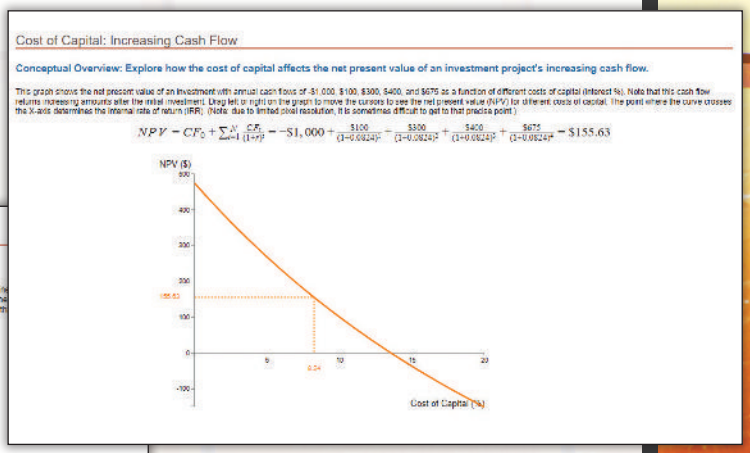


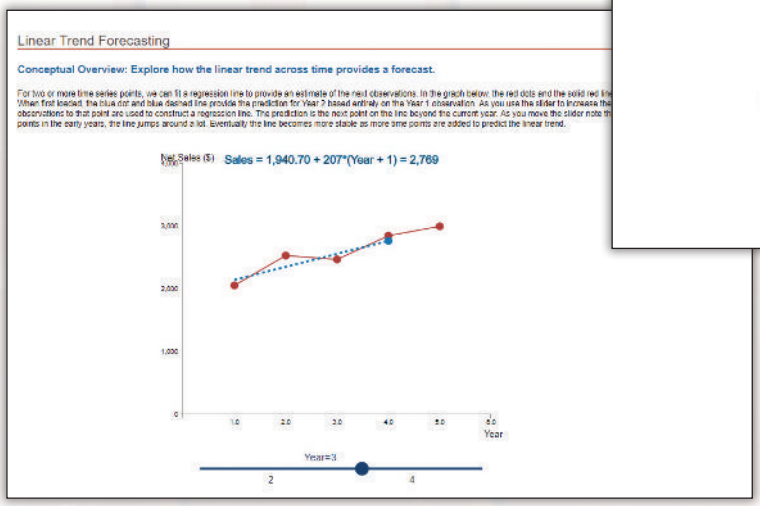


Exploring Finance visualizations are found at the chapter level of the MindTap learning path for easy retrieval in class to show on projector screens.



Exploring Finance visualizations have a pre-built activity in the learning path within MindTap that allows students to manipulate the values and then respond to questions that reinforce their understanding of the concept being conveyed. These activities can be assigned as practice or for a grade and often offer an interactive, conceptual activity immediately reinforcing student understanding.

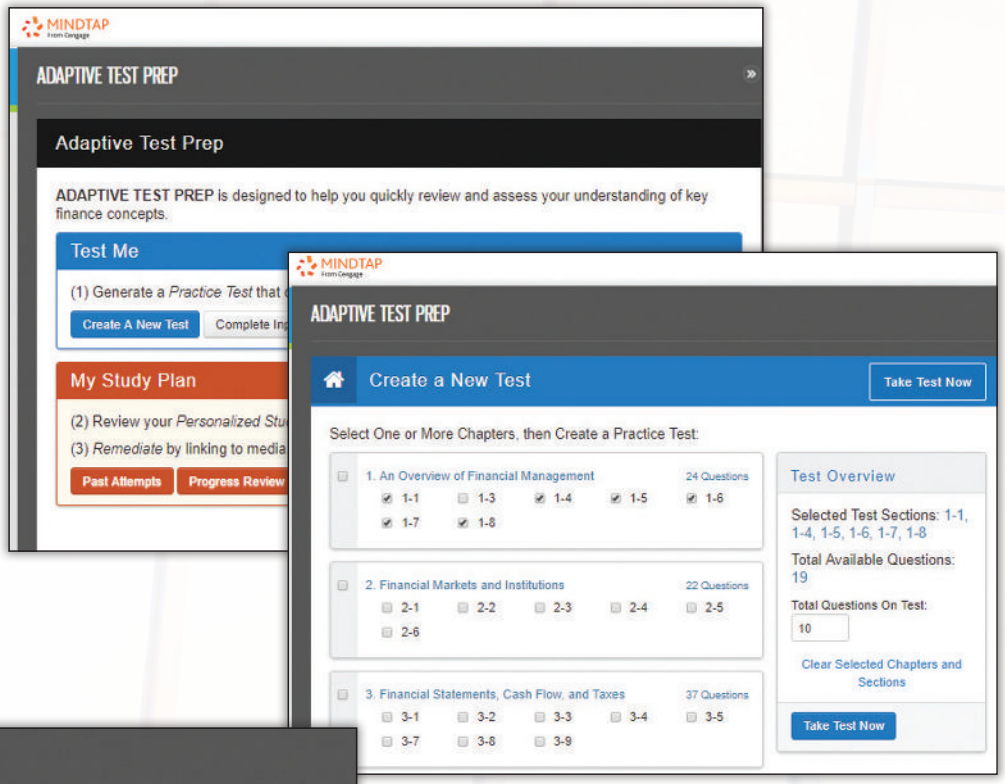


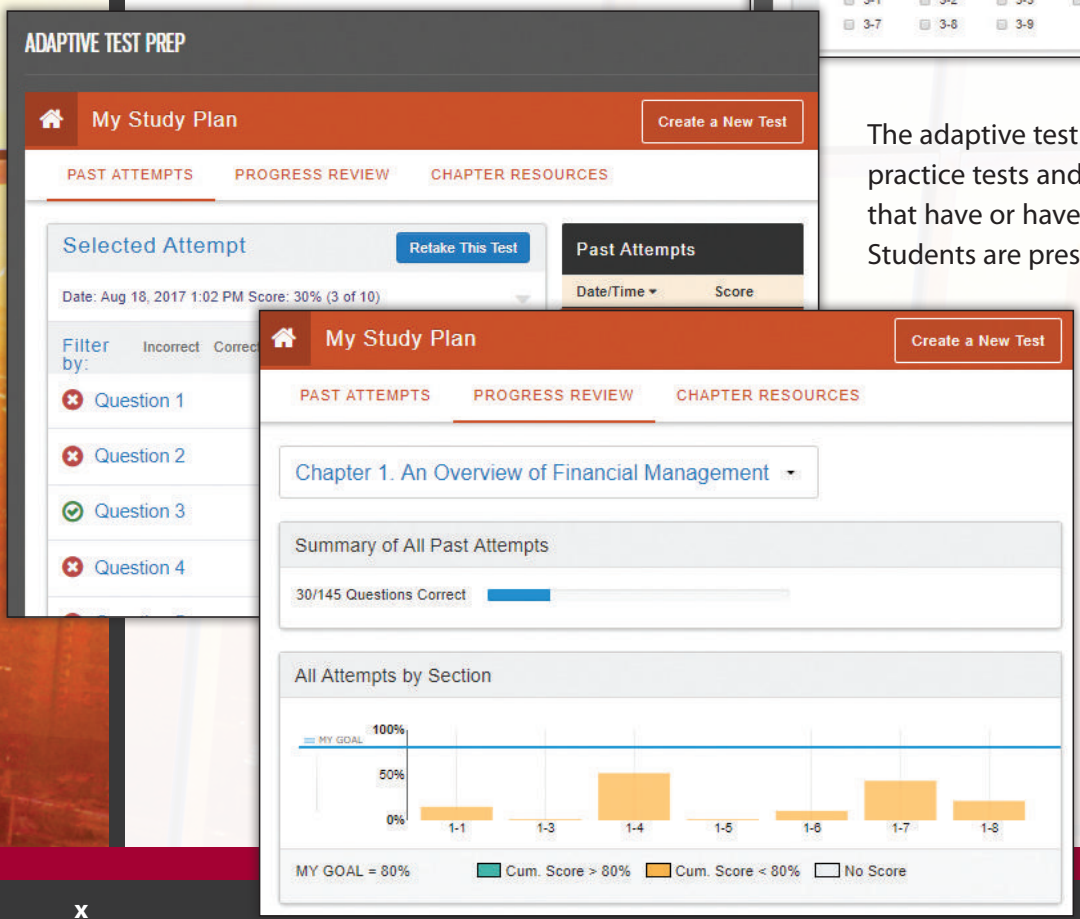


Help students prepare for exam success with Adaptive Test Prep, only available in MindTap

ADAPTIVE WHERE IT COUNTS

The new Adaptive Test Prep App helps students prepare for test success by allowing them to generate multiple practice tests across chapters until they have confidence they have mastered the material.

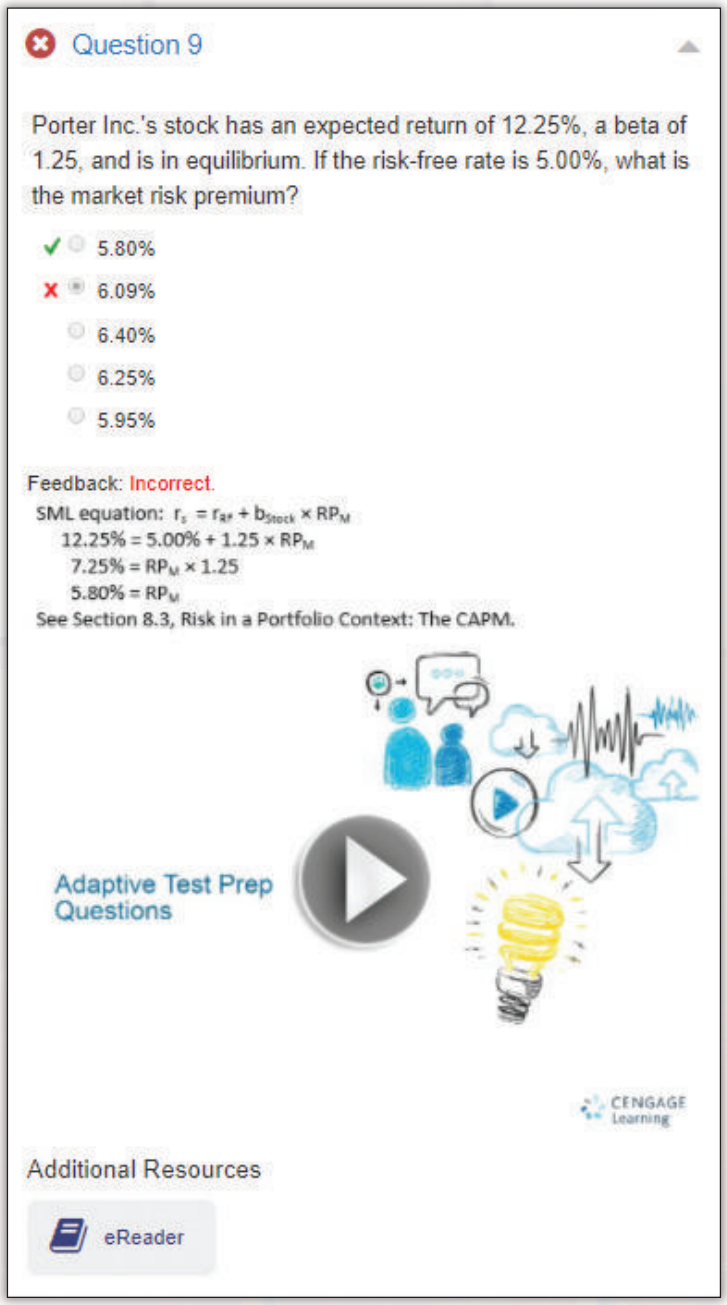




The adaptive test program grades practice tests and indicates the areas that have or have not been mastered. Students are presented with an Adaptive Study Plan that takes them directly to the pertinent pages in the text where the practice question materials are referenced.

FEEDBACK IS KEY

Students also receive robust explanations of the problems to assist in further understanding. Many of the quantitative test questions feature video feedback that offers students step-by-step instruction to reinforce their understanding and bolster their confidence.

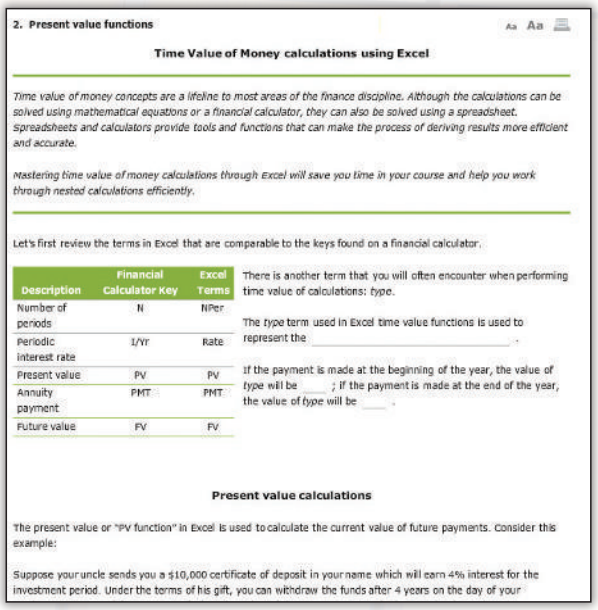


Getting Down the Basics is Important

In order for you to take students further into the applications of finance, it's important that they have a firm handle on the basic concepts and methods used. In MindTap for *Fundamentals of Financial Management*, we provide students with just-in-time tools that—coupled with your guidance—ensure that they build a solid foundation.

PREPARING FOR FINANCE

Students are more confident and prepared when they have the opportunity to brush up on their knowledge of the prerequisite concepts required to be successful in finance. Tutorials/problems to review prerequisite concepts that students should know. Topics covered include Accounting, Economics, Mathematics, and Statistics, as well as coverage of various Financial Calculators and Excel.



2. Present value functions

Time Value of Money calculations using Excel

Time value of money concepts are a lifeline to most areas of the finance discipline. Although the calculations can be solved using mathematical equations or a financial calculator, they can also be solved using a spreadsheet. Spreadsheets and calculators provide tools and functions that can make the process of deriving results more efficient and accurate.

Mastering time value of money calculations through Excel will save you time in your course and help you work through nested calculations efficiently.

Let's first review the terms in Excel that are comparable to the keys found on a financial calculator.

Description	Financial Calculator Key	Excel Terms
Number of periods	N	NPer
Periodic interest rate	I/Yr	Rate
Present value	PV	PV
Annuity payment	PMT	PMT
Future value	FV	FV

There is another term that you will often encounter when performing time value of calculations: *type*.

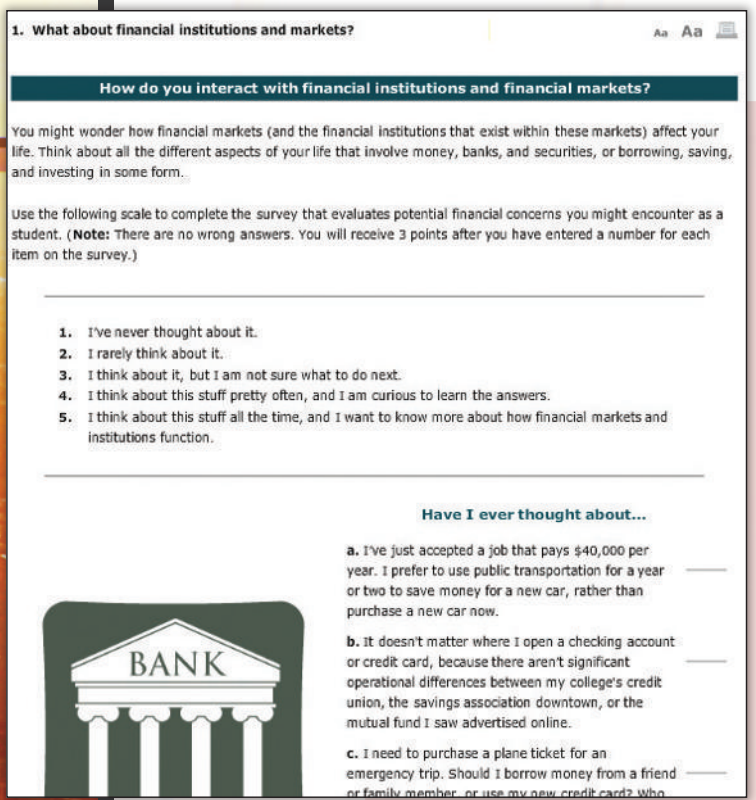
The *type* term used in Excel time value functions is used to represent the _____.

If the payment is made at the beginning of the year, the value of *type* will be ____ ; if the payment is made at the end of the year, the value of *type* will be ____ .

Present value calculations

The present value or "PV function" in Excel is used to calculate the current value of future payments. Consider this example:

Suppose your uncle sends you a $10,000 certificate of deposit in your name which will earn 4% interest for the investment period. Under the terms of his gift, you can withdraw the funds after 4 years on the day of your



1. What about financial institutions and markets?

How do you interact with financial institutions and financial markets?

You might wonder how financial markets (and the financial institutions that exist within these markets) affect your life. Think about all the different aspects of your life that involve money, banks, and securities, or borrowing, saving, and investing in some form.

Use the following scale to complete the survey that evaluates potential financial concerns you might encounter as a student. (**Note:** There are no wrong answers. You will receive 3 points after you have entered a number for each item on the survey.)

1. I've never thought about it.
2. I rarely think about it.
3. I think about it, but I am not sure what to do next.
4. I think about this stuff pretty often, and I am curious to learn the answers.
5. I think about this stuff all the time, and I want to know more about how financial markets and institutions function.

Have I ever thought about...

a. I've just accepted a job that pays $40,000 per year. I prefer to use public transportation for a year or two to save money for a new car, rather than purchase a new car now. ____

b. It doesn't matter where I open a checking account or credit card, because there aren't significant operational differences between my college's credit union, the savings association downtown, or the mutual fund I saw advertised online. ____

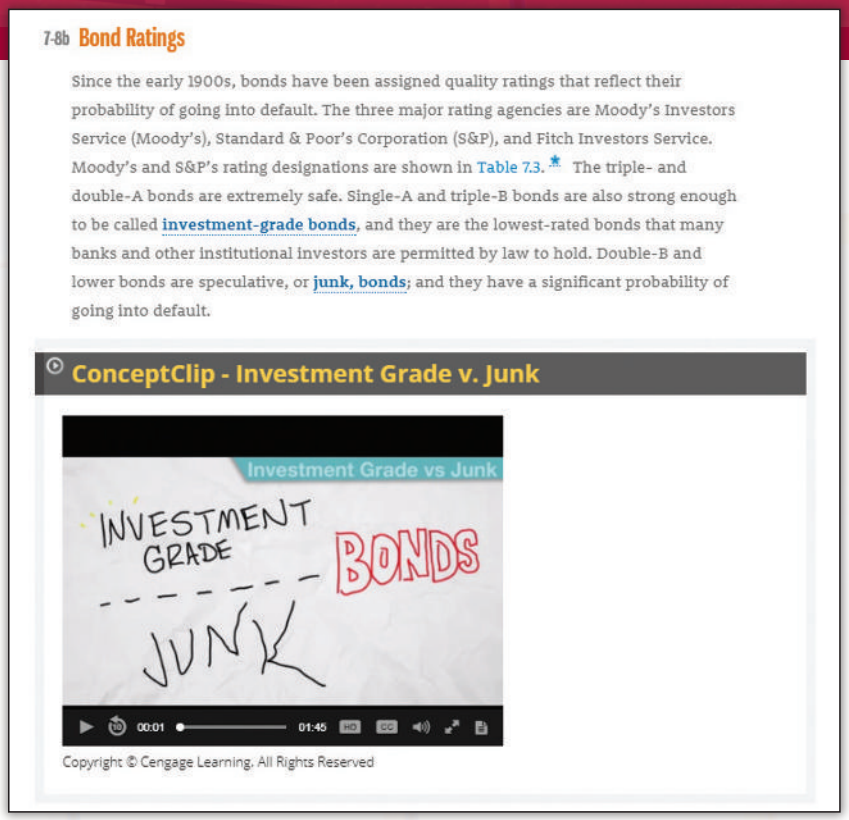
c. I need to purchase a plane ticket for an emergency trip. Should I borrow money from a friend or family member, or use my new credit card? Who ____

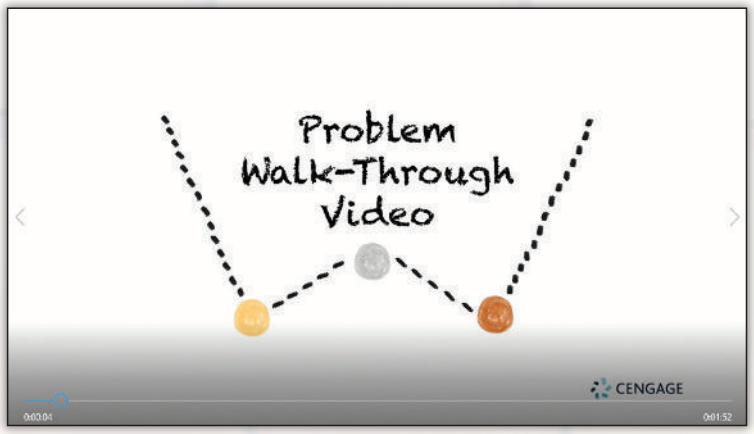
WHY IS THIS IMPORTANT TO ME?

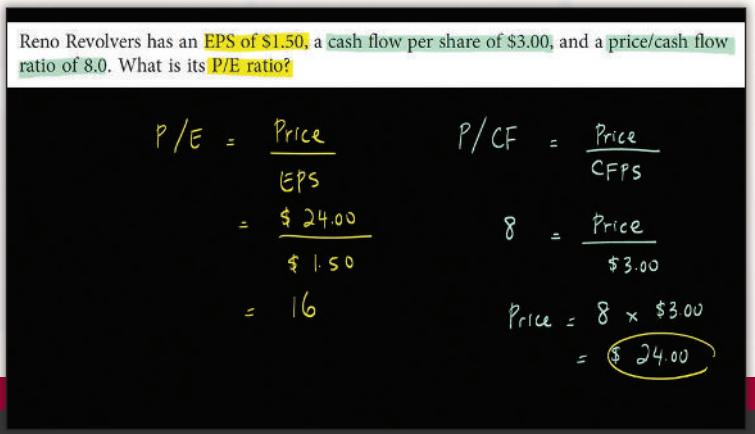
For many students, the idea of taking finance is intimidating. Beyond that, students report that they become more engaged with the course material when they see its relevance in business. The "Why is this important to me?" activity asks the student to complete a short self-assessment activity to demonstrate how they may already have personal knowledge about the important finance concepts they will learn in the chapter material. It is intended to help the student, especially the non-finance major, better understand the relevance in the financial concepts they will learn.

CONCEPT CLIPS

Embedded throughout the new interactive MindTap Reader, Concept Clips present key finance topics to students in an entertaining and memorable way via short animated video clips. These video animations provide students with auditory and visual representation of the important terminology for the course.







PROBLEM WALK-THROUGH VIDEOS

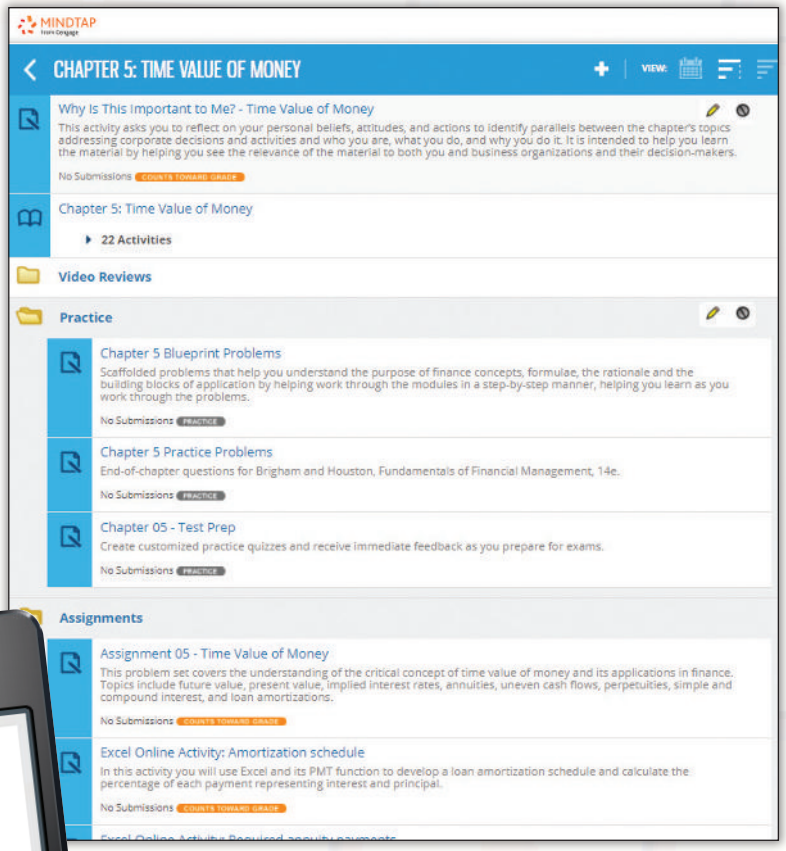
Embedded in the interactive MindTap Reader and linked to select problems in MindTap, Problem Walk-Through Videos provide step-by-step instructions designed to walk students through solving a problem from start to finish. Students can play and replay the tutorials as they work through homework assignments or prepare for quizzes and tests—almost as though they had you by their side the whole time. Ideal for homework, study outside the classroom, or distance learning, Problem Walk-Through Videos extend your reach to give students extra instructional help whenever and wherever it's most useful.

Customizable Course and Mobile On-the-Go study tools based on YOUR Needs

MindTap for *Fundamentals of Financial Management, 16e* offers features that allow you to customize your course based on the topics you cover.

LEARNING PATH CUSTOMIZATION

The learning path is structured by chapter so you can easily hide activities you wish to not cover, or change the order to better align with your course syllabus. RSS feeds and YouTube links can easily be added to the learning path or embedded directly within the MindTap Reader.



MINDTAP EREADER

Provides Convenience

Students can read their full course eBook on their smartphone. This means they can complete reading assignments anyplace, anytime. They can take notes, highlight important passages, and have their text read aloud, whether they are on- or off-line.

FLASHCARDS AND QUIZZING

Cultivate Confidence and Elevate Outcomes

Students have instant access to readymade flashcards specific to their course. They can also create flashcards tailored to their own learning needs. Study games present a fun and engaging way to encourage recall of key concepts. Students can use pre-built quizzes or generate a self-quiz from any flashcard deck.

THE GRADEBOOK

Keep Students Motivated

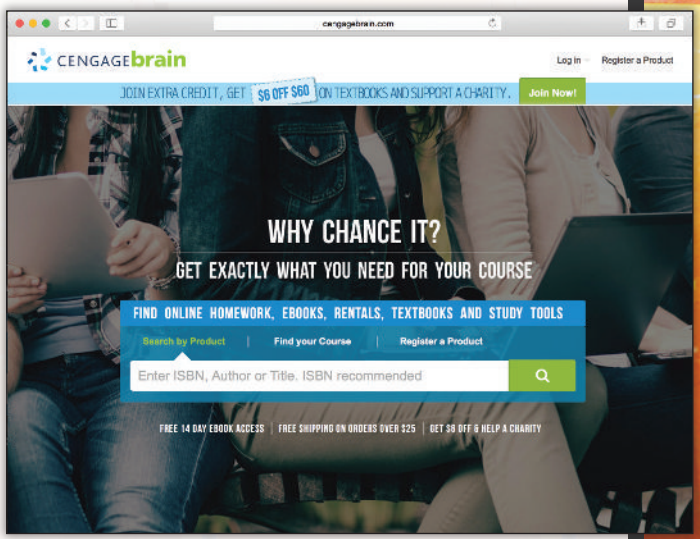
Students can instantly see their grades and how they are doing in the course. If they didn't do well on an assignment, they can implement the flashcards and practice quizzes for that chapter.

NOTIFICATIONS

Keep Students Connected

Students want their smartphones to help them remember important dates and milestones—for both the social and academic parts of their lives. The MindTap Mobile App pushes course notifications directly to them, making them more aware of what's ahead with:

- Due date reminders
- Changes to activity due dates, score updates, and instructor comments
- Messages from their instructor
- Technical announcements about the platform



LMS Integration

Cengage's LMS Integration is designed to help you seamlessly integrate our digital resources within your institution's Learning Management System.

LMS integration is available with the Learning Management Systems instructors use most. Our integrations work with any LMS that supports IMS Basic LTI Open Standards. Enhanced features, including grade synchronization, are the result of active collaborations with our LMS partners.

CREATE A SEAMLESS USER EXPERIENCE

With LMS Integration, your students are ready to learn on the first day of class. In just a few simple steps, both you and your students can access Cengage resources using a LMS login.

CONTENT CUSTOMIZATION WITH DEEP LINKING

Focus student attention on what matters most. Use our Content Selector to create a unique learning path that blends your content with links to learning activities, assignments, and more.

AUTOMATIC GRADE SYNCHRONIZATION*

Need to have your course grades recorded in your LMS gradebook? No problem. Simply select the activities you want synched, and grades will automatically be recorded in your LMS gradebook.

* Grade synchronization is currently available with Blackboard, BrightSpace (powered by D2L), Canvas, and Angel 8.

Brief Contents

Contents

Preface

When the first edition of *Fundamentals* was published 43 years ago, we wanted to provide an introductory text that students would find interesting and easy to understand. *Fundamentals* immediately became the leading undergraduate finance text, and it has maintained that position ever since. Our continuing goal with this edition is to produce a book and ancillary package that sets a new standard for finance textbooks.

Finance is an exciting and continually changing field. Since the last edition, many important changes have occurred within the global financial environment. In the midst of this changing environment, it is certainly an interesting time to be a finance student. In this latest edition, we highlight and analyze the events leading to these changes from a financial perspective. Although the financial environment is ever changing, the tried-and-true principles that the book has emphasized over the past four decades are now more important than ever.

Structure of the Book

Our target audience is a student taking his or her first, and perhaps only, finance course. Some of these students will decide to major in finance and go on to take courses in investments, money and capital markets, and advanced corporate finance. Others will choose marketing, management, or some other nonfinance business major. Still others will major in areas other than business and take finance plus a few other business courses to gain information that will help them in law, real estate, or other fields.

Our challenge has been to provide a book that serves all of these audiences well. We focus on the core principles of finance, including the basic topics of time value of money, risk analysis, and valuation. In each case, we address these topics from two points of view: (1) that of an investor who is seeking to make intelligent investment choices and (2) that of a business manager trying to maximize the value of his or her firm's stock. Both investors and managers need to understand the same set of principles, so the core topics are important to students regardless of what they choose to do after they finish the course.

In planning the book's structure, we first listed the core topics in finance that are important to virtually everyone. Included were an overview of financial markets, methods used to estimate the cash flows that determine asset values, the time value of money, the determinants of interest rates, the basics of risk analysis, and the basics of bond and stock valuation procedures. We cover these core topics in the first nine chapters. Next, because most students in the course will probably work for a business firm, we want to show them how the core ideas are implemented in practice. Therefore, we go on to discuss cost of capital, capital budgeting, capital structure, dividend policy, working capital management, financial forecasting, international operations, risk management, hybrids, and mergers and acquisitions.

Non-finance majors sometimes wonder why they need to learn finance. As we have structured the book, it quickly becomes obvious to everyone why they need to understand time value, risk, markets, and valuation. Virtually all students enrolled in the basic course expect at some point to have money to invest, and they quickly realize that the knowledge gained from Chapters 1 through 9 will help them make better investment decisions. Moreover, students who plan

to go into the business world soon realize that their own success requires that their firms be successful, and the topics covered in Chapters 10 through 21 will be helpful here. For example, good capital budgeting decisions require accurate forecasts from people in sales, marketing, production, and human resources, and non-financial people need to understand how their actions affect the firm's profits and future performance.

Organization of the Chapters: A Valuation Focus

As we discuss in Chapter 1, in an enterprise system such as that of the United States, the primary goal of financial management is to maximize their firms' values. At the same time, we stress that managers should not do "whatever it takes" to increase the firm's stock price. Managers have a responsibility to behave ethically, and when striving to maximize value, they must abide by constraints such as not polluting the environment, not engaging in unfair labor practices, not breaking the antitrust laws, and the like. In Chapter 1, we discuss the concept of valuation, explain how it depends on future cash flows and risk, and show why value maximization is good for society in general. This valuation theme runs throughout the text.

Stock and bond values are determined in the financial markets, so an understanding of those markets is essential to anyone involved with finance. Therefore, Chapter 2 covers the major types of financial markets, the rates of return that investors have historically earned on different types of securities, and the risks inherent in these securities. This information is important for anyone working in finance, and it is also important for anyone who has or hopes to own any financial assets. In this chapter, we also highlight how this environment has changed in the aftermath of the financial crisis and the ongoing coronavirus pandemic.

Asset values depend in a fundamental way on earnings and cash flows as reported in the accounting statements. Therefore, we review those statements in Chapter 3 and then, in Chapter 4, show how accounting data can be analyzed and used to measure how well a company has operated in the past and how well it is likely to perform in the future.

Chapter 5 covers the time value of money (TVM), perhaps the most fundamental concept in finance. The basic valuation model, which ties together cash flows, risk, and interest rates, is based on TVM concepts, and these concepts are used throughout the remainder of the book. Therefore, students should allocate plenty of time for studying Chapter 5.

Chapter 6 deals with interest rates, a key determinant of asset values. We discuss how interest rates are affected by risk, inflation, liquidity, the supply of and demand for capital in the economy, and the actions of the Federal Reserve. The discussion of interest rates leads directly to the topics of bonds in Chapter 7 and stocks in Chapters 8 and 9, where we show how these securities (and all other financial assets) are valued using the basic TVM model.

The background material provided in Chapters 1 through 9 is essential to both investors and corporate managers. These are finance topics, not business or corporate finance topics as those terms are commonly used. Thus, Chapters 1 through 9 concentrate on the concepts and models used to establish values, whereas Chapters 10 through 21 focus on specific actions managers can take to maximize their firms' values.

Because most business students don't plan to specialize in finance, they might think the business finance chapters are not particularly relevant to them. This is

most decidedly not true, and in the later chapters we show that all really important business decisions involve every one of a firm's departments—marketing, accounting, production, and so on. Although a topic such as capital budgeting can be thought of as a financial issue, marketing people provide inputs on likely unit sales and sales prices; manufacturing people provide inputs on costs; and so on. Moreover, capital budgeting decisions influence the size of the firm, its products, its profits, and its stock price, and those factors affect all of the firm's employees, from the CEO to the mail room staff.

Innovations for the Sixteenth Edition

A great deal has happened in the financial markets and corporate America since the 15th edition was published. In this 16th edition, we have made several important changes to reflect this dynamic environment. Here is a brief summary of the more significant changes.

1. Today's students are tomorrow's business, government, and non-profit leaders, and it is essential that they understand the key principles of finance and the important role that financial markets and institutions have on our economy. Since the last edition, a number of key events have significantly influenced the financial markets and finance in general. Most notably, the coronavirus pandemic has dramatically transformed the world economy, and has had a significant impact on large parts of our society. As we highlight in the text, many of these changes have affected many elements of financial decision making, and some of these changes may be long-lasting. Other major events include the surprise election of President Donald J. Trump in November 2016, the uncertainty surrounding the 2020 election, and civil unrest in the United States. Not surprisingly, these events have influenced business decisions and government policy, and they have had a dramatic effect on financial markets. The Federal Reserve has pushed interest rates to historically low levels in response to the pandemic, and it anticipates that it will keep rates low until it is confident that the economy has weathered recent events. We have also witnessed considerable volatility in the stock market. Following a dramatic five and a half year run-up, the market reached record-high levels, just before the pandemic hit. In the early days of the pandemic there was a major collapse in stock prices, but the market quickly rebounded and was once again approaching record-high levels in October 2020. Throughout the 16th edition, we discuss these events and their implications for financial markets and corporate managers, and we use these examples to illustrate the importance of the key concepts covered in *Fundamentals* for investors, businesses, and even government officials.
2. In December 2017, Congress passed the Tax Cuts and Jobs Act (TCJA). We have described the act's key features and have highlighted its important impacts throughout the text. More specifically, in Chapter 3 (Financial Statements, Cash Flow, and Taxes), we incorporate the act's effects in our newly revised illustrative financial statements and in our discussion of individual and corporate tax rates and tax provisions. In Chapter 10 (The Cost of Capital), we discuss a firm's capital components and the new law's impact on a firm's after-tax cost of debt and therefore its WACC. In Chapter 12 (Cash Flow Estimation and Risk Analysis), we demonstrate the act's impact on a project's free cash flows due to immediate 100% expensing of certain new and used business assets and the lower corporate tax rate. In Chapter 14 (Capital Structure and Leverage), we show the lower

corporate tax rate's impact on a firm's optimal capital structure. In Chapter 15 (Distributions to Shareholders: Dividends and Share Repurchases), we discuss the change in corporate dividend exclusion percentages. In Chapter 17 (Financial Planning and Forecasting), we demonstrate the lower corporate tax rate's impact on a firm's forecasted financial statements and related forecasted ratios. In Chapter 20 (Hybrid Financing: Preferred Stock, Leasing, Warrants, and Convertibles), we illustrate the impacts of bonus depreciation and the lower corporate tax rate on lease analysis. Finally, we have also revised the relevant end-of-chapter problems and have updated our various ancillaries to take into account the effects of the recent act.

3. In the 16th edition, we also continue to highlight the important influences of increased globalization and changing technology. These influences have not only created new opportunities, but they have also generated new sources of risk for individuals and businesses. Notably, since the last edition, we have seen the phenomenal increase in the stock prices of the FANG (Facebook, Amazon, Netflix, and Google's parent Alphabet). We have also witnessed the initial public offerings of SNAP and Alibaba, the disrupting forces
of Uber and Airbnb, the continued rise of Bitcoin and other cryptocurrencies, and several high-profile mergers.
4. Instructors and students continually impress upon us the importance of having interesting and relevant real-world examples. Throughout the 16th edition we have added several new examples where recent events help illustrate the key concepts covered in the text. We have added a number of new boxes discussing chapter concepts impacting real-world companies, such as Chapter 3: "A Quick Glance at the Aggregate Balance Sheets of Households and Nonprofits, 2000-2019"; Chapter 3: "Congress Passes Sweeping Tax Reform Act in 2017"; Chapter 3: "Corporate Tax Rates Around the World"; Chapter 6 vignette: "Interest Rates Fall to Historic Lows"; Chapter 6: "Does an Inverted Yield Curve Signal That a Recession is Coming?"; Chapter 8: "Recent Study Highlights the Importance of Diversification"; Chapter 9: "The Coronavirus and the Stock Market"; Chapter 15: "Coronavirus Concerns Spur Many Companies to Reduce or Suspend Their Dividends"; Chapter 15: "Stock Repurchases Come under Attack"; Chapter 18: "President Trump Imposes New Tariffs"; Chapter 18: "A New Era of Deglobalization"; Chapter 20: "New Lease Guidance: ASC 842; and Chapter 21 vignette: "Disney Expands Its Media Empire." We have also expanded and updated the many tables where we present real-world data, and we have updated our "Taking A Closer Look" Problems. Finally, as is always the case, we have made significant changes to many of the opening vignettes that precede each chapter.
5. Behavioral finance theory continues to have an important influence on the academic literature and it has in many ways reshaped the way that many of us think about financial markets and corporate finance. In addition, we continue to highlight the importance of securitization, the role of derivatives, and the increasing importance of hedge funds, mutual funds, and private equity firms.
6. In Chapter 1, we added the marginal definitional term and discussed environmental, social, and governance (ESG) measures.
7. In Chapter 4, we revised the definition of the inventory turnover ratio to reflect real-world practices and financial publications that measure the inventory turnover ratio using cost of goods sold in the numerator rather than sales. Therefore, we use cost of goods sold in our calculation. We have updated end-of-chapter problems and computer models to reflect this

change. In addition, we also expanded the discussion of the EV/EBITDA ratio to clarify the meaning of other financial claims.

8. In Chapter 13, we added more discussion to capital rationing along with a new table that emphasizes that the optimal project selection would be the one that maximizes NPV, recognizing that because of capital rationing the true optimal capital budget cannot be reached. A related end of-chapter problem was added.
9. We updated the exchange rate data in Chapter 18 to reflect what's currently going on in the world. All figures and text discussion have been updated accordingly, including "Hungry for a Big Mac? Go to South Africa" "Stock Market Indexes Around the World," and "Investing in International Stocks" boxes.
10. In Chapter 20, we streamlined and updated the lease discussion to reflect the implementation of the new lease guidance, ASC 842. The lease analysis reflects the impact of bonus depreciation and a lowered corporate tax rate from the TCJA. In addition, we have added breakeven lease analysis and discussion.

When revising the text, we always rely heavily on a team of reviewers who offer suggestions for making the text more readable and relevant to students. We give special thanks to these reviewers later in the preface; their comments and recommendations certainly helped us improve this 16th edition.

Digital Solutions for the Sixteenth Edition

Changing technology and new ideas have had an exciting and dramatic influence on the ways we teach finance. Innovative instructors are developing and utilizing different classroom strategies, and new technology has allowed us to present key material in a more interesting and interactive fashion. As textbook authors, we think these new developments are tremendously exciting, and we have worked closely with our publisher's top team of innovative content and media developers, who have created a whole new set of revolutionary products for the 16th edition.

MINDTAP™

MindTap™, Cengage Learning's fully online, highly personalized learning experience combines readings, multimedia activities, and assessments into a singular Learning Path. MindTap™ guides students through their course with ease and engagement with a learning path that includes an Interactive Chapter Reading, Problem Demonstrations, Blueprint Problems, Excel Online Problems, and Homework Assignment powered by Aplia. These homework problems include rich explanations and instant grading, with opportunities to try another algorithmic version of the problem to bolster confidence with problem solving. Instructors can personalize the Learning Path for their students by customizing the robust suite of the Sixteenth Edition resources and adding their own content via apps that integrate into the MindTap™ framework seamlessly with Learning Management Systems.

NEW! VIDEO LESSONS

All new video lessons have been added to MindTap to help students learn fundamental topics in corporate finance. Fully algorithmic to provide ample practice, each lesson includes several steps that build conceptual understanding through use of video, 'chunked' instructional narrative, and practice exercises with rich

feedback. Students answer a series of questions with each required step ensuring they build foundational knowledge along the way. These modules serve as good supplements to assign along readings or as pre-class activities to build more foundational knowledge prior to more involved homework assignments or application-oriented problems.

NEW! ALGORITHMIC TEST BANK

Over 600+ algorithmic test bank questions have been added to MindTap to provide more flexibility, variety, and support for online exams or higher stakes assignments.

NEW! AUTO-GRADED EXCEL® CASE PROBLEMS

Comprehensive Excel spreadsheet problems from the textbook are now available as auto-graded, algorithmic case assignments within MindTap. Involving deeper analysis and what-if scenarios to encourage decision-making and analytical skills, these problems provide a natural capstone to the chapter promote mastery.

NEW! UPDATED MINDTAP LEARNING PATH

The learning path has been optimized and streamlined to group learning activities, video, and other interactive assignments and study materials into "Learn It", "Study It', and "Apply It" sections. This reorganization better reflects the intended progression of learning for each chapter unit and supports more consistency with MindTap courses students may be using for other classes. Estimated time to completion has been added to select activity and homework descriptions to better improve time on task information for both students and instructors.

EXCEL ONLINE PROBLEMS

Microsoft Excel Online activities provide students with an opportunity to work auto-gradable, algorithmic homework problems directly in their browser using Excel Online. Students receive instant feedback on their Excel work, including "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.

ADAPTIVE TEST PREP

Adaptive Test Prep allows students to create practice quizzes covering multiple chapters in a lowstakes environment. Students receive immediate feedback so they know where they need additional help, and the test bank–like questions prepare students for what to expect on the exam. With many questions offered per chapter, students can create multiple unique practice quizzes within MindTap.

EXPLORING FINANCE

Exploring Finance offers instructors and students interactive visualizations that engage with "lean forward" interactivity. Exploring Finance offers instructors

visual, interactive tools that they can use to help students "see" the financial concept being presented directly within MindTap.

QUICK LESSONS

Embedded throughout the new interactive eReader, finance Quick Lessons 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.

EVEN MORE PROBLEM WALK-THROUGHS

More than 150 Problem Walk-Through videos are embedded in the interactive MindTap eReader and 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.

COGNERO™ 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, and deliver tests from your LMS, your classroom, or wherever you want. Revised to reflect concepts covered in the Sixteenth Edition, the Cognero™ Test Bank is tagged according to Tier I (AACSB Business Program Interdisciplinary Learning Outcomes) and Tier II (Finance specific) topic, Bloom's Taxonomy, and difficulty level. In addition to these changes, we have also significantly updated and improved our more traditional ancillary package, which includes the Instructor's Manual, Test Bank, Excel Chapter Models, Excel Chapter Integrated Case Models, Excel Spreadsheet Problem Models, and PowerPoints for Chapter Integrated Cases.

Acknowledgments

The book reflects the efforts of a great many people, both those who worked on *Fundamentals* and our related books in the past and those who worked specifically on this 16th edition. First, we would like to thank Dana Aberwald Clark, who worked closely with us at every stage of the revision—her assistance was absolutely invaluable.

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Errors in the Textbook

At this point, most authors make a statement such as this: "We appreciate all the help we received from the people listed above; but any remaining errors are, of course, our own responsibility." And generally there are more than enough remaining errors! Having experienced difficulties with errors ourselves, both as students and instructors, we resolved to avoid this problem in *Fundamentals*. As a result of our detection procedures, we are convinced that few errors remain, but primarily because we want to detect any errors that may have slipped by so

that we can correct them in subsequent printings, we decided to offer a reward of $10 to the first person who reports an error in the printed textbook or the corresponding e-book. For the purpose of this reward, errors 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 of opinion regarding grammatical or punctuation conventions do not qualify for this reward. Given the ever-changing nature of the World Wide Web, changes in web addresses also do not qualify as errors, although we would like to learn about them. Finally, any qualifying error that has follow-through effects is counted as two errors only. Please report any errors to Joel Houston through e-mail at bhfundamentals@gmail.com or by regular mail at the address below.

Conclusion

Finance is, in a real sense, the cornerstone of the enterprise system—good financial management is vitally important to the economic health of all firms and hence to the nation and the world. Because of its importance, finance should be widely and thoroughly understood, but this is easier said than done. The field is complex, and it undergoes constant change due to shifts in economic conditions. All of this makes finance stimulating and exciting, but challenging and sometimes perplexing. We sincerely hope that this 16th Edition of *Fundamentals* will meet its own challenge by contributing to a better understanding of our financial system.

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Joel F. Houston *University of Florida*

Joel F. Houston is the Eugene F. Brigham Professor of Finance at the University of Florida. He received his MA and PhD from the Wharton School at the University of Pennsylvania, and his undergraduate degree from Franklin and Marshall College. Prior to his appointment at the University of Florida, Dr. Houston was an economist at the Federal Reserve Bank of Philadelphia. Dr. Houston's research is primarily in the areas of corporate finance and financial institutions, and his work has been published in top journals including *The Journal of Finance, Journal of Financial Economics, Journal of Business, Journal of Financial and Quantitative Analysis, Journal of Accounting Research,* and *Financial Management*. Dr. Houston also currently serves as an associate editor for *The Journal of Financial Services Research,* and *The Journal of Financial Economic Policy*. Since arriving at the University of Florida in 1987, he has received 25 teaching awards and has been actively involved in both undergraduate and graduate education. In addition to coauthoring leading textbooks in financial management, Dr. Houston has participated in management education programs for the PURC/World Bank Program, Southern Company, Exelon Corporation, and Volume Services America. He enjoys playing golf and spending time with his wife (Sherry), son (Chris), daughter (Meredith), and grandson (Teddy). He is an avid sports fan who follows the Florida Gators and the Pittsburgh Steelers, Pirates, and Penguins.

part 1

Introduction to Financial Management

CHAPTERS

An Overview of Financial Management

CHAPTER 1

Philip Lange/Shutterstock.com

Striking the Right Balance

In 1776, Adam Smith described how an "invisible hand" guides companies as they strive for profits, and that hand leads them to decisions that benefit society. Smith's insights led him to conclude that profit maximization is the right goal for a business and that the free enterprise system is best for society. But the world has changed since 1776. Firms today are much larger, they operate globally, they have thousands of employees, and they are owned by millions of stockholders. This makes us wonder if the "invisible hand" still provides reliable guidance: Should companies still try to maximize profits, or should they take a broader view and more balanced actions designed to benefit customers, employees, suppliers, and society as a whole?

Many academics and finance professionals today subscribe to the following modified version of Adam Smith's theory:

- A firm's principal financial goal should be to maximize the wealth of its stockholders, which means maximizing the value of its stock.
- Free enterprise is still the best economic system for society as a whole. Under the free enterprise framework, companies develop products and services that people want and that benefit society.
- However, some constraints are needed—firms should not be allowed to pollute the air and water, to engage in unfair employment practices, or to create monopolies that exploit consumers.

These constraints take a number of different forms. The first set of constraints is the costs that are assessed on companies if they take actions that harm society. Another set of constraints arises through the political process, where society imposes a wide range of regulations that are designed to keep companies from engaging in harmful practices. Properly imposed, these costs fairly transfer value to

suffering parties and help create incentives that help prevent similar events from occurring in the future.

The financial crisis in 2007 and 2008 dramatically illustrates these points. We witnessed many Wall Street firms engaging in extremely risky activities that pushed the financial system to the brink of collapse. Saving the financial system required a bailout of the banks and other financial companies, and that bailout imposed huge costs on taxpayers and helped push the economy into a deep recession. Apart from the huge costs imposed on society, the financial firms also paid a heavy price—a number of leading financial institutions saw a huge drop in their stock price, some failed and went out of business, and many Wall Street executives lost their jobs.

Arguably, these costs are not enough to prevent another financial crisis from occurring. Many maintain that the events surrounding the financial crisis illustrate that markets don't always work the way they should and that there is a need for stronger regulation of the financial sector. For example, in his recent books, Nobel Laureate Joseph Stiglitz makes a strong case for enhanced regulation. At the same time, others with a different political persuasion continue to express concerns about the costs of excessive regulation.

Beyond the financial crisis, there is a broader question of whether laws and regulations are enough to compel firms to act in society's interest. An increasing number of companies continue to recognize the need to maximize shareholder value, but they also see their mission as more than just making money for shareholders. Google's parent company Alphabet's motto is "Do the right thing—follow the law, act honorably, and treat each other with respect." Consistent with this mission, the company has its own in-house foundation that each year makes large investments in a wide range of philanthropic ventures worldwide.

Microsoft is another good example of a company that has earned a reputation for taking steps to be socially responsible. The company recently released its 2019 Corporate Social Responsibility Report. In an accompanying letter to shareholders, Microsoft CEO Satya Nadella highlighted its broader mission:

> Our mission to **empower every person and every organization on the planet to achieve more** has never been more important. At a time when many are calling attention to the role technology plays in society broadly, our mission remains constant. It grounds us in the enormous opportunity and responsibility we have to ensure that the technology we create always benefits everyone on the planet, including the planet itself. Our platforms and tools help make small businesses more productive, multinationals more competitive, nonprofits more effective, and governments more efficient. They improve healthcare and education outcomes, amplify human ingenuity, and allow people everywhere to reach higher.

Similarly, the Business Roundtable, a group of leading business executives, made news in 2019 when it put out a statement indicating that companies should explicitly account for the broader interests of stakeholders, not just focus exclusively on shareholders.

While many companies and individuals have taken very significant steps to demonstrate their commitments to being socially responsible, corporate managers frequently face a tough balancing act. Realistically, there will still be cases where companies face conflicts between their various constituencies—for example, a company may enhance shareholder value by laying off some workers, or a change in policy may improve the environment but reduce shareholder value. We also have seen examples where leading tech companies such as Facebook and Google have come under fire for their handling of their users' private information. In each of these instances, managers have to balance these competing interests and different managers will clearly make different choices. More recently, virtually every organization has faced considerable pressure trying to manage their various constituencies in the midst of the massive personal and economic dislocation resulting from the coronavirus pandemic. At the end of the day, all companies struggle to find the right balance. Enlightened managers recognize that there is more to life than money, but it often takes money to do good things.

Sources: "Microsoft 2019 Corporate Social Responsibility Report," microsoft.com/en-us/corporate-responsibility/reports-hub, October 16, 2019; "Microsoft 2019 Annual Report," microsoft.com/investor/reports/ar19/index.html, October 16, 2019; "Business Roundtable Redefines the Purpose of a Corporation to Promote 'An Economy That Serves All Americans,'" businessroundtable.org/business-roundtable-redefines-the-purpose-of-a-corporation-to-promote-an-economy-that-serves-all-americans, August 19, 2019; Kevin J. Delaney, "Google: From 'Don't Be Evil' to How to Do Good," *The Wall Street Journal*, January 18, 2008, pp. B1–B2; Joseph E. Stiglitz, *FreeFall: America, Free Markets, and the Sinking of the World Economy* (New York: W.W. Norton, 2010); and Joseph E. Stiglitz, *The Price of Inequality* (New York: W.W. Norton, 2012).

PUTTING THINGS IN PERSPECTIVE

This chapter will give you an idea of what financial management is all about. We begin the chapter by describing how finance is related to the overall business environment, by pointing out that finance prepares students for jobs in different fields of business, and by discussing the different forms of business organization. For corporations, management's goal should be to maximize shareholder wealth, which means maximizing the value of the stock. When we say "maximizing the value of the stock," we mean the "true, long-run value," which may be different from the current stock price. In the chapter, we discuss how firms must provide the right incentives for managers to focus on long-run value maximization. Good managers understand the importance of ethics, and they recognize that maximizing long-run value is consistent with being socially responsible.

When you finish this chapter, you should be able to do the following:

- **Explain the role of finance and the different types of jobs in finance.**
- **Identify the advantages and disadvantages of different forms of business organization.**
- **Explain the links between stock price, intrinsic value, and executive compensation.**
- **Identify the potential conflicts that arise within the firm between stockholders and managers and between stockholders and bondholders, and discuss the techniques that firms can use to mitigate these potential conflicts.**
- **Discuss the importance of business ethics and the consequences of unethical behavior.**

1-1 What Is Finance?

Finance is defined by *Webster's Dictionary* as "the system that includes the circulation of money, the granting of credit, the making of investments, and the provision of banking facilities." Finance has many facets, which makes it difficult to provide one concise definition. The discussion in this section will give you an idea of what finance professionals do and what you might do if you enter the finance field after you graduate.

1-1A AREAS OF FINANCE

Finance as taught in universities is generally divided into three areas: (1) financial management, (2) capital markets, and (3) investments.

Financial management, also called corporate finance, focuses on decisions relating to how much and what types of assets to acquire, how to raise the capital needed to purchase assets, and how to run the firm so as to maximize its value. The same principles apply to both for-profit and not-for-profit organizations, and as the title suggests, much of this book is concerned with financial management.

Capital markets relate to the markets where interest rates, along with stock and bond prices, are determined. Also studied here are the financial institutions that supply capital to businesses. Banks, investment banks, stockbrokers, mutual funds, insurance companies, and the like bring together "savers" who have money to invest and businesses, individuals, and other entities that need capital for various purposes. Governmental organizations such as the Federal Reserve System,

which regulates banks and controls the supply of money, and the Securities and Exchange Commission (SEC), which regulates the trading of stocks and bonds in public markets, are also studied as part of capital markets.

Investments relate to decisions concerning stocks and bonds and include a number of activities: (1) *Security analysis* deals with finding the proper values of individual securities (i.e., stocks and bonds). (2) *Portfolio theory* deals with the best way to structure portfolios, or "baskets," of stocks and bonds. Rational investors want to hold diversified portfolios in order to limit risks, so choosing a properly balanced portfolio is an important issue for any investor. (3) *Market analysis* deals with the issue of whether stock and bond markets at any given time are "too high," "too low," or "about right." Included in market analysis is *behavioral finance*, where investor psychology is examined in an effort to determine whether stock prices have been bid up to unreasonable heights in a speculative bubble or driven down to unreasonable lows in a fit of irrational pessimism.

Although we separate these three areas, they are closely interconnected. Banking is studied under capital markets, but a bank lending officer evaluating a business' loan request must understand corporate finance to make a sound decision. Similarly, a corporate treasurer negotiating with a banker must understand banking if the treasurer is to borrow on "reasonable" terms. Moreover, a security analyst trying to determine a stock's true value must understand corporate finance and capital markets to do his or her job. In addition, financial decisions of all types depend on the level of interest rates; so all people in corporate finance, investments, and banking must know something about interest rates and the way they are determined. Because of these interdependencies, we cover all three areas in this book.

1-1B FINANCE WITHIN AN ORGANIZATION

Most businesses and not-for-profit organizations have an organization chart similar to the one shown in Figure 1.1. The board of directors is the top governing body, and the chairperson of the board is generally the highest-ranking individual. The chief executive officer (CEO) comes next, but note that the chairperson of the board often also serves as the CEO. Below the CEO comes the chief operating officer (COO), who is often also designated as a firm's president. The COO directs the firm's operations, which include marketing, manufacturing, sales, and other operating departments. The chief financial officer (CFO), who is generally a senior vice president and the third-ranking officer, is in charge of accounting, finance, credit policy, decisions regarding asset acquisitions, and investor relations, which involves communications with stockholders and the press.

The duties of the CFO have broadened over the years. CFO magazine's online service, ***cfo.com****, is an excellent source of timely finance articles intended to help the CFO manage those new responsibilities.*

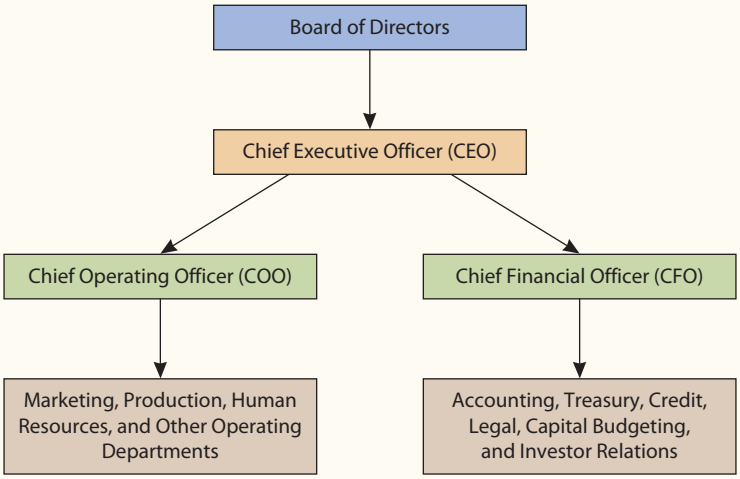
If the firm is publicly owned, the CEO and the CFO must both certify to the SEC that reports released to stockholders, and especially the annual report, are accurate. If inaccuracies later emerge, the CEO and the CFO could be fined or even jailed. This requirement was instituted in 2002 as a part of the **Sarbanes-Oxley Act**. The act was passed by Congress in the wake of a series of corporate scandals involving now-defunct companies such as Enron and WorldCom, where investors, workers, and suppliers lost billions of dollars due to false information released by those companies.

Sarbanes-Oxley Act
A law passed by Congress that requires the CEO and CFO to certify that their firms' financial statements are accurate.

1-1C FINANCE VERSUS ECONOMICS AND ACCOUNTING

Finance, as we know it today, grew out of economics and accounting. Economists developed the notion that an asset's value is based on the future cash flows the asset will provide, and accountants provided information regarding the likely size of those cash flows. People who work in finance need knowledge of both economics and accounting. Figure 1.1 illustrates that in the modern corporation, the accounting department typically falls under the control of the CFO. This further illustrates the link among finance, economics, and accounting.

FIGURE 1.1 Finance within the Organization



SelfTest

What three areas of finance does this book cover? Are these areas independent of one another, or are they interrelated in the sense that someone working in one area should know something about each of the other areas? Explain.

Who is the CFO, and where does this individual fit into the corporate hierarchy? What are some of his or her responsibilities?

Does it make sense for not-for-profit organizations such as hospitals and universities to have CFOs? Why or why not?

What is the relationship among economics, finance, and accounting?

1-2 Jobs in Finance

*To find information about different finance careers, go to **allbusinessschools.com/business-careers/finance/job-description**. This website provides information about different finance areas.*

Finance prepares students for jobs in banking, investments, insurance, corporations, and government. Accounting students need to know marketing, management, and human resources; they also need to understand finance, for it affects decisions in all those areas. For example, marketing people propose advertising programs, but those programs are examined by finance people to judge the effects of the advertising on the firm's profitability. So to be effective in marketing, one needs to have a basic knowledge of finance. The same holds for management—indeed, most important management decisions are evaluated in terms of their effects on the firm's value.

It is also worth noting that finance is important to individuals regardless of their jobs. Some years ago most employees received pensions from their employers upon retirement, so managing one's personal investments was not critically important. That's no longer true. Most firms today provide "defined contribution" pension plans, where each year the company puts a specified amount of money into an account that belongs to the employee. The employee must decide how those funds are to be invested—how much should be divided among stocks, bonds, or money funds—and how much risk they're willing to take with their stock and bond investments. These decisions have a major effect on people's lives, and the concepts covered in this book can improve decision-making skills.

1-3 Forms of Business Organization

efinancialcareers.com *provides finance career news and advice including information on who's hiring in finance and accounting fields.*

The basics of financial management are the same for all businesses, large or small, regardless of how they are organized. Still, a firm's legal structure affects its operations and thus should be recognized. There are four main forms of business organizations: (1) proprietorships, (2) partnerships, (3) corporations, and (4) limited liability companies (LLCs) and limited liability partnerships (LLPs). In terms of numbers, most businesses are proprietorships. However, based on the dollar value of sales, more than 80% of all business is done by corporations.[1] Because corporations conduct the most business and because most successful businesses eventually convert to corporations, we focus on them in this book. Still, it is important to understand the legal differences between types of firms.

Proprietorship
An unincorporated business owned by one individual.

A **proprietorship** is an unincorporated business owned by one individual. Going into business as a sole proprietor is easy—a person begins business operations. Proprietorships have three important advantages: (1) They are easy and inexpensive to form, (2) they are subject to few government regulations, and (3) they are subject to lower income taxes than are corporations. However, proprietorships also have three important limitations: (1) Proprietors have unlimited personal liability for the business' debts, so they can lose more than the amount of money they invested in the company. You might invest $10,000 to start a business but be sued for $1 million if, during company time, one of your employees runs over someone with a car. (2) The life of the business is limited to the life of the individual who created it, and to bring in new equity, investors require a change in the structure of the business. (3) Because of the first two points, proprietorships have difficulty obtaining large sums of capital; hence, proprietorships are used primarily for small businesses. However, businesses are frequently started as proprietorships and then converted to corporations when their growth results in the disadvantages outweighing the advantages.

Partnership
An unincorporated business owned by two or more persons.

A **partnership** is a legal arrangement between two or more people who decide to do business together. Partnerships are similar to proprietorships in that they can be established relatively easily and inexpensively. Moreover, the firm's income is allocated on a pro rata basis to the partners and is taxed on an individual basis. This allows the firm to avoid the corporate income tax. However, all of the partners are generally subject to unlimited personal liability, which means that if a partnership goes bankrupt and any partner is unable to meet his or her pro rata share of the firm's liabilities, the remaining partners will be responsible for making good on the unsatisfied claims. Thus, the actions of a Texas partner can bring ruin to a millionaire New York partner who had nothing to do with the actions that led to the downfall of the company. Unlimited liability makes it difficult for partnerships to raise large amounts of capital.[2]

[1]Refer to "SOI Tax Stats–Integrated Business Data: Table 1. Number of Returns, Total Receipts, Business Receipts, Net Income (less deficit), Net Income, and Deficit, by Form of Business, Tax Years 1980–2015," IRS, Statistics of Income Division, irs.gov/statistics/soi-tax-stats-integrated-business-data, February 2020.

[2]Originally, there were just straightforward partnerships, but over the years lawyers have created a number of variations. We leave the variations to courses on business law, but we note that the variations are generally designed to limit the liabilities of some of the partners. For example, a *limited partnership* has a general partner, who has unlimited liability, and one or more limited partners, whose liability is limited to the amount of their investment. This sounds great from the standpoint of limited liability, but the limited partners must cede sole control to the general partner, which means that they have almost no say in the way the firm is managed. With a corporation, the owners (stockholders) have limited liability, but they also have the right to vote and thus change management if they think that a change is in order. Note too that LLCs and LLPs, discussed later in this section, are increasingly used in lieu of partnerships.

Corporation
A legal entity created by a state, separate and distinct from its owners and managers, having unlimited life, easy transferability of ownership, and limited liability.

A **corporation** is a legal entity created by a state, and it is separate and distinct from its owners and managers. It is this separation that limits stockholders' losses to the amount they invested in the firm—the corporation can lose all of its money, but its owners can lose only the funds that they invested in the company. Corporations also have unlimited lives, and it is easier to transfer shares of stock in a corporation than one's interest in an unincorporated business. These factors make it much easier for corporations to raise the capital necessary to operate large businesses. Thus, companies such as Hewlett-Packard and Microsoft generally begin as proprietorships or partnerships, but at some point they find it advantageous to become a corporation.

A major drawback to corporations is taxes. Most corporations' earnings are subject to double taxation—the corporation's earnings are taxed, and then when its after-tax earnings are paid out as dividends, those earnings are taxed again as personal income to the stockholders. However, as an aid to small businesses, Congress created **S corporations**, which are taxed as if they were proprietorships or partnerships; thus, they are exempt from the corporate income tax.[3] To qualify for S corporation status, a firm can have no more than 100 stockholders, which limits their use to relatively small, privately owned firms. Larger corporations are known as *C corporations*. The vast majority of small corporations elect S status and retain that status until they decide to sell stock to the public, at which time they become C corporations.

S Corporations
A special designation that allows small businesses that meet qualifications to be taxed as if they were a proprietorship or a partnership rather than a corporation.

Limited Liability Company (LLC)
A popular type of organization that is a hybrid between a partnership and a corporation.

Limited Liability Partnership (LLP)
Similar to an LLC but used for professional firms in the fields of accounting, law, and architecture. It provides personal asset protection from business debts and liabilities but is taxed as a partnership.

A **limited liability company (LLC)** is a popular type of organization that is a hybrid between a partnership and a corporation. A **limited liability partnership (LLP)** is similar to an LLC. LLPs are used for professional firms in the fields of accounting, law, and architecture, while LLCs are used by other businesses. Similar to corporations, LLCs and LLPs provide limited liability protection, but they are taxed as partnerships. Further, unlike limited partnerships, where the general partner has full control of the business, the investors in an LLC or LLP have votes in proportion to their ownership interest. LLCs and LLPs have been gaining in popularity in recent years, but large companies still find it advantageous to be C corporations because of the advantages in raising capital to support growth. LLCs/LLPs were dreamed up by lawyers; they are often structured in very complicated ways, and their legal protections often vary by state. So it is necessary to hire a good lawyer when establishing one.

When deciding on its form of organization, a firm must trade off the advantages of incorporation against double taxation. However, for the following reasons, the value of any business other than a relatively small one will probably be maximized if it is organized as a corporation:

1. Limited liability reduces the risks borne by investors, and, other things held constant, the lower the firm's risk, the higher its value.
2. A firm's value is dependent on its growth opportunities, which are dependent on its ability to attract capital. Because corporations can attract capital more easily than other types of businesses, they are better able to take advantage of growth opportunities.

[3]Under the new tax law and until January 1, 2026, pass-through entities (S corporations, partnerships, and proprietorships) can deduct 20% of their qualified business income (QBI), which is the net amount of income, gain, deduction, and loss with respect to the trade or business. QBI doesn't include investment-related income or loss. In 2020, this deduction phases out beginning at $163,300 of income for single taxpayers and $326,600 for couples filing jointly. While the lowered tax rate from 35% to 21% for C corporations is attractive, double taxation remains an issue for them. So if the bulk of the profits will be taken out of the business and distributed to owners rather than being reinvested in the business, a pass-through entity will be preferable. S corporations are still advantageous in many situations. For more details, refer to Nellie Akalp, "How the New Tax Law Will Affect Your Clients' S Corporations," *Accounting Today* (accountingtoday.com), February 6, 2018.

3. The value of an asset also depends on its liquidity, which means the time and effort it takes to sell the asset for cash at a fair market value. Because the stock of a corporation is easier to transfer to a potential buyer than is an interest in a proprietorship or partnership and because more investors are willing to invest in stocks than in partnerships (with their potential unlimited liability), a corporate investment is relatively liquid. This too enhances the value of a corporation.

SelfTest

What are the key differences among proprietorships, partnerships, and corporations?

How are LLCs and LLPs related to the other forms of organization?

What is an S corporation, and what is its advantage over a C corporation? Why don't firms such as IBM, GE, and Microsoft choose S corporation status?

What are some reasons why the value of a business other than a small one is generally maximized when it is organized as a corporation?

1-4 The Main Financial Goal: Creating Value for Investors

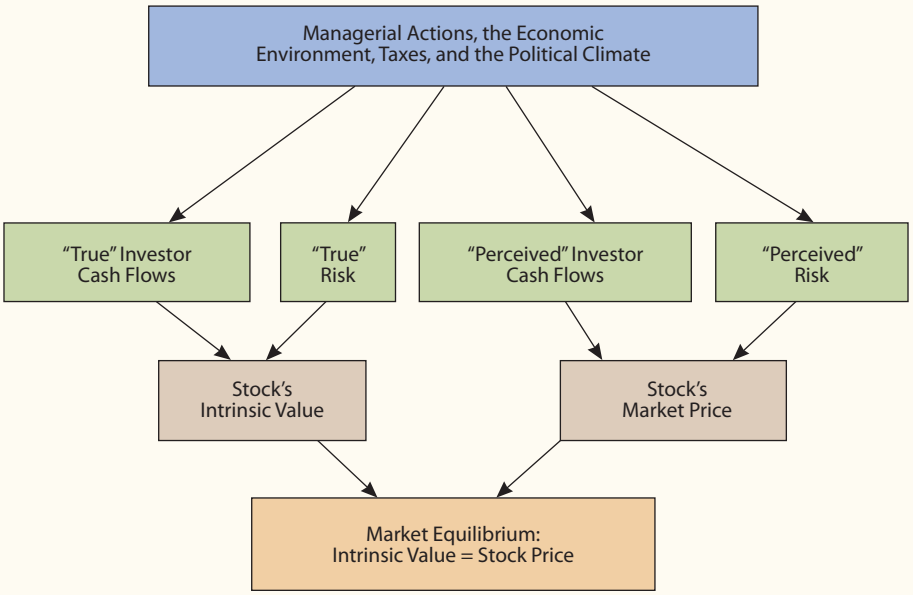
In public corporations, managers and employees work on behalf of the shareholders who own the business, and therefore they have an obligation to pursue policies that promote stockholder value. While many companies focus on maximizing a broad range of financial objectives, such as growth, earnings per share, and market share, these goals should not take precedence over the main financial goal, which is to create value for investors. Keep in mind that a company's stockholders are not just an abstract group—they represent individuals and organizations who have chosen to invest their hard-earned cash into the company and who are looking for a return on their investment in order to meet their long-term financial goals, which might be saving for retirement, a new home, or a child's education. In addition to financial goals, the firm also has nonfinancial goals, which we will discuss in Section 1-7.

If a manager is to maximize stockholder wealth, he or she must know how that wealth is determined. Throughout this book, we shall see that the value of any asset is the present value of the stream of cash flows that the asset provides to its owners over time. We discuss stock valuation in depth in Chapter 9, where we see that stock prices are based on cash flows expected in future years, not just in the current year. Thus, stock price maximization requires us to take a long-run view of operations. At the same time, managerial actions that affect a company's value may not immediately be reflected in the company's stock price.

1-4A DETERMINANTS OF VALUE

Figure 1.2 illustrates the situation. The top box indicates that managerial actions, combined with the economy, taxes, and political conditions, influence the level and riskiness of the company's future cash flows, which ultimately determine the company's stock price. As you might expect, investors like higher expected cash flows, but they dislike risk; so the larger the expected cash flows and the lower the perceived risk, the higher the stock's price.

FIGURE 1.2 Determinants of Intrinsic Values and Stock Prices



Intrinsic Value
An estimate of a stock's "true" value based on accurate risk and return data. The intrinsic value can be estimated, but not measured precisely.

Market Price
The stock value based on perceived but possibly incorrect information as seen by the marginal investor.

Marginal Investor
An investor whose views determine the actual stock price.

Equilibrium
The situation in which the actual market price equals the intrinsic value, so investors are indifferent between buying and selling a stock.

The second row of boxes differentiates what we call "true" expected cash flows and "true" risk from "perceived" cash flows and "perceived" risk. By "true," we mean the cash flows and risk that investors would expect if they had all of the information that existed about a company. "Perceived" means what investors expect, given the limited information they have. To illustrate, in early 2001, investors had information that caused them to think Enron was highly profitable and would enjoy high and rising future profits. They also thought that actual results would be close to the expected levels and hence that Enron's risk was low. However, true estimates of Enron's profits, which were known by its executives but not the investing public, were much lower; Enron's true situation was extremely risky.

The third row of boxes shows that each stock has an **intrinsic value**, which is an estimate of the stock's "true" value as calculated by a competent analyst who has the best available data, and a **market price**, which is the actual market price based on perceived but possibly incorrect information as seen by the **marginal investor**.[4] Not all investors agree, so it is the "marginal" investor who determines the actual price.

When a stock's actual market price is equal to its intrinsic value, the stock is in **equilibrium**, which is shown in the bottom box in Figure 1.2. When equilibrium exists, there is no pressure for a change in the stock's price. Market prices can—and do—differ from intrinsic values; eventually, however, as the future unfolds, the two values tend to converge.

[4]Investors at the margin are the ones who actually set stock prices. Some stockholders think that a stock at its current price is a good deal, and they would buy more if they had more money. Others think that the stock is priced too high, so they would not buy it unless the price dropped sharply. Still others think that the current stock price is about where it should be; so they would buy more if the price fell slightly, sell it if the price rose slightly, and maintain their current holdings unless something were to change. These are the marginal investors, and it is their view that determines the current stock price. We discuss this point in more depth in Chapter 9, where we discuss the stock market in detail.

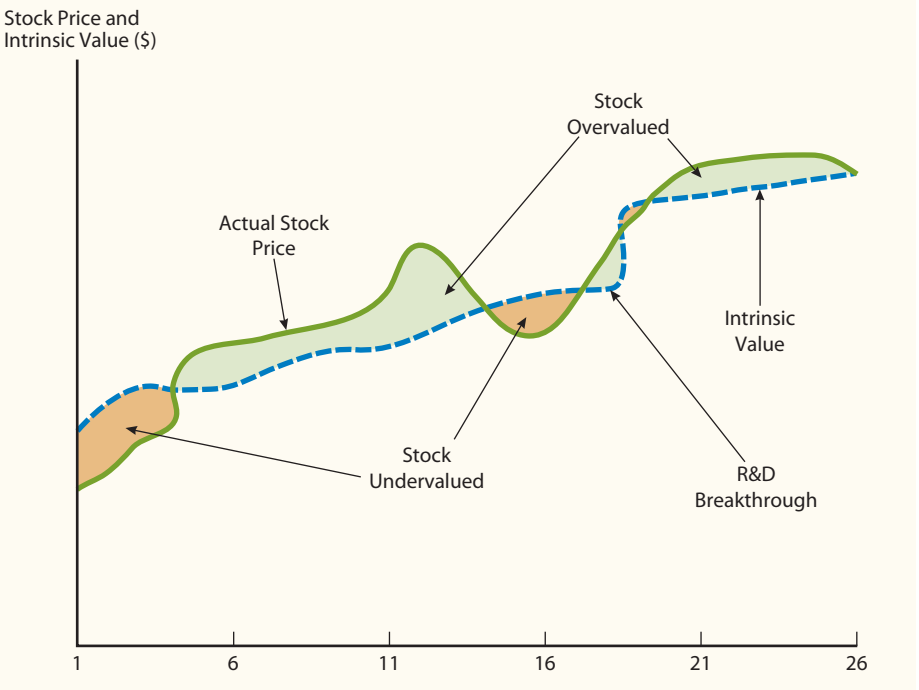
1-4B INTRINSIC VALUE

Actual stock prices are easy to determine—they can be found on the Internet and are published in newspapers every day. However, intrinsic values are estimates, and different analysts with different data and different views about the future form different estimates of a stock's intrinsic value. *Indeed, estimating intrinsic values is what security analysis is all about and is what distinguishes successful from unsuccessful investors.* Investing would be easy, profitable, and essentially riskless if we knew all stocks' intrinsic values—but, of course, we don't. We can estimate intrinsic values, but we can't be sure that we are right. A firm's managers have the best information about the firm's future prospects, so managers' estimates of intrinsic values are generally better than those of outside investors. However, even managers can be wrong.

Figure 1.3 graphs a hypothetical company's actual price and intrinsic value as estimated by its management over time.[5] The intrinsic value rises because the firm retains and reinvests earnings each year, which tends to increase profits. The value jumped dramatically in Year 20, when a research and development (R&D) breakthrough raised management's estimate of future profits before investors had this information. The actual stock price tended to move up and down with the estimated intrinsic value, but investor optimism and pessimism, along with imperfect knowledge about the true intrinsic value, led to deviations between the actual prices and intrinsic values.

Intrinsic value is a long-run concept. *Management's goal should be to take actions designed to maximize the firm's intrinsic value, not its current market price.*

FIGURE 1.3 Graph of Actual Prices versus Intrinsic Values



[5]We emphasize that the intrinsic value is an estimate and that different analysts have different estimates for a company at any given time. Managers should also estimate their firm's intrinsic value and then take actions to maximize that value. They should try to help outside security analysts improve their intrinsic value estimates by providing accurate information about the company's financial position and operations, but without releasing information that would help its competitors.

Note, though, that maximizing the intrinsic value will maximize the *average* price over the long run but not necessarily the current price at each point in time. For example, management might make an investment that lowers profits for the current year but raises expected future profits. If investors are not aware of the true situation, the stock price will be held down by the low current profit even though the intrinsic value was actually raised. Management should provide information that helps investors make better estimates of the firm's intrinsic value, which will keep the stock price closer to its equilibrium level. However, there are times when management cannot divulge the true situation because doing so would provide information that helps its competitors.[6]

1-4c CONSEQUENCES OF HAVING A SHORT-RUN FOCUS

Ideally, managers adhere to this long-run focus, but there are numerous examples in recent years where the focus for many companies shifted to the short run. Perhaps most notably, prior to the recent financial crisis, many Wall Street executives received huge bonuses for engaging in risky transactions that generated short-term profits. Subsequently, the value of these transactions collapsed, causing many of these Wall Street firms to seek a massive government bailout.

Apart from the recent problems on Wall Street, there have been other examples where managers have focused on short-run profits to the detriment of long-term value. For example, Wells Fargo implemented incentives to reward employees for signing up customers to new accounts. Unfortunately, to obtain bonuses some employees created fake accounts or signed up customers for unauthorized credit cards. This led to the firing of thousands of employees, as well as its CEO and other senior managers, and millions of dollars in fines for Wells Fargo. In addition, the Fed has limited Wells Fargo's growth so total assets are no greater than the year end 2017 total until the bank repairs its culture and cleans up its act. On February 21, 2020, Wells Fargo agreed to pay $3 billion to settle claims, including $500 million that will be returned to investors. Wells Fargo has eliminated all product-based sales goals, restructured its compensation, and strengthened customer consent and oversight systems.[7] With these types of concerns in mind, many academics and practitioners stress the need for boards and directors to establish effective procedures for **corporate governance**. This involves putting in place a set of rules and practices to ensure that managers act in shareholders' interests while also balancing the needs of other key constituencies such as customers, employees, and affected citizens. Having a strong, independent board of directors is viewed as an important component of strong governance.

Corporate Governance
Establishment of rules and practices by Board of Directors to ensure that managers act in shareholders' interests while balancing the needs of other key constituencies.

Effective governance requires holding managers accountable for poor performance and understanding the important role that executive compensation plays in encouraging managers to focus on the proper objectives. For example, if a manager's bonus is tied solely to this year's earnings, it would not be a surprise to discover that the manager took steps to pump up current earnings—even if those steps were detrimental to the firm's long-run value. With these concerns in mind, a growing number of companies have used stock and stock options as a key part of executive pay. The intent of structuring compensation in this way is for managers to think more like stockholders and to continually work to increase shareholder value.

[6]As we discuss in Chapter 2, many academics believe that stock prices embody all publicly available information—hence, that stock prices are typically reasonably close to their intrinsic values and thus at or close to equilibrium. However, almost no one doubts that managers have better information than the public at large, that at times stock prices and equilibrium values diverge, and thus that stocks can be temporarily undervalued or overvalued (as we suggest in Figure 1.3).

[7]Refer to Paul Davidson and Jessica Menton, "Wells Fargo to Pay $3B Settlement for Violating Antifraud Rules, Resolving Fake Account Probes," *USA Today* (usatoday.com), February 22, 2020.

Despite the best of intentions, stock-based compensation does not always work as planned. To give managers an incentive to focus on stock prices, stockholders (acting through boards of directors) awarded executives stock options that could be exercised on a specified future date. An executive could exercise the option on that date, receive stock, immediately sell it, and earn a profit. The profit was based on the stock price on the option exercise date, which led some managers to try to maximize the stock price on that specific date, not over the long run. That, in turn, led to some horrible abuses. Projects that looked good from a long-run perspective were turned down because they would penalize profits in the short run and thus lower the stock price on the option exercise day. Even worse, some managers deliberately overstated profits, temporarily boosted the stock price, exercised their options, sold the inflated stock, and left outside stockholders "holding the bag" when the true situation was revealed.

SelfTest

What's the difference between a stock's current market price and its intrinsic value?

Do stocks have known and "provable" intrinsic values, or might different people reach different conclusions about intrinsic values? Explain.

Should managers estimate intrinsic values or leave that to outside security analysts? Explain.

If a firm could maximize either its current market price or its intrinsic value, what would stockholders (as a group) want managers to do? Explain.

Should a firm's managers help investors improve their estimates of the firm's intrinsic value? Explain.

1-5 Stockholder–Manager Conflicts[8]

It has long been recognized that managers' personal goals may compete with shareholder wealth maximization. In particular, managers might be more interested in maximizing their own wealth than their stockholders' wealth; therefore, managers might pay themselves excessive salaries.

Effective executive compensation plans motivate managers to act in their stockholders' best interests. Useful motivational tools include (1) reasonable compensation packages, (2) firing of managers who don't perform well, and (3) the threat of hostile takeovers.

1-5A COMPENSATION PACKAGES

Compensation packages should be sufficient to attract and retain able managers, but they should not go beyond what is needed. Compensation policies need to be consistent over time. Also, compensation should be structured so that managers are rewarded on the basis of the stock's performance over the long run, not the stock's price on an option exercise date. This means that options (or direct stock awards) should be phased in over a number of years so that managers have an incentive

[8]Conflicts between stockholders and managers, which are discussed in this section, and conflicts between stockholders and debtholders, which are discussed in the next section, are studied under the heading of "agency theory" in finance literature. The classic work on agency theory is Michael C. Jensen and William H. Meckling, "Theory of the Firm, Managerial Behavior, Agency Costs, and Ownership Structure," *Journal of Financial Economics*, vol. 3, no. 4 (October 1976), pp. 305–360.