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Inside all new copies of this textbook is a pre-paid access code that students can use to access www.pearsonmiddleeastawe.com/gitman
I dedicate this book to:
Eman, Sinan, Sarmed, Amir, Athir, and Adam
With love and appreciation
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We are delighted that Pearson is publishing the Arab World Edition of Principles of Managerial Finance. This textbook will make a valuable contribution to teaching finance in the Arab world. Both students and instructors will find this edition has been made more applicable to them by drawing examples from the region. In this edition, we have tried to explain managerial finance in a coherent and simplified way to make it easily understood by students. In recent years, the Arab world, particularly the GCC countries, has become a financial center for both conventional and Islamic financial institutions and markets which has increased the need for more applied and practical examples in teaching finance. In addition, the Arab region has experienced substantial socioeconomic transformation in recent years, which has increased the importance of the region as a vital marketplace, not only for local but also for global business. The goal of this edition is to present managerial finance in a simplified manner to students and practitioners who are interested in enhancing their knowledge and understanding of corporate finance.

Professors Elali and Al-Roubaie have made an outstanding contribution in making this edition possible by addressing some of the main issues concerning financial markets and institutions in the Arab region. No doubt students will find studying finance much easier when they see financial problems applied within the context of their region. We hope students and instructors will make use of this new edition to enhance their understanding of both theoretical and practical issues in finance. The emergence of new, global financial and business trends in the Arab world requires student exposure to modern methods to help them to make decisions and formulate and implement policies. This edition provides students with the necessary fundamentals to make sound financial decisions in a rapidly growing region such as the Arab world.

Professor Lawrence Gitman
and Dr. Chad J Zutter
About the Authors

Lawrence J. Gitman is an emeritus professor of finance at San Diego State University. Dr. Gitman has published more than 50 articles in scholarly journals as well as textbooks covering undergraduate- and graduate-level corporate finance, investments, personal finance, and introduction to business. Dr. Gitman is past president of the Academy of Financial Services, the San Diego Chapter of the Financial Executives Institute, the Midwest Finance Association, and the FMA National Honor Society. Dr. Gitman served as Vice-President of Financial Education of the Financial Management Association, as a director of the San Diego MIT Enterprise Forum, and on the CFP® Board of Standards. He received his BSIM from Purdue University, his MBA from the University of Dayton, and his Ph.D. from the University of Cincinnati. He and his wife have two children and live in La Jolla, California, where he is an avid bicyclist, having twice competed in the coast-to-coast Race Across America.

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**Wajeeh Elali** is a professor of corporate finance and Vice President for Administration and Finance at Ahlia University, Bahrain. He joined Ahlia University after more than a decade teaching at McGill University, Canada. He has also taught various corporate finance and business economics courses at Northeastern University (U.S.A.) and Concordia University (Canada). His educational accomplishments include an MA in Economics from Northeastern University (U.S.A.), and a PhD in Finance from the University of Westminster, London (U.K.).

From 1981 to 1982 he was a Visiting Scholar at Harvard Business School. He has attended and presented numerous papers at international conferences and professional meetings in North America, Europe, the Middle East, Africa, and south Asia. His work has been published in various refereed journals such as the *Thunderbird International Business Review* (U.S.A.), the *International Journal of Business Governance and Ethics* (U.K.), the *International Journal of Commerce & Management* (U.S.A.), *Economia Internazionale* (Italy), *Arab Studies Quarterly* (U.S.A.), the *Journal of Public Administration* (R.S.A.), and the *Middle East Studies Association Bulletin* (U.S.A.). His current research focuses on corporate governance, business valuation, and international debt problems. He is also the (co-) author of eight books in the field of finance and productivity including *Advanced Corporate Finance: A Practical Approach* (with Therese Trainor) published by Pearson/Addison Wesley in 2009.

Throughout his career, he has received a number of awards for excellence in teaching and research. In 1993, he won the Best Conceptual Research Award from the International Academy of Business Disciplines (IABD) for “Debt-Equity Swaps: A Solution to the LDCs Debt Crisis.” In 2000, he received the Distinguished Teaching Award from McGill’s Centre for Continuing Education. The award was given for outstanding graduate and undergraduate teaching. Among his prestigious recognitions, he received the Distinguished Teaching Award from McGill’s Desautels Faculty of Management in 2003. He is also the recipient of the 1995 Distinguished Teaching Award from Concordia’s John Molson School of Business.

**Dr. Amer Al-Roubaie** is currently holding the position of the Dean of the College of Business and Finance, Ahlia University, Bahrain. He obtained his doctorate in economics from McGill University, Montreal, Canada. He taught economics and finance at universities in North America, Asia, and the Middle East. Besides economics, his expertise is in the fields of knowledge-based development, Islamic banking and finance, development economics, globalization, and international business. His publications include books, research reports, and many articles which have appeared in a number of international journals. Dr. Al-Roubaie’s latest book is Routledge’s *Islamic Banking and Finance* (in four volumes), London and New York, 2010.
The need for publishing the first Arab edition of Principles of Managerial Finance came out of our experience teaching managerial finance to students in the Arab world. This edition provides insights into core concepts in financial management from the vantage-point of the Middle East. Recent trends in business education in the Arab world focus on a holistic approach to business studies that melds the inculcation of analytical skills necessary for investment and financial decision-making with an overall appreciation of financial markets in a regional context. The book, while maintaining rigor in its presentation of theoretical concepts, provides regional context from which Arab students will profit by understanding financial management through examples of local and regional businesses. Our aim is to help students in the Arab region gain the analytical skills necessary to become financial managers/specialists in the Arab world. To this end, through this Arab edition, we seek to impart to students the necessary thought processes and tools needed to understand the workings of financial markets with a view to facilitating the seamless integration of students, able to conduct research most relevant to financial markets in the Middle East, into a variety of regional financial institutions in their home countries.

The book has been designed to serve as a comprehensive primer in managerial finance written in clear nontechnical language, coherently organized, to serve both the needs of nonmajors, as well as specialists, in finance. Numerous examples combined with web exercises—facilitating accessibility, as a learning resource, for distance learning, blended learning, and self-study—contribute to the pedagogical richness of the text. The book has been well received as the principal text in the financial core course in MBA programs and in management development and executive training programs run in the Arabian Gulf.

For a book on finance to be effective, however, it must address salient contemporary issues that are of interest to students, wherever located, and to the field of study. During the past 5 years, in the wake of financial globalization and integration of financial markets, a number of global issues have swept the field of finance, including the global financial crisis, the slump in growth of the Islamic financial institutions, and the European debt crisis. In this book, these global issues are particularly explored from the point of view of regional exposure to which stock markets and financial institutions responded negatively—in turn causing considerable instability and loss of confidence in the marketplace. The book accordingly includes risk management in an unpredictable world characterized by diminution in both financial stability and market confidence.

In this edition, we applied considerable effort to simplifying the presentation of financial techniques and concepts in order to make it easier for students, for whom English is not their native language, to follow up and get acquainted with the various issues discussed in the book while, simultaneously, placing emphasis on the application of analytical techniques to problem solving. Through numerous such applications, students rapidly assimilate financial concepts.

In addition, key aspects of managerial finance and financial markets in the Arab world are featured. The Arab edition contains 18 chapters divided into six parts. Each part is introduced by a brief overview, which is intended to give students an initial idea of the collective value of the chapters included in the part. Part one comprises three chapters: the role and environment of managerial finance; financial statements and analysis; and cash flow and financial planning. Part two includes four chapters: time value of money; risk and return; interest rates and
bond valuation; and stock valuation. Part three comprises three chapters: capital budgeting techniques; capital budgeting cash flows; and risk and refinements in capital budgeting. Part four comprises three chapters: the cost of capital; leverage and capital structure; and dividend policy. Part five includes two chapters: working capital and current assets management; and current liabilities management. Part six comprises three chapters: hybrid and derivative securities; mergers, LBOs, divestitures, and business failure; and international managerial finance.

Supplements to the Arab World Edition

The *Principles of Managerial Finance* Teaching and Learning System includes a variety of useful supplements for teachers and for students.

**TEACHING TOOLS FOR INSTRUCTORS**

The key teaching tools available to instructors are the Instructor’s Manual, testing materials, and PowerPoint Lecture Presentations.

*Instructor’s Manual*  This comprehensive resource pulls together the teaching tools so that instructors can use the textbook easily and effectively in the classroom. Each chapter provides an overview of key topics and detailed answers and solutions to all review questions, warm-up exercises, end-of-chapter problems, and chapter cases. At the end of the manual are practice quizzes and solutions. The complete Instructor’s Manual is available online at (www.pearsonmiddleeastawe.com/gitman).

*Test Bank*  Thoroughly revised to accommodate changes in the text, the Test Bank consists of a mix of true/false, multiple-choice, and essay questions. TestGen is also available, providing test generating software which uses all the material from the Test Bank, and allows instructors to view, edit and add questions. Both are available online at (www.pearsonmiddleeastawe.com/gitman).

*PowerPoint Lecture Presentation*  This presentation combines lecture notes with all of the figures from the textbook. The PowerPoint Lecture Presentation is available online at (www.pearsonmiddleeastawe.com/gitman).

**LEARNING TOOLS FOR STUDENTS**

*MyFinanceLab*  Packaged with new copies of this text, and accessed with the access code printed in each edition of the book, MyFinanceLab opens the door to a powerful web-based diagnostic testing and tutorial system designed specifically for the Gitman, *Principles of Managerial Finance Arab World Edition* textbooks. With MyFinanceLab, instructors can create, edit, and assign online homework, and test and track all student work in the online gradebook. MyFinanceLab allows students to take practice tests correlated to the textbook and receive a customized study plan based on the test results. Most end-of-chapter problems are available in MyFinanceLab, and because the problems have algorithmically generated values, no student will have the same homework as another, and there is an unlimited opportunity for practice and testing. Students get the help they need, when they need it, from the robust tutorial options, including “View an Example” and “Help Me Solve This,” which breaks the problem into its steps and links to the relevant textbook page. Students can use MyFinanceLab with
no instructor intervention. However, to take advantage of the full capabilities of MyFinanceLab, including assigning homework and tracking student progress in the automated gradebook, instructors will want to set up their class. To view a demo of MyFinanceLab or to request instructor access go to www.myfinancelab.com. Instructor access can also be requested directly from the MyLab portals (e.g. www.myfinancelab.com). Instructors can select their country from a drop down menu and then they can call/email the appropriate office.
Completion of the Arab edition of this book would not have been possible without input from several sources. We are especially grateful to Ahlia University for providing all the necessary facilities and support that we used while working on the book. Special thanks and appreciation go to Professor Abdulla Al-Hawaj, President of Ahlia University, for his unflagging encouragement, exceptional support, and masterful leadership. We would like to thank our colleague Richard Cummings (Ahlia University) for his valuable contributions to several parts of the text. We are also extremely grateful to Hanadi Chehade who typed most of the material unique to this Arab edition. We also would like to thank Shaima AlKhozaie for her secretarial support. It is not easy to list the names of all those who contributed to this edition; however, we are thankful to all those involved directly and indirectly to the completion of this work. We also would like to extend special thanks to Ahlia University students who, in the classroom, provided a test bed for much of the pedagogy utilized in this book. Special thanks must go to Pearson Education for entrusting us with the task of writing this book for the Arab world. We would like to offer our personal expression of appreciation to our editors, Sarah Wightman and Rasheed Roussan, who provided excellent support and direction to this project. We would also like to extend our thanks to Joyce Adjekum, who served as our project editor. The publishing team at Pearson deserves a tremendous amount of credit for the effort devoted to the text.

As a final word, we would like to express our sincere thanks to those using Principles of Managerial Finance in the classroom. We truly hope that this text will help you and your students to appreciate the financial challenges and opportunities faced in today’s business world. Good luck and best wishes!

Wajeeh Elali
Amer Al-Roubaie
Manama, Bahrain
June 2012

Many thanks to the following reviewers for the Arab World Edition:

Professor Idries Al-Jarrah, The University of Jordan, Jordan
Dr. Fayez A. Tayem, King Saud University, Saudi Arabia
Professor John Rutland, American University of Kuwait, Kuwait
Mr. Namasiku Liandu, Bahrain Institute of Banking and Finance, Bahrain
Dr. Viviane Naimy, Notre Dame University, Lebanon
Dr. Hussein Al-Tamimi, University of Sharjah, U.A.E.
Dr. Narjess Boubakri, American University of Sharjah, U.A.E.
Dr. Engku Ngah S.E. Chik, Prince Sultan University, Saudi Arabia
Dr. Jasmin Mahmoud Fouad, The American University in Cairo, Egypt
Dr. Ahmed Adbelmotelib Badawi, The German University in Cairo, Egypt
Learning Goals

After reading this chapter, you should be able to:

LG 1 Differentiate between debt and equity capital.
LG 2 Discuss the features of both common and preferred stock.
LG 3 Describe the process of issuing common stock, including venture capital, going public, and the investment banker.
LG 4 Understand the concept of market efficiency and basic stock valuation using zero-growth, constant-growth, and variable-growth models.
LG 5 Discuss the free cash flow valuation model and the book value, liquidation value, and price/earnings (P/E) multiple approaches.
LG 6 Explain the relationships among financial decisions, return, risk, and the firm’s value.
Among the GCC countries, the economy of Qatar has been growing exponentially due to its liquefied natural gas production and exports. Qatar has the highest GDP per capita in the world, standing at US$90,149 in terms of purchasing power parity in 2010. In addition to revenues earned from the sale of lucrative hydrocarbons, Qatar has been making efforts to diversify its economy by encouraging private enterprises to participate in market activities. In 1995, the Doha Stock Market was established, paving the way for state-asset privatization which, in turn, opened the door for more private sector participation. Qatar’s exchange index registered a growth of 24.9 percent in 2010, surpassing the growth of 8.2 percent by the Saudi Tadawul and 6.1 percent of the Muscat Securities Market. Further improvement was recorded at the end of 2010, making Qatar the best-performing market in the region. At that time, the market reacted positively to the announcement by FIFA granting Qatar the right to host the World Cup in 2022.

In 1997, upon commencement of operations, the Doha Stock Market boasted 17 companies with an initial market capitalization of QR6bn (US$1.65bn). As a result of innovation giving rise to rapid technological advances, the market was quickly transformed into a fully functioning electronic trading system. As of today, the Qatar Exchange comprises 43 listed companies with a total market capitalization of QR450.2bn (US$123.9bn). As for market performance, Qatar’s market has, on average, performed better than other markets in the region, losing 28 percent of its value due to the global financial crisis compared to a loss of 47.5 percent by Abu Dhabi’s ADX, 56.55 percent by Saudi Arabia’s Tadawul, and 72.4 percent by Dubai’s financial market.

In November 2010 a memorandum of understanding was signed between the Qatar Exchange and Qatar Chamber of Commerce to collaborate on raising awareness among local investors of the superior returns achieved by the bourse (stock exchange). In support of the agreement, the Qatar Chamber of Commerce earmarked no fewer than 27 new entities likely to be publicly traded in the coming few years. In Qatar, moreover, many publicly traded corporations are establishing dedicated investor relations departments to enhance the access of investors to information about investment opportunities in Qatari corporations. Leveraging the financial resources derived from its natural gas wealth, Qatar, in comparison to other countries in the GCC, has apparently achieved greater success in bringing its capital markets up to international standards.

7.1 Differences between Debt and Equity Capital

The term capital denotes the long-term funds of a firm. All items on the right-hand side of the firm’s balance sheet, excluding current liabilities, are sources of capital. Debt capital includes all long-term borrowing incurred by a firm including bonds, which were discussed in Chapter 6. Equity capital consists of long-term funds provided by the firm’s owners, the stockholders. A firm can obtain equity capital either internally, by retaining earnings rather than paying them out as dividends to its stockholders, or externally, by selling common or preferred stock. The key differences between debt and equity capital are summarized in Table 7.1 and discussed below.

**VOICE IN MANAGEMENT**

Unlike creditors (lenders), holders of equity capital (common and preferred stockholders) are owners of the firm. Holders of common stock have voting rights that permit them to select the firm’s directors and to vote on special issues. In contrast, debtholders and preferred stockholders may receive voting privileges only when the firm has violated its stated contractual obligations to them.

**CLAIMS ON INCOME AND ASSETS**

Holders of equity have claims on both income and assets that are secondary to the claims of creditors. Their claims on income cannot be paid until the claims of all creditors (including both interest and scheduled principal payments) have been satisfied. After satisfying these claims, the firm’s board of directors decides whether to distribute dividends to the owners.

The equity holders’ claims on assets also are secondary to the claims of creditors. If the firm fails, its assets are sold, and the proceeds are distributed in this order: employees and customers, the government, creditors, and (finally) equity holders. Because equity holders are the last to receive any distribution of assets, they expect greater returns from dividends and/or increases in stock price.

The costs of equity financing are generally higher than debt costs. One reason is that the suppliers of equity capital take more risks because of their subordinate claims on income and assets. Despite being more costly, equity capital is necessary for a firm to grow. All corporations must initially be financed with some common stock equity.

<table>
<thead>
<tr>
<th>TABLE 7.1 Key Differences between Debt and Equity Capital</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Characteristic</strong></td>
</tr>
<tr>
<td>----------------------------------------------------------</td>
</tr>
<tr>
<td>Voice in management*</td>
</tr>
<tr>
<td></td>
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<tr>
<td>Claims on income and assets</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Maturity</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Tax treatment</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

Debtholders do not have voting rights, but instead they rely on the firm’s contractual obligations to them to be their voice.
MATURITY

Unlike debt, equity capital is a permanent form of financing for the firm. It does not ‘mature’ so repayment is not required. Because equity is liquidated only during bankruptcy proceedings, stockholders must recognize that although a ready market may exist for their shares, the price that can be realized may fluctuate. This fluctuation of the market price of equity makes the overall returns to a firm’s stockholders even more risky.

TAX TREATMENT

Interest payments to debtholders are treated as tax-deductible expenses by the issuing firm, whereas dividend payments to a firm’s common and preferred stockholders are not tax deductible. The tax deductibility of interest lowers the corporation’s cost of debt financing, further causing it to be lower than the cost of equity financing.

→ REVIEW QUESTION

7–1 What are the key differences between debt capital and equity capital?

7.2 Common and Preferred Stock

A firm can obtain equity capital by selling either common or preferred stock. All corporations initially issue common stock to raise equity capital. Some of these firms later issue either additional common stock or preferred stock to raise more equity capital. Although both common and preferred stock are forms of equity capital, preferred stock has some similarities to debt capital that significantly differentiate it from common stock. Here we first consider the features of both common and preferred stock and then describe the process of issuing common stock, including the use of venture capital.

COMMON STOCK

The true owners of business firms are the common stockholders. Common stockholders are sometimes referred to as residual owners because they receive what is left—the residual—after all other claims on the firm’s income and assets have been satisfied. They are assured of only one thing: that they cannot lose any more than they have invested in the firm. As a result of this generally uncertain position, common stockholders expect to be compensated with adequate dividends and, ultimately, capital gains.

Ownership

The common stock of a firm can be privately owned (stock) by a single individual, closely owned (stock) by a small group of investors (such as a family), or publicly owned (stock) by a broad group of unrelated individual or institutional investors. Typically, small corporations are privately or closely owned; if their shares are traded, this trading occurs infrequently and in small amounts. Large corporations, which are emphasized in the following discussions, are publicly owned, and their shares are generally actively traded in the broker or dealer markets described in Chapter 1.

Par Value

Unlike bonds, which always have a par value, common stock may be sold with or without a par value. The par value of a common stock is a relatively useless value established for legal purposes in the firm’s corporate charter. It is generally quite low, about US$1.
Firms often issue stock with no par value, in which case they may assign the stock a value or record it on the books at the price at which it is sold. A low par value may be advantageous in states where certain corporate taxes are based on the par value of stock; if a stock has no par value, the tax may be based on an arbitrarily determined per-share figure.

Preemptive Rights

The preemptive right allows common stockholders to maintain their proportionate ownership in the corporation when new shares are issued, thus protecting them from dilution of their ownership. A dilution of ownership is a reduction in each previous shareholder’s fractional ownership resulting from the issuance of additional shares of common stock. Preemptive rights allow preexisting shareholders to maintain their preissuance voting control and protect them against the dilution of earnings. Preexisting shareholders experience a dilution of earnings when their claim on the firm’s earnings is diminished as a result of new shares being issued.

In a rights offering, the firm grants rights to its shareholders. These financial instruments allow stockholders to purchase additional shares at a price below the market price, in direct proportion to their number of owned shares. Rights are used primarily by smaller corporations whose shares are either closely owned or publicly owned and not actively traded. In these situations, rights are an important financing tool without which shareholders would run the risk of losing their proportionate control of the corporation. From the firm’s viewpoint, the use of rights offerings to raise new equity capital may be less costly and may generate more interest than a public offering of stock.

Authorized, Outstanding, and Issued Shares

A firm’s corporate charter indicates how many authorized shares it can issue. The firm cannot sell more shares than the charter authorizes without obtaining approval through a shareholder vote. To avoid later having to amend the charter, firms generally attempt to authorize more shares than they initially plan to issue.

Authorized shares become outstanding shares when they are held by the public. If the firm repurchases any of its outstanding shares, these shares are recorded as treasury stock and are no longer considered to be outstanding shares. Issued shares are the shares of common stock that have been put into circulation; they represent the sum of outstanding shares and treasury stock.

Example 7.1

Golden Enterprises, a producer of medical pumps, has the following stockholders’ equity account on December 31:

<table>
<thead>
<tr>
<th>Stockholders’ Equity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common stock—US$0.80 par value:</td>
</tr>
<tr>
<td>Authorized 35,000,000 shares; issued 15,000,000 shares</td>
</tr>
<tr>
<td>Paid-in capital in excess of par</td>
</tr>
<tr>
<td>Retained earnings</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Less: Cost of treasury stock (1,000,000 shares)</td>
</tr>
<tr>
<td>Total stockholders’ equity</td>
</tr>
</tbody>
</table>
How many shares of additional common stock can Golden sell without gaining approval from its shareholders? The firm has 35 million authorized shares, 15 million issued shares, and 1 million shares of treasury stock. Thus 14 million shares are outstanding (15 million issued shares − 1 million shares of treasury stock), and Golden can issue 21 million additional shares (35 million authorized shares − 14 million outstanding shares) without seeking shareholder approval. This total includes the treasury shares currently held, which the firm can reissue to the public without obtaining shareholder approval.

Voting Rights
Generally, each share of common stock entitles its holder to one vote in the election of directors and on special issues. Votes are generally assignable and may be cast at the annual stockholders’ meeting.

In recent years, many firms have issued two or more classes of common stock; they differ mainly in having unequal voting rights. A firm can use different classes of stock as a defense against a hostile takeover in which an outside group, without management support, tries to gain voting control of the firm by buying its shares in the marketplace. Supervoting shares of stock give each owner multiple votes. Supervoting shares allow ‘insiders’ to maintain control against an outside group whose shares have only one vote each. At other times, a class of nonvoting common stock is issued when the firm wishes to raise capital through the sale of common stock but does not want to give up its voting control.

When different classes of common stock are issued on the basis of unequal voting rights, class A common is typically—but not universally—designated as nonvoting, and class B common has voting rights. Generally, higher classes of shares (class A, for example) are given preference in the distribution of earnings (dividends) and assets; lower-class shares, in exchange, receive voting rights. Treasury stock, which is held within the corporation, generally does not have voting rights, does not earn dividends, and does not have a claim on assets in liquidation.

Because most small stockholders do not attend the annual meeting to vote, they may sign a proxy statement transferring their votes to another party. In the U.S., the solicitation of proxies from shareholders is closely controlled by the Capital Markets Authority (CMA) to ensure that proxies are not being solicited on the basis of false or misleading information. Existing management generally receives the stockholders’ proxies, because it is able to solicit them at company expense.

Occasionally, when the firm is widely owned, outsiders may wage a proxy battle to unseat the existing management and gain control. To win a corporate election, votes from a majority of the shares voted are required. However, the odds of a nonmanagement group winning a proxy battle are generally slim.

Dividends
The payment of dividends to the firm’s shareholders is at the discretion of the corporation’s board of directors. Most corporations pay dividends quarterly. Dividends may be paid in cash, stock, or merchandise. Cash dividends are the most common, merchandise dividends the least.

Common stockholders are not promised a dividend, but they come to expect certain payments on the basis of the historical dividend pattern of the firm. Before dividends are paid to common stockholders, the claims of the government, all creditors, and preferred stockholders must be satisfied. Because of the importance of the dividend decision to the growth and valuation of the firm, dividends are discussed in greater detail in Chapter 13.
International Stock Issues

Although the international market for common stock is not as large as the international market for bonds, cross-border issuance and trading of common stock have increased dramatically in the past 30 years.

Some corporations issue stock in foreign markets. For example, the stock of General Electric trades in Frankfurt, London, Paris, and Tokyo; the stocks of Time Warner and Microsoft trade in Frankfurt and London; and the stock of McDonald’s trades in Frankfurt, London, and Paris. The Frankfurt, London, and Tokyo markets are the most popular. Issuing stock internationally broadens the ownership base and helps a company to integrate itself into the local business scene. A listing on a foreign stock exchange both increases local business press coverage and serves as effective corporate advertising. Having locally traded stock can also facilitate corporate acquisitions, because shares can be used as an acceptable method of payment.

Preferred Stock

Preferred stock gives its holders certain privileges that make them senior to common stockholders. Preferred stockholders are promised a fixed periodic dividend, which is stated either as a percentage or as a cash amount. How the dividend is specified depends on whether the preferred stock has a par value. Par-value preferred stock has a stated face value, and its annual dividend is specified as a percentage of this value. No-par preferred stock has no stated face value, but its annual dividend is stated in cash. Preferred stock is most often issued by public utilities, by acquiring firms in merger transactions, and by firms that are experiencing losses and need additional financing.

Basic Rights of Preferred Stockholders

The basic rights of preferred stockholders are somewhat more favorable than the rights of common stockholders. Preferred stock is often considered quasi-debt because, much like interest on debt, it specifies a fixed periodic payment (dividend). Preferred stock is unlike debt in that it has no maturity date. Because they have a fixed claim on the firm’s income that takes precedence over the claim of common stockholders, preferred stockholders are exposed to less risk. They are consequently not normally given a voting right.

Preferred stockholders have preference over common stockholders in the distribution of earnings. If the stated preferred stock dividend is ‘passed’ (not paid) by the board of directors, the payment of dividends to common stockholders is prohibited. It is this preference in dividend distribution that makes common stockholders the true risk takers.

Preferred stockholders are also usually given preference over common stockholders in the liquidation of assets in a legally bankrupt firm, although they must ‘stand in line’ behind creditors. The amount of the claim of preferred stockholders in liquidation is normally equal to the par or stated value of the preferred stock.

Features of Preferred Stock

A preferred stock issue generally includes a number of features which, along with the stock’s par value, the amount of dividend payments, the dividend payment dates, and any restrictive covenants, are specified in an agreement similar to a bond indenture.

Restrictive Covenants The restrictive covenants in a preferred stock issue focus on ensuring the firm’s continued existence and regular payment of the dividend. These covenants include provisions about passing dividends, the sale of senior securities, mergers, sales of assets, minimum liquidity requirements, and repurchases
of common stock. The violation of preferred stock covenants usually permits preferred stockholders either to obtain representation on the firm’s board of directors or to force the retirement of their stock at or above its par or stated value.

**Cumulation**  Most preferred stock is **cumulative** with respect to any dividends passed. That is, all dividends in arrears, along with the current dividend, must be paid before dividends can be paid to common stockholders. If preferred stock is **noncumulative (preferred stock)**, passed (unpaid) dividends do not accumulate. In this case, only the current dividend must be paid before dividends can be paid to common stockholders. Because the common stockholders can receive dividends only after the dividend claims of preferred stockholders have been satisfied, it is in the firm’s best interest to pay preferred dividends when they are due.

**Other Features**  Preferred stock is generally **callable**—the issuer can retire outstanding stock within a certain period of time at a specified price. The call option generally cannot be exercised until after a specified date. The call price is normally set above the initial issuance price, but it may decrease as time passes. Making preferred stock callable provides the issuer with a way to bring the fixed-payment commitment of the preferred issue to an end if conditions in the financial markets make it desirable to do so.

Preferred stock quite often contains a **conversion feature** that allows holders of convertible preferred stock to change each share into a stated number of shares of common stock. Sometimes the number of shares of common stock that the preferred stock can be exchanged for changes according to a predetermined formula.

### ISSUING COMMON STOCK

Because of the high risk associated with a business startup, a firm’s initial financing typically comes from its founders in the form of a common stock investment. Until the founders have made an equity investment, it is highly unlikely that others will contribute either equity or debt capital. Early-stage investors in the firm’s equity, as well as lenders who provide debt capital, want to be assured that they are taking no more risk than the founding owner(s). In addition, they want confirmation that the founders are confident enough in their vision for the firm that they are willing to risk their own money.

The initial nonfounder financing for business startups with attractive growth prospects comes from private equity investors. Then, as the firm establishes the viability of its product or service offering and begins to generate revenues, cash flow, and profits, it will often ‘go public’ by issuing shares of common stock to a much broader group of investors.

Before we consider the initial public sales of equity, let’s review some of the key aspects of early-stage equity financing in firms that have attractive growth prospects.

**Venture Capital**

The initial external equity financing privately raised by firms, typically early-stage firms with attractive growth prospects, is called **venture capital**. Those who provide venture capital are known as **venture capitalists (VCs)**. They typically are formal businesses that maintain strong oversight over the firms they invest in and that have clearly defined exit strategies. Less visible early-stage investors, called **angel capitalists (angels)**, tend to be investors who do not actually operate as a business; they are often wealthy individual investors who are willing to invest in promising early-stage companies in exchange for a portion of the firm’s equity. Although angels play a major role in early-stage equity financing, we will focus on VCs because of their more formal structure and greater public visibility.
TABLE 7.2 Organization of Institutional Venture Capital Investors

<table>
<thead>
<tr>
<th>Organization</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small business investment companies (SBICs)</td>
<td>Corporations chartered by the U.S. federal government that can borrow at attractive rates from the national treasury and use the funds to make venture capital investments in private companies.</td>
</tr>
<tr>
<td>Financial VC funds</td>
<td>Subsidiaries of financial institutions, particularly banks, set up to help young firms grow and, it is hoped, become major customers of the institution.</td>
</tr>
<tr>
<td>Corporate VC funds</td>
<td>Firms, sometimes subsidiaries, established by nonfinancial firms, typically to gain access to new technologies that the corporation can access to further its own growth.</td>
</tr>
<tr>
<td>VC limited partnerships</td>
<td>Limited partnerships organized by professional VC firms, which serve as the general partner and organize, invest, and manage the partnership using the limited partners’ funds; the professional VCs ultimately liquidate the partnership and distribute the proceeds to all partners.</td>
</tr>
</tbody>
</table>

*Organization and Investment Stages*  Institutional venture capital investors tend to be organized in one of four basic ways, as described in Table 7.2. The VC limited partnership is by far the dominant structure. These funds have as their sole objective to earn high returns, rather than to obtain access to the companies in order to sell or buy other products or services.

VCs can invest in early-stage companies, later-stage companies, or buyouts and acquisitions. Generally, about 40 to 50 percent of VC investments are devoted to early-stage companies (for startup funding and expansion) and a similar percentage to later-stage companies (for marketing, production expansion, and preparation for public offering); the remaining 5 to 10 percent are devoted to the buyout or acquisition of other companies. Generally, VCs look for compound annual rates of return ranging from 20 to 50 percent or more, depending on both the development stage and the attributes of each company. Earlier-stage investments tend to demand higher returns than later-stage investments because of the higher risk associated with the earlier stages of a firm’s growth.

*Deal Structure and Pricing* Regardless of the development stage, venture capital investments are made under a legal contract that clearly allocates responsibilities and ownership interests between existing owners (founders) and the VC fund or limited partnership. The terms of the agreement will depend on numerous factors related to the founders; the business structure, stage of development, and outlook; and other market and timing issues. The specific financial terms will, of course, depend on the value of the enterprise, the amount of funding, and the perceived risk. To control the VC’s risk, various covenants are included in the agreement, and the actual funding may be pegged to the achievement of measurable milestones. The VC will negotiate numerous other provisions into the contract, both to ensure the firm’s success and to control its risk exposure. The contract will have an explicit exit strategy for the VC that may be tied both to measurable milestones and to time.

The amount of equity to which the VC is entitled will, of course, depend on the value of the firm, the terms of the contract, the exit terms, and the minimum compound annual rate of return required by the VC on its investment. Although each VC investment is unique and no standard contract exists, the transaction will be structured to provide the VC with a high rate of return that is consistent with the typically high risk of such transactions. The exit strategy of most VC investments is to take the firm public through an initial public offering.
Going Public
When a firm wishes to sell its stock in the primary market, it has three alternatives. It can make (1) a public offering, in which it offers its shares for sale to the general public; (2) a rights offering, in which new shares are sold to existing stockholders; or (3) a private placement, in which the firm sells new securities directly to an investor or group of investors. Here we focus on public offerings, particularly the initial public offering (IPO), which is the first public sale of a firm’s stock. IPOs are typically made by small, rapidly growing companies that either require additional capital to continue expanding or have met a milestone for going public that was established in a contract signed earlier in order to obtain VC funding.

To go public, the firm must first obtain the approval of its current shareholders, the investors who own its privately issued stock. Next, the company’s auditors and lawyers must certify that all documents for the company are legitimate. The company then finds an investment bank willing to underwrite the offering. This underwriter is responsible for promoting the stock and facilitating the sale of the company’s IPO shares. The underwriter often brings in other investment banking firms as participants. We’ll discuss the role of the investment banker in more detail in the next section.

In the U.S., the company files a registration statement with the CMA. One portion of the registration statement is called the prospectus. It describes the key aspects of the issue, the issuer, and its management and financial position. During the waiting period between the statement’s filing and its approval, prospective investors can receive a preliminary prospectus. This preliminary version is called a red herring because a notice printed in red on the front cover indicates the tentative nature of the offer. The cover of the preliminary prospectus describing the 2010 stock issue of Convio, Inc., is shown in Figure 7.1. Note the red herring printed across the top of the page.

![Figure 7.1](image)

Cover of a Preliminary Prospectus for a Stock Issue
Some of the key factors related to the 2010 common stock issue by Convio, Inc., are summarized on the cover of the prospectus. The disclaimer printed in red across the top of the page is what gives the preliminary prospectus its ‘red herring’ name.

The information in this preliminary prospectus is not complete and may be changed. These securities may not be sold until the registration statement filed with the Securities and Exchange Commission is effective. This preliminary prospectus is not an offer to sell and does not ask an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

SUBJECT TO COMPLETION. DATED APRIL 23, 2010.

IPO PRELIMINARY PROSPECTUS

Convio, Inc., is selling 5,132,728 shares of our common stock and the selling stockholders identified in this prospectus are selling additional 1,395,304 shares. We will not receive any of the proceeds from the sale of the shares being sold by the selling stockholders. We have granted the underwriters a 30-day option to purchase up to an additional 799,909 shares from us to cover over-allotments, if any.

This is an initial public offering of our common stock. We currently expect the initial public offering price to be between $10.00 and $12.00 per share. We have applied for the listing of our common stock on the NASDAQ Global Market under the symbol ‘CNVO.’

INVESTING IN OUR COMMON STOCK INVOLVES RISKS. SEE “RISK FACTORS” BEGINNING ON PAGE 10.

Per Share | Total
---|---
Initial public offering price | $ | $%
Underwriting discount | $ | $
Proceeds before expenses, to Company | $ | $%
Proceeds before expenses, to selling stockholders | $ | $

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the accuracy or adequacy of this prospectus. Any representation to the contrary is a criminal offense.

Thomas Weisel Partners LLC | Piper Jaffray
William Blair & Company | JMP Securities
Pacific Crest Securities

The date of this prospectus is, 2010.

Source: SEC filing Form S-1/A, Convio, Inc., filed April 26, 2010, p.4
After the U.S. CMA approves the registration statement, the investment community can begin analyzing the company’s prospects. However, from the time it files until at least one month after the IPO is complete, the company must observe a quiet period, during which there are restrictions on what company officials may say about the company. The purpose of the quiet period is to make sure that all potential investors have access to the same information about the company—the information presented in the preliminary prospectus—and not to any unpublished data that might give them an unfair advantage.

The investment bankers and company executives promote the company’s stock offering through a road show, a series of presentations to potential investors around the relevant country and sometimes overseas. In addition to providing investors with information about the new issue, road show sessions help the investment bankers gauge the demand for the offering and set an expected pricing range. After the underwriter sets terms and prices the issue, the U.S. CMA must approve the offering.

The Investment Banker’s Role
Most public offerings are made with the assistance of an investment banker. The investment banker is a financial intermediary (such as Morgan Stanley or Goldman Sachs) that specializes in selling new security issues and advising firms with regard to major financial transactions. The main activity of the investment banker is underwriting. This process involves purchasing the security issue from the issuing corporation at an agreed-on price and bearing the risk of reselling it to the public at a profit. The investment banker also provides the issuer with advice about pricing and other important aspects of the issue.

In the case of very large security issues, the investment banker brings in other bankers as partners to form an underwriting syndicate. The syndicate shares the financial risk associated with buying the entire issue from the issuer and reselling the new securities to the public. The originating investment banker and the syndicate members put together a selling group, normally made up of themselves and a large number of brokerage firms. Each member of the selling group accepts the responsibility for selling a certain portion of the issue and is paid a commission on the securities it sells. The selling process for a large security issue is depicted in Figure 7.2 on page 248.

Compensation for underwriting and selling services typically comes in the form of a discount on the sale price of the securities. For example, an investment banker may pay the issuing firm US$24 per share for stock that will be sold for US$26 per share. The investment banker may then sell the shares to members of the selling group for US$25.25 per share. In this case, the original investment banker earns US$1.25 per share (US$25.25 sale price – US$24 purchase price). The members of the selling group earn 75 cents for each share they sell (US$26 sale price – US$25.25 purchase price). Although some primary security offerings are directly placed by the issuer, the majority of new issues are sold through public offering via the mechanism just described.

INTERPRETING STOCK QUOTATIONS
The financial manager needs to stay abreast of the market values of the firm’s outstanding stock, whether it is traded domestically or in international markets. Similarly, existing and prospective stockholders need to monitor the prices of the securities they own because these prices represent the current value of their investments. Price quotations, which include current price data along with statistics on recent price behavior, are readily available for actively traded stocks. Up until a couple of years ago, the best source of stock quotations was
the business section of a daily newspaper, such as the Financial Times and Wall Street Journal. One problem with newspapers, however, is that they are printed only once a day. Now it is possible to get quotes all day long from a wide variety of internet sources such as www.bloomberg.com, www.globestor.com, and www.gulfbase.com.

Figure 7.3 shows a quote for Saudi Basic Industries Corporation in Saudi Arabia, which is traded on the Saudi stock exchange (Tadawul) under the symbol SABIC. As Figure 7.3 shows, SABIC’s stock ended the day at SR89.75, for a loss of SR0.50. The data also show that during the past year, the price has been as high as SR114.00 and as low as SR28.52. The ‘net change’ of −0.50 tells us that the closing price of SR89.75 per share is SR0.50 lower than the closing price the day before. The fifth column tells us how many shares traded during the reported day (November 27, 2011). For example, the 7,762,300 for SABIC tells us that more than 7.7 million shares changed hands. The column marked ‘Dividend Yield (%)’ gives the dividend yield based on the current dividend and the closing price. For SABIC, this is 3.88 percent as shown. The column labeled PE (short for price/earnings ratio), is the closing price of SR89.75 divided by annual earnings per share (based on the most recent full fiscal year). In the jargon of financial markets, we might say that SABIC “sells for 9.06 times earnings”. The remaining column, ‘Beta’, tells us about the market risk of an individual stock; i.e., the extent to which the stock’s returns move relative to the market. For SABIC, this is 1.59.

Similar quotations systems are used for stocks that trade in other markets such as the NYSE, London, Dubai, Cairo, and the Nasdaq market. Also note that when a stock issue is not traded on a given day, it generally is not quoted in the financial and business press.

➔ REVIEW QUESTIONS

7–2 What risks do common stockholders take that other suppliers of long-term capital do not?
7–3 How does a rights offering protect a firm’s stockholders against the dilution of ownership?
7–4 Explain the relationships among authorized shares, outstanding shares, treasury stock, and issued shares.
7–5 What claims do preferred stockholders have with respect to distribution of earnings (dividends) and assets?
7–6 Explain the cumulative feature of preferred stock. What is the purpose of a call feature in a preferred stock issue?
7–7 What is the difference between a venture capitalist (VC) and an angel capitalist (angel)?
7–8 Into what bodies are institutional VCs most commonly organized? How are their deals structured and priced?
7–9 What general procedures must a private firm follow to go public via an initial public offering (IPO)?
7–10 What role does an investment banker play in a public offering? Explain the sequence of events in the issuing of stock.
7–11 What are the key sources of stock quotations? Describe the items of information included in a published stock quotation.

### 7.3 Common Stock Valuation

Common stockholders expect to be rewarded through periodic cash dividends and an increasing—or at least nondeclining—share value. Like current owners, prospective owners and security analysts frequently estimate the firm’s value. Investors purchase the stock when they believe that it is undervalued—when its true value is greater than its market price. They sell the stock when they feel that it is overvalued—when its market price is greater than its true value.
In this section, we will describe specific stock-valuation techniques. First,
though, we will look at the concept of an efficient market, which questions
whether the prices of actively traded stocks can differ from their true values.

**MARKET EFFICIENCY**

Economically rational buyers and sellers use their assessment of an asset’s risk
and return to determine its value. To a buyer, the asset’s value represents
the maximum price that he or she would pay to acquire it; a seller views the asset’s
value as a minimum sale price. In competitive markets with many active partic-
ipants, such as the London or New York Stock Exchange, the interactions of
many buyers and sellers result in an equilibrium price—the *market value*—for
each security. This price reflects the collective actions that buyers and sellers take
on the basis of all available information. Buyers and sellers are assumed to digest
new information immediately as it becomes available and, through their purchase
and sale activities, to create a new market equilibrium price quickly. This general
concept is known as *market efficiency*.

**The Efficient-Market Hypothesis**

As noted in Chapter 1, active broker and dealer markets, such as the London
Stock Exchange, the New York Stock Exchange and the Nasdaq market, are *efficient*—they are made up of many rational investors who react quickly and
objectively to new information. The *efficient-market hypothesis* (EMH), which
is the basic theory describing the behavior of such a ‘perfect’ market, specifically
states that:

1. Securities are typically in equilibrium, which means that they are fairly priced
and that their expected returns equal their required returns.
2. At any point in time, security prices fully reflect all public information avail-
able about the firm and its securities, and these prices react swiftly to new
information.
3. Because stocks are fully and fairly priced, investors need not waste their time
trying to find mispriced (undervalued or overvalued) securities.

Not all market participants are believers in the efficient-market hypothesis.
Some feel that it is worthwhile to search for undervalued or overvalued secur-
ities and to trade them to profit from market inefficiencies. Others argue that it
is mere luck that would allow market participants to anticipate new information
correctly and as a result earn *excess returns*—that is, actual returns greater than
required returns. They believe it is unlikely that market participants can *over the
long run* earn excess returns. Contrary to this belief, some well-known investors
such as Warren Buffett, Bill Gross, and Peter Lynch *have* over the long run consis-
tently earned excess returns on their portfolios. It is unclear whether their success
is the result of their superior ability to anticipate new information or of some
form of market inefficiency.

**The Behavioral Finance Challenge**

Although considerable evidence supports the concept of market efficiency, a
growing body of academic evidence has begun to cast doubt on the validity of
this notion. The research documents various *anomalies*—deviations from ac-
cepted beliefs—in stock returns. A number of academics and practitioners have
also recognized that emotions and other subjective factors play a role in invest-
ment decisions.

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**HINT** Be sure to clarify in your own mind the difference between the required return and
the expected return. *Required return* is what an investor has to invest in a specific asset,
and *expected return* is the return an investor thinks he or she will get if the asset is purchased.
This focus on investor behavior has resulted in a significant body of research, collectively referred to as behavioral finance. Advocates of behavioral finance are commonly referred to as ‘behaviorists.’ Daniel Kahneman was awarded the 2002 Nobel Prize in economics for his work in behavioral finance, specifically for integrating insights from psychology and economics. Ongoing research into the psychological factors that can affect investor behavior and the resulting effects on stock prices will likely result in growing acceptance of behavioral finance. The Focus on Practice box further explains some of the findings of behavioral finance.

Throughout this text we ignore both disbelievers and behaviorists and continue to assume market efficiency. This means that the terms ‘expected return’ and ‘required return’ are used interchangeably, because they should be equal in an efficient market. This also means that stock prices accurately reflect true value based on risk and return. In other words, we will operate under the assumption that a stock’s market price at any point in time is the best estimate of its value. We’re now ready to look closely at the mechanics of common stock valuation.

**Focus on Practice**

Understanding Human Behavior Helps Us Understand Investor Behavior

Market anomalies are not always explained by the efficient market hypothesis. Behavioral finance has a number of theories to help explain how human emotions influence people in their investment decision-making processes. Regret theory deals with the emotional reaction people experience after realizing they have made an error in judgment. Faced with the prospect of selling a stock, investors become emotionally affected by the price at which they purchased the stock. A sale at a loss would confirm that the investor mis-calculated the value of the stock when it was purchased. The correct approach when considering whether to sell a stock is, "Would I buy this stock today if it were already liquidated?" If the answer is "no," it is time to sell. Regret theory also holds true for investors who passed up buying a stock that now is selling at a much higher price. Again, the correct approach is to value the stock today without regard to its prior value.

Herding is another market behavior affecting investor decisions. Some investors rationalize their decision to buy certain stocks with “everyone else is doing it.” Investors may feel less embarrassment about losing money on a popular stock than about losing money on an unknown or unpopular stock.

People have a tendency to place particular events into mental compartments, and the difference between these compartments sometimes impacts behavior more than the events themselves. Researchers have asked people the following question: "Would you purchase a US$20 ticket at the local theater if you realize after you get there that you have lost a US$20 bill?" Roughly 88 percent of people would do so. Under another scenario, people were asked whether they would buy a second US$20 ticket if they arrived at the theater and realized that they had left at home a ticket purchased in advance for US$20. Only 40 percent of respondents would buy another. In both scenarios the person is out US$40, but mental accounting leads to a different outcome. In investing, compartmentalization is best illustrated by the hesitation to sell an investment that once had monstrous gains and now has a modest gain. During bull markets, people get accustomed to paper gains. When a market correction deflates investors’ net worth, they are hesitant to sell, causing them to wait for the return of that gain.

Other investor behaviors are prospect theory and anchoring. According to prospect theory, people express a different degree of emotion toward gains than losses. Individuals are stressed more by prospective losses than they are buoyed by the prospect of equal gains. Anchoring is the tendency of investors to place more value on recent information. People tend to give too much credence to recent market opinions and events and mistakenly extrapolate recent trends that differ from historical, long-term averages and probabilities. Anchoring is a partial explanation for the longevity of some bull markets.

Most stock-valuation techniques require that all relevant information be available to properly determine a stock’s value and potential for future gain. Behavioral finance may explain the connection between valuation and an investor’s actions based on that valuation.

Theories of behavioral finance can apply to other areas of human behavior in addition to investing. Think of a situation in which you may have demonstrated one of these behaviors. Share your situation with a classmate.
BASIC COMMON STOCK VALUATION EQUATION

Like the value of a bond, which we discussed in Chapter 6, the value of a share of common stock is equal to the present value of all future cash flows (dividends) that it is expected to provide over an infinite time horizon. Although a stockholder can earn capital gains by selling stock at a price above that originally paid, what is really sold is the right to all future dividends. What about stocks that are not expected to pay dividends in the foreseeable future? Such stocks have a value attributable to a future dividend stream or to the proceeds from sale of the company or liquidation of its assets. Therefore, from a valuation viewpoint, only dividends are relevant.

The basic valuation model for common stock is given in Equation 7.1:

\[
P_0 = \frac{D_1}{(1 + r_s)^1} + \frac{D_2}{(1 + r_s)^2} + \cdots + \frac{D_n}{(1 + r_s)^n} \tag{7.1}
\]

where

- \(P_0\) = value of common stock
- \(D_t\) = per-share dividend expected at the end of year \(t\)
- \(r_s\) = required return on common stock

The equation can be simplified somewhat by redefining each year’s dividend, \(D_t\), in terms of anticipated growth. We will consider three models here: zero-growth, constant-growth, and variable-growth.

Zero-Growth Model

The simplest approach to dividend valuation, the zero-growth model, assumes a constant, nongrowing dividend stream. In terms of the notation already introduced

\[D_1 = D_2 = \cdots = D_n\]

When we let \(D_1\) represent the amount of the annual dividend, Equation 7.1 under zero growth reduces to

\[
P_0 = D_1 \times \sum_{t=1}^{\infty} \frac{1}{(1 + r_s)^t} = D_1 \times \frac{1}{r_s} = \frac{D_1}{r_s} \tag{7.2}
\]

The equation shows that with zero growth, the value of a share of stock would equal the present value of a perpetuity of \(D_1\) dollars discounted at a rate \(r_s\). (Perpetuities were introduced in Chapter 4; see Equation 4.14 and the related discussion.)

Example 7.2

Ghazi Badawi estimates that the dividend of Zina Company, an established textile producer, is expected to remain constant at US$3 per share indefinitely. If his required return on its stock is 15 percent, the stock’s value is US$20 (US$3 ÷ 0.15) per share.

Preferred Stock Valuation Because preferred stock typically provides its holders with a fixed annual dividend over its assumed infinite life, Equation 7.2 can be used to find the value of preferred stock. The value of preferred stock can be estimated by substituting the stated dividend on the preferred stock for \(D_1\) and the required return for \(r_s\) in Equation 7.2. For example, a preferred stock paying a US$5 stated annual dividend and having a required return of 13 percent would have a value of US$38.46 (US$5 ÷ 0.13) per share.
The most widely cited dividend valuation approach, the **constant-growth model**, assumes that dividends will grow at a constant rate, but a rate that is less than the required return. (The assumption that the constant rate of growth, \( g \), is less than the required return, \( r_s \), is a necessary mathematical condition for deriving this model.) By letting \( D_0 \) represent the most recent dividend, we can rewrite Equation 7.1 as follows:

\[
P_0 = \frac{D_0 \times (1 + g)^1}{(1 + r_s)^1} + \frac{D_0 \times (1 + g)^2}{(1 + r_s)^2} + \cdots + \frac{D_0 \times (1 + g)^\infty}{(1 + r_s)^\infty} \tag{7.3}
\]

If we simplify Equation 7.3, it can be rewritten as:

\[
P_0 = \frac{D_1}{r_s - g} \tag{7.4}
\]

The constant-growth model in Equation 7.4 is commonly called the **Gordon model**. An example will show how it works.

**Example 7.3** Lamar Company, a small cosmetics company, from 2007 through 2012 paid the following per-share dividends.

<table>
<thead>
<tr>
<th>Year</th>
<th>Dividend per share</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>US$1.40</td>
</tr>
<tr>
<td>2011</td>
<td>1.29</td>
</tr>
<tr>
<td>2010</td>
<td>1.20</td>
</tr>
<tr>
<td>2009</td>
<td>1.12</td>
</tr>
<tr>
<td>2008</td>
<td>1.05</td>
</tr>
<tr>
<td>2007</td>
<td>1.00</td>
</tr>
</tbody>
</table>

We assume that the historical compound annual growth rate of dividends is an accurate estimate of the future constant annual rate of dividend growth, \( g \). To find the historical annual growth rate of dividends, we must solve the following for \( g \).

\[
D_{2012} = D_{2007} \times (1 + g)^5
\]

\[
\frac{D_{2007}}{D_{2012}} = \frac{1}{(1 + g)^5}
\]

\[
\text{US$1.00} = \frac{1}{(1 + 0.07)^5}
\]

Using a financial calculator or a spreadsheet, we find that the historical compound annual growth rate of Lamar Company dividends equals 7 percent. The company estimates that its dividend in 2013, \( D_1 \), will equal US$1.50.

---

1. Another assumption of the constant-growth model as presented is that earnings and dividends grow at the same rate. This assumption is true only in cases in which a firm pays out a fixed percentage of its earnings each year (has a fixed payout ratio). In the case of a declining industry, a negative growth rate (\( g < 0 \)) might exist. In such a case, the constant-growth model, as well as the variable-growth model presented in the next section, remains fully applicable to the valuation process.

2. A financial calculator can be used. (Note: Most calculators require either the PV or FV value to be input as a negative number to calculate an unknown interest or growth rate. That approach is used here.) Using the inputs shown on the left, you should find the growth rate to be 6.96 percent, which we round to 7 percent. An electronic spreadsheet could also be used to make this computation. Given space considerations, we have forgone that computational aid here.
The required return, \( r_s \), is assumed to be 15 percent. By substituting these values into Equation 7.4, we find the value of the stock to be

\[
P_0 = \frac{US\$1.50}{0.15 - 0.07} = \frac{US\$1.50}{0.08} = US\$18.75 \text{ per share}
\]

Assuming that the values of \( D_1 \), \( r_s \), and \( g \) are accurately estimated, Lamar Company’s stock value is US$18.75 per share.

**Variable-Growth Model**

The zero- and constant-growth common stock models do not allow for any shift in expected growth rates. Because future growth rates might shift up or down because of changing expectations, it is useful to consider a variable-growth model that allows for a change in the dividend growth rate.\(^3\) We will assume that a single shift in growth rates occurs at the end of year \( N \), and we will use \( g_1 \) to represent the initial growth rate and \( g_2 \) for the growth rate after the shift. To determine the value of a share of stock in the case of variable growth, we use a four-step procedure.

**Step 1** Find the value of the cash dividends at the end of each year, \( D_t \), during the initial growth period, years 1 through \( N \). This step may require adjusting the most recent dividend, \( D_0 \), using the initial growth rate, \( g_1 \), to calculate the dividend amount for each year. Therefore, for the first \( N \) years,

\[
D_t = D_0 \times (1 + g_1)^t
\]

**Step 2** Find the present value of the dividends expected during the initial growth period. Using the notation presented earlier, we can give this value as

\[
\sum_{t=1}^{N} \frac{D_t}{(1 + r_s)^t} = \sum_{t=1}^{N} \frac{D_t}{(1 + r_s)^t}
\]

**Step 3** Find the value of the stock at the end of the initial growth period, \( P_N = (D_{N+1})/(r_s - g_2) \), which is the present value of all dividends expected from year \( N + 1 \) to infinity, assuming a constant dividend growth rate, \( g_2 \). This value is found by applying the constant-growth model (Equation 7.4) to the dividends expected from year \( N + 1 \) to infinity. The present value of \( P_N \) would represent the value today of all dividends that are expected to be received from year \( N + 1 \) to infinity. This value can be represented by

\[
\frac{1}{(1 + r_s)^N} \times \frac{D_N + 1}{r_s - g_2}
\]

**Step 4** Add the present value components found in Steps 2 and 3 to find the value of the stock, \( P_0 \), given in Equation 7.5

\[
P_0 = \sum_{t=1}^{N} \left( \frac{D_0 \times (1 + g_1)^t}{(1 + r_s)^t} \right) + \left[ \frac{1}{(1 + r_s)^N} \times \frac{D_N + 1}{r_s - g_2} \right] \tag{7.5}
\]

The following example illustrates the application of these steps to a variable-growth situation with only one change in growth rate.

---

\(^3\) More than one change in the growth rate can be incorporated into the model, but to simplify the discussion we will consider only a single growth-rate change. The number of variable-growth valuation models is technically unlimited, but concern over all possible shifts in growth is unlikely to yield much more accuracy than a simpler model.
Farida Rida is considering purchasing the common stock of Red Sea Industries, a rapidly growing boat manufacturer. She finds that the firm’s most recent (2012) annual dividend payment was US$1.50 per share. Farida estimates that these dividends will increase at a 10 percent annual rate, \( g_1 \), over the next 3 years (2013, 2014, and 2015) because of the introduction of a fantastic new boat. At the end of the 3 years (the end of 2015), she expects the firm’s mature product line to result in a slowing of the dividend growth rate to 5 percent per year, \( g_2 \), for the foreseeable future. Farida’s required return, \( r_s \), is 15 percent. To estimate the current (end-of-2012) value of Red Sea’s common stock, \( P_0 = P_{2012} \), she applies the four-step procedure to these data.

**Step 1** The value of the cash dividends in each of the next 3 years is calculated in columns 1, 2, and 3 of Table 7.3. The 2013, 2014, and 2015 dividends are US$1.65, US$1.82, and US$2.00, respectively.

**Step 2** The present value of the three dividends expected during the 2013–2015 initial growth period is calculated in columns 3, 4, and 5 of Table 7.3. The sum of the present values of the three dividends is US$4.12.

**Step 3** The value of the stock at the end of the initial growth period \( (N = 2015) \) can be found by first calculating \( D_{N+1} = D_{2016} \)

\[
D_{2016} = D_{2015} \times (1 + 0.05) = US$2.00 \times (1.05) = US$2.10
\]

Finally, in Step 3, the share value of US$21 at the end of 2015 must be converted into a present (end-of-2012) value. Using the 15 percent required return, we get

\[
P_{2015} = \frac{D_{2016}}{r_s - g_2} = \frac{US$2.10}{0.15 - 0.05} = \frac{US$2.10}{0.10} = US$21.00
\]

**Step 4** Adding the present value of the initial dividend stream (found in Step 2) to the present value of the stock at the end of the initial growth period (found in Step 3) as specified in Equation 7.5, the current (end-of-2012) value of Red Sea Industries’ stock is:

\[
P_{2012} = US$4.12 + US$13.81 = US$17.93 \text{ per share}
\]

Farida’s calculations indicate that the stock is currently worth US$17.93 per share. Her calculation of this value is depicted graphically on the following time line.
The zero-, constant-, and variable-growth valuation models provide useful frameworks for estimating stock value. Clearly, the estimates produced cannot be very precise, given that the forecasts of future growth and discount rates are themselves necessarily approximate. Furthermore, a great deal of measurement error can be introduced into the stock price estimate as a result of the imprecise and rounded growth and discount rate estimates used as inputs. When applying valuation models, it is therefore advisable to estimate these rates carefully and round them conservatively, probably to the nearest tenth of a percent.

**FREE CASH FLOW VALUATION MODEL**

As an alternative to the dividend valuation models presented above, a firm’s value can be estimated by using its projected free cash flows (FCFs). This approach is appealing when one is valuing firms that have no dividend history or are startups, or when one is valuing an operating unit or division of a larger public company. Although dividend valuation models are widely used and accepted, in these situations it is preferable to use a more general free cash flow valuation model.

The free cash flow valuation model is founded on the same basic premise as dividend valuation models: The value of a share of common stock is the present value of all future cash flows it is expected to provide over an infinite time horizon. However, in the free cash flow valuation model, instead of valuing the firm’s expected dividends, we value the firm’s expected free cash flows, defined in Equation 3.6 (on page 80). They represent the amount of cash flow available to investors—the providers of debt (creditors) and equity (owners)—after all other obligations have been met.

The free cash flow valuation model estimates the value of the entire company by finding the present value of its expected free cash flows discounted at its weighted average cost of capital, which is its expected average future cost of funds over the long run, as specified in Equation 7.6.

\[
V_C = \frac{FCF_1}{(1 + r_a)^1} + \frac{FCF_2}{(1 + r_a)^2} + \cdots + \frac{FCF_n}{(1 + r_a)^n} \tag{7.6}
\]

where

- \(V_C\) = value of the entire company
- \(FCF_t\) = free cash flow expected at the end of year \(t\)
- \(r_a\) = the firm’s weighted average cost of capital

Note the similarity between Equations 7.6 and 7.1, the general stock-valuation equation.
Because the value of the entire company, $V_C$, is the market value of the entire enterprise (that is, of all assets), to find the common stock value, $V_S$, we must subtract the market value of all of the firm’s debt, $V_D$, and the market value of preferred stock, $V_P$, from $V_C$.

$$V_S = V_C - V_D - V_P \quad (7.7)$$

Because it is difficult to forecast a firm’s free cash flow, specific annual cash flows are typically forecast for only about 5 years, beyond which a constant growth rate is assumed. Here we assume that the first 5 years of free cash flows are explicitly forecast and that a constant rate of free cash flow growth occurs beyond the end of year 5 to infinity. This model is methodologically similar to the variable-growth model presented earlier. Its application is best demonstrated with an example.

**Example 7.5**

Tripoli, Inc., wishes to determine the value of its stock by using the free cash flow valuation model. To apply the model, the firm’s CFO developed the data given in Table 7.4. Application of the model can be performed in four steps.

**Step 1** Calculate the present value of the free cash flow occurring from the end of 2018 to infinity, measured at the beginning of 2018 (that is, at the end of 2017). Because a constant rate of growth in FCF is forecast beyond 2017, we can use the constant-growth dividend valuation model (Equation 7.4) to calculate the value of the free cash flows from the end of 2018 to infinity.

$$\text{Value of FCF}_{2018-\infty} = \frac{\text{FCF}_{2018}}{r_a - g_{FCF}}$$

$$= \frac{\text{US$600,000} \times (1 + 0.03)}{0.09 - 0.03}$$

$$= \frac{\text{US$618,000}}{0.06} = \text{US$10,300,000}$$

Note that to calculate the FCF in 2018, we had to increase the 2017 FCF value of US$600,000 by the 3 percent FCF growth rate, $g_{FCF}$.

**Step 2** Add the present value of the FCF from 2018 to infinity, which is measured at the end of 2017, to the 2017 FCF value to get the total FCF in 2017.

$$\text{Total FCF}_{2017} = \text{US$600,000} + \text{US$10,300,000} = \text{US$10,900,000}$$

**Table 7.4** Tripoli, Inc.’s Data for the Free Cash Flow Valuation Model

<table>
<thead>
<tr>
<th>Year (t)</th>
<th>(FCF)</th>
<th>Other data</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>US$400,000</td>
<td>Growth rate of FCF, beyond 2017 to infinity, $g_{FCF} = 3%$</td>
</tr>
<tr>
<td>2014</td>
<td>450,000</td>
<td>Weighted average cost of capital, $r_a = 9%$</td>
</tr>
<tr>
<td>2015</td>
<td>520,000</td>
<td>Market value of all debt, $V_D = \text{US$3,100,000}$</td>
</tr>
<tr>
<td>2016</td>
<td>560,000</td>
<td>Market value of preferred stock, $V_P = \text{US$800,000}$</td>
</tr>
<tr>
<td>2017</td>
<td>600,000</td>
<td>Number of shares of common stock outstanding = 300,000</td>
</tr>
</tbody>
</table>

*Developed using Equations 3.5 and 3.6 (on pages 79 and 80).*
Important Financial Concepts

Step 3 Find the sum of the present values of the FCFs for 2013 through 2017 to determine the value of the entire company, \( V_C \). This calculation is shown in Table 7.5, using present value interest factors, \( PVIFs \), from Appendix Table A–2.

**Step 4** Calculate the value of the common stock using Equation 7.7. Substituting into Equation 7.7 the value of the entire company, \( V_C \), calculated in Step 3, and the market values of debt, \( V_D \), and preferred stock, \( V_P \), given in Table 7.4, yields the value of the common stock, \( V_S \):

\[
V_S = US\$8,628,620 - US\$3,100,000 - US\$800,000 = US\$4,728,620
\]

The value of Tripoli’s common stock is therefore estimated to be US$4,728,620. By dividing this total by the 300,000 shares of common stock that the firm has outstanding, we get a common stock value of US$15.76 per share (US$4,728,620 ÷ 300,000).

It should now be clear that the free cash flow valuation model is consistent with the dividend valuation models presented earlier. The appeal of this approach is its focus on the free cash flow estimates rather than on forecast dividends, which are far more difficult to estimate, given that they are paid at the discretion of the firm’s board. The more general nature of the free cash flow model is responsible for its growing popularity, particularly with CFOs and other financial managers.

**OTHER APPROACHES TO COMMON STOCK VALUATION**

Many other approaches to common stock valuation exist. The more popular approaches include book value, liquidation value, and some type of price/earnings multiple.

**Book Value**

Book value per share is simply the amount per share of common stock that would be received if all of the firm’s assets were sold for their exact book (accounting) value and the proceeds remaining after paying all liabilities (including preferred stock) were divided among the common stockholders. This method lacks sophistication and can be criticized on the basis of its reliance on historical balance sheet data. It ignores the firm’s expected earnings potential and generally lacks any true relationship to the firm’s value in the marketplace. Let us look at an example.

---

**TABLE 7.5 Calculation of the Value of the Entire Company for Tripoli, Inc.**

<table>
<thead>
<tr>
<th>Year (t)</th>
<th>( FCF_t ) (1)</th>
<th>( PVIF_{9%,t} ) (2)</th>
<th>Present value of ( FCF_t ) (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>US$ 400,000</td>
<td>0.917</td>
<td>US$ 366,800</td>
</tr>
<tr>
<td>2014</td>
<td>450,000</td>
<td>0.842</td>
<td>378,900</td>
</tr>
<tr>
<td>2015</td>
<td>520,000</td>
<td>0.772</td>
<td>401,440</td>
</tr>
<tr>
<td>2016</td>
<td>560,000</td>
<td>0.708</td>
<td>396,480</td>
</tr>
<tr>
<td>2017</td>
<td>10,900,000(^a)</td>
<td>0.650</td>
<td>7,085,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Value of entire company, ( V_C = US$8,628,620 )</td>
</tr>
</tbody>
</table>

\(^a\)This amount is the sum of the \( FCF_{2017} \) of US$600,000 from Table 7.4 and the US$10,300,000 value of the \( FCF_{2016\to\infty} \), calculated in Step 1.
Chapter 7  Stock Valuation

Liquidation Value

Liquidation value per share is the actual amount per share of common stock that would be received if all of the firm’s assets were sold for their market value, liabilities (including preferred stock) were paid, and any remaining money were divided among the common stockholders. This measure is more realistic than book value—because it is based on the current market value of the firm’s assets—but it still fails to consider the earning power of those assets. An example will illustrate.

Example 7.6

At year-end 2012, Lamar Company’s balance sheet shows total assets of US$6 million, total liabilities (including preferred stock) of US$4.5 million, and 100,000 shares of common stock outstanding. Its book value per share therefore would be

\[
\frac{\text{US$6,000,000} - \text{US$4,500,000}}{100,000\text{shares}} = \text{US$15 per share}
\]

Because this value assumes that assets could be sold for their book value, it may not represent the minimum price at which shares are valued in the marketplace. As a matter of fact, although most stocks sell above book value, it is not unusual to find stocks selling below book value when investors believe either that assets are overvalued or that the firm’s liabilities are understated.

Example 7.7

Lamar Company found upon investigation that it could obtain only US$5.25 million if it sold its assets today. The firm’s liquidation value per share therefore would be

\[
\frac{\text{US$5,250,000} - \text{US$4,500,000}}{100,000\text{shares}} = \text{US$7.50 per share}
\]

Ignoring liquidation expenses, this amount would be the firm’s minimum value.

Price/Earnings (P/E) Multiples

The price/earnings (P/E) ratio, introduced in Chapter 2, reflects the amount investors are willing to pay for each dollar of earnings. The average P/E ratio in a particular industry can be used as the guide to a firm’s value—if it is assumed that investors value the earnings of that firm in the same way they do the ‘average’ firm in the industry. The price/earnings multiple approach is a popular technique used to estimate the firm’s share value; it is calculated by multiplying the firm’s expected earnings per share (EPS) by the average price/earnings (P/E) ratio for the industry. The average P/E ratio for the industry can be obtained from a source such as Standard & Poor’s Industrial Ratios.

The P/E ratio valuation technique is a simple method of determining a stock’s value and can be quickly calculated after firms make earnings announcements, which accounts for its popularity. Naturally, this has increased the demand for more frequent announcements or ‘guidance’ regarding future earnings. Some firms feel that pre-earnings guidance creates additional costs and can lead to ethical issues, as discussed in the Focus on Ethics box on page 260.

The use of P/E multiples is especially helpful in valuing firms that are not publicly traded, whereas market price quotations can be used to value publicly traded firms. In any case, the price/earnings multiple approach is considered superior to the use of book or liquidation values because it considers expected earnings. An example will demonstrate the use of price/earnings multiples.
Psst—Have You Heard Any Good Quarterly Earnings Forecasts Lately?

Corporate managers have long complained about the pressure to focus on the short term, and now business groups are coming to their defense. "The focus on the short term is a huge problem," says William Donaldson, former chairman of the Securities and Exchange Commission. "With all of the attention paid to quarterly performance, managers are taking their eyes off long-term strategic goals."

Donaldson, the U.S. Chamber of Commerce, and others believe that the best way to focus companies toward long-term goals is to do away with the practice of giving quarterly earnings guidance. In March 2007 the CFA Centre for Financial Market Integrity and the Business Roundtable Institute for Corporate Ethics proposed a template for quarterly earnings reports that would, in their view, obviate the need for earnings guidance.

Meanwhile, many companies are hesitant to give up issuing quarterly guidance. The practice of issuing earnings forecasts began in the early 1980s, a few years after the U.S. SEC's decision to allow companies to include forward-looking projections, provided they were accompanied by appropriate cautionary language. The result was what former U.S. SEC chairman Arthur Levitt once called a "game of winks and nods." Companies used earnings guidance to lower analysts' estimates; when the actual numbers came in higher, their stock prices jumped. The practice reached a fever pitch during the late 1990s when companies that missed the consensus earnings estimate, even by just a penny, saw their stock prices tumble.

One of the first companies to stop issuing earnings guidance was Gillette, in 2001. Others that abandoned quarterly guidance were Coca-Cola, Intel, and McDonald's. It became a trend. By 2005, just 61 percent of U.S. companies were offering quarterly projections to the public; according to the National Investor Relations Institute, the number declined to 52 percent in 2006.

Not everyone agrees with eliminating quarterly guidance. A survey conducted by New York University's Stern School of Business finance professor Baruch Lev, along with University of Florida professors Joel Houston and Jennifer Tucker, showed that companies that ended quarterly guidance reaped almost no benefit from doing so. Their study found no evidence that guidance-stoppers increased capital investments or research and development. So when should companies give up earnings guidance? According to Lev, they should do so only when they are not very good at predicting their earnings. "If you are not better than others at forecasting, then don’t bother," he says.

What temptations might managers face if they have provided earnings guidance to investors and later find it difficult to meet the expectations that they helped create?

Example 7.8

Dalal Said plans to use the price/earnings multiple approach to estimate the value of Lamar Company’s stock, which she currently holds in her retirement account. She estimates that Lamar Company will earn US$2.60 per share next year (2013). This expectation is based on an analysis of the firm’s historical earnings trend and of expected economic and industry conditions. She finds the price/earnings (P/E) ratio for firms in the same industry to average 7. Multiplying Lamar’s expected earnings per share (EPS) of US$2.60 by this ratio gives her a value for the firm’s shares of US$18.20, assuming that investors will continue to value the average firm at 7 times its earnings.

So how much is Lamar Company’s stock really worth? That’s a trick question, because there’s no one right answer. It is important to recognize that the answer depends on the assumptions made and the techniques used. Professional securities analysts typically use a variety of models and techniques to value stocks. For example, an analyst might use the constant-growth model, liquidation value, and a price/earnings (P/E) multiple to estimate the worth of a given stock. If the analyst feels comfortable with his or her estimates, the stock would be valued at no more than the largest estimate. Of course, should the firm’s estimated liquidation value per share exceed its ‘going concern’ value per share, estimated by using one of the valuation models (zero-, constant-, or variable-growth or free cash flow) or the P/E multiple approach, the firm would be viewed as being ‘worth more dead than alive.’ In such an event, the firm would lack sufficient earning power to justify its existence and should probably be liquidated.

HINT From an investor’s perspective, the stock in this situation would be an attractive investment only if it could be purchased at a price below its liquidation value—which in an efficient market could never occur.
→ REVIEW QUESTIONS

7–12 Describe the events that occur in an efficient market in response to new information that causes the expected return to exceed the required return. What happens to the market value?

7–13 What does the efficient-market hypothesis (EMH) say about (a) securities prices, (b) their reaction to new information, and (c) investor opportunities to profit? What is the behavioral finance challenge to this hypothesis?

7–14 Describe, compare, and contrast the following common stock dividend valuation models: (a) zero-growth, (b) constant-growth, and (c) variable-growth.

7–15 Describe the free cash flow valuation model and explain how it differs from the dividend valuation models. What is the appeal of this model?

7–16 Explain each of the three other approaches to common stock valuation: (a) book value, (b) liquidation value, and (c) price/earnings (P/E) multiples. Which of these is considered the best?

**7.4 Decision Making and Common Stock Value**

Valuation equations measure the stock value at a point in time based on expected return and risk. Any decisions of the financial manager that affect these variables can cause the value of the firm to change. Figure 7.4 depicts the relationship among financial decisions, return, risk, and stock value.

**CHANGES IN EXPECTED RETURN**

Assuming that economic conditions remain stable, any management action that would cause current and prospective stockholders to raise their dividend expectations should increase the firm’s value. In Equation 7.4, we can see that \( P_0 \) will increase for any increase in \( D_1 \) or \( g \). Any action of the financial manager that will increase the level of expected returns without changing risk (the required return) should be undertaken, because it will positively affect owners’ wealth.

Using the constant-growth model in Example 7.3, we found Lamar Company to have a share value of US$18.75. On the following day, the firm announced a major technological breakthrough that would revolutionize its industry. Current and prospective stockholders would not be expected to adjust their required return of 15 percent, but they would expect that future dividends will increase. Specifically, they expect that although the dividend next year, \( D_1 \), will remain at US$1.50, the expected rate of growth thereafter will increase from 7 percent to 9 percent. If we substitute \( D_1 = \text{US$1.50}, \ r_s = 0.15, \) and \( g = 0.09 \)
With the risk-free rate, \( R_F \), and the market return, \( r_m \), held constant, the required return, \( r_s \), depends directly on beta. Any action taken by the financial manager that increases risk (beta) will also increase the required return. In Equation 7.4, we can see that with everything else constant, an increase in the required return, \( r_s \), will reduce share value, \( P_0 \). Likewise, a decrease in the required return will increase share value. Thus any action of the financial manager that increases risk contributes to a reduction in value, and any action that decreases risk contributes to an increase in value.

**Example 7.10**

Assume that Lamar Company’s 15 percent required return resulted from a risk-free rate of 9 percent, a market return of 13 percent, and a beta of 1.50. Substituting into the capital asset pricing model, Equation 7.8, we get a required return, \( r_s \), of 15 percent:

\[
 r_s = R_F + [b \times (r_m - R_F)]
\]  

(7.8)

With the risk-free rate, \( R_F \), and the market return, \( r_m \), held constant, the required return, \( r_s \), depends directly on beta. Any action taken by the financial manager that increases risk (beta) will also increase the required return. In Equation 7.4, we can see that with everything else constant, an increase in the required return, \( r_s \), will reduce share value, \( P_0 \). Likewise, a decrease in the required return will increase share value. Thus any action of the financial manager that increases risk contributes to a reduction in value, and any action that decreases risk contributes to an increase in value.

**Example 7.11**

If we assume that the two changes illustrated for Lamar Company in the preceding examples occur simultaneously, key variable values would be \( D_1 = \$1.50 \), \( r_s = 0.16 \), and \( g = 0.09 \). Substituting into the valuation model, we obtain a share price of \( \$21.43 \) [\( \$1.50 / (0.16 - 0.09) \)]. The net result of the decision, which increased return (\( g \), from 7 percent to 9 percent) as well as risk (\( b \), from 1.50 to
Chapter 7

Stock Valuation

Summary

FOCUS ON VALUE

The price of each share of a firm’s common stock is the value of each ownership interest. Although common stockholders typically have voting rights, which indirectly give them a say in management, their only significant right is their claim on the residual cash flows of the firm. This claim is subordinate to those of vendors, employees, customers, lenders, the government (for taxes), and preferred stockholders. The value of the common stockholders’ claim is embodied in the cash flows they are entitled to receive from now to infinity. The present value of those expected cash flows is the firm’s share value.

To determine this present value, forecast cash flows are discounted at a rate that reflects their risk. Riskier cash flows are discounted at higher rates, resulting in lower present values than less-risky expected cash flows, which are discounted at lower rates. The value of the firm’s common stock is therefore driven by its expected cash flows (returns) and risk (certainty of the expected cash flows).

In pursuing the firm’s goal of maximizing the stock price, the financial manager must carefully consider the balance of return and risk associated with each proposal and must undertake only those actions that create value for owners. By focusing on value creation and by managing and monitoring the firm’s cash flows and risk, the financial manager should be able to achieve the firm’s goal of share price maximization.

REVIEW OF LEARNING GOALS

LG 1 Differentiate between debt and equity capital. Holders of equity capital (common and preferred stock) are owners of the firm. Typically, only common stockholders have a voice in management. Equity holders’ claims on income and assets are secondary to creditors’ claims, there is no maturity date, and dividends paid to stockholders are not tax deductible.

LG 2 Discuss the features of both common and preferred stock. The common stock of a firm can be privately owned, closely owned, or publicly owned. It can be sold with or without a par value. Preemptive rights allow common stockholders to avoid dilution of ownership when new shares are issued. Not all shares authorized in the corporate charter are outstanding. If a firm has treasury stock, it will have issued more shares than are outstanding. Some firms have two or more classes of common stock that differ mainly in having unequal voting rights. Proxies transfer voting rights from one party to another. The decision to pay dividends to common stockholders is made by the firm’s board of directors. Firms can issue stock in foreign markets.

1.75 and therefore \( r_f \) from 15 percent to 16 percent, is positive: The share price increased from US$18.75 to US$21.43. The decision appears to be in the best interest of the firm’s owners, because it increases their wealth.

REVIEW QUESTIONS

7–17 Explain the linkages among financial decisions, return, risk, and stock value.
7–18 Assuming that all other variables remain unchanged, what impact would each of the following have on stock price? (a) The firm’s beta increases. (b) The firm’s required return decreases. (c) The dividend expected next year decreases. (d) The rate of growth in dividends is expected to increase.
Preferred stockholders have preference over common stockholders with respect to the distribution of earnings and assets. They do not normally have voting privileges. Preferred stock issues may have certain restrictive covenants, cumulative dividends, a call feature, and a conversion feature.

**LG 3** Describe the process of issuing common stock, including venture capital, going public, and the investment banker. The initial nonfounder financing for business startups with attractive growth prospects typically comes from private equity investors. These investors can be either angel capitalists or venture capitalists (VCs). VCs usually invest in both early-stage and later-stage companies that they hope to take public so as to cash out their investments.

The first public issue of a firm’s stock is called an initial public offering (IPO). The company selects an investment banker to advise it and to sell the securities. The lead investment banker may form a selling syndicate with other investment bankers. The IPO process includes getting U.S. CMA approval, promoting the offering to investors, and pricing the issue.

Stock quotations provide information on the closing (last) price at which the stock sold on the given day and the net price change from the prior trading day.

**LG 4** Understand the concept of market efficiency and basic stock valuation using zero-growth, constant-growth, and variable-growth models. Market efficiency assumes that the quick reactions of rational investors to new information cause the market value of common stock to adjust upward or downward quickly. The efficient-market hypothesis (EMH) suggests that securities are fairly priced, that they reflect fully all publicly available information, and that investors should therefore not waste time trying to find and capitalize on mispriced securities. Behavioral finance advocates challenge this hypothesis by arguing that emotion and other factors play a role in investment decisions.

The value of a share of common stock is the present value of all future dividends it is expected to provide over an infinite time horizon. Three dividend growth models—zero-growth, constant-growth, and variable-growth—can be considered in common stock valuation. The most widely cited model is the constant-growth model.

**LG 5** Discuss the free cash flow valuation model and the book value, liquidation value, and price/earnings (P/E) multiple approaches. The free cash flow valuation model values firms that have no dividend history, startups, or an operating unit or division of a larger public company. The model finds the value of the entire company by discounting the firm’s expected free cash flow at its weighted average cost of capital. The common stock value is found by subtracting the market values of the firm’s debt and preferred stock from the value of the entire company.

Book value per share is the amount per share of common stock that would be received if all of the firm’s assets were sold for their exact book (accounting) value and the proceeds remaining after paying all liabilities (including preferred stock) were divided among the common stockholders. Liquidation value per share is the actual amount per share of common stock that would be received if all of the firm’s assets were sold for their market value, liabilities (including preferred stock) were paid, and the remaining money were divided among the common stockholders. The price/earnings (P/E) multiple approach estimates stock value by multiplying the firm’s expected earnings per share (EPS) by the average price/earnings (P/E) ratio for the industry.

**LG 6** Explain the relationships among financial decisions, return, risk, and the firm’s value. In a stable economy, any action of the financial manager that
increases the level of expected return without changing risk should increase share value; any action that reduces the level of expected return without changing risk should reduce share value. Similarly, any action that increases risk (required return) will reduce share value; any action that reduces risk will increase share value. An assessment of the combined effect of return and risk on stock value must be part of the financial decision-making process.

Self-Test Problems

ST7–1 Common stock valuation  Nassir Motors’ common stock currently pays an annual dividend of US$1.80 per share. The required return on the common stock is 12 percent. Estimate the value of the common stock under each of the following assumptions about the dividend.

a. Dividends are expected to grow at an annual rate of 0 percent to infinity.

b. Dividends are expected to grow at a constant annual rate of 5 percent to infinity.

c. Dividends are expected to grow at an annual rate of 5 percent for each of the next 3 years, followed by a constant annual growth rate of 4 percent in years 4 to infinity.

ST7–2 Free cash flow valuation  Highstyle Footwear wishes to assess the value of its Active Shoe Division. This division has debt with a market value of US$12,500,000 and no preferred stock. Its weighted average cost of capital is 10 percent. The Active Shoe Division’s estimated free cash flow each year from 2013 through 2016 is given in the following table. Beyond 2016 to infinity, the firm expects its free cash flow to grow at 4 percent annually.

<table>
<thead>
<tr>
<th>Year (t)</th>
<th>Free cash flow (FCF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>US$ 800,000</td>
</tr>
<tr>
<td>2014</td>
<td>1,200,000</td>
</tr>
<tr>
<td>2015</td>
<td>1,400,000</td>
</tr>
<tr>
<td>2016</td>
<td>1,500,000</td>
</tr>
</tbody>
</table>

a. Use the free cash flow valuation model to estimate the value of Highstyle’s entire Active Shoe Division.

b. Use your finding in part a along with the data provided above to find this division’s common stock value.

c. If the Active Shoe Division as a public company will have 500,000 shares outstanding, use your finding in part b to calculate its value per share.

Warm-Up Exercises

All problems are available in myfinancelab.

E7–1 A balance sheet balances assets with their sources of debt and equity financing. If a corporation has assets equal to US$5.2 million and a debt ratio of 75.0 percent, how much debt does the corporation have on its books?

E7–2 Angina, Inc., has 5 million shares outstanding. The firm is considering issuing an additional 1 million shares. After selling these shares at their US$20 per share offering price and netting 95 percent of the sale proceeds, the firm is obligated by an earlier agreement to sell an additional 250,000 shares at 90 percent of the offering price. In total, how much cash will the firm net from these stock sales?
P7–1  Authorized and available shares  Adam Corporation's charter authorizes issuance of 2,000,000 shares of common stock. Currently, 1,400,000 shares are outstanding and 100,000 shares are being held as treasury stock. The firm wishes to raise US$48,000,000 for a plant expansion. Discussions with its investment bankers indicate that the sale of new common stock will net the firm US$60 per share.
   a. What is the maximum number of new shares of common stock that the firm can sell without receiving further authorization from shareholders?
   b. Judging on the basis of the data given and your finding in part a, will the firm be able to raise the needed funds without receiving further authorization?
   c. What must the firm do to obtain authorization to issue more than the number of shares found in part a?

P7–2  Preferred dividends  In each case in the following table, how many dollars of preferred dividends per share must be paid to preferred stockholders in the current period before common stock dividends are paid?

<table>
<thead>
<tr>
<th>Case</th>
<th>Type</th>
<th>Par value</th>
<th>Dividend per share per period</th>
<th>Periods of dividends passed</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Cumulative</td>
<td>US$80</td>
<td>US$ 5</td>
<td>2</td>
</tr>
<tr>
<td>B</td>
<td>Noncumulative</td>
<td>110</td>
<td>8%</td>
<td>3</td>
</tr>
<tr>
<td>C</td>
<td>Noncumulative</td>
<td>100</td>
<td>US$11</td>
<td>1</td>
</tr>
<tr>
<td>D</td>
<td>Cumulative</td>
<td>60</td>
<td>8.5%</td>
<td>4</td>
</tr>
<tr>
<td>E</td>
<td>Cumulative</td>
<td>90</td>
<td>9%</td>
<td>0</td>
</tr>
</tbody>
</table>

P7–3  Common stock valuation—Zero growth  Sami Manufacturing is a mature firm in the machine tool component industry. The firm’s most recent common stock dividend was US$2.40 per share. Because of its maturity as well as its stable sales and earnings, the firm’s management feels that dividends will remain at the current level for the foreseeable future.
   a. If the required return is 12 percent, what will be the value of Sami’s common stock?
   b. If the firm’s risk as perceived by market participants suddenly increases, causing the required return to rise to 20 percent, what will be the common stock value?
c. Judging on the basis of your findings in parts a and b, what impact does risk have on value? Explain.

**P7-4 Preferred stock valuation** Jalil Design wishes to estimate the value of its outstanding preferred stock. The preferred issue has a US$80 par value and pays an annual dividend of US$6.40 per share. Similar-risk preferred stocks are currently earning a 9.3 percent annual rate of return.

a. What is the market value of the outstanding preferred stock?

b. If an investor purchases the preferred stock at the value calculated in part a, how much does she gain or lose per share if she sells the stock when the required return on similar-risk preferred stocks has risen to 10.5 percent? Explain.

**P7-5 Common stock value—Constant growth** West Island Roofing, Inc., common stock paid a dividend of US$1.20 per share last year. The company expects earnings and dividends to grow at a rate of 5 percent per year for the foreseeable future.

a. What required rate of return for this stock would result in a price per share of US$28?

b. If West Island expects both earnings and dividends to grow at an annual rate of 10 percent, what required rate of return would result in a price per share of US$28?

**P7-6 Common stock value—Constant growth** Zina Telephone has paid the dividends shown in the following table over the past 6 years.

<table>
<thead>
<tr>
<th>Year</th>
<th>Dividend per share</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>US$2.87</td>
</tr>
<tr>
<td>2011</td>
<td>2.76</td>
</tr>
<tr>
<td>2010</td>
<td>2.60</td>
</tr>
<tr>
<td>2009</td>
<td>2.46</td>
</tr>
<tr>
<td>2008</td>
<td>2.37</td>
</tr>
<tr>
<td>2007</td>
<td>2.25</td>
</tr>
</tbody>
</table>

The firm’s dividend per share next year is expected to be US$3.02.

a. If you can earn 13 percent on similar-risk investments, what is the most you would be willing to pay per share?

b. If you can earn only 10 percent on similar-risk investments, what is the most you would be willing to pay per share?

c. Compare and contrast your findings in parts a and b, and discuss the impact of changing risk on share value.

**P7-7 Common stock value—Variable growth** Newman Manufacturing is considering a cash purchase of the stock of Grips Tool. During the year just completed, Grips earned US$4.25 per share and paid cash dividends of US$2.55 per share ($D_0 = US$2.55$). Grips’ earnings and dividends are expected to grow at 25 percent per year for the next 3 years, after which they are expected to grow at 10 percent per year to infinity. What is the maximum price per share that Newman should pay for Grips if it has a required return of 15 percent on investments with risk characteristics similar to those of Grips?

**P7-8 Common stock value—Variable growth** Home Place Hotels, Inc., is entering into a 3-year remodeling and expansion project. The construction will have a limiting effect on earnings during that time, but when it is complete, it should allow the company to enjoy much-improved growth in earnings and dividends. Last year, the company paid a dividend of US$3.40. It expects zero growth in the next year. In years 2 and 3, 5 percent growth is expected, and in year 4, 15 percent growth. In year 5 and
thereafter, growth should be a constant 10 percent per year. What is the maximum price per share that an investor who requires a return of 14 percent should pay for Home Place Hotels’ common stock?

**P7–9 Common stock value—Variable growth** Lawrence Industries’ most recent annual dividend was US$1.80 per share \( (D_0 = \text{US$1.80}) \), and the firm’s required return is 11 percent. Find the market value of Lawrence’s shares when:

a. Dividends are expected to grow at 8 percent annually for 3 years, followed by a 5 percent constant annual growth rate in years 4 to infinity.

b. Dividends are expected to grow at 8 percent annually for 3 years, followed by a 0 percent constant annual growth rate in years 4 to infinity.

c. Dividends are expected to grow at 8 percent annually for 3 years, followed by a 10 percent constant annual growth rate in years 4 to infinity.

**P7–10 Common stock value—All growth models** You are evaluating the potential purchase of a small business currently generating US$42,500 of after-tax cash flow \( (D_0 = \text{US$42,500}) \). On the basis of a review of similar-risk investment opportunities, you must earn an 18 percent rate of return on the proposed purchase. Because you are relatively uncertain about future cash flows, you decide to estimate the firm’s value using several possible assumptions about the growth rate of cash flows.

a. What is the firm’s value if cash flows are expected to grow at an annual rate of 0 percent from now to infinity?

b. What is the firm’s value if cash flows are expected to grow at a constant annual rate of 7 percent from now to infinity?

c. What is the firm’s value if cash flows are expected to grow at an annual rate of 12 percent for the first 2 years, followed by a constant annual rate of 7 percent from year 3 to infinity?

**P7–11 Free cash flow valuation** Nassif Industries is considering going public but is unsure of a fair offering price for the company. Before hiring an investment banker to assist in making the public offering, managers at Nassif have decided to make their own estimate of the firm’s common stock value. The firm’s CFO has gathered data for performing the valuation using the free cash flow valuation model.

The firm’s weighted average cost of capital is 11 percent, and it has US$1,500,000 of debt at market value and US$400,000 of preferred stock at its assumed market value. The estimated free cash flows over the next 5 years, 2013 through 2017, are given below. Beyond 2017 to infinity, the firm expects its free cash flow to grow by 3 percent annually.

<table>
<thead>
<tr>
<th>Year ((t))</th>
<th>Free cash flow ((FCF_t))</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>US$200,000</td>
</tr>
<tr>
<td>2014</td>
<td>250,000</td>
</tr>
<tr>
<td>2015</td>
<td>310,000</td>
</tr>
<tr>
<td>2016</td>
<td>350,000</td>
</tr>
<tr>
<td>2017</td>
<td>390,000</td>
</tr>
</tbody>
</table>

a. Estimate the value of Nassif Industries’ entire company by using the free cash flow valuation model.

b. Use your finding in part a, along with the data provided above, to find Nassif Industries’ common stock value.

c. If the firm plans to issue 200,000 shares of common stock, what is its estimated value per share?
P7–12 Using the free cash flow valuation model to price an IPO  Assume that you have an opportunity to buy the stock of CoolTech, Inc., an IPO being offered for US$12.50 per share. Although you are very much interested in owning the company, you are concerned about whether it is fairly priced. To determine the value of the shares, you have decided to apply the free cash flow valuation model to the firm’s financial data that you’ve developed from a variety of data sources. The key values you have compiled are summarized in the following table.

<table>
<thead>
<tr>
<th>Year (t)</th>
<th>$FCF_t</th>
<th>Other data</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>US$ 700,000</td>
<td>Growth rate of FCF, beyond 2013 to infinity = 2%</td>
</tr>
<tr>
<td>2014</td>
<td>800,000</td>
<td>Weighted average cost of capital = 8%</td>
</tr>
<tr>
<td>2015</td>
<td>950,000</td>
<td>Market value of all debt = US$2,700,000</td>
</tr>
<tr>
<td>2016</td>
<td>1,100,000</td>
<td>Market value of preferred stock = US$1,000,000</td>
</tr>
</tbody>
</table>

a. Use the free cash flow valuation model to estimate CoolTech’s common stock value per share.

b. Judging on the basis of your finding in part a and the stock’s offering price, should you buy the stock?

c. Upon further analysis, you find that the growth rate in FCF beyond 2016 will be 3 percent rather than 2 percent. What effect would this finding have on your responses in parts a and b?

P7–13 Book and liquidation value  The balance sheet for Ghalib Industries is as follows.

<table>
<thead>
<tr>
<th>Ghalib Industries Balance Sheet December 31</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Assets</strong></td>
</tr>
<tr>
<td>Cash US$ 40,000</td>
</tr>
<tr>
<td>Marketable securities 60,000</td>
</tr>
<tr>
<td>Accounts receivable 120,000</td>
</tr>
<tr>
<td>Inventories 160,000</td>
</tr>
<tr>
<td>Total current assets US$380,000</td>
</tr>
<tr>
<td>Land and buildings (net) US$150,000</td>
</tr>
<tr>
<td>Machinery and equipment 250,000</td>
</tr>
<tr>
<td>Total fixed assets (net) US$400,000</td>
</tr>
<tr>
<td>Total assets US$780,000</td>
</tr>
</tbody>
</table>

Additional information with respect to the firm is available:
(1) Preferred stock can be liquidated at book value.
(2) Accounts receivable and inventories can be liquidated at 90 percent of book value.
(3) The firm has 10,000 shares of common stock outstanding.
(4) All interest and dividends are currently paid up.
(5) Land and buildings can be liquidated at 130 percent of book value.
(6) Machinery and equipment can be liquidated at 70 percent of book value.
(7) Cash and marketable securities can be liquidated at book value.
Given this information, answer the following.

a. What is Ghalib Industries' book value per share?
b. What is its liquidation value per share?
c. Compare, contrast, and discuss the values found in parts a and b.

**P7–14 Valuation with price/earnings multiples** For each of the firms shown in the following table, use the data given to estimate its common stock value employing price/earnings (P/E) multiples.

<table>
<thead>
<tr>
<th>Firm</th>
<th>Expected EPS</th>
<th>Price/earnings multiple</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>US$3.00</td>
<td>6.2</td>
</tr>
<tr>
<td>B</td>
<td>4.50</td>
<td>10.0</td>
</tr>
<tr>
<td>C</td>
<td>1.80</td>
<td>12.6</td>
</tr>
<tr>
<td>D</td>
<td>2.40</td>
<td>8.9</td>
</tr>
<tr>
<td>E</td>
<td>5.10</td>
<td>15.0</td>
</tr>
</tbody>
</table>

**P7–15 Management action and stock value** REH Corporation’s most recent dividend was US$3 per share, its expected annual rate of dividend growth is 5 percent, and the required return is now 15 percent. A variety of proposals are being considered by management to redirect the firm’s activities. Determine the impact on share price for each of the following proposed actions, and indicate the best alternative.

a. Do nothing, which will leave the key financial variables unchanged.
b. Invest in a new machine that will increase the dividend growth rate to 6 percent and lower the required return to 14 percent.
c. Eliminate an unprofitable product line, which will increase the dividend growth rate to 7 percent and raise the required return to 17 percent.
d. Merge with another firm, which will reduce the growth rate to 4 percent and raise the required return to 16 percent.
e. Acquire a subsidiary operation from another manufacturer. The acquisition should increase the dividend growth rate to 8 percent and increase the required return to 17 percent.

**P7–16 Integrative—Valuation and CAPM formulas** Given the following information for the stock of Foster Company, calculate its beta.

- Current price per share of common stock: US$50.00
- Expected dividend per share next year: US$3.00
- Constant annual dividend growth rate: 9%
- Risk-free rate of return: 7%
- Return on market portfolio: 10%

**P7–17 Integrative—Risk and valuation** Giant Enterprises has a beta of 1.20, the risk-free rate of return is currently 10 percent, and the market return is 14 percent. The company, which plans to pay a dividend of US$2.60 per share in the coming year, anticipates that its future dividends will increase at an annual rate consistent with that experienced over the 2006–2012 period, when the following dividends were paid.

<table>
<thead>
<tr>
<th>Year</th>
<th>Dividend per share</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>US$2.45</td>
</tr>
<tr>
<td>2011</td>
<td>2.28</td>
</tr>
<tr>
<td>2010</td>
<td>2.10</td>
</tr>
<tr>
<td>2009</td>
<td>1.95</td>
</tr>
<tr>
<td>2008</td>
<td>1.82</td>
</tr>
<tr>
<td>2007</td>
<td>1.80</td>
</tr>
<tr>
<td>2006</td>
<td>1.73</td>
</tr>
</tbody>
</table>
a. Use the capital asset pricing model (CAPM) to determine the required return on Giant’s stock.
b. Using the constant-growth model and your finding in part a, estimate the value of Giant’s stock.
c. Explain what effect, if any, a decrease in beta would have on the value of Giant’s stock.

P7–18 Integrative—Valuation and CAPM Hilal Steel Company wishes to determine the value of Craft Foundry, a firm that it is considering acquiring for cash. Hilal wishes to use the capital asset pricing model (CAPM) to determine the applicable discount rate to use as an input to the constant-growth valuation model. Craft’s stock is not publicly traded. After studying the betas of firms similar to Craft that are publicly traded, Hilal believes that an appropriate beta for Craft’s stock would be 1.25. The risk-free rate is currently 9 percent, and the market return is 13 percent. Craft’s dividend per share for each of the past 6 years is shown in the following table.

<table>
<thead>
<tr>
<th>Year</th>
<th>Dividend per share</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>US$3.44</td>
</tr>
<tr>
<td>2011</td>
<td>3.28</td>
</tr>
<tr>
<td>2010</td>
<td>3.15</td>
</tr>
<tr>
<td>2009</td>
<td>2.90</td>
</tr>
<tr>
<td>2008</td>
<td>2.75</td>
</tr>
<tr>
<td>2007</td>
<td>2.45</td>
</tr>
</tbody>
</table>

a. Given that Craft is expected to pay a dividend of US$3.68 next year, determine the maximum cash price that Hilal should pay for each share of Craft.
b. Discuss the use of the CAPM for estimating the value of common stock, and describe the effect on the resulting value of Craft of:
   (1) A decrease in its dividend growth rate of 2 percent from that exhibited over the 2007–2012 period.
   (2) A decrease in its beta to 1.

P7–19 ETHICS PROBLEM Madina is trying to value Generic Utility, Inc.’s stock, which is clearly not growing at all. Generic declared and paid a US$5 dividend last year. The required rate of return for utility stocks is 11 percent, but Madina is unsure about the financial reporting integrity of Generic’s finance team. She decides to add an extra 1 percent ‘credibility’ risk premium to the required return as part of her valuation analysis.

a. What is the value of Generic’s stock, assuming that the financials are trustworthy?
b. What is the value of Generic’s stock, assuming that Madina includes the extra 1 percent ‘credibility’ risk premium?
c. What is the difference between the values found in parts a and b, and how might one interpret that difference?

Visit www.myfinancelab.com for Additional Exercises and numerous online resources.
Chapter 7 Case

Assessing the Impact of Suroor Manufacturing’s Proposed Risky Investment on Its Stock Value

Early in 2013, Enas Ramadan, the chief financial officer for Suroor Manufacturing, was given the task of assessing the impact of a proposed risky investment on the firm’s stock value. To perform the necessary analysis, Enas gathered the following information on the firm’s stock.

During the immediate past 5 years (2008–2012), the annual dividends paid on the firm’s common stock were as follows.

<table>
<thead>
<tr>
<th>Year</th>
<th>Dividend per share</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>US$1.90</td>
</tr>
<tr>
<td>2011</td>
<td>1.70</td>
</tr>
<tr>
<td>2010</td>
<td>1.55</td>
</tr>
<tr>
<td>2009</td>
<td>1.40</td>
</tr>
<tr>
<td>2008</td>
<td>1.30</td>
</tr>
</tbody>
</table>

The firm expects that without the proposed investment, the dividend in 2013 will be US$2.09 per share and the historical annual rate of growth (rounded to the nearest whole percent) will continue in the future. Currently, the required return on the common stock is 14 percent. Enas’s research indicates that if the proposed investment is undertaken, the 2013 dividend will rise to US$2.15 per share and the annual rate of dividend growth will increase to 13 percent. She feels that in the best case, the dividend would continue to grow at this rate each year into the future and that in the worst case, the 13 percent annual rate of growth in dividends would continue only through 2015, and then, at the beginning of 2016, would return to the rate that was experienced between 2008 and 2012. As a result of the increased risk associated with the proposed risky investment, the required return on the common stock is expected to increase by 2 percent to an annual rate of 16 percent, regardless of which dividend growth outcome occurs.

Armed with the preceding information, Enas must now assess the impact of the proposed risky investment on the market value of Suroor’s stock. To simplify her calculations, she plans to round the historical growth rate in common stock dividends to the nearest whole percent.

**TO DO**

a. Find the current value per share of Suroor Manufacturing’s common stock.

b. Find the value of Suroor’s common stock in the event that it undertakes the proposed risky investment and assuming that the dividend growth rate stays at 13 percent forever. Compare this value to that found in part a. What effect would the proposed investment have on the firm’s stockholders? Explain.

c. On the basis of your findings in part b, do the stockholders win or lose as a result of undertaking the proposed risky investment? Should the firm do it? Why?

d. Rework parts b and c, assuming that at the beginning of 2016 the annual dividend growth rate returns to the rate experienced between 2008 and 2012.
You are interested in purchasing the common stock of Asia Corporation. The firm recently paid a dividend of US$3 per share. It expects its earnings—and hence its dividends—to grow at a rate of 7 percent for the foreseeable future. Currently, similar-risk stocks have required returns of 10 percent.

**TO DO**

a. Given the data above, calculate the present value of this security. Use the constant-growth model (Equation 7.4) to find the stock value.

b. One year later, your broker offers to sell you additional shares of Asia at US$73. The most recent dividend paid was US$3.21, and the expected growth rate for earnings remains at 7 percent. If you determine that the appropriate risk premium is 6.74 percent and you observe that the risk-free rate, \( R_F \), is currently 5.25 percent, what is the firm’s current required return, \( r_{Asia} \)?

c. Applying Equation 7.4, determine the value of the stock using the new dividend and required return from part b.

d. Given your calculation in part c, would you buy the additional shares from your broker at US$73 per share? Explain.

e. Given your calculation in part c, would you sell your old shares for US$73? Explain.

**Spreadsheet Exercise**

**Ahmed Saleh Al Marhoon(*) on IPO**

**TAKING IT PUBLIC**

In an interview conducted by the Oxford Business Group, Ahmed Saleh Al Marhoon, Director-General, Muscat Securities Market (MSM) explains his initiatives to encourage companies to list on the MSM.

**Question:** How can companies be convinced to go public?

**Answer:** Our listing environment is simple and aimed at encouraging companies to list on the MSM. Newly listed companies add more depth to both primary and secondary markets. Foreign investors like to see high market capitalization and high liquidity. Initial public offering (IPOs) can help create depth and liquidity and a lack of IPOs makes the MSM less attractive, with limited options. I believe that in order to have more IPOs, we need to create the right incentives. During the mid-to-late 1990s, the government introduced incentives (such as soft loans) that would give firms reasons to offer at least a 4 percent share to the public, but these incentives no longer exist and it is difficult to convince companies to go public. Closed and family holdings are also hesitant to go public because of their desire to retain control and transparency issues.

**Question:** How is the MSM adapting its trading platform to cater to increased interest in more sophisticated financial tools like stock options and mutual funds?

**Answer:** When we talk about market depth, we talk about options of different instruments. Our market is based on cash, equities and bonds (corporate and government). Bonds are not heavily traded, but equities are. Stock lending and borrowing with clauses might be introduced if market-makers are licensed. We have been approached by companies who have expressed their willingness to become market-makers for specific shares. Another opportunity is exchange traded funds (ETFs). In
2007, MSM hosted a conference on ETFs to introduce the concept to the market. For the past 3 years, most of the bourses in the Gulf have been trying to launch ETFs. In 2010, Abu Dhabi, Saudi Arabia, and Egypt all launched some sort of ETF. We hope that the ETF concept will also take off in Oman and that we’ll manage to launch our own in 2010. There are also mutual funds, but most investors in Oman are used to investing on their own rather than through funds. It will take time for investors to become aware of how other methods of investing, like trading through funds, may actually better suit their specific needs.

**Question:** What needs to be done to encourage development of greater depth in the secondary markets?

**Answer:** Well, we first need the primary market to be stronger, as it is essentially the backbone of any market system. If the primary market is weak, then the secondary market will not be able to create the necessary depth. In the last few years, there have been many improvements made in developing the market structure in terms of technology and regulations, all with the aim of encouraging more investment. The MSM is also using an advanced and flexible trading platform from NYSE—Euronext—which can accommodate future developments like the trading of new financial instruments.

**Question:** How might traditional, family-owned businesses be encouraged to list on the MSM?

**Answer:** Companies must have more incentive to go public. The incentives should be created through cooperation between the Ministry of Commerce and Industry, the Ministry of Finance, and the Capital Market Authority. Some family-owned companies perceive corporate governance and transparency as interference in their business. It is my understanding that this issue is being revised and that the amended commercial law will address the issue and encourage family-owned businesses to go public. Other advantages to publicly listing on the MSM include faster growth, as it provides a way to know the true market value of a company and ensures its lasting existence. Statistics show 96 percent of family businesses disappear after three generations. In Saudi Arabia, family-owned businesses are more aware and have realized the importance of going public. Stability is the key to long-term business survival and is particularly relevant in our region. It must be addressed as GCC countries have young populations. There are many young families today and while the pie will not get bigger, the number eating from it will grow.

Glossary

ABC inventory system | نظام تصنيف المخزون
Inventory management technique that divides inventory into three groups—A, B, and C, in descending order of importance and level of monitoring, on the basis of the cash investment in each.

ability to service debts | قابلية خدمة الدين
The ability of a firm to make the payments required on a scheduled basis over the life of a debt.

accept-reject approach | الرفض / الدخول للقبول
The evaluation of capital expenditure proposals to determine whether they meet the firm’s minimum acceptance criterion.

accounting exposure | انكشاف المحاسبة
The risk resulting from the effects of changes in foreign exchange rates on the translated value of a firm’s financial statement accounts denominated in a given foreign currency.

accounts payable management | إدارة الحسابات الدائنة
Management by the firm of the time that elapses between its purchase of raw materials and its mailing payment to the supplier.

accreted basis | مبدأ الاستحقاق
In preparation of financial statements, recognizes revenue at the time of sale and recognizes expenses when they are incurred.

accruals | مصروفات مستحقة
Liabilities for services received for which payment has yet to be made.

ACH (automated clearinghouse) transfer | غرفة المقاصة الإلكترونية
Preauthorized electronic withdrawal from the payer’s account and deposit into the payee’s account via a settlement among banks by the automated clearinghouse, or ACH.

acquiring company | الشركة المالكة أو المستحوذة
The firm in a merger transaction that attempts to acquire another firm.

activity ratios | نسب النشاط
Measure the speed with which various accounts are converted into sales or cash—inflows or outflows.

after-tax proceeds from sale of old asset | العائدات من بيع الأصول القديمة بعد سداد استحقاقات الضرائب
The difference between the old asset’s sale proceeds and any applicable taxes or tax refunds related to its sale.

agency costs | تكاليف الوكالة
The costs borne by stockholders to maintain a governance structure that minimizes agency problems and contributes to the maximization of owner wealth.

agency problem | مشاكل الوكالة
The likelihood that managers may place personal goals ahead of corporate goals.

aggressive funding strategy | إستراتيجية التمويل الجزيرة
A funding strategy under which the firm funds its seasonal requirements with short-term debt and its permanent requirements with long-term debt.

aging schedule | جدول التقدم
A credit-monitoring technique that breaks down accounts receivable into groups on the basis of their time of origination; it shows the percentages of the total accounts receivable balance that have been outstanding for specified periods of time.

American depositary receipts (ADRs) | إيصالات الإيداع الأمريكي
Claims issued by U.S. banks representing ownership of shares of a foreign company’s stock held on deposit by the U.S. bank in the foreign market and issued in U.S. dollars to U.S. investors.

angel capitalists (angels) | مستثمرون ملائكة
Wealthy individual investors who do not operate as a business but invest in promising early-stage companies in exchange for a portion of the firm’s equity.

annual cleanup | تنظيف سنوي
The requirement that for a certain number of days during the year borrowers under a line of credit carry a zero loan balance (that is, owe the bank nothing).

annual percentage rate (APR) | معدل الفائدة السنوي الاسمي
The nominal annual rate of interest, found by multiplying the periodic rate by the number of periods in 1 year, that must be disclosed to consumers on credit cards and loans as a result of ‘truth-in-lending laws.’

annual percentage yield (APY) | معدل الفائدة السنوي الحقيقي
The effective annual rate of interest that must be disclosed to consumers by banks on their savings products as a result of ‘truth-in-savings laws.’

annual report | التقرير السنوي
A document which gives an account of a business’s activities for the preceding year.

annualized net present value (ANPV) approach | طريقة صافي القيمة الحالية السنوي
An approach to evaluating unequal-lived projects that converts the net present value of unequal-lived, mutually exclusive projects into an equivalent annual amount (in NPV terms).

annuity | دفعة نقدية متساوية ومنتظمة على فترات محددة
A stream of equal periodic cash flows, over a specified time period. These cash flows can be inflows of returns earned on investments or outflows of funds invested to earn future returns.

annuity due | دفعة متساوية مستحقة في بداية كل فترة
An annuity for which the cash flow occurs at the beginning of each period.
ASEAN | منطقة التجارة الحرة لمجموعة دول جنوب شرق آسيا
A large trading bloc with 10 member nations, all in Southeast Asia. Also called the Association of Southeast Asian Nations.

ask price | سعر البيع المحلى
The lowest price at which a security is offered for sale.

assignment | تنازل طوعي
A voluntary liquidation procedure by which a firm’s creditors pass the power to liquidate the firm’s assets to an adjustment bureau, a trade association, or a third party, which is designated the assignee.

asymmetric information | عدم تماثل المعلومات (تباین معلومات)
The situation in which managers of a firm have more information about operations and future prospects than do investors.

authorized shares | أسهم مصرح بها
The number of shares of common stock that a firm’s corporate charter allows it to issue.

average age of inventory | متوسط عمر المخزون
Average number of days’ sales in inventory.

average collection period | متوسط فترة التحصيل
The average amount of time needed to collect accounts receivable.

average payment period | متوسط فترة الدفع
The average amount of time needed to pay accounts payable.

average tax rate | متوسط معدل الضريبة
A firm’s taxes divided by its taxable income.

balance sheet | ميزانية عمومية
Summary statement of the firm’s financial position at a given point in time.

bankruptcy | إفلاس
Business failure that occurs when the stated value of a firm’s liabilities exceeds the fair market value of its assets.

Bankruptcy Reform Act of 1978 | قانون إصلاح نظام إعلان الإفلاس
The governing bankruptcy legislation in the United States today.

bar chart | رسم أعمدة
The simplest type of probability distribution; shows only a limited number of outcomes and associated probabilities for a given event.

basic EPS | ربحية السهم الأساسية
Earnings per share (EPS) calculated without regard to any contingent securities.

behavioral finance | المالية السلوكية
A growing body of research that focuses on investor behavior and its impact on investment decisions and stock prices. Advocates are commonly referred to as “behaviorists.”

benchmarking | مقارنة مقايضة
A type of cross-sectional analysis in which the firm’s ratio values are compared to those of a key competitor or group of competitors that it wishes to emulate.

beta coefficient | معمل بيتا
A relative measure of nondiversifiable risk. An index of the degree of movement of an asset’s return in response to a change in the market return.

bid price | سعر الشراء
The highest price offered to purchase a security.

bird-in-the-hand argument | مراجعة مصرف في اليد
The belief, in support of dividend relevance theory, that investors see current dividends as less risky than future dividends or capital gains.

board of directors | مجلس الإدارة
Group elected by the firm’s stockholders and typically responsible for developing strategic goals and plans, setting general policy, guiding corporate affairs, approving major expenditures, and hiring/firing, compensating, and monitoring key officers and executives.

bond | سند
Long-term debt instrument used by business and governments to raise large sums of money, generally from a diverse group of lenders.

bond indenture | اتفاقية إصدار سندات
A legal document that specifies both the rights of the bondholders and the duties of the issuing corporation.

book value | قيمة دفترية
The strict accounting value of an asset, calculated by subtracting its accumulated depreciation from its installed cost.

book value per share | القيمة الادارية للسهم
The amount per share of common stock that would be received if all of the firm’s assets were sold for their exact book (accounting) value and the proceeds remaining after paying all liabilities (including preferred stock) were divided among the common stockholders.

book value weights | وزن دفترية مرجحة
Weights that use accounting values to measure the proportion of each type of capital in the firm’s financial structure.

break even analysis | تحليل التعادل
Indicates the level of operations necessary to cover all operating costs and the profitability associated with various levels of sales.

break even cash inflow | نقطة تعادل التدفق النقدي
The minimum level of cash inflow necessary for a project to be acceptable, that is, NPV > US$0.

breakup value | قيمة تسبيح مشتقة
The value of a firm measured as the sum of the values of its operating units if each were sold separately.

broker market | سمسار (وسط)
The securities exchanges on which the two sides of a transaction, the buyer and seller, are brought together to trade securities.
business ethics
Standards of conduct or moral judgment that apply to persons engaged in commerce.

business risk
The risk to the firm of being unable to cover operating costs.

call feature
A feature included in nearly all corporate bond issues that gives the issuer the opportunity to repurchase bonds at a stated call price prior to maturity.

call option
An option to purchase a specified number of shares of a stock (typically 100) on or before a specified future date at a stated call price.

call premium
The amount by which a bond’s call price exceeds its par value.

call price
The stated price at which a bond may be repurchased, by use of a call feature, prior to maturity.

capital
The long-term funds of a firm; all items on the right-hand side of the firm’s balance sheet, excluding current liabilities.

capital asset pricing model (CAPM)
The basic theory that links risk and return for all assets; describes the relationship between the required return, \( r_s \), and the nondiversifiable risk of the firm as measured by the beta coefficient, \( \beta \).

capital budgeting
The process of evaluating and selecting long-term investments that are consistent with the firm’s goal of maximizing owner wealth.

capital budgeting process
Five distinct but interrelated steps: proposal generation, review and analysis, decision making, implementation, and follow-up.

capital expenditure
An outlay of funds by the firm that is expected to produce benefits over a period of time greater than 1 year.

capital gain
The amount by which the sale price of an asset exceeds the asset’s initial purchase price.

capital market
A market that enables suppliers and demanders of long-term funds to make transactions.

capital rationing
The financial situation in which a firm has only a fixed monetary amount available for capital expenditures, and numerous projects compete for this amount.

capital structure
The mix of long-term debt and equity maintained by the firm.

capitalized lease
A financial (capital) lease that has the present value of all its payments included as an asset and corresponding liability on the firm’s balance sheet, as required by the International Accounting Standards Board (IASB).

carrying costs
The variable costs per unit of holding an item in inventory for a specific period of time.

cash basis
Recognizes revenues and expenses only with respect to actual inflows and outflows of cash.

cash bonuses
Cash paid to management for achieving certain performance goals.

cash budget (cash forecast)
A statement of the firm’s planned inflows and outflows of cash that is used to estimate its short-term cash requirements.

cash concentration
The process used by the firm to bring lockbox and other deposits together into one bank, often called the concentration bank.

cash conversion cycle (CCC)
The amount of time a firm’s resources are tied up; calculated by subtracting the average payment period from the operating cycle.

cash disbursements
All outlays of cash by the firm during a given financial period.

cash discount
A percentage deduction from the purchase price; available to the credit customer who pays its account within a specified time.

cash discount period
The number of days after the beginning of the credit period during which the cash discount is available.

cash receipts
All of a firm’s inflows of cash in a given financial period.

catering theory
A theory that says firms cater to the preferences of investors, initiating or increasing dividend payments during periods in which high-dividend stocks are particularly appealing to investors.

change in net working capital
The difference between a change in current assets and a change in current liabilities.

Chapter 7
The portion of the U.S. Bankruptcy Reform Act of 1978 that details the procedures to be followed when liquidating a failed firm.

Chapter 11
The portion of the U.S. Bankruptcy Reform Act of 1978 that outlines the procedures for reorganizing a failed (or failing) firm, whether its petition is filed voluntarily or involuntarily.
clearing float | فترة التحصيل
The time between deposit of a payment and when spendable funds become available to the firm.

clientele effect | اتت أشخاص عملاء
The argument that a firm attracts shareholders whose preferences for the payment and stability of dividends correspond to the payment pattern and stability of the firm itself.

closed owned (stock) | أسهم إمتلاك محدود
All common stock of a firm owned by a small group of investors (such as a family).

coefficient of variation (CV) | معامل الاختلاف
A measure of relative dispersion that is useful in comparing the risks of assets with differing expected returns.

collateral trust bonds | سندات ضمان إضافي
See Table 6.4.

commercial finance companies | شركات التمويل التجارية
Lending institutions that make only secured loans—both short-term and long-term—to businesses.

commercial paper | أوراق تجارية
A form of financing consisting of short-term, unsecured promissory notes issued by firms with a high credit standing.

commitment fee | رسم تعهد
The fee that is normally charged on a revolving credit agreement; it often applies to the average unused balance of the borrower’s credit line.

common-size income statement | قائمة أرباح وخسائر نسبية
An income statement in which each item is expressed as a percentage of sales.

common stock | سهم عادي
The purest and most basic form of corporate ownership.

compensating balance | رصيد تعويضي
A required checking account balance equal to a certain percentage of the amount borrowed from a bank under a line-of-credit or revolving credit agreement.

composition | صلاح وظيف من الأدوات
A pro rata cash settlement of creditor claims by the debtor firm; a uniform percentage owed is paid.

compound interest | فائدة مركبة
Interest that is earned on a given deposit and has become part of the principal at the end of a specified period.

conflicting rankings | تصنيف متضارب
Conflicts in the ranking given a project by NPV and IRR, resulting from differences in the magnitude and timing of cash flows.

congenic merger | اندماج شركات متماثلة الأنشطة
A merger in which one firm acquires another firm that is in the same general industry but neither in the same line of business nor a supplier or customer.

conglomerate merger | اندماج شركات متعددة الأنشطة
A merger combining firms in unrelated businesses.

conservative funding strategy | استراتيجية تمويل محافظة
A funding strategy under which the firm funds both its seasonal and its permanent requirements with long-term debt.

consolidation | توحيد أو دمج
The combination of two or more firms to form a completely new corporation.

constant-growth model | نموذج النمو الثابت
A widely cited dividend valuation approach that assumes dividends will grow at a constant rate, but a rate that is less than the required return.

constant-growth valuation (Gordon) model | نموذج النمو الثابت لقيمة الأسهم
Assumes that the value of a share of stock equals the present value of all future dividends (assumed to grow at a constant rate) that it is expected to provide over an infinite time horizon.

constant-payout-ratio dividend policy | سياسة توزيع الأرباح وفقًا لل معدل الثابت
A dividend policy based on the payment of a certain percentage of earnings to owners in each dividend period.

contingent securities | أوراق مالية مشروطة
Convertible, warrants, and stock options. Their presence affects the reporting of a firm’s earnings per share (EPS).

continuous compounding | احتساب فائدة مركبة مستمرة
Compounding of interest an infinite number of times per year at intervals of microseconds.

continuous probability distribution | توزيع إحتمالي مستمر
A probability distribution showing all the possible outcomes and associated probabilities for a given event.

controlled disbursing | مصروفات منضبطة (مراقبة)
The strategic use of mailing points and bank accounts to lengthen mail float and clearing float, respectively.

controller | مراقب مالي
The firm’s chief accountant, who is responsible for the firm’s accounting activities, such as corporate accounting, tax management, financial accounting, and cost accounting.

conventional cash flow pattern | نموذج للتدفقات النقدية التقليدية
An initial outflow followed only by a series of inflows.

conversion feature | خصائص تحويل
An option that is included as part of a bond or a preferred stock issue and allows its holder to change the security into a stated number of shares of common stock.

conversion feature (preferred stock) | خصائص تحويل الأسهم الممتازة
A feature of convertible preferred stock that allows holders to change each share into a stated number of shares of common stock.

conversion (or stock) value | قيمة التحويل
The value of a convertible security measured in terms of the market price of the common stock into which it can be converted.
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