

# Preface

This book is about corporate finance. It focuses on how companies invest in real assets and how they raise the money to pay for these investments.

Financial management is important, interesting, and challenging. It is important because today's capital investment decisions may determine the businesses that the firm is in 10, 20, or more years ahead. Also, a firm's success or failure depends in large part on its ability to find the capital that it needs.

Finance is interesting for several reasons. Financial decisions often involve huge sums of money. Large investment projects or acquisitions may involve billions of dollars. Also, the financial community is international and fast moving with colourful heroes and a sprinkling of unpleasant villains.

Finance is challenging. Financial decisions are rarely cut and dried, and the financial markets in which companies operate are changing rapidly. Good managers can cope with routine problems but only the best managers can respond to change. To handle new problems, you need more than rules of thumb; you need to understand why companies and financial markets behave as they do and when common practice may not be best practice. Once you have a consistent framework for making financial decisions, complex problems become more manageable.

This book provides that framework. It is not an encyclopedia of finance. It focuses instead on setting out the basic principles of financial management and applying them to the main decisions faced by the financial manager. It explains why the firm's owners would like the manager to increase firm value, and it shows how managers value investments that may pay off at different points of time or have different degrees of risk. It also describes the main features of financial markets and discusses why companies may prefer a particular source of finance.

Some texts shy away from modern finance, sticking instead to more traditional, procedural, or institutional approaches. These are supposed to be easier or more practical. We disagree emphatically. The concepts of modern finance, properly explained, make the subject simpler not more difficult. They are also more practical. The tools of financial management are easier to grasp and can be used effectively when presented in a consistent conceptual framework. Modern finance provides that framework.

Modern financial management is not "rocket science." It is a set of ideas that can be made clear by words, graphs, and numerical examples. The ideas provide the "why" behind the tools that good financial managers use to make investment and financing decisions.

We wrote this book to make financial management clear, useful, interesting, and fun for beginners. We set out to show that modern finance and good financial practice go together—even for the financial novice.

# Fundamentals and Principles of Corporate Finance

This book is derived in part from its sister text *Principles of Corporate Finance*. The spirit of the two books is similar: both apply modern finance, giving students a working ability to make financial decisions. However, there are also substantial differences between the two books.

First, we provide much more detailed discussion of the principles and mechanics of the time value of money. This material underlies almost all of this text, and we spend a lengthy chapter providing extensive practice with this key concept.

Second, we use numerical examples in this text to a greater degree than in *Principles*. Each chapter presents several detailed numerical examples to help the reader become familiar and comfortable with the material.

Third, we have streamlined the treatment of most topics. Whereas *Principles* has 35 chapters, *Fundamentals* has only 26. The relative brevity of *Fundamentals* necessitates a broader-brush coverage of some topics, but we feel that this is an advantage for beginners.

Fourth, we don't assume users will have a lot of background knowledge. While most will have had an introductory accounting course, we review the concepts of accounting that are important to the financial manager in Chapter 2.

*Principles* is known for its relaxed and informal writing style, and we continue this tradition in *Fundamentals*. In addition, we use as little mathematical notation as possible. Even when we present an equation, we usually write it in words rather than symbols. This approach has two advantages: It is less intimidating, and it focuses attention on the underlying concept rather than the formula.

## Changes in The Second Canadian Edition

This second Canadian edition of *Fundamentals* includes many changes. After thoroughly researching the market, we have rewritten and rearranged material to improve readability, and we have expanded the treatment of some topics and introduced others for the first time. Here are some examples of the changes that we have made in various chapters:

Chapter 1 includes a whole new section on careers in finance. This overview introduces students to different possible career paths and also conveys a richer sense of the various roles of financial managers. The chapter has an expanded discussion of financial markets and institutions. Our discussion of whether managers maximize firm value includes updated coverage of compensation plans.

In Chapter 2 we have extended the discussion of the statement of cash flows to include the concepts of free cash flow and financial flows to bondholders and shareholders. We show how to use the statement of cash flows to calculate free cash flow. The taxation material has been updated to reflect the new provincial tax-on-income system.

In response to user requests, we have slightly reorganized Chapter 3. It now includes a section on inflation and the time value of money, formerly in Chapter 4, and the material on effective annual rates and compounding periods has been placed at the end of the chapter. We show how to use various financial calculators to solve time value of money problems. We have included present value formulas for growing annuities and growing perpetuities as well as the present and future values of ordinary annuities.

Chapter 4 is now devoted solely to bonds and includes the discussion of credit risk that was formerly part of a later chapter. A detailed example of valuing a bond with semiannual coupons has been added. Chapter 5 covers the stock market and stock valuation. Also, each chapter now includes a discussion of calculating before- and after-tax rates of return.

Chapter 6 on net present value and other investment criteria includes a new segment on the discounted payback period. This chapter also details the steps for finding NPV and IRR values using a financial calculator. Chapter 7 on discounted cash flow analysis has been extensively rewritten with careful attention to improving and clarifying the computation of project cash flows. This material has been expanded and enhanced with several worked examples. The chapter includes a detailed discussion of the capital cost allowance (CCA) system and an extensive conceptual treatment of the cash-flow implications of this system on capital budgeting decisions. We also provide a simple spreadsheet model that shows students how spreadsheets can enhance and simplify cash-flow analysis and capital budgeting decisions. The steps for arriving at a general formula for the CCA tax shield are provided in the chapter's appendix.

The material on risk and return in Part Three has been revised. The data in Chapter 9 has been updated. Chapter 10 on the capital asset pricing model contains new material on the firm's use of the CAPM in capital budgeting. The discussion of both theoretical and empirical calculations of beta has been extended. The treatment of taxes in measuring cost of capital (Chapter 11) has been simplified. A new section on flotation costs and the cost of capital has been added.

Part Four has also been revised. Chapter 13 (An Overview of Corporate Financing) has been updated with new material on asset-backed and index bonds as well as more recent data on trends in corporate financing. A new appendix to the chapter takes us through the process of deciding on whether or not to refund a bond issue. A spreadsheet example of the bond refunding decision is also included. Chapter 14 contains additional material on IPOs and an expanded discussion of rights issues. A new section examines issues germane to listing on Canada's stock markets. This chapter features a new appendix that discusses the environment for the financing of new and small enterprises in Canada. The appendix also describes the venture capital industry and angel investing in Canada. The section also includes a write-up on small business financing available under the Canada Small Business Financing Act, lending programs sponsored by the Business Development Bank of Canada as well as other regional and provincial lending programs. The material on capital structure in Chapter 15 has been considerably rewritten and simplified. Chapter 16 includes new discussion on reverse splits and the tax treatment of dividend decisions.

Part Six contains a significant amount of new material. Chapter 17 has three new Finance in Action articles relating accounting issues to finance, including a discussion of Enron's off-balance sheet accounting practices. Chapter 17 now discusses the analysis of the statement of cash flows and also the measurement and interpretation of economic value added (EVA). An Excel spreadsheet with a long-term financial plan has been integrated into Chapter 18. Chapter 19 similarly contains a cash management spreadsheet. Chapter 20 includes new material on Canada's payments system and electronic funds transfer. Chapter 21 has expanded coverage of bankruptcy.

Part Seven has been extended and updated. A new chapter on leasing, Chapter 22, has been added. It covers types of leases, reasons for leasing, and the valuation of financial leases. In Chapter 23, we illustrate the issues surrounding mergers with many new Canadian examples, including the story of the hostile takeover battle for Chapters, Inc. We have expanded our coverage of cash and stock offers. Chapter 24 reflects on the European Monetary Union and the creation of the euro. Chapter 25 contains actual applications of real options analysis and a new appendix on the Black-Scholes Option Valuation Model and how to use it has been added. Chapter 26 has additional examples and figures illustrating hedging with options and futures.

## ORGANIZATIONAL DESIGN

*Fundamentals* is organized in eight parts.

**Part One (Introduction)** provides essential background material. In the first chapter we discuss how businesses are organized, the role of the financial manager, and the financial markets in which the manager operates. We explain how shareholders want managers to take actions that increase the value of their investment, and we describe some of the mechanisms that help to align the interests of managers and shareholders. Of course the task of increasing shareholder value does not justify corrupt and unscrupulous behaviour. We therefore discuss some of the ethical issues that confront managers.

A large corporation is a team effort, and so companies produce financial statements to help the players monitor their progress. Chapter 2 provides a brief overview of these financial statements and introduces two key distinctions—between market and book values and cash flows and profits. The chapter concludes with a summary of corporate and personal taxation.

**Part Two (Value)** is concerned with valuation. In Chapter 3 we introduce the concept of the time value of money, and since most readers will be more familiar with their own financial affairs rather than the big leagues of finance, we motivate our discussion by looking first at some personal financial decisions. We show how to value long-lived streams of cash flows and work through the valuation of perpetuities and annuities. Chapter 3 also contains a short concluding section on inflation and the distinction between real and nominal returns.

Chapters 4 and 5 introduce the basic features of bonds and stocks and give students a chance to apply the ideas of Chapter 3 to the valuation of these securities. We show how to find the value of a bond given its yield, and we show how prices of bonds fluctuate as interest rates change. We look at what determines stock prices and how stock valuation formulas can be used to infer the return that investors expect. Finally, we see how investment opportunities are reflected in the stock price and why analysts focus on the price-earnings multiple.

The remaining chapters of Part Two are concerned with the company's investment decisions. In Chapter 6 we introduce the concept of net present value (NPV) and show how to calculate the NPV of a simple investment project. We also look at other measures of an investment's attractiveness—the internal rate of return rule, payback, discounted payback, and the return on book. We then turn to more complex investment proposals, including choices between alternative projects, machine replacement decisions, and decisions of when to invest. Finally, we show how the profitability index can be used to choose between investment projects when capital is scarce.

The first step in any NPV calculation is to decide what to discount. Therefore, in Chapter 7 we work through a realistic example of a capital budgeting analysis, showing how the manager needs to recognize the investment in working capital and how taxes and capital cost allowance affect cash flows.

We start Chapter 8 by looking at how companies organize the investment process and ensure everyone works toward a common goal. We then go on to look at various techniques to help managers identify the key assumptions in their estimates, such as sensitivity analysis, scenario analysis, and break-even analysis. We describe how managers try to build future flexibility into projects so that they can capitalize on good luck and mitigate the consequences of bad luck. We conclude the chapter with a discussion of capital budgeting practices in corporate Canada.

**Part Three (Risk)** is concerned with the cost of capital. Chapter 9 starts with a historical

survey of returns on bonds and stocks and goes on to distinguish between the unique risk and market risk of individual stocks. Chapter 10 shows how to measure market risk and discusses the relationship between risk and expected return. Chapter 11 introduces the weighted-average cost of capital and provides a practical illustration of how to estimate it.

**Part Four (Financing)** begins our discussion of the financing decision. In Chapter 12 we introduce the notion of market efficiency. Few other introductory texts include a chapter on this topic. We believe that without a solid understanding of market efficiency it is difficult to think through the issues that arise when firms issue securities or make capital structure and dividend decisions. Chapter 13 looks at the role of shareholders in large corporations and compares corporate governance in Canada and elsewhere. It also provides an overview of the securities that firms issue and their relative importance as sources of finance. An appendix to the chapter takes us through the process of deciding on whether or not to refund a bond issue. In Chapter 14 we look at how firms issue securities, and we follow a firm from its first need for venture capital through its initial public offering to its continuing need to raise debt or equity. Chapter 14 contains additional material on IPOs and an expanded discussion of rights issues. We have added a section on listing in Canada's stock markets. An appendix to the chapter describes the environment for the financing of new and small enterprises in Canada.

**Part Five (Capital Structure and Dividend Policy)** focuses on the two classic long-term financing decisions. How much the firm should borrow is addressed in Chapter 15 and how it should set its dividend policy is addressed in Chapter 16. In each case we start with Modigliani and Miller's (MM) observation that in well-functioning markets the decision should not matter, but we use this observation to help the reader understand why financial managers in practice do pay attention to these decisions. The material on capital structure in Chapter 15 has been considerably rewritten and simplified. In Chapter 16, we have added new discussion on reverse splits and have expanded the coverage of the tax implications of dividends payments.

**Part Six (Financial Planning)** starts with financial statement analysis in Chapter 17 and shows how analysts summarize the large volume of accounting information by calculating some key financial ratios. Long-term financial planning is discussed in Chapter 18, where we look at how the financial manager considers the combined effects of investment and financing decisions on the firm as a whole. We also show how measures of internal and sustainable growth help managers check that the firm's planned growth is consistent with its financing plans. Chapter 19 is an introduction to working capital management. It also shows how the manager ensures that the firm will have enough cash to pay its bills over the coming year, and it describes the principal sources of short-term borrowing.

**Part Seven (Short-Term Financial Decisions)** is concerned with two important short-term problems. Chapter 20 explains the mechanics of cash collection and disbursement and shows how firms invest idle cash. It also looks at the problem of managing inventories and shows how the decision to stock up on cash is similar to the decision to stock up on inventories of raw materials or finished goods. The parallel between the task of inventory management and cash management enables us to cover these topics with less repetition than in most other texts. In Chapter 21 we describe the basic steps of credit management, and we summarize bankruptcy procedures when customers cannot pay their bills.

**Part Eight (Special Topics)** covers several important but somewhat more advanced topics—leasing (Chapter 22), mergers (Chapter 23), international financial management (Chapter 24), options (Chapter 25), and risk management (Chapter 26). Some of these top-

ics are touched on in earlier chapters. For example, the impact of leasing on financial statements comes up in Chapter 17, but we delve more deeply into the topic in Chapter 22. We introduce the idea of options in Chapter 8, when we show how companies build flexibility into capital projects. However, Chapter 25 generalizes this material, explains at an elementary level how options are valued, and provides some examples of why the financial manager needs to be concerned about options. In the appendix to Chapter 25, the Black-Scholes Option Valuation Model is presented. International finance is also not confined to Chapter 24. As one might expect from a book that is written by an international group of authors, examples from different countries and financial systems are scattered throughout the book. However, Chapter 24 tackles the specific problems that arise when a corporation is confronted by different currencies.

## ROUTES THROUGH THE BOOK

There are about as many effective ways to organize a course in corporate finance as there are teachers. For this reason, we have ensured that the text is modular, so that topics can be introduced in different sequences.

We discuss the principles of valuation before plunging into detailed financial statement analysis or issues of financial planning. Nevertheless, we recognize that many instructors will prefer to move directly from Chapter 2 (Accounting and Finance) to Chapter 17 (Financial Statement Analysis) in order to provide a gentler transition from the typical prerequisite accounting course. We have made sure that Part Six (Financial Planning) can easily follow Part One.

Similarly, we discuss working capital after the student is familiarized with the basic principles of valuation and financing, but we recognize that many instructors prefer to reverse our order. There should be no difficulty in using Part Seven out of order.

When we discuss project valuation in Part Two, we stress that the opportunity cost of capital depends on project risk. But we do not discuss how to measure risk or how return and risk are linked until Part Three. This ordering can easily be modified. For example, the chapters on risk and return can be introduced before, after, or midway through the material on project valuation.

# Walk-Through

## New and Enhanced Pedagogy

A great deal of effort has gone into expanding and enhancing the features in *Fundamentals of Corporate Finance*.

### CHAPTER OPENING

Each chapter begins with an overview relating the material to be covered in the chapter to the real world. Learning goals are contained in this section which are referred to again in the Summary that closes each chapter. See chapter 3, pages 62 and 98.

- After studying this chapter you should be able to
- ▶ Calculate the future value to which money invested at a given interest rate will grow.
  - ▶ Calculate the present value of a future payment.
  - ▶ Calculate present and future values of streams of cash payments.
  - ▶ Find the interest rate implied by the present or future value.
  - ▶ Understand the difference between real and nominal cash flows and between real and nominal interest rates.
  - ▶ Compare interest rates quoted over different time intervals—for example, monthly versus annual rates.

### Examples

Separated numbered and titled examples are extensively integrated into the chapters providing detailed applications and illustrations of the text material. See chapter 4, page 116 and chapter 9, page 293.

#### ▶ EXAMPLE 4.3 *Calculating Yield to Maturity for the Canada Bond*

We found the value of the 6.5 percent coupon Canada bond by discounting at a 5.1 percent interest rate. We could have phrased the question the other way around: If the price of the bond is \$1,038.05, what return do investors expect? We need to find the yield to maturity in other words, the discount rate  $r$  that solves the following equation:



#### FINANCE IN ACTION

### Syncrude Consortium's Staged Alberta's Oil Sands Operations

Buoyed by market and political momentum, Syncrude Canada Ltd., the consortium that runs northern Alberta's largest oil sands operation, will seek owner approval by July for the next and largest stage of its \$8 billion expansion.

The Imperial Oil-led plant has also begun work on Stage 4, the final stage of its Syncrude 21 suite of projects, which may be larger than originally planned, Eric Newell, chairman and chief executive, said in an interview.

"We continue at Syncrude to spend between \$30 million and \$40 million a year on research and development and we are continuing to find better ways. And who knows, you may see that investment even larger," he said. "The oil sands has a tremendous future and Syncrude is going to continue to be

while Suncor Energy, Inc.'s is already wrapping up this year.

Shell has said the cost of its \$3 billion oil sands project could escalate by about 20 percent because of a tight market for skilled labour. Higher cost pressures could further increase the cost of the project, which has already jumped to \$2.8 billion from estimates of about \$2 billion.

Newell said he is encouraged by the fact that said new development must wait until the current projects underway were completed.

"In 1995, we didn't have any projects in the ground now we have \$51 billion in terms of investment. It's hard to

#### HOW TO VALUE PERPETUITIES



Some time ago the British government borrowed by issuing perpetuities. Instead of repaying these loans, the British government pays the investors holding these securities an annual payment in perpetuity.

The rate of interest on a perpetuity is equal to the promised annual payment  $C$  divided by the present value. For example, if a perpetuity pays \$10 per year and you can buy it for \$100, the interest rate is 10 percent. In general,

$$\text{Interest rate} = \frac{\text{Annual cash payment}}{\text{Present value}}$$

### Finance in Action Boxes

Almost every chapter includes at least one "Finance in Action" box. These are excerpts, usually from the financial press, providing real-life illustrations of the chapter's topics, such as ethical choices in finance, new views about stock valuation, Internet IPOs, and corporate takeover battles abroad. See chapter 4, page 115, and chapter 8, page 259.

### International Icon

An international icon now appears where the authors discuss global issues.

# Walk-Through

costs to the firm's projects, a charge for overhead is usually made. But our principal agent's incremental cash flows says that in investment appraisal we should include only the incremental cash flows that would result from the project.

A project may generate extra overhead costs, but then again, it may not. We should be cautious about assuming that the accountant's allocation of overhead costs represents the incremental cash flow that would be incurred by accepting the project.

The firm is considering an investment in a new manufacturing plant. The company, but existing buildings would

## Key Points

Located every few pages throughout the text, these points underscore and summarize the importance of the immediately preceding material, at the same time helping students focus on the most relevant topics critical to their understanding.

### Check Point 3.5

Suppose you are planning a 1-month European vacation right now. The cost of the trip will be \$3,500. Right now you have a bank account that pays 6 percent interest. How much more money do you need to have 1 year from now to have enough money for the trip 2 years from now?

## Check Point Question

Check Point questions are provided within each chapter, and enable students to check their understanding as they read. Answers are provided at the end of the chapter. See chapter 3, pages 75 and 108.

## Key Formulas

Called out in the text, key formulas are identified by a number. A summary of key formulas can be found on the Brealey web page.

FINANCIAL CALCULATOR

### An Introduction to Financial Calculators

Financial calculators are designed with present value and future value formulas already programmed. Therefore, you can readily solve many problems simply by entering the inputs for the problem and punching a key for the solution.

The basic financial calculator uses five keys that correspond to the inputs for common problems involving the time value of money.

n i PV FV PMT

**Future Values**

Recall Example 3.1, where we calculated the future value of Peter Minuit's \$24 investment. We enter the value by typing 24 into the *PV* register. (You enter the value by typing the *PV* key.) We assumed an interest rate of 8 percent, so we enter 8 into the *i* register. Because the interest is compounded annually, we enter 1 into the *n* register. Because there is no regular payment, we enter 0 into the *PMT* register. Now ask the calculator to calculate the future value. On some calculators you simply press the *FV* key. On other calculators you need to first press the *CPT* key.

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## EXCEL SPREADSHEET

### A SPREADSHEET MODEL FOR BLOOPER (FORMULA)

	A	B	C	D	E
1	Year:	0	1	2	3
2	Capital investment	10,000			
3	Working capital	=0.15*C6+2/12*B5	=0.15*D6+2/12*C5	=0.15'E6+2/12'D5	=0.15'F6+2/12'E5
4	Change in working capital	=B3	=C3-B3	=D3-C3	=E3-D3
5	Revenues		15000	=C5*1.05	=D5*1.05
6	Expenses		10000	=C6*1.05	=D6*1.05
7	Profit before tax (excluding CCA tax shield)		=C5-C6	=D5-D6	=E5-E6
8	Tax (35%)		=C7*0.35	=D7*0.35	=E7*0.35
9	Operating cash flows (excluding CCA tax shield)		=C7-C8	=D7-D8	=E7-E8
10	Salvage value				
11	Total cash flow (excluding CCA tax shield)	=B2-B4	=C2-C4+C9	=D2-D4+D9	=E2-E4+E9
12	NPV (cost of capital = 12%)	=B11/(1.12)^B1	=C11/(1.12)^C1	=D11/(1.12)^D1	=E11/(1.12)^E1

## Excel Spreadsheet

New Excel spreadsheet boxes provide the student with detailed examples of how to use spreadsheets when applying financial concepts. See chapter 7, pages 226 and 227.

## Calculator Boxes and Exercises

In a continued effort to help students grasp the critical concept of Time Value of Money, many pedagogical tools have been added throughout the first section of the text. Financial Calculator boxes provide examples for solving a variety of problems with directions for the three most popular financial calculators. See chapter 3, pages 72–73, and chapter 6, page 179.

# Walk-Through

## End of Chapter

A variety of end-of-chapter features are offered to support the concepts presented throughout each chapter and include the following: Related Web Links, Key Terms, Questions and Problems, Spreadsheet Icons, Internet Problems, and Minicases.

**Related Web Links**

- [www.ganeshia.org/invest/index.html](http://www.ganeshia.org/invest/index.html) Links to information useful for val
- [www.tsx.ca](http://www.tsx.ca) Information about stocks trading on the Toronto Stock Exchange
- [www.nasdaq.com](http://www.nasdaq.com) Information about Nasdaq and Amex-traded stocks
- [www.nyse.com](http://www.nyse.com) Information about stocks and trading on the New York S
- [www.fool.com/School/HowtoValueStocks.htm](http://www.fool.com/School/HowtoValueStocks.htm) How investors value firm
- [www.zacks.com](http://www.zacks.com) Information and analyses from Zacks Investment Resea
- [www.investools.com](http://www.investools.com) Investing tools, links to research reports on public con
- [www.brill.com](http://www.brill.com) Information on mutual funds, as well as articles and othe

## Related Web Links

Web citations listed at the end of each chapter immediately direct students to the best sources of financial information on the Internet. While the authors have listed only relatively stable websites, some change in Web addresses is inevitable. Visit the text's Online Learning Centre at [www.mcgrawhill.ca/college/brealey](http://www.mcgrawhill.ca/college/brealey) for updated information

## Key Terms

Throughout each chapter, key terms appear in bold type with margin definitions and are listed in the end of chapter material for easy reference.

### Key Terms

common stock	139	price-earnings (P/E)	constant
primary market	139	multiple	142
initial public offering (IPO)	139	book value	142
secondary market	139	liquidation value	143
dividend	141	market-value balance	143
		sheet	145
		dividend discount model	147
			sustaina

**Basic**

d. current yield

2. **Bond Yields.** If a bond with par value of \$1,000 and a coupon rate of 8 percent is selling at a price of \$970, is the bond's yield to maturity more or less than 8 percent? What about the current yield?

\*3. **Bond Yields.** A bond with par value \$1,000 has a current yield of 7.5 percent and a coupon rate of 8 percent. What is the bond's price?

**Practice**

\*11. **Bond Prices and Returns.** One bond has a coupon rate of 8 percent, another a coupon rate of 12 percent. Both bonds have 10-year maturities and sell at a yield to maturity of 10 percent. If their yields to maturity next year are still 10 percent, what is the rate of return on each bond? Does the higher coupon bond give a higher rate of return?

\*12. **Bond Returns.**

a. If the BCE bond in problem 6 has a yield to maturity of 8 percent 1 year from now, what will its

**Challenge**

32. **Interest Rate Risk.** Suppose interest rates increase from 8 percent to 9 percent. Which bond will suffer the greater percentage decline in price: a 30-year bond paying annual coupons of 8 percent, or a 30-year zero coupon bond? Can you explain intuitively why the zero exhibits greater interest rate risk even though it has the same maturity as the coupon bond?

\*33. **After-Tax Rate of Return.** Using the information in problem 26, calculate your after-tax rate of re-


## Questions and Problems

New end-of-chapter problems are included for even more hands-on practice. Each question is labeled by topic and is separated by level of difficulty. Answers to selected questions (identified by an asterisk) are provided in Appendix B.

# Walk-Through

## Spreadsheet Icon

To better understand important spreadsheet based problems, spreadsheet icons indicate problems specially linked to Excel based templates for further practice. These templates are available for download at the text's Online Learning Centre.




\*8. **Stocks** Potato Chips plans to grow steadily at a rate of 4 percent per year.

- What is the expected dividend in each of the next 3 years?
- If the discount rate for the stock is 12 percent, at what price will the stock sell 3 years from now?
- What is the expected stock price 3 years from now?
- If you buy the stock and plan to hold it for 3 years, what payments will you receive? What is the present value of those payments? Compare your answer to part (b).

9. **Constant-Growth Model.** A stock sells for \$40. The next dividend will be \$4 per share. If the return earned on reinvested funds is 15 percent and the company reinvests 40 percent of its earnings in the firm, what must be the discount rate?

## Internet Problems

Students are presented with problems to solve using the wealth of material available on the Internet. See chapter 5, page 165 and chapter 10, page 330.



### Internet Problems

- Information about companies and their shares abounds on the web, and <http://ca.finance.yahoo.com>. Click on "Symbol Lookup" to find Microsoft. What other types of information are reported on these websites?
- Visit the Toronto Stock Exchange website at [www.tsx.ca](http://www.tsx.ca), click on "Listed Companies" and compare it to what is found on [www.globeinvestor.com](http://www.globeinvestor.com).
- Pick two Canadian companies listed on either the TSX or the Venture Exchange. Go to each company's website and compare the information to shareholders. Go to each company's website and compare the information to shareholders.
- Create a list of preferred shares traded on the Toronto Stock Exchange on [Globeinvestor.com](http://Globeinvestor.com). Select "Preferred" from the pull-down menu. Pick one preferred share, such as BCE.PR.P-T, which pays a fixed annual dividend of \$1.60 per share. Using the information provided, calculate the expected rate of return on the preferred share. If the expected rate of return is 35 percent and your dividend tax rate is 20 percent, what is the expected rate of return on these preferred shares?
- It is difficult to get detailed information about companies' preferred shares, however, [www.rbc.com/investorrel](http://www.rbc.com/investorrel) provides one exception. Look at [www.rbc.com/investorrel](http://www.rbc.com/investorrel) and compare the specific features of the various classes of preferred shares traded on each class and compare them to each other. What conclusions can you draw from your assessment of these securities?

## MINICASE

Jack Tar, CFO of Sheetbend & Halyard, Inc., opened the company confidential envelope. It contained a draft of a competitive bid for a contract to supply duffel canvas to the Canadian Armed Forces. The cover memo from Sheetbend's CEO asked Mr. Tar to review the bid before it was submitted.

The bid and its supporting documents had been prepared by Sheetbend's sales staff. It called for Sheetbend to supply 100,000 yards of duffel canvas per year for 5 years. The proposed selling price was fixed at \$30 per yard.

Mr. Tar was not usually involved in sales, but this bid was unusual in at least two respects. First, if accepted by the navy, it would commit Sheetbend to a fixed price, long-term contract. Second, producing the duffel canvas would require an investment of \$1.5 million to purchase machinery and to refurbish Sheetbend's plant in Saint John, New Brunswick.

Mr. Tar set to work and by the end of the week had collected the following facts and questions:

could be depreciated in an asset with a useful life of 30 years.

- The refurbished plant and new machinery would cost \$1.5 million. However, the remaining value of the plant was small, and it was not clear that the value would be maintained once the Forces contract was custom built and could be sold as second-hand value at the end of the contract.
- Table 7.11 shows the sales staff's estimate of the sales for the navy contract. Mr. Tar reviewed the assumptions were reasonable. However, the depreciation book, not tax, depreciation.
- But the forecast income statement showed a working capital requirement of \$1.5 million. Mr. Tar thought that the average about 10 percent of sales would be required.

Armed with this information, Mr. Tar was able to calculate the NPV of the bid.

## Minicases

Integrative minicases end most chapters and allow students to apply their knowledge to relatively complex, practical situations. See chapter 7, page 238, and chapter 15, page 477.