Intermediate Financial Management

13e

BRIGHAM

DAVES

Intermediate Financial Management

THIRTEENTH EDITION

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CENGAGE

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

CENGAGE

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13th Edition
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MindTap for ***Intermediate 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).

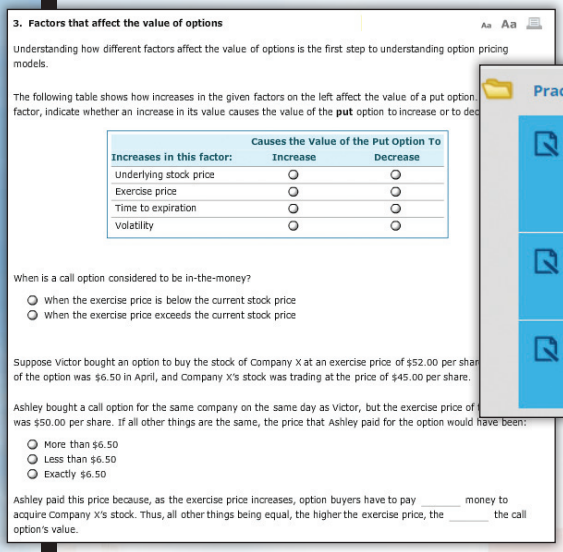
A DEDICATED TEAM, WHENEVER YOU NEED IT.

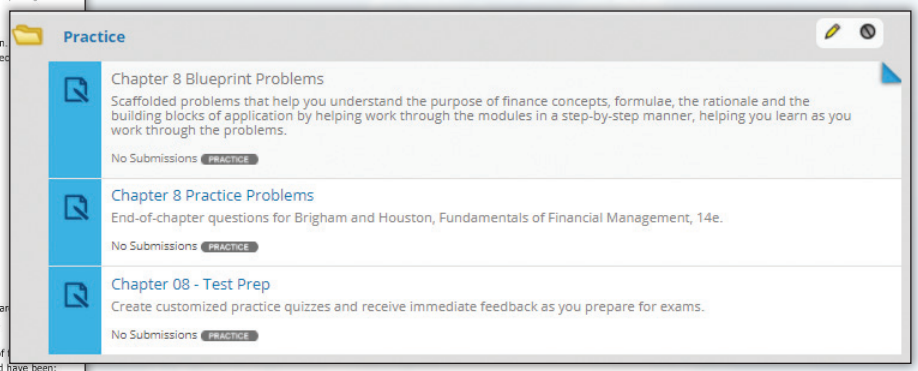
MindTap is backed by a personalized team eager to help you every step of the way. We'll help set up your course, tailor it to your specific objectives, and stand by to provide support.

Elevate Critical Thinking through a variety of unique Assessment Tools

PRACTICE PROBLEMS

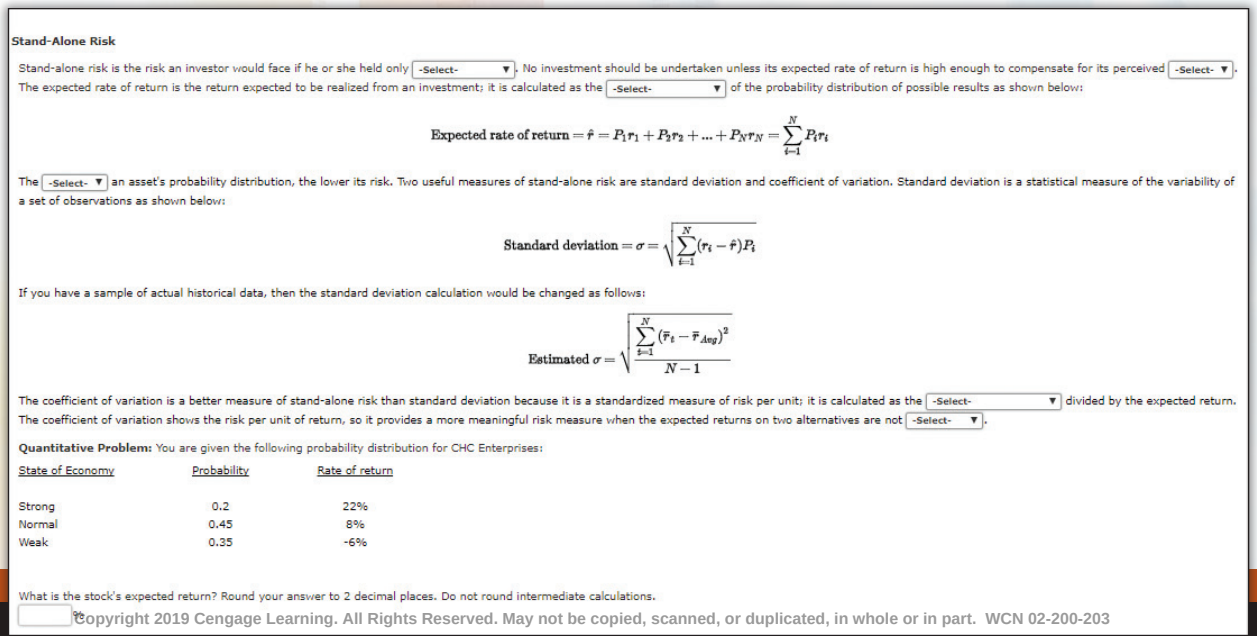
All of the end-of-chapter problems are available in algorithmic format for either student practice of applying content presented in the chapter or alternative graded assignment. MindTap is a highly customizable assessment delivery platform, so you can pick and choose from a large bank of algorithmic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





BLUEPRINT PRACTICE PROBLEMS

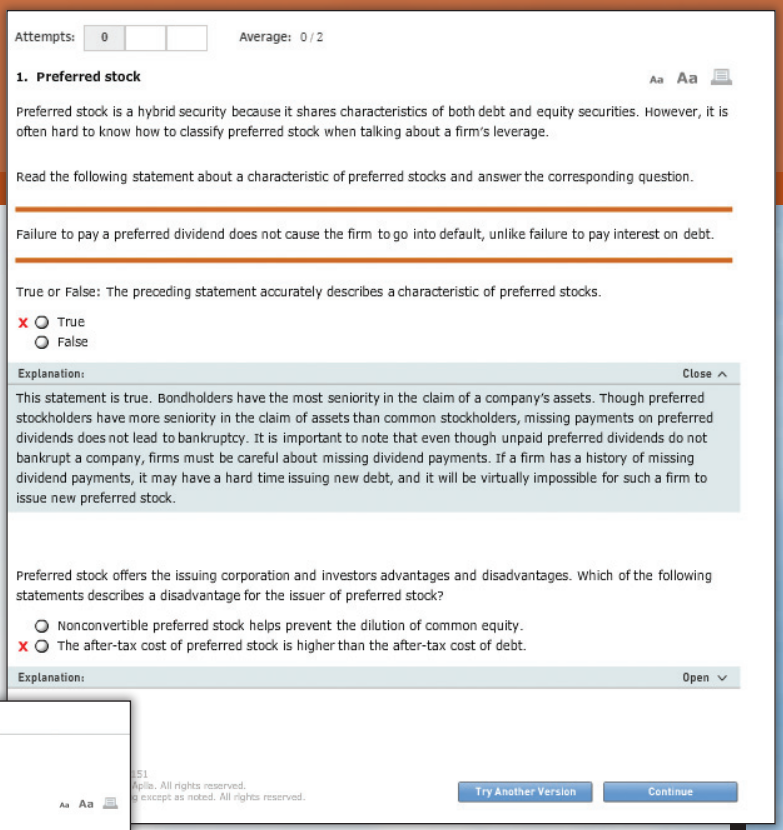
Blueprint Practice Problems combine conceptual and application-driven problems with a tutorial emphasis. Students will know with certainty their level of competency for every chapter, which will improve course outcomes.

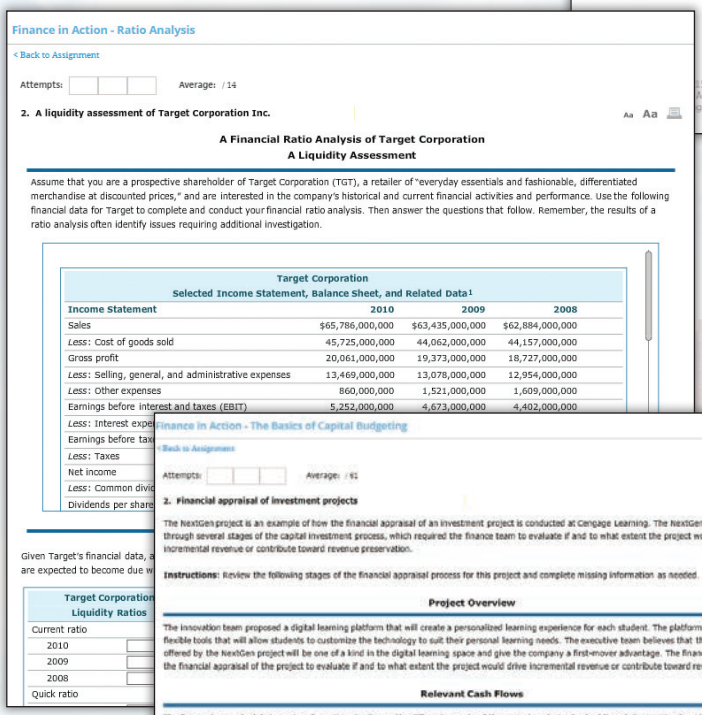


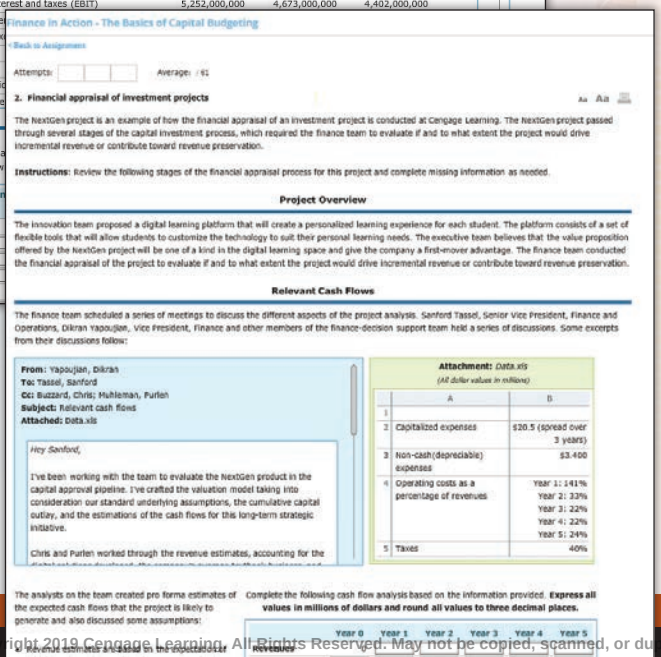
GRADED HOMEWORK

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.

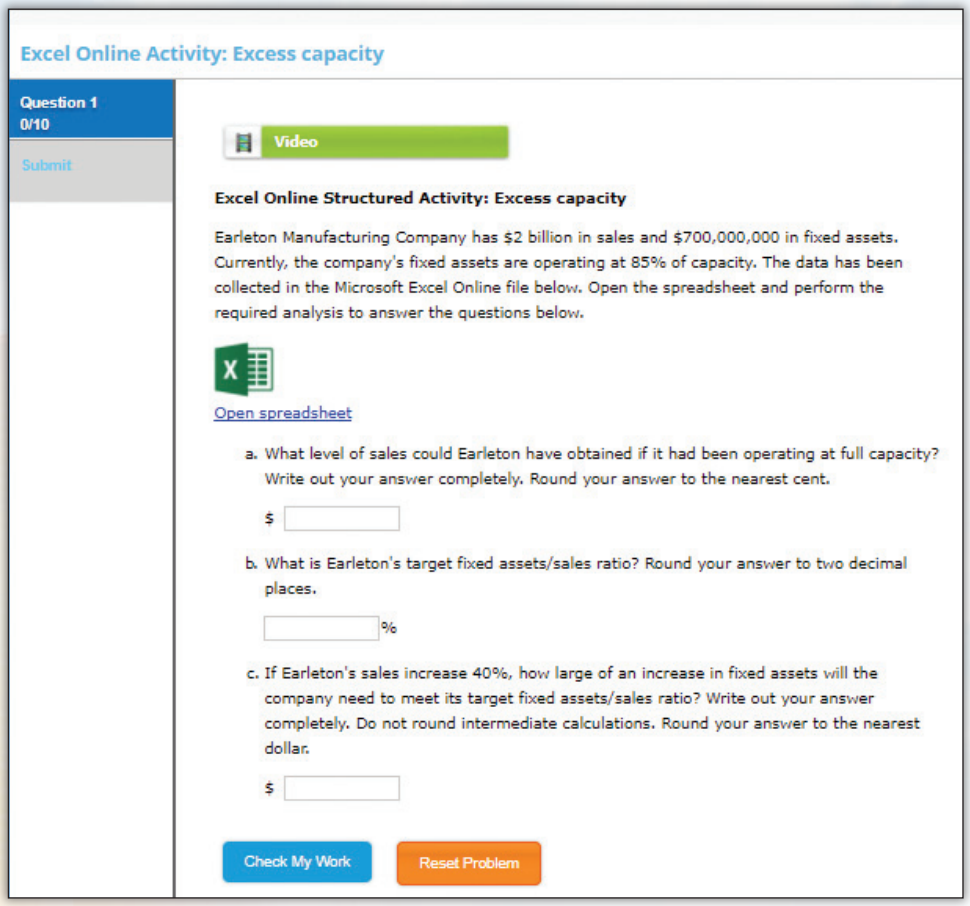
Building valuable Excel skills for future business careers **while making data-driven decisions**

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.

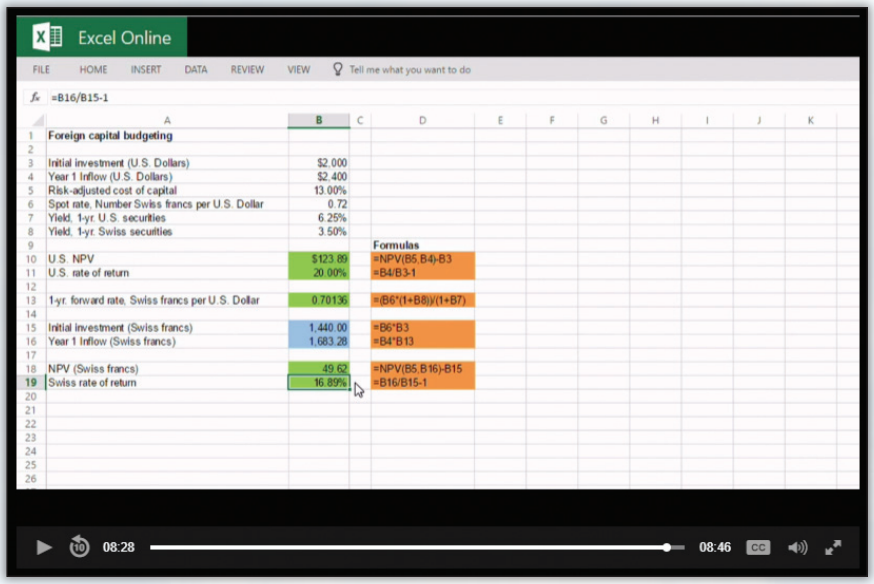
These new algorithmic activities offer pre-populated data directly in Microsoft Excel Online, which runs seamlessly on all major platforms and browsers. Students each receive their own version of the problem data in order to use Excel Online to perform the necessary financial analysis calculations. Their 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 *Intermediate Financial Management, 13e*. 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

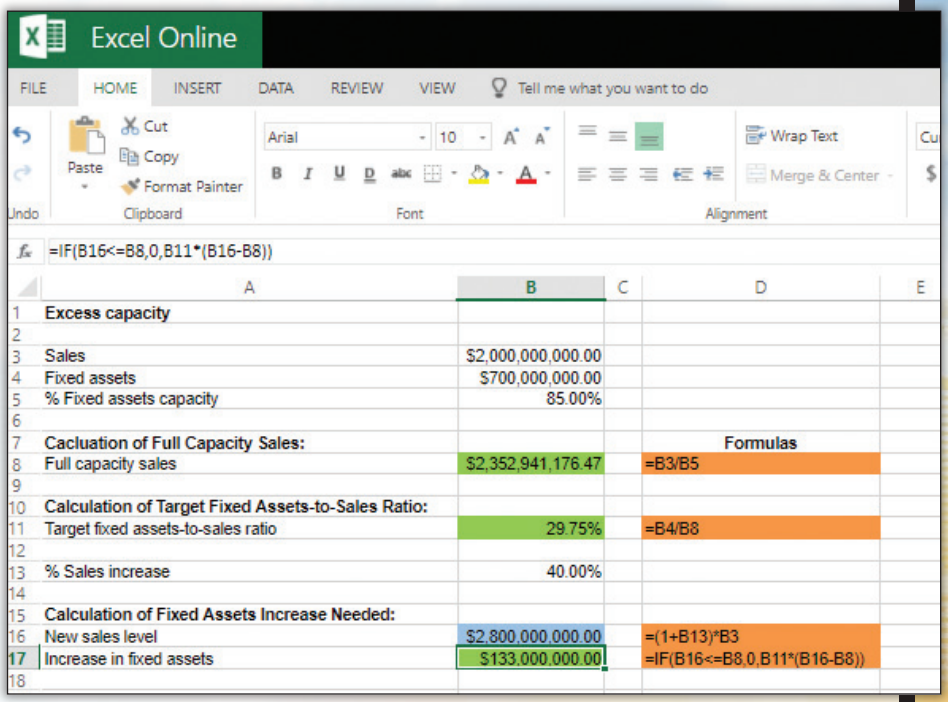


EXCEL VIDEO TIPS

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

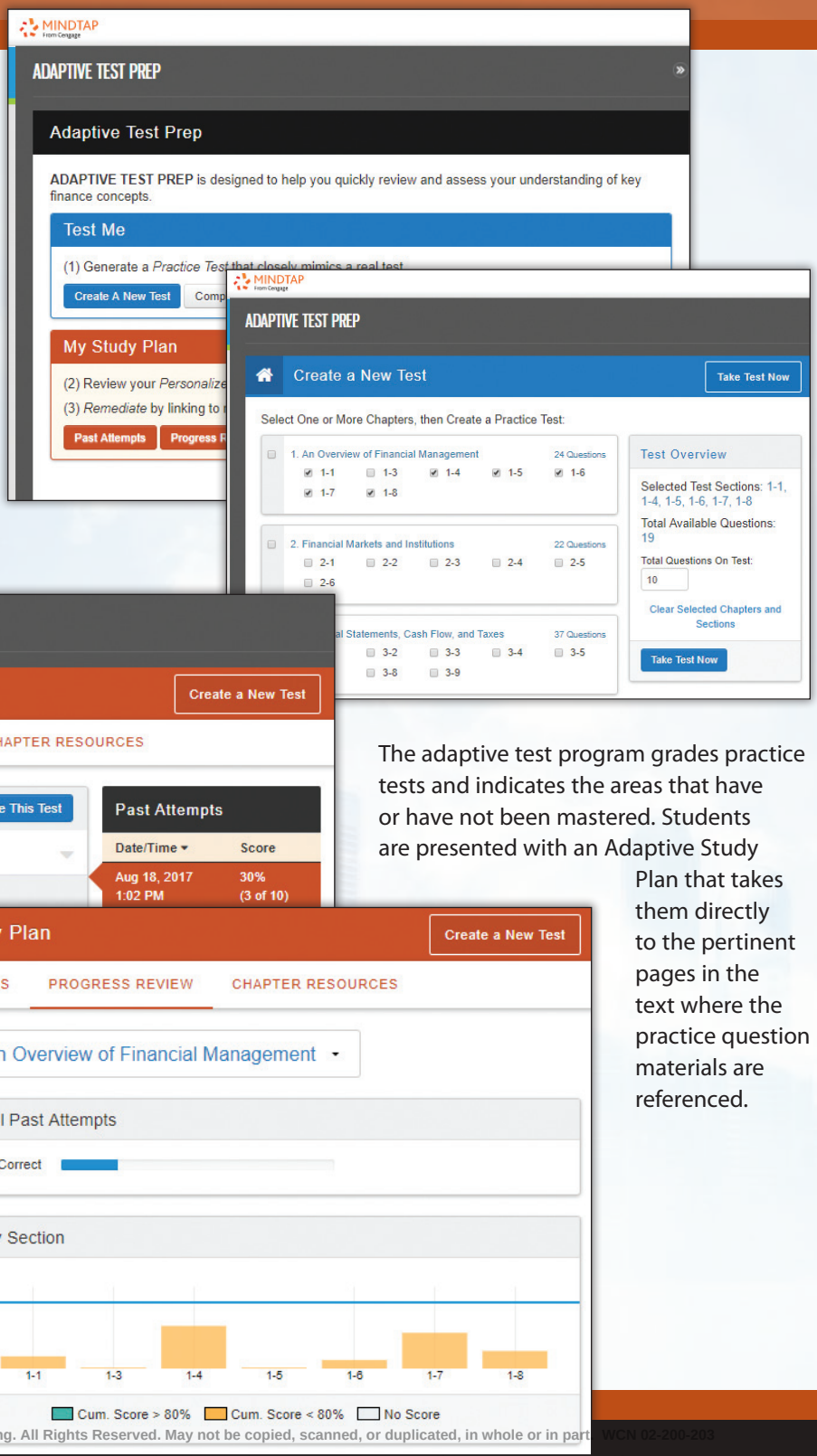
Each activity offers configurable displays that include the correct answers, the manual calculation steps, and an Excel solution (with suggested formulas) that matches the exact version of the problem the student received. Students can check their work against the correct solution to identify improvement 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.



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.

Question 9

Porter Inc.'s stock has an expected return of 12.25%, a beta of 1.25, and is in equilibrium. If the risk-free rate is 5.00%, what is the market risk premium?

- ✓ 5.80%
- ✗ 6.09%
- 6.40%
- 6.25%
- 5.95%

Feedback: Incorrect.

SML equation: $r_s = r_{RF} + b_{Stock} \times RP_M$

$12.25\% = 5.00\% + 1.25 \times RP_M$

$7.25\% = RP_M \times 1.25$

$5.80\% = RP_M$

See Section 8.3, Risk in a Portfolio Context: The CAPM.

Adaptive Test Prep Questions

CENGAGE Learning

Additional Resources

eReader

FEEDBACK IS KEY

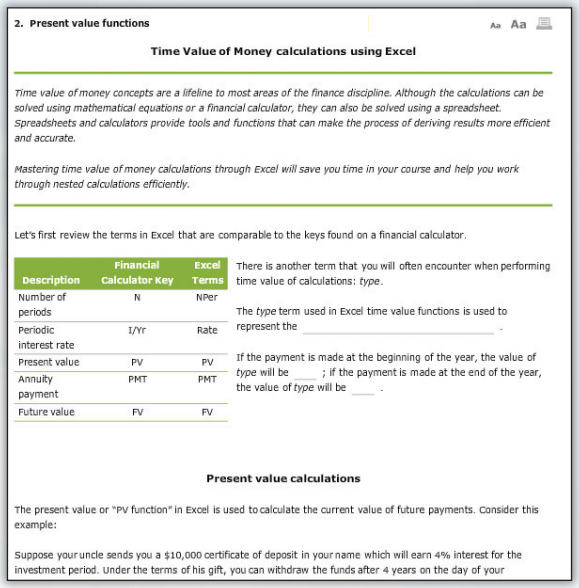
Students also receive robust explanations of the problems to assist in further understanding. Many of the quantitative test questions feature video feedback that offers students step-by-step instruction to reinforce their understanding and bolster their confidence.

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 *Intermediate 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 are available 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*.

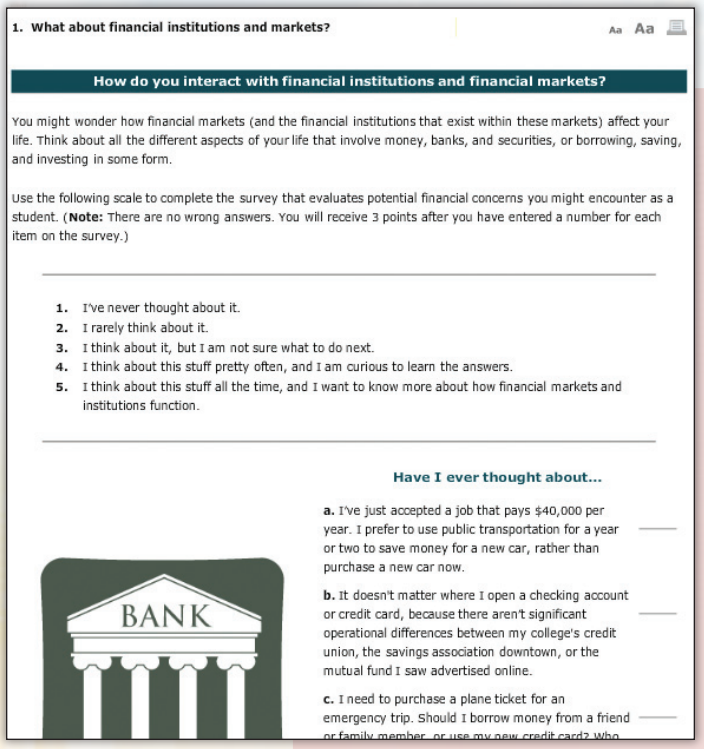
The *type* term used in Excel time value functions is used to represent the _____ .

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. ____

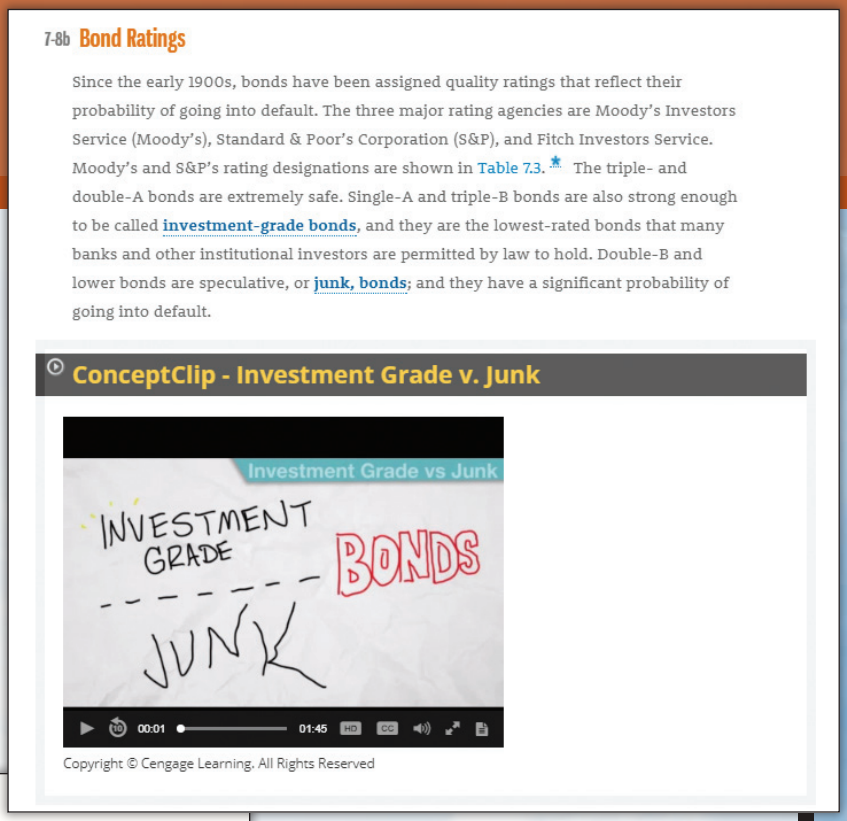
c. I need to purchase a plane ticket for an emergency trip. Should I borrow money from a friend or family member, or use my new credit card? Who ____

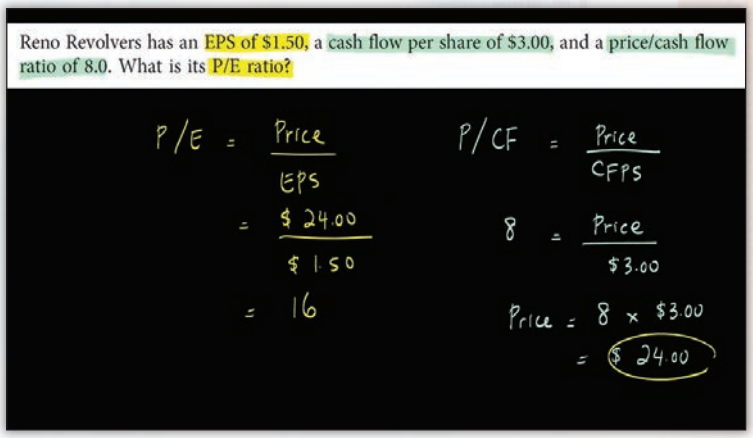
WHY IS THIS IMPORTANT TO ME?

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

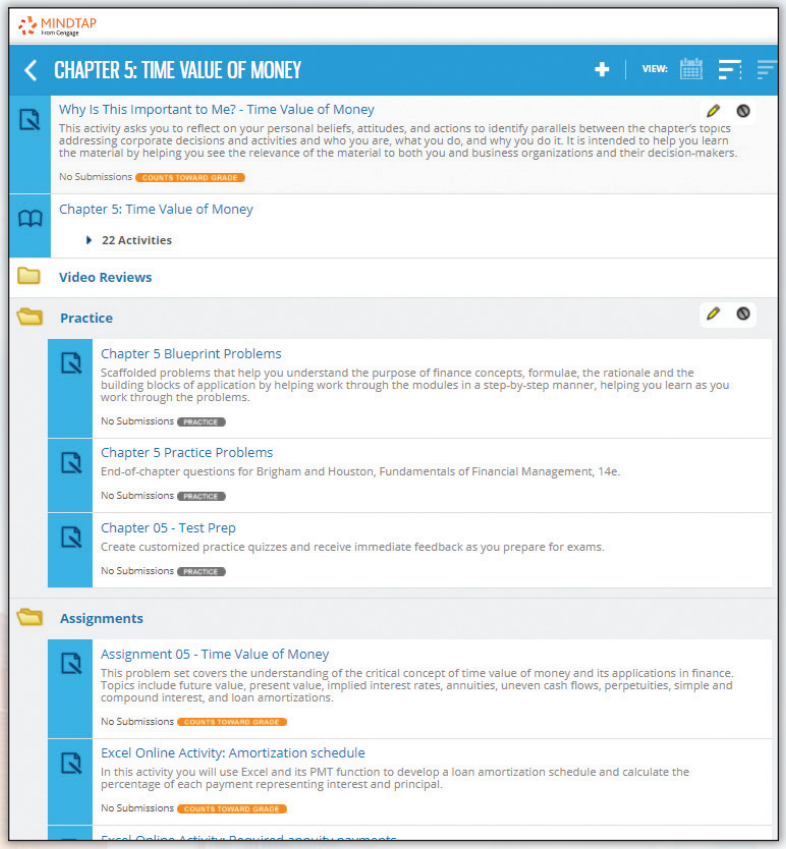
Embedded in the interactive MindTap Reader and linked to select problems in MindTap, Problem Walk-Through Videos provide step-by-step instructions designed to walk students through solving a problem from start to finish. Students can play and replay the tutorials as they work through homework assignments 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 *Intermediate Financial Management, 13e* 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

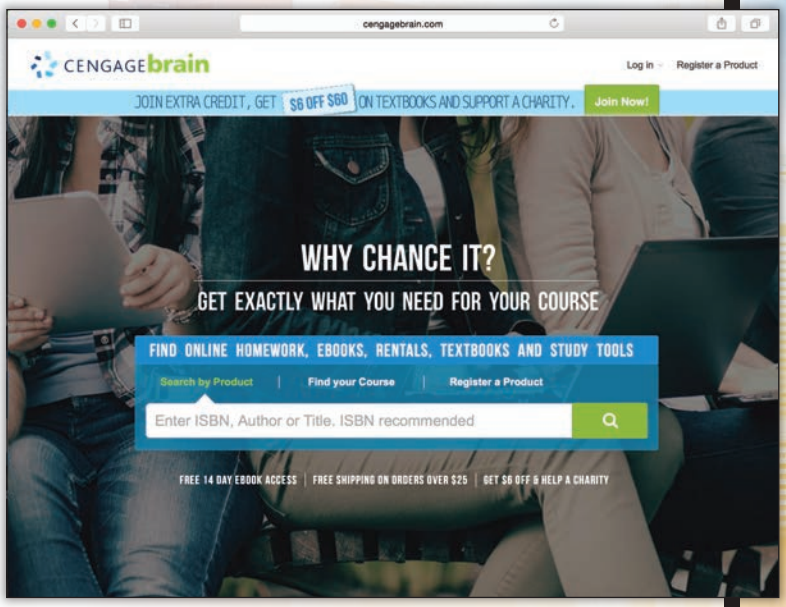
Students can instantly see their grades and how they are doing in the course. If they didn't do well on an assignment, they can implement the flashcards and practice quizzes for that chapter.

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).

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

WEB CHAPTERS & WEB EXTENSIONS

Students: Access the Web Chapters and Web Extensions by visiting **www.cengagebrain.com**, searching ISBN 9781285850030, and clicking "Access Now" under "Study Tools" to go to the student textbook companion site.

Instructors: Access the Web Chapters, Web Extensions, and other instructor resources by going to **www.cengage.com/login**, logging in with your faculty account username and password, and using ISBN 9781285850030 to search for and to add resources to your account "Bookshelf."

WEB CHAPTERS

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Web Chapters

Web Extensions

Preface

web

Students: Access the *Intermediate Financial Management 13e* companion site and online student resources by visiting **www.cengagebrain.com**, searching ISBN 9781285850030 and clicking "Access Now" under "Study Tools" to go to the student textbook companion site.

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Much has happened in finance recently. Years ago, when the body of knowledge was smaller, the fundamental principles could be covered in a one-term lecture course and then reinforced in a subsequent case course. This approach is no longer feasible. There is simply too much material to cover in one lecture course.

As the body of knowledge expanded, we and other instructors experienced increasing difficulties. Eventually, we reached these conclusions:

- The introductory course should be designed for all business students, not just for finance majors, and it should provide a broad overview of finance. Therefore, a text designed for the first course should cover key concepts but avoid confusing students by going beyond basic principles.
- Finance majors need a second course that provides not only greater depth on the core issues of valuation, capital budgeting, capital structure, cost of capital, and working capital management but also covers such special topics as mergers, multinational finance, leasing, risk management, and bankruptcy.
- This second course should also utilize cases that show how finance theory is used in practice to help make better financial decisions.

When we began teaching under the two-course structure, we tried two types of existing books, but neither worked well. First, there were books that emphasized theory, but they were unsatisfactory because students had difficulty seeing the usefulness of the theory and consequently were not motivated to learn it. Moreover, these books were of limited value in helping students deal with cases. Second, there were books designed primarily for the introductory MBA course that contained the required material, but they also contained too much introductory material. We eventually concluded that a new text was needed, one designed specifically for the second financial management course, and that led to the creation of *Intermediate Financial Management*, or *IFM* for short.

The Next Level: *Intermediate Financial Management*

In your introductory finance course, you learned basic terms and concepts. However, an intro course cannot make you "operational" in the sense of actually "doing" financial management. For one thing, introductory courses necessarily focus on individual chapters and even sections of chapters, and first-course exams generally consist of relatively simple problems plus short-answer questions. As a result, it is hard to get a good sense of how the various parts of financial management interact with one another. Second, there is not enough time in the intro course to allow students to set up and work out realistic problems, nor is there time to delve into actual cases that illustrate how finance theory is applied in practice.

Now it is time to move on. In *Intermediate Financial Management,* we first review materials that were covered in the introductory course, then take up new

material. The review is absolutely essential because no one can remember everything that was covered in the first course, yet all of the introductory material is essential for a good understanding of the more advanced material. Accordingly, we revisit topics such as the net present value (NPV) and internal rate of return (IRR) methods, but now we delve into them more deeply, considering how to streamline and automate the calculations, how to obtain the necessary data, and how errors in the data might affect the outcome. We also relate the topics covered in different chapters to one another, showing, for example, how cost of capital, capital structure, dividend policy, and capital budgeting combine forces to affect the firm's value.

Also, because spreadsheets such as *Excel,* not financial calculators, are used for most real-world calculations, students need to be proficient with spreadsheets so that they will be more marketable after graduation. Therefore, we explain how to do various types of financial analysis with *Excel*. Working with *Excel* has, in fact, two important benefits: (1) a knowledge of *Excel* is important in the workplace and the job market, and (2) setting up spreadsheet models and analyzing the results also provide useful insights into the implications of financial decisions.

Corporate Valuation as a Unifying Theme

Management's goal is to maximize firm value. Job candidates who understand the theoretical underpinning for value maximization and have the practical skills to analyze business decisions within this context make better, more valuable employees. Our goal is to provide you with both this theoretical underpinning and a practical skill set. To this end we have developed several integrating features that will help you to keep the big picture of value maximization in mind while you are honing your analytical skills:

- Every chapter starts off with a series of integrating *Beginning of Chapter Questions* that will help you place the material in the broader context of financial management.
- Most chapters have a valuation graphic and description that show exactly how the material relates to corporate valuation.
- Each chapter has a *Mini Case* that provides a business context for the material.
- Each chapter has an *Excel* spreadsheet *Tool Kit* that steps through all the calculations in the chapter.
- Each chapter has a spreadsheet *Build-a-Model* that steps you through constructing an *Excel* model to work problems. We've designed these features and tools so that you'll finish your course with the skills to analyze business decisions and the understanding of how these decisions impact corporate value.

Design of the Book

Based on more than 30 years working on *Intermediate Financial Management* and teaching the advanced undergraduate financial management course, we have concluded that the book should include the following features:

- *Completeness*. Because *IFM* is designed for finance majors, it should be self-contained and suitable for reference purposes. Therefore, we specifically and

purposely included: (a) some material that overlaps with introductory finance texts and (b) more material than can realistically be covered in a single course. We included in Chapters 2 through 5 some fundamental materials borrowed directly from other Cengage Learning texts. If an instructor chooses to cover this material, or if an individual student feels a need to cover it on his or her own, it is available. In other chapters, we included relatively brief reviews of first-course topics. This was necessary both to put *IFM* on a stand-alone basis and to help students who have a delay between their introductory and second financial management courses get up to speed before tackling new material. This review is particularly important for working capital management and such "special topics" as mergers, lease analysis, and convertibles—all of which are often either touched on only lightly or skipped in the introductory course. Thus, the variety of topics covered in the text provides adopters with a choice of materials for the second course, and students can use materials that were not covered for reference purposes. We note, though, that instructors must be careful not to bite off more than their students can chew.

- *Theory and applications*. Financial theory is useful to financial decision makers, both for the insights it provides and for direct application in several important decision areas. However, theory can seem sterile and pointless unless its usefulness is made clear. Therefore, in *IFM*, we present theory in a decision-making context, which motivates students by showing them how theory can lead to better decisions. The combination of theory and applications also makes the text more usable as a reference for case courses as well as for real-world decision making.
- *Computer orientation*. Today, a business that does not use computers in its financial planning is about as competitive as a student who tries to take a finance exam without a financial calculator. Throughout the text we provide computer spreadsheet examples for the calculations and spreadsheet problems for the students to work. This emphasis on spreadsheets both orients students to the business environment they will face upon graduation and helps them understand key financial concepts better.
- *Global perspective*. Successful businesses know that the world's economies are rapidly converging, that business is becoming globalized, and that it is difficult to remain competitive without being a global player. Even purely domestic firms cannot escape the influence of the global economy because international events have a significant effect on domestic interest rates and economic activity. All of this means that today's finance students—who are tomorrow's financial executives—must develop a global perspective. To this end, *IFM* also contains an entire chapter on multinational financial management. In addition, to help students "think global," we provide examples throughout the text that focus on the types of global problems companies face. Of course, we cannot make multinational finance experts out of students in a conventional corporate finance course, but we can help them recognize that insular decision making is insufficient in today's world.

Beginning-of-Chapter Questions

We start each chapter with several Beginning-of-Chapter (BOC) questions. You will be able to answer some of the questions before you even read the chapter, and you will be able to give better answers after you have read it. Other questions are harder,

and you won't feel truly comfortable answering them until after they have been discussed in class. We considered putting the questions at the ends of the chapters, but we concluded that they would best serve our purposes if placed at the beginning. Here is a summary of our thinking as we wrote the questions:

- The questions indicate to you the key issues covered in the chapter and the things you should know when you complete the chapter.
- Some of the questions were designed to help you remember terms and concepts that were covered in the introductory course. Others indicate where we will be going beyond the intro course.
- You need to be able to relate different parts of financial management to one another, so some of the BOC questions were designed to get you to think about how the various chapters are related to one another. These questions tend to be harder, and they can be answered more completely after a classroom discussion.
- You also need to think about how financial concepts are applied in the real world, so some of the BOC questions focus on the application of theories to the decision process. Again, complete answers to these questions require a good bit of thought and discussion.
- Some of the BOC questions are designed to help you see how *Excel* can be used to make better financial decisions. These questions have accompanying models that provide tutorials on *Excel* functions and commands. The completed models are available on the textbook's Web site. Going through them will help you learn how to use *Excel* as well as give you valuable insights into the financial issues covered in the chapter. We have also provided an "*Excel* Tool Locater," which is an index of all of the *Excel* skills that the BOC models go over. This index is in the *Excel* file, ***Excel Locations.xls.*** Because recruiters like students who are good with *Excel,* this will also help you as you look for a good job. It will also help you succeed once you are in the workplace.

We personally have used the BOC questions in several different ways:

- In some classes we simply told students to use the BOC questions or not, as they wished. Some students did study them and retrieve the *Excel* models from the Web, but many just ignored them.
- We have also assigned selected BOC questions and then used them, along with the related *Excel* models, as the basis for some of our lectures.
- Most recently, we literally built our course around the BOC questions.[1] Here we informed students on day one that we would start each class by calling on them randomly and grading them on their answers.[2] We also informed them that our exams would be taken verbatim from the BOC questions. They complained a bit about the quizzes, but the students' course evaluations stated that the quizzes should be continued because without them they would have come to class less well prepared and hence would have learned much less than they did.

[1]In fact, we broke our course into two segments, one where we covered selected text chapters and another where we covered cases that were related to and illustrated the text chapters. For the case portion of the course, students made presentations and discussed the cases. All the cases required them to use *Excel*.

[2]Most of our students were graduating seniors who were interviewing for jobs. We excused them from class (and the quizzes) if they informed us by e-mail before class that they were interviewing.

- The best way to prepare for the course as we taught it was by first reading the questions, then reading the chapter, and then writing out notes outlining answers to the questions in preparation for the oral quiz. We expected students to give complete answers to "easy" questions, but we gave them good grades if they could say enough about the harder questions to demonstrate that they had thought about how to answer them. We would then discuss the harder questions in lieu of a straight lecture, going into the related *Excel* models both to explain *Excel* features and to provide insights into different issues.
- Our midterm and final exams consisted of five of the harder BOC questions, of which three had to be answered in 2 hours in an essay format. It took a much more complete answer to earn a good grade than would have been required on the oral quizzes. We also allowed students to use a four-page "cheat sheet" on the exams.[3] That reduced time spent trying to memorize things as opposed to understanding them. Also, students told us that making up the cheat sheets was a great way to study.

Major Changes in the Thirteenth Edition

As in every revision, we updated and clarified sections throughout the text. Specifically, we also made the following changes in content:

References to, implications of, and explanations for the global economic crisis. We have continued discussing the financial crisis that began in 2007. We renamed this the "Great Recession of 2007" since its implications persisted well past the financial crisis and we have included more material focusing on the issues related to this recession.

Additional integration of the textbook and the accompanying *Excel Tool Kit* spreadsheet models for each chapter. Many figures in the textbook are actually screen shots from the chapter's *Excel* ***Tool Kit*** model. This serves two purposes. First, it makes the analysis more transparent to the student; the student or instructor can go to the ***Tool Kit*** and see exactly how all of the numbers in a figure were calculated. Second, it provides an additional resource for students and instructors to use in learning Excel.

Improvements in the MicroDrive Examples. 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. We have continued to improve the integration, especially in the corporate valuation material.

Significant Changes in Selected Chapters

We made many small improvements within each chapter; some of the more notable ones are discussed as follows.

[3]We did require that students make up their own "cheat sheets," and we required them to turn their sheets in with their exams so we could check for independence.

Chapter 1: An Overview of Financial Management and the Financial Environment Because financial markets have changed so dramatically over the past 15 years, we felt it was important to include a completely updated section on financial markets with special emphasis on the developments in the equities secondary markets. We discuss the types of markets, automated trading, Reg NMS and quotes, and high-frequency trading. We added boxes on B-corporations and whistleblowing.

Chapter 3: Risk and Return: Part II In Chapter 2, we estimate General Electric's beta using 4 years of monthly returns. In this chapter, we estimate betas using 1 year of weekly returns because this is another widely used approach. In addition to this change, we are using Apple, a high-tech company, to illustrate the estimation techniques for an individual company.

Chapter 4: Bond Valuation We revised our presentation of the real risk-free rate and of the nominal rate. We also added a box on a special kind of bond whose payments are in chocolate, "Chocolate Bonds."

Chapter 6: Accounting for Financial Management We moved the introduction of the operating profitability ratio and the capital requirement ratio from later chapters to this chapter and included their discussion in the material on the return on invested capital. This enabled our expanded discussion of free cash flow and valuation in Chapter 8.

Chapter 8: Basic Stock Valuation Last edition, we substantially restructured the chapter on stock valuation to begin with free cash flow valuation and to treat the dividend growth model as a special case. We continued with this restructuring in this edition by including the valuation of MicroDrive here rather than in the financial planning chapter and by incorporating some basic forecasting material to support the valuation concepts. This allows us to emphasize valuation and value-based management earlier in the text. We have focused on free cash flow valuation and value-based management in our classroom for several years with great success, and this change makes the basic stock valuation chapter fully consistent with our focus.

Chapter 9: Corporate Valuation and Financial Planning We moved some of the introductory forecasting material to the Basic Stock Valuation chapter and expanded our coverage of valuation. We included an additional Spreadsheet Problem on valuation. We did this to reinforce our treatment of valuation in Chapter 8.

Chapter 13: Capital Budgeting: Estimating Cash Flow and Analyzing Risk We added a new box, "Mistakes in Cash Flow Estimation Can Kill Innovation," describing common mistakes in project analysis.

Chapter 16: Capital Structure Decisions We moved the material on viewing equity in a company with risky debt as an option into this chapter from Chapter 17 on dynamic capital structures because such analysis has become mainstream. We also added coverage of the debt maturity choice along with some recent empirical evidence on the move away from long-term debt. The proofs of the Modigliani and Miller theorems are now in the self-contained ***Web Extension 16B***, and we have provided a PowerPoint file with these proofs.

Chapter 17: Dynamic Capital Structures We streamlined this chapter substantially. It is now focused on valuation issues associated with the interest tax shield, including cases in which the capital structure changes during the forecast period. We provide a brief review of the free cash flow corporate valuation model, we describe the free cash flow to equity (FCFE) valuation model, and we show that these models are inappropriate for situations in which the capital structure is changing. We describe a very general version of the adjusted present value (APV) approach and show how it can be used when the capital structure is changing. This provides a natural segue into the compressed adjusted present value (CAPV) model, in which the tax shield is discounted at the unlevered cost of equity.

We illustrate the valuation concepts using a hypothetical company, Tutwiler Controls. (We use this same company in Chapter 26 as the target of an acquisition, except we then include synergies and a different capital structure.) Discussing Tutwiler's valuation here permits a natural extension into merger-related issues in Chapter 26.

As noted previously, we moved the material on viewing equity as an option on the assets of a levered firm to Chapter 16. We moved the MM proofs (including PowerPoint slides) into Chapter 16 as a new Web extension, ***Web Extension 16B***. This consolidates important capital structure concepts in Chapter 16 and permits this chapter to focus on valuation issues associated with capital structures.

Chapter 18: Initial Public Offerings, Investment Banking, and Financial Restructuring We added a new Spreadsheet Problem on setting IPO terms.

Chapter 19: Lease Financing We revised the discussion of the accounting effects of leasing to accommodate Accounting Standards Update 2016-02, which essentially requires that all leases be capitalized. We added a new ***Web Extension 19D*** that discusses how leases are capitalized.

Chapter 21: Supply Chains and Working Capital Management We revised our discussion of the cash conversion cycle by simplifying the example. We also reorganized the subsequent material on inventory management, receivables management, and payables management to reinforce the cash conversion cycle principles. We added a new section (21-9a) that explains the U.S. payment, clearing, and settlement infrastructure. We added a box on the recent phenomenon of banks charging corporate customers for cash deposit accounts, "Use It or Lose Part of It: Cash Can Be Costly!" We also added ***Web Extension 21B*** on supply chain finance.

Chapter 26: Mergers, LBOs, Divestitures, and Holding Companies We moved the comparison of the FCF corporate valuation model, the free cash flow to equity model, and the compressed adjusted present value model to Chapter 17, allowing us to focus more on merger analysis in this chapter rather than on the development of valuation models.

Chapter 27: Multinational Financial Management We reworked the material on exchange rate quotes to be more clear and to have more of a business focus rather than a tourist focus. We also expanded the material on exchange rate appreciation and depreciation. We added material on currencies that are not readily convertible or that have restrictions on conversion. We incorporated more discussion of how

central governments manage their currencies and the different characteristics of sovereign debt.

Test Bank The instructor's test bank has been updated and revised with many new questions and problems.

Other Ways the Book Can Be Used

The second corporate finance course can be taught in a variety of other ways, depending on a school's curriculum structure and the instructor's personal preferences. We have been focusing on the BOC questions and discussions, but we have used alternative formats, and all can work out very nicely. Therefore, we designed the book so that it can be flexible.

Mini Cases as a framework for lectures.
We originally wrote the Mini Cases specifically for use in class. We had students read the chapter and the Mini Case, and then we systematically went through it in class to "explain" the chapter. (See the section titled "The Instructional Package" later in this Preface for a discussion of lecture aids available from Cengage Learning.) Here we use a *PowerPoint* slide show, which is located on the instructor's Web site, and which we make available to students on our own course Web site. Students bring a printout of the slides to class, which makes it easier to take good notes. Generally, it takes us about two hours to frame the issues with the opening questions and then go through a Mini Case, so we allocate that much time. We want to facilitate questions and class discussion, and the Mini Case format stimulates both.

The Mini Cases themselves provide case content, so it is not as necessary to use regular cases as it would be if we used lectures based entirely on text chapters. Still, we like to use a number of the free-standing cases that are available from CengageCompose, Cengage Learning's online case library, at **http://compose.cengage.com,** and we have teams of students present their findings in class. The presenters play the role of consultants teaching newly hired corporate staff members (the rest of the class) how to analyze a particular problem, and we as instructors play the role of "chief consultant"—normally silent but available to answer questions if the student "consultants" don't know the answers (which is rare). We use this format because it is more realistic to have students think about *how to analyze* problems than to focus on the final decision, which is really the job of corporate executives with far more experience than undergraduate students.

To ensure that nonpresenting students actually study the case, we call on them randomly before the presentation begins, we grade them on class participation, and our exams are patterned closely after the material in the cases. Therefore, nonpresenting students have an incentive to study and understand the cases and to participate when the cases are discussed in class. This format has worked well, and we have obtained excellent results with a relatively small amount of preparation time. Indeed, some of our PhD students with no previous teaching experience have taught the course entirely on their own, following our outline and format, and have also obtained excellent results.

An emphasis on basic material.
If students have not gained a thorough understanding of the basic concepts from their earlier finance courses, instructors may want to place more emphasis on the

basics and thus cover Chapters 2 through 5 in detail rather than merely as a review. We even provide a chapter (Web Chapter 28) on time value of money skills on the textbook's Web site for students who need an even more complete review. Then, Chapters 6 through 17 can be covered in detail, and any remaining time can be used to cover some of the other chapters. This approach gives students a sound background on the core of financial management, but it does not leave sufficient time to cover a number of interesting and important topics. Because the book is written in a modular format, if students understand the fundamental core topics, they should be able to cover the remaining chapters on their own, if and when the need arises.

A case-based course.
At the other extreme, where students have an exceptionally good background, hence little need to review topics that were covered in the basic finance course, instructors can spend less time on the early chapters and concentrate on advanced topics. When we take this approach, we assign Web Chapter 29 as a quick review and then assign cases that deal with the topics covered in the early chapters. We tell students to review the other relevant chapters on their own to the extent necessary to work the cases, thus freeing up class time for the more advanced material. This approach works best with relatively mature students, including evening students with some business experience.

Comprehensive Learning Solutions

Intermediate Financial Management includes a broad range of ancillary materials designed both to enhance students' learning and to help instructors prepare for and conduct classes.

Supplemental Student Resources

Students: Access all of the following resources by visiting **www.cengagebrain.com**, searching ISBN 9781337395083, and clicking "Access Now" under "Study Tools" to go to the student textbook companion site.

Beginning-of-Chapter (BOC) spreadsheets. Many of the integrative questions that appear at the start of each chapter have a spreadsheet model that illustrates the topic. There is also an index of the *Excel* techniques covered in the BOC *Excel* models. This index is in the *Excel* file, Excel Locations.xls, and it provides a quick way to locate examples of *Excel* programming techniques

End-of-chapter Build-a-Model spreadsheet problems. In addition to the Tool Kits and Beginning-of-Chapter models, most chapters have a "Build a Model" Spreadsheet Problem. These spreadsheets contain financial data plus instructions for solving a particular problem. The model is partially completed, with headings but no formulas, so the models must literally be built. The partially completed spreadsheets for these Build-a-Model problems are on the student companion Web site, with the completed versions available to instructors.

Mini Case spreadsheets. These *Excel* spreadsheets do all the calculations required in the Mini Cases. They are similar to the Tool Kits for the chapter, except (a) the

numbers in the examples correspond to the Mini Case rather than to the chapter per se, and (b) there are some features that make it possible to do what-if analyses on a real-time basis in class.

Web Chapters and Web Extensions. Web chapters provide a chapter-length discussion of specialized topics that are not of sufficient general interest to warrant inclusion in the printed version of the text. Web extensions provide additional discussion or examples pertaining to material that is in the text.

Instructor Resources

Instructors: Access the preceding chapter resources and the following instructor ancillaries by going to **www.cengage.com/login**, logging in with your faculty account username and password, and using ISBN 9781337395083 to search for and to add resources to your account "Bookshelf."

- ***Instructor's Manual.*** This comprehensive manual contains answers to all the Beginning-of-Chapter Questions, end-of-chapter questions and problems, and Mini Cases.
- ***PowerPoint®* slides.** Created by the authors, the PowerPoint® slides cover essential topics for each chapter. Graphs, tables, and lists are developed sequentially for your convenience and can be easily modified for your needs. There are *also* slides that are specifically based on each chapter's Mini Case and in which graphs, tables, lists, and calculations are developed sequentially.
- ***Test Bank.*** The *Test Bank* contains more than 1,200 class-tested questions and problems. Information regarding the topic and degree of difficulty, along with the complete solution for all numerical problems, is provided with each question.

Digital Course Solutions

MINDTAP From Cengage MindTap™ for ***Intermediate Financial Management.***

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. 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. Instructors can personalize the Learning Path for their students by customizing the robust suite of the Brigham/Daves 13e resources and adding their own content via apps that integrate into the MindTap™ framework seamlessly with Learning Management Systems.

Preparing for Finance

Students are more confident and prepared when they have the opportunity to brush up their knowledge of the prerequisite concepts required to be successful in finance. Available via MindTap™, Preparing for Finance offers tutorials/problems to review

the prerequisite concepts students should know. Topics covered include accounting, economics, mathematics, and statistics, as well as coverage of various financial calculators and *Excel*.

Blueprint Problems

Blueprint Practice Problems available in MindTap™ teach students the 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.

Concept Clips

Embedded throughout the interactive eReader, finance Concept Clips 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.

Problem Walk-Throughs

Nearly 200 Problem Walk-Through videos are embedded in the online, algorithmic End-of-Chapter problems, including over 100 videos new to this edition developed by Burhan Kawosa of Wright State University. 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.

Excel Online

Using Microsoft *Excel* to set up and solve practical finance problems is a skill that hiring firms often expect from business school graduates. **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 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.

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, 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™.

Finance in Action

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

Cognero™ Testing Software

Cognero™ Test Bank. 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 now available via **CengageCompose, Cengage Learning's online case library**, and new cases are added every year. 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.**

The Cengage Global Economic Watch (GEW) Resource Center. This is your source for turning today's challenges into tomorrow's solutions. This online portal houses the most current and up-to-date content concerning the economic crisis. Organized by discipline, the GEW Resource Center offers the solutions that instructors and students need in an easy-to-use format. Included are an overview and timeline of the historical events leading up to the crisis, links to the latest news and resources, discussion and testing content, an instructor feedback forum, and global issues database. Visit **www.cengage.com/thewatch** for more information.

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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 listed above, 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 *Intermediate Financial Management*. 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 very much to detect those errors that may have slipped by to correct them in subsequent printings, we decided to offer a reward of $10 per error to the first person who reports it to us. For purposes 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 in opinion regarding grammatical or punctuation conventions do not qualify for this reward. Finally, any qualifying error that has follow-through effects is counted as two errors only. Please report any errors to Phillip Daves at the following email address: pdaves@utk.edu.

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, financial management 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 this makes financial management stimulating and exciting, but also challenging and sometimes perplexing. We sincerely hope that the Thirteenth Edition of *Intermediate Financial Management* will help you understand the financial problems faced by businesses today, as well as the best ways to solve those problems.

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PART 1

Fundamental Concepts of Corporate Finance

CHAPTER 1

An Overview of Financial Management and the Financial Environment

This book is designed to explain what financial management is all about and to show how it can be used to help increase the value of a firm. It is intended for use in a second-level finance course, following the introductory course. Only the basic course is prerequisite, so if students have taken other finance courses, especially on investments or capital markets, they will find some of the material a review.

The book is often used in a capstone course taken during the last term before graduation. This is an exhilarating time for students, with graduation looming and a job search under way. It is also a good time to step back from the technical skills developed in the classroom and to look at the big picture of why financial management is so important. Spending the time now to develop a good overview of financial management can be tremendously valuable to your career. Why is financial management so valuable? Because, in a nutshell, it explains both how managers can increase their firms' value and why it is essential for them to do so.

Today's business environment is more complicated than ever. Investors are increasingly forcing managers to focus on value maximization, but the Volkswagen/Audi diesel emission scandal, the unauthorized customer accounts opened by Wells Fargo and Company, and the root causes of the Great Recession of 2007 show that ethical behavior and managerial accountability are crucial prerequisites. Mastering the technical details of financial management and understanding its role within the firm is important to graduating students because companies want to hire people who can make decisions with the broad corporate goal of value maximization in mind. Therefore, students who understand the principles of value maximization have a major advantage in

the job market over students who do not. Demonstrating that you understand all this can make a big difference in both the quality of your initial job and your subsequent career path.

BEGINNING-OF-CHAPTER QUESTIONS

As you read the chapter, consider how you would answer the following questions. You *should not* necessarily be able to answer the questions before you read the chapter. Rather, you should use them to get a sense of the issues covered in the chapter. After reading the chapter, you should be able to give at least partial answers to the questions, and you should be able to give better answers after the chapter has been discussed in class. Note, too, that it is often useful, when answering conceptual questions, to use hypothetical data to illustrate your answer. For example, your answer to Question 2 would probably be better if it were illustrated with numbers. We have done this, using *Excel*; our model is available on the textbook's Web site. A useful exercise is to access the model and work through it.

1. What is presumed to be the *primary objective* of financial management? How is this goal related to other societal goals and considerations? Is this goal consistent with the basic assumptions of microeconomics? Are managers' actions always consistent with this goal?
2. Finance is all about **valuation**—how to estimate asset values and what to do to increase them. We develop and use *Excel* models throughout the book. We start that process in this chapter with simple models used to value bonds, stocks, and capital budgeting projects. Working through the model will give you a refresher in valuation plus a refresher on (or preview of) *Excel*. The model can be accessed on the textbook's Web site.
   a. Explain how to find the value of a bond given the rate of interest it pays (its coupon rate), its par value (assume $1,000), and the going rate of interest on bonds with the same risk and maturity.
   b. Explain how to find the value of a stock given its last dividend, its expected growth rate, and its required rate of return.
   c. Explain how to find the value of a capital budgeting project given its cost, its expected annual net cash flows, its life, and its cost of capital.
   d. In each of these cases, discuss how changes in the inputs would affect the output. Would it matter if the outputs were highly sensitive to changes in the inputs?
3. What are the advantages of the corporate form over a sole proprietorship or a partnership? What are the disadvantages of this form?
4. What are the various factors that affect the cost of money and hence interest rates? How will changes in these components affect asset prices?
5. Are most stocks traded on face-to-face exchanges or electronically? What impact has this had on retail stock transactions? On portfolio management?
6. What is securitization? How is securitization supposed to help banks and S&Ls manage risks and increase homeowners' access to capital?
7. What was the Great Recession of 2007? This is a really big question, so specifically, explain how in our interconnected global economy a decrease in housing prices in large U.S. cities ended up bankrupting Norwegian retirees.

1-1 Introduction

In your introductory finance course, you learned a number of terms and concepts, and you now have an idea of what financial management is all about. However, you probably focused on individual chapters, or sections of chapters, and you probably prepared for exams that consisted of relatively simple problems and short-answer

resource

Visit the textbook's Web site. This ever-evolving site, for students and instructors, is a tool for teaching, learning, financial research, and job searches.

questions, often given in a multiple-choice format. That was a necessary part of the learning process, but now it is time to move on.

In *Intermediate Financial Management,* we go back over much of what you covered in the introductory course, and we introduce new material. However, our focus now is different. At this point we want you to learn how to *apply* the concepts, how to obtain the data necessary to implement the various decision models, and how to relate the various parts of finance to one another. So, while we revisit topics such as the net present value (NPV) and internal rate of return (IRR) methods, we delve into them more deeply, considering how to streamline and automate the calculations, how to obtain the necessary data, and how errors in the data affect the outcome. We also spend more time comparing the topics covered in different chapters to one another. For example, you probably did not spend much time considering how the cost of capital, capital structure, dividend policy, and capital budgeting are related to one another, but we now discuss these critically important relationships.

1-2 How to Use This Text

To help sharpen your focus, we start each chapter with several *Beginning-of-Chapter Questions.* Some of these questions are designed to help you see how the chapter ties in with other chapters, while others will help you think about how the concepts are applied in the real world. You probably won't be able to answer all of the questions when you start working through the chapter, but that's fine! The questions aren't a pre-test. Their purpose is to help guide you through the material, and having them in mind when you read will help you understand the chapter in a more integrative and relevant way.

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Consult **www.careers-in-finance.com** for an excellent site containing information on a variety of business career areas, listings of current jobs, and other reference materials.

Because *Excel* is the most widely used tool to analyze actual business decisions, you need to be proficient with *Excel* if you are to get a good job and if you are to succeed in it. Therefore, we explain how to do the most common types of financial analyses using *Excel.* This focus has two benefits: Knowledge of *Excel* is useful per se, and setting up and analyzing the output from spreadsheet models will also teach you a lot about financial concepts.

Most of the chapters have two spreadsheet models, which are available on the textbook's Web site. The first is a "Tool Kit," which contains the *Excel* models used to generate most of the tables and examples in the chapter. The second is a model that deals with specific Beginning-of-Chapter Questions. Both models contain notes and comments that explain the *Excel* procedures we used, so that they can be used as a tutorial for learning more about both *Excel* and finance. Again, since recruiters prefer students who are good with *Excel,* learning more about it will help you get a better job and then succeed in it.

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? No two companies develop in exactly the same way, but 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—one merely begins business operations after obtaining any required city or state business licenses. The proprietorship has three important advantages: (1) It is easily and inexpensively formed. (2) It is subject to few government regulations. (3) Its income is not subject to corporate taxation but is taxed as part of the proprietor's personal 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. For these three reasons, sole proprietorships are used primarily for small businesses. Even though about 73% of all companies are proprietorships, they account 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 generally similar to those of a proprietorship.

Regarding liability, the partners potentially can lose all of their personal assets, even assets not invested in the business, because under partnership law, each partner is liable for the business's debts. Therefore, in the event the partnership goes bankrupt, if any partner is unable to meet his or her pro rata liability then the remaining partners must make good on the unsatisfied claims, drawing on their personal assets to the extent necessary. To avoid this, the liabilities of some of the partners can be limited by establishing a **limited partnership**, wherein certain partners are designated **general partners** and others **limited partners**. In a limited partnership, the limited partners can lose only the amount of their investment in the partnership, while 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 general business situations because usually no partner is willing to be the general partner and thus accept the majority of the business's risk, and no partners are willing to be limited partners and give up all control.

In both regular and limited partnerships, at least one partner is liable for the debts of the partnership. However, in a **limited liability partnership (LLP)** and a **limited liability company (LLC)**, all partners (or members) enjoy limited liability with regard to the business's liabilities, and their 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. This is generally not a problem for a slow-growing business, but if a business's products or services really catch on, and if it needs to raise large sums of money to capitalize on its opportunities, then the difficulty in attracting capital becomes a real drawback. Thus, many growth companies begin as a proprietorship or partnership, and at some point their founders decide to convert to a corporation. On the other hand, some 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 transferability of ownership interest*—ownership interests are divided into shares of stock, which can be transferred far more easily than can proprietorship or partnership interests; 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 the owners are liable for the debts of a partnership, you could be assessed for a share of the company's debt, and you could be held liable for the entire $1 million if your partners could not pay their shares. On the other hand, if you invested $10,000 in the stock of a corporation that went bankrupt, your potential loss on the investment would be limited to your $10,000 investment. Unlimited life, easy transferability of ownership interest, and limited liability make it much easier for corporations than proprietorships or partnerships to raise money in the financial markets and grow into large companies.

The corporate form offers significant advantages over proprietorships and partnerships, but it also 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. Included are such points as: (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

[1]More than 60% 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.

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 incorporate in order to avoid certain types of unlimited liability yet still be held responsible for professional liability.

Finally, if certain requirements are met, particularly with regard to size and number of stockholders, owners can establish a corporation but elect to be taxed as if the business were a proprietorship or partnership. Such firms, which differ not in organizational form but only in how their owners are taxed, are called **S corporations**.

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

1-3d Growing a Corporation: Going Public

Once a corporation has been established, 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. As the corporation grows, it will need factories, equipment, inventory, and other resources to support its growth. In time, the entrepreneurs usually deplete their own resources and must 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.

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**.

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 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 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

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

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 $120 million to $150 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 2015 the average first-day return was over 18%.

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.

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.*

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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.

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 flows are called **free cash flows (FCF)**, not because they are free, but because they are available (or free) for distribution to all of the company's investors, including creditors and stockholders. You will learn how to calculate free cash flows in Chapter 6, but for now you should know that free cash flow is:

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

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:

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

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.