

14th Edition

Brigham | Ehrhardt



# Financial Management

*Theory and Practice*

## FREQUENTLY USED SYMBOLS

ACP	Average collection period
ADR	American Depository Receipt
APR	Annual percentage rate
AR	Accounts receivable
b	Beta coefficient, a measure of an asset's market risk
$b_L$	Levered beta
$b_U$	Unlevered beta
BEP	Basic earning power
BVPS	Book value per share
CAPM	Capital Asset Pricing Model
CCC	Cash conversion cycle
CF	Cash flow; $CF_t$ is the cash flow in Period t
CFPS	Cash flow per share
CR	Conversion ratio
CV	Coefficient of variation
$\Delta$	Difference or change (uppercase delta)
$D_{ps}$	Dividend of preferred stock
$D_t$	Dividend in Period t
DCF	Discounted cash flow
D/E	Debt-to-equity ratio
DPS	Dividends per share
DRIP	Dividend reinvestment plan
DRP	Default risk premium
DSO	Days sales outstanding
EAR	Effective annual rate, EFF%
EBIT	Earnings before interest and taxes; net operating income
EBITDA	Earnings before interest, taxes, depreciation, and amortization
EPS	Earnings per share
EVA	Economic Value Added
F	(1) Fixed operating costs (2) Flotation cost
FCF	Free cash flow
$FV_N$	Future value for Year N
$FVA_N$	Future value of an annuity for N years
g	Growth rate in earnings, dividends, and stock prices
I	Interest rate; also denoted by r
I/YR	Interest rate key on some calculators
INT	Interest payment in dollars
IP	Inflation premium
IPO	Initial public offering
IRR	Internal rate of return
LP	Liquidity premium
M	(1) Maturity value of a bond (2) Margin (profit margin)
M/B	Market-to-book ratio
MIRR	Modified Internal Rate of Return
MRP	Maturity risk premium
MVA	Market Value Added
n	Number of shares outstanding
N	Calculator key denoting number of periods
$N(d_i)$	Area under a standard normal distribution function
NOPAT	Net operating profit after taxes
NOWC	Net operating working capital
NPV	Net present value
P	(1) Price of a share of stock in Period t; $P_0$ = price of the stock today (2) Sales price per unit of product sold
$P_c$	Conversion price

$P_f$	Price of good in foreign country
$P_h$	Price of good in home country
$P_N$	A stock's horizon, or terminal, value
P/E	Price/earnings ratio
PM	Profit margin
PMT	Payment of an annuity
PPP	Purchasing power parity
PV	Present value
$PVA_N$	Present value of an annuity for N years
Q	Quantity produced or sold
$Q_{BE}$	Breakeven quantity
r	(1) A percentage discount rate, or cost of capital; also denoted by i (2) Nominal risk-adjusted required rate of return
$\bar{r}$	"r bar," historic, or realized, rate of return
$\hat{r}$	"r hat," an expected rate of return
$r^*$	Real risk-free rate of return
$r_d$	Before-tax cost of debt
$r_e$	Cost of new common stock (outside equity)
$r_f$	Interest rate in foreign country
$r_h$	Interest rate in home country
$r_i$	Required return for an individual firm or security
$r_M$	Return for "the market" or for an "average" stock
$r_{NOM}$	Nominal rate of interest; also denoted by $i_{NOM}$
$r_{ps}$	(1) Cost of preferred stock (2) Portfolio's return
$r_{PER}$	Periodic rate of return
$r_{RF}$	Rate of return on a risk-free security
$r_s$	(1) Required return on common stock (2) Cost of current outstanding common stock
$\rho$	Correlation coefficient (lowercase rho); also denoted by R when using historical data
ROA	Return on assets
ROE	Return on equity
RP	Risk premium
$RP_M$	Market risk premium
RR	Retention rate
S	(1) Sales (2) Estimated standard deviation for sample data (3) Intrinsic value of stock (i.e., all common equity)
SML	Security Market Line
$\Sigma$	Summation sign (uppercase sigma)
$\sigma$	Standard deviation (lowercase sigma)
$\sigma^2$	Variance
t	Time period
T	Marginal income tax rate
$TV_N$	A stock's horizon, or terminal, value
TIE	Times interest earned
V	Variable cost per unit
$V_B$	Bond value
$V_L$	Total market value of a levered firm
$V_{op}$	Value of operations
$V_{ps}$	Value of preferred stock
$V_U$	Total market value of an unlevered firm
VC	Total variable costs
w	Proportion or weight
$w_d$	Weight of debt
$w_{ps}$	Weight of preferred stock
$w_s$	Weight of common equity raised internally by retaining earnings
WACC	Weighted average cost of capital
X	Exercise price of option
YTC	Yield to call
YTM	Yield to maturity



# financial management

14e

*theory & practice*

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# Preface

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## resource

**Students:** Access the *Financial Management: Theory and Practice* (14th Edition) companion site and online student resources by visiting [www.cengagebrain.com](http://www.cengagebrain.com), searching for ISBN 9781111972202, and clicking “Access Now” under “Study Tools” to go to the student companion site.

**Instructors:** Access the *Financial Management: Theory and Practice* (14th Edition) companion site and instructor resources by going to [login.cengage.com](http://login.cengage.com), logging in with your faculty account username and password, and using ISBN 9781111972202 to reach the site through your account.

When we wrote the first edition of *Financial Management: Theory and Practice*, we had four goals: (1) to create a text that would help students make better financial decisions; (2) to provide a book that could be used in the introductory MBA course, but one that was complete enough for use as a reference text in follow-on case courses and after graduation; (3) to motivate students by demonstrating that finance is both interesting and relevant; and (4) to make the book clear enough so that students could go through the material without wasting either their time or their professors’ time trying to figure out what we were saying.

The collapse of the sub-prime mortgage market, the financial crisis, and the global economic crisis make it more important than ever for students and managers to understand the role that finance plays in a global economy, in their own companies, and in their own lives. So in addition to the four goals listed above, this edition has a fifth goal, to prepare students for a changed world.

## INTRINSIC VALUATION AS A UNIFYING THEME

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

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

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

1. Managers should try to maximize the intrinsic value of a firm, which is determined by cash flows as revealed in financial statements. Our early coverage of financial statements helps students see how particular financial decisions affect the various parts of the firm and the resulting cash flow. Also, financial statement analysis provides an excellent vehicle for illustrating the usefulness of spreadsheets.
2. Covering time value of money early helps students see how and why expected future cash flows determine the value of the firm. Also, it takes time for students to digest TVM concepts and to learn how to do the required calculations, so it is good to cover TVM concepts early and often.

3. Most students—even those who do not plan to major in finance—are interested in investments. The ability to learn is a function of individual interest and motivation, so *Financial Management's* early coverage of securities and security markets is pedagogically sound.
4. Once basic concepts have been established, it is easier for students to understand both how and why corporations make specific decisions in the areas of capital budgeting, raising capital, working capital management, mergers, and the like.

## INTENDED MARKET AND USE

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

## IMPROVEMENTS IN THE 14<sup>TH</sup> EDITION

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

### Changes That Affect All Chapters

Following are some of the changes that affect all chapters.

**THE GLOBAL ECONOMIC CRISIS.** In every chapter we use real-world examples to show how the chapter's topics are related to some aspect of the global economic crisis. In addition, many chapters have "Global Economic Crisis" boxes that focus on important issues related to the crisis. Last edition we began using the global economic crisis to illustrate important learning points, and we have continued that in this edition.

**ADDITIONAL INTEGRATION WITH EXCEL.** We have continued to integrate the textbook and the accompanying *Excel Tool Kit* spreadsheet models for each chapter. Many figures in the textbook show the appropriate area from the chapter's *Excel Tool Kit* model. This makes the analysis more transparent to the students and better enables them to follow the analysis in the *Excel* model. In addition, we have added the Mini Case data to a worksheet in the *Excel Tool Kits* in selected chapters, saving time for those students who do the Mini Cases.

**IMPROVEMENTS IN MICRODRIVE.** As in previous editions, we use a hypothetical company, MicroDrive, as a running example to provide continuity and help students move up the learning curve more efficiently. However, we have made several changes to MicroDrive's financial statements for this edition. First, the values are now all integers and in most cases end with zero, which simplifies many calculations. This seemingly minor change helps students learn the finance topics without being distracted by complicated calculations. Second, we have broken operating costs into costs of goods sold (excluding

depreciation), other operating costs, and depreciation. This allows more flexibility in defining ratios and in forecasting financial statements. Third, we have modified the values in the financial statements so that MicroDrive can be used as the illustrative company in more chapters and more topics than in the previous editions, especially in measuring systematic risk and estimating intrinsic value with the free cash flow model.

## Notable Changes within Selected Chapters

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

**CHAPTER 1: AN OVERVIEW OF FINANCIAL MANAGEMENT AND THE FINANCIAL ENVIRONMENT.** We added a box on high-frequency trading, “Life in the Fast Lane: High-Frequency Trading!,” and a box on mortgage-backed securities, “Anatomy of a Toxic Asset.” We also increased our coverage of the global economic crisis to reflect changes in the past three years, including a section on the Dodd-Frank Act.

**CHAPTER 2: FINANCIAL STATEMENTS, CASH FLOW, AND TAXES.** We reorganized and better integrated the sections on the statement of cash flows, operating cash flow, and free cash flow. We now have a single section focusing on the use of free cash flow and its components as performance measures. We added two new boxes. “Filling in the GAAP” describes the planned convergence of GAAP and IFRS; “When It Comes to Taxes, History Repeats and Repeats Itself!” discusses the actual taxes (or lack thereof) paid by many corporations. MicroDrive is the company used as a running example throughout the book. We changed its financial statements so that MicroDrive would provide additional learning points when we cover valuation and forecasting in Chapter 12.

**CHAPTER 3: ANALYSIS OF FINANCIAL STATEMENTS.** We updated and revised the opening vignette to describe Macy’s earnings announcement and its stock price reaction. In previous editions, we defined the inventory turnover ratio using sales instead of COGS because some compilers of financial ratio statistics, such as Dun & Bradstreet, use the ratio of sales to inventories. However, most sources now report the turnover ratio using COGS, so we have changed our definition to conform to the majority of reporting organizations and now define the inventory turnover ratio as  $\text{COGS}/\text{Inventories}$ . Also, to be more consistent with many Web-based reporting organizations, we now define the debt ratio as total debt divided by total assets, the market debt ratio as total debt divided by total debt plus the market value of equity, and the debt-to-equity ratio as total debt divided by total common equity. MicroDrive is the company used as a running example throughout the book, and we changed its financial statements (which change its ratios) so that MicroDrive would offer additional learning points when we cover valuation and forecasting in Chapter 12.

**CHAPTER 4: TIME VALUE OF MONEY.** We added a new box, “It’s a Matter of Trust,” that describes the future value of several multi-century trusts. Another new box, “What You Know Is What You Get: Not in Payday Lending,” which describes the effects of better disclosure on consumer borrowing decisions. We moved the section on perpetuities so that it now comes before the section on annuities, because perpetuities are simpler than annuities and because perpetuities are the “building blocks” of annuities. We also modified the example of consols to be denominated in pounds instead of dollars as part of our effort to add more international examples to each chapter. We added a discussion



of mortgage payments in Section 4.17, comparing the total interest paid on a 30-year mortgage to a 15-year mortgage.

**CHAPTER 5: BONDS, BOND VALUATION, AND INTEREST RATES.** We refocused the opening vignette on the amount of debt held by corporations, noncorporate businesses, and households. We updated the box “Betting with or against the U.S. Government: The Case of Treasury Bond Credit Default Swaps” to reflect the debt-ceiling crisis of July 2011. We added another new box describing the handful of AAA rated companies, “The Few, the Proud, the... AAA-Rated Companies!” We revised another box, “Fear and Rationality,” to include the TED spread as well as the Hi-Yield bond spread. We also added a brief discussion of duration and its use as a measure of risk. MicroDrive is the company used as a running example throughout the book. We changed its example bond offering to be consistent with MicroDrive’s revised financial statements.

**CHAPTER 6: RISK AND RETURN.** As a part of our effort to integrate the illustrative company MicroDrive throughout the book, we made significant changes in this chapter. We begin with a discussion of discrete probability distributions involving different market scenarios and then segue into continuous distributions and estimating means and standard deviations using historical data for MicroDrive. We discuss 2-stock portfolios and the impact of diversification by using data for MicroDrive and another company. This sets the stage for a discussion of market risk versus diversifiable risk and the appropriate measure of market risk, beta. We then describe the risk-return relationship defined by the CAPM and the basic concept of market equilibrium. This provides a natural transition into the efficient market hypothesis (previously in Chapter 7, the stock valuation chapter). We also added optional sections covering the Fama-French 3-factor model and behavioral finance. These optional sections can be omitted without loss of continuity, or they can be covered to provide more depth on the topic of market efficiency and asset pricing. This new organization consolidates our treatment of risk and return and also illustrates these concepts with MicroDrive, providing a more effective learning experience for students.

**CHAPTER 7: VALUATION OF STOCKS AND CORPORATIONS.** We moved coverage of efficient markets into Chapter 6, where it is a natural extension of risk and return. This change permits Chapter 7 to focus on stock valuation. In addition to the dividend growth model, we moved coverage of the free cash flow valuation model from later in the book into Chapter 7; this chapter now provides comprehensive coverage of stock valuation via the dividend growth model and the free cash flow corporate valuation model.

**CHAPTER 9: THE COST OF CAPITAL.** We have a new opening vignette focusing on the importance of the cost of capital to companies making equipment purchases. A new box, “How Effective Is the Effective Corporate Tax Rate?,” shows the differences between the statutory rate and the effective rate over time; it also compares the U.S. statutory and effective rate with those of other developed economies. For better integration, we now use the company in our running example, MicroDrive, to illustrate cost of capital estimation. We streamlined the chapter’s coverage of the forward-looking risk premium by moving the discussion of the relatively complex multistage model to a Web Extension. This allows the text’s coverage of the forward-looking premium focus on the concepts all MBA students need to understand, while at the same time letting the Web Extension address additional issues in more detail, such as the application of multistage models and the

impact of stock repurchases. We now cover the over-own-bond-yield-plus-judgmental-risk-premium approach in the section on privately held companies, because this approach is used more often for such companies.

**CHAPTER 10: THE BASICS OF CAPITAL BUDGETING: EVALUATING CASH FLOWS.** The new opening vignette describes John Deere's expansion plans and its commitment to disciplined capital budgeting. We improved the integration with Chapter 11 by revising the numerical example in Chapter 10 so that the cash flows for Project L are now the cash flows that we estimate in Chapter 11. We put all the material related to IRR (such as the possibility of multiple IRRs) in a single section to make our coverage of IRR more cohesive.

**CHAPTER 11: CASH FLOW ESTIMATION AND RISK ANALYSIS.** A new opening vignette describes how several companies use risk analysis when making capital budgeting decisions. We revised the numerical example so that the cash flows we estimate in this chapter are the same cash flows we use in Chapter 10 for Project L.

**CHAPTER 12: CORPORATE VALUATION AND FINANCIAL PLANNING.** We divided the financial planning process into two activities. First, we show how to forecast the operating portion of a financial plan, including free cash flows and estimates of intrinsic value. Second, we show how to take the operating forecast and combine it with a preliminary financial policy to forecast the complete financial statements. This structure makes it easier for students to grasp and gives instructors a choice of covering just the operating forecast or covering the complete projection of financial statements.

**CHAPTER 13: AGENCY CONFLICTS AND CORPORATE GOVERNANCE.** We moved the valuation material from the previous edition to the stock valuation chapter (Chapter 7) and to the financial forecasting chapter (Chapter 13). In addition to better integrating the topics in those chapters, the move allows us to focus on agency conflicts and corporate governance in this chapter. We added a new opening vignette describing the shareholder rejection of Citigroup's proposed compensation plan at the 2012 annual meetings.

**CHAPTER 14: DISTRIBUTIONS TO SHAREHOLDERS: DIVIDENDS AND REPURCHASES.** We added a new opening vignette describing Apple's dividend initiation. We added a new Self-Test Problem addressing the impact of dividends versus repurchases.

**CHAPTER 15: CAPITAL STRUCTURE DECISIONS.** While updating Section 15-4 to include results from the latest empirical tests, we also reorganized the material and added subheadings to make it easier for students to synthesize. We moved the current valuation of Strausburg, the illustrative company, so that it immediately precedes Strausburg's recapitalization, which provides a better segue into the valuation effects of recapitalizations.

**CHAPTER 16: SUPPLY CHAINS AND WORKING CAPITAL MANAGEMENT.** We added two new boxes, "Your Check Isn't in the Mail," and "A Wag of the Finger or Tip of the Hat? The Colbert Report and Small Business Payment Terms." We rewrote the first section in the chapter to better distinguish between cash (including cash equivalents and marketable securities) used to support current operations and short-term investments (including marketable securities) held for possible future uses. We continued this distinction throughout the chapter in our discussions of cash management and managing short-term investments. Recall that in Chapter 3 we updated our definition of inventory turnover ratio to  $\text{COGS}/\text{Inventories}$  to be consistent with the majority of reporting, so we followed through with that definition in Chapter 16.

**CHAPTER 17: MULTINATIONAL FINANCIAL MANAGEMENT.** A new opening vignette describes the interconnectedness of global financial markets and begins a discussion of the Eurozone crisis that we continue throughout the chapter. We added a section on foreign exchange notation to ensure that all readers will better understand the relative values of currencies as reported by the financial press. We added a new figure showing the growth in employment by U.S. multinational corporations, including the mix of domestic and international employment. We added a new figure showing the value of the dollar index relative to major currencies to show how demand for the dollar and its relative value has changed over time. We added a new section on sovereign debt, including a brief discussion of the current Greek debt crisis.

**CHAPTER 18: PUBLIC AND PRIVATE FINANCING: INITIAL OFFERINGS, SEASONED OFFERINGS, AND INVESTMENT BANKS.** The new opening vignette describes Facebook's IPO and the events of the month that followed. We added a section describing how the offer price is set in an IPO.

**19: LEASE FINANCING.** We changed the definition of the net advantage of leasing (NAL) to:  $NAL = \text{Present value of leasing} - \text{Present value of owning}$ . Both present values are negative, so a positive NAL means that leasing should be preferred. The results from using this definition of NAL are unchanged from previous editions, but our students find this definition more intuitive.

**CHAPTER 20: HYBRID FINANCING: PREFERRED STOCK, WARRANTS, AND CONVERTIBLES.** We added a new box describing the deductibility of preferred dividends by Section 521 cooperatives entitled "Hybrids Aren't Only for Corporations."

**CHAPTER 21: DYNAMIC CAPITAL STRUCTURES.** We added a new opening vignette describing changes in Hewlett-Packard's capital structure. We rewrote the chapter and organized it around the fundamental concept that a levered firm's value is equal to its unlevered value plus any side effects due to leverage. From this general concept, we examine special cases, including the MM models and the compressed adjusted present value (APV) model. In addition to the static case of a constant capital structure and constant growth, we apply the APV model to situations with dynamic capital structures that vary from year to year before becoming constant. We retained the MM proofs and put them in a separate section, which provides flexibility to instructors in selecting topics to cover.

**CHAPTER 23: ENTERPRISE RISK MANAGEMENT.** We rewrote much of the chapter, changing it from a chapter about derivatives with applications in risk management to a chapter about enterprise risk management with applications of derivatives as one of several tools in managing risk. We adapted the general enterprise risk management framework of the Treadway Commission's Committee of Sponsoring Organizations (COSO) because it satisfies the requirements of the Sarbanes-Oxley Act and the Foreign Corrupt Practices Act (FCPA). We now include the use of Monte Carlo simulation as a technique for identifying risk. We use the results of a simulation example to illustrate VaR and the expected shortfall (ES) measures that is recommended by Basel III.

**CHAPTER 24: BANKRUPTCY, REORGANIZATION, AND LIQUIDATION.** We added a new section describing the events leading to GM's government bailout, bankruptcy, and IPO.

## LEARNING TOOLS AVAILABLE TO STUDENTS AND INSTRUCTORS

*Financial Management* includes a broad range of ancillary materials designed to enhance students' learning and to make it easier for instructors to prepare for and conduct classes. All resources available to students are also available to instructors; in addition, instructors have access to the course management tools.

In addition to these resources and the items noted previously, many other resources are available on the Web at *Financial Management's* Web site. These ancillaries include the following:

### Excel Tool Kits

Proficiency with spreadsheets is an absolute necessity for all MBA students. With that in mind, for each chapter we created *Excel* spreadsheets, called **Tool Kits**, to show how the calculations used in the chapter were done. The **Tool Kit** models include explanations that show students how to use many of the features and functions of *Excel*, enabling the **Tool Kits** to serve as self-taught tutorials.

### Web Extensions

Many chapters have Adobe PDF “appendices” that provide more detailed coverage of topics that were addressed in the chapter

### End-of-Chapter Spreadsheet Problems

Each chapter has a Build a Model problem, where students start with a spreadsheet that contains financial data plus general instructions about solving a specific problem. The model is partially completed, with headings but no formulas, so the student must literally build a model. This structure guides the student through the problem, minimizes unnecessary typing and data entry, and also makes it easy to grade the work, because all students' answers are in the same locations on the spreadsheet. The partial spreadsheets for the *Build a Model* problems are available to students on the book's Web site; the completed models are in files on the Instructor's portion of the Web site.



## THOMSON ONE—BUSINESS SCHOOL EDITION

Thomson ONE—Business School Edition (TO:BSE) is an online database that draws from the world-acclaimed Thomson Reuters data sources. This product includes Thomson ONE Investment Banking assets which deliver world class content and powerful analytical tools via a web interface. TO:BSE enables students to gain insight into the financial markets by accessing data and analysis used by the deal-making community globally, such as investment bankers and consultancies. This product provides access to market news and comprehensive reference data to monitor changing market conditions and to gain insight into a company, industry or event. It consists of a foundation solution for market awareness and company insight. TO:BSE provides one-click download of financial statements to *Excel*, data from domestic and international companies, one-click Peer Set analysis, as well as other valuable tools useful in learning finance.

Many chapters contain problems based on the data that is available in TO:BSE. Some of the key information that is available in the database includes:

## I/B/E/S Consensus Estimates

Find consensus estimates—averages, means, and medians; analyst-by-analyst earnings coverage; analysts' forecasts based on 15 industry standard measures; current and historic coverage for the selected 500 companies. Current coverage is five years forward plus historic data from 1976 for U.S. companies and from 1987 for international companies, with current data updated daily and historic data updated monthly.

## Financials

View current and historical financial information covering 99% of global market capitalization. You can access financial statements, key ratios and summary financial information for more than 70,000 active and inactive companies and click through to the underlying source. View financials in the format you prefer with both standardized and as-reported formats available.

## Company and Financial Information

Find data for over one million private companies globally plus private company profiles including business descriptions, private equity investors and fund names, key executives and investment round details.

## Streaming Reuters News and Quotes

Constantly monitor changing market conditions and breaking news in real time with Reuters News and other third-party news services.

Reuters News includes market moving stories and comprehensive analysis on companies, industries, market trends, and more. It is the leading source of breaking news with the broadest coverage across sectors, geographies and markets from 2,700 journalists across 200 bureaus worldwide.

## Market Awareness

Summary pages provide quick access to world indices, currencies and key exchange metrics like new highs and new lows, LIBOR, Benchmark bond yields and Treasury rates.

View the latest key indicators through Thomson Reuters Datastream economics and a comprehensive calendar of upcoming indicators so you are always on top of the factors affecting market sentiment.

## Filings

Access the largest database of international filings with 19 million documents that 60,000 companies filed with stock exchanges and regulatory agencies such as the LSE and the SEC, dating back to the late 1960s.

## COURSE MANAGEMENT TOOLS AVAILABLE ONLY TO INSTRUCTORS

Instructors have access to all of the materials listed above in addition to course management tools. These tools are available at *Financial Management's* Instructor companion Web site and on the Instructor's Resource CD. These materials include the following resources.

## Solutions Manual

This comprehensive manual contains worked-out solutions to all end-of-chapter materials. It is available in both printed and electronic formats.

### PowerPoint Slides

For each chapter, we provide a set of *PowerPoint* slides that present graphs, tables, lists, and calculations for use in lectures. Although the slides correspond to the Mini Cases at the end of the chapter, the slides are completely self-contained in the sense that they can be used for lectures regardless of whether students have read the Mini Cases. In fact, we often don't assign the Mini Case but we do use the *PowerPoint* slides. Copies of these files are on the Instructor's Web site and the CengageNOW site.

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

In addition to the slides, there is a Mini Case at the end of each chapter. We assign the Mini Cases only for specific chapters, but some professors assign the Mini Cases for most chapters. These cases cover all the essential issues presented in the chapter, and they provide the structure for our class lectures even if we don't assign the Mini Case.

### Mini Case Spreadsheets

In addition to the *PowerPoint* slides, we also provide *Excel* spreadsheets that perform the calculations required in the Mini Cases. These spreadsheets are similar to the **Tool Kits** except (a) the numbers correspond to the Mini Cases rather than the chapter examples, and (b) we added some features that enable “what if” analysis on a real-time basis in class. We usually begin our lectures with the *PowerPoint* presentation, but after we have explained a basic concept we “toggle” to the Mini Case *Excel* file and show how the analysis can be done in *Excel*.<sup>2</sup> For example, when teaching bond pricing, we begin with the *PowerPoint* show and cover the basic concepts and calculations. Then we toggle to *Excel* and use a sensitivity-based graph to show how bond prices change as interest rates and time to maturity vary. More and more students are bringing their laptops to class—they can follow along and do the “what if” analysis for themselves.

### Solutions to End-of-Chapter Spreadsheet Problems

The partial spreadsheets for the *Build a Model* problems are available to students, and the completed models are in files on the Instructor's Web site.

### Solutions to Thomson ONE—BSE Problem Sets

The Thomson ONE—BSE problem sets require students to use real-world data. Although the solutions change daily as the data change, we provide instructors with “representative” answers.

<sup>1</sup>To convert into *PowerPoint* for Office 2010, select Design, Theme, and choose a theme. To convert into *PowerPoint* for Office 2007, select Format, Apply Design Template, and then pick any template. Always double-check the conversion; some templates use fonts of different sizes, which can cause some slide titles to run over their allotted space.

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

## Test Bank

The *Test Bank* contains more than 1,200 class-tested questions and problems. Information regarding the topic and degree of difficulty, along with the complete solution for all numerical problems, is provided with each question. The *Test Bank* is available in three forms: (1) in a printed book, (2) in Microsoft Word files, and (3) in a computerized test bank software package, **ExamView**, which has many features that make test preparation, scoring, and grade recording easy—including the ability to generate different versions of the same problem. With **ExamView**, instructors can easily export questions into Blackboard and WebCT.

## Optional Materials for Your Students

We developed a printed *Study Guide* for this textbook, which includes an overview and outline of the chapter with brief explanations of key concepts. The *Study Guide* also has practice questions and problems for the students, along with the worked-out solutions. Students who have good math skills or who have taken a previous course in finance probably don't need the *Study Guide*, but many students who don't have that background have told us that our *Study Guide* is very helpful. Therefore, when ordering books for our course, we order this *Study Guide* as an optional book, not a required book.

It is also possible for an instructor to order the Solutions Manual as an optional book for students.

## ADDITIONAL COURSE TOOLS

### CengageNOW™ for *Financial Management: Theory and Practice*.

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and testing content, an instructor feedback forum, and a Global Issues Database. Visit [www.cengage.com/thewatch](http://www.cengage.com/thewatch) for more information.

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## ERRORS IN THE TEXT

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

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

## CONCLUSION

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

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PART **1**

# The Company and Its Environment

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## CHAPTER 1

# An Overview of Financial Management and the Financial Environment

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WWW

See [money.cnn.com/magazines/fortune](http://money.cnn.com/magazines/fortune) for updates on the ranking.

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

Or at least Apple is the most admired company in the world, according to *Fortune* magazine's annual survey. The others in the global top ten are Google, Berkshire Hathaway, Southwest Airlines, Procter & Gamble, Coca-Cola, Amazon.com, FedEx, Microsoft, and McDonald's. What do these companies have that separates them from the rest of the pack?

According to a survey of executives, directors, and security analysts, these companies have very high average scores across nine attributes: (1) innovativeness, (2) quality of management, (3) long-term investment value, (4) social responsibility, (5) employee talent, (6) quality of products and services, (7) financial soundness, (8) use of corporate assets, and (9) effectiveness in doing business globally. After culling weaker companies, the final rankings are then determined by over 3,700 experts from a wide variety of industries.

What do these companies have in common? First, they have an incredible focus on using technology to understand their customers, reduce costs, reduce inventory, and speed up product delivery. Second, they continually innovate and invest in ways to differentiate their products. Some are known for game-changing products, such as Apple's iPad. Others continually introduce small improvements, such as Southwest Airlines's streamlined boarding procedures.

In addition to their acumen with technology and customers, they are also on the leading edge when it comes to training employees and providing a workplace in which people can thrive.

Prior to the global economic crisis, these companies maintained reasonable debt levels and avoided overpaying for acquisitions. This allowed them to weather the crisis and position themselves for stronger subsequent performance than many of their competitors.

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

# GLOBAL ECONOMIC CRISIS



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## The Global Economic Crisis

The global economic crisis is like a guest at a party who has one drink and is very interesting and entertaining but who then has many more drinks, gets sick, and lingers on after everyone else has left. At the risk of oversimplification, this is what happened during the past decade: Many of the world's individuals, financial institutions, and governments borrowed too much money and used those borrowed funds to make speculative investments. Those investments turned out to be worth less than the amounts owed by the borrowers, forcing widespread bankruptcies, buyouts, and restructurings for both borrowers and lenders. This in turn reduced the supply of available funds that

financial institutions normally lent to creditworthy individuals, manufacturers, and retailers. Without access to credit, consumers bought less, manufacturers produced less, and retailers sold less—all of which led to layoffs. According to the National Bureau of Economic Research, the resulting recession lasted from December 2007 through June 2009. But as we write this chapter in 2012, the U.S. economy is still not growing very quickly. As we progress through this chapter and the rest of the book, we will discuss different aspects of the crisis. For real-time updates, go to the Global Economic Watch (GEW) Resource Center at [www.cengage.com/thewatch](http://www.cengage.com/thewatch).

### resource

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

This chapter should give you an idea of what financial management is all about, including an overview of the financial markets in which corporations operate. Before going into details, let's look at the big picture. You're probably in school because you want an interesting, challenging, and rewarding career. To see where finance fits in, here's a five-minute MBA.

## 1-1 The Five-Minute MBA

Okay, we realize you can't get an MBA in five minutes. But just as an artist quickly sketches the outline of a picture before filling in the details, we can sketch the key elements of an MBA education. The primary objective of an MBA program is to provide managers with the knowledge and skills they need to run successful companies, so we start our sketch with some common characteristics of successful companies. In particular, all successful companies are able to accomplish two main goals:

1. All successful companies identify, create, and deliver products or services that are highly valued by customers—so highly valued that customers choose to purchase from them rather than from their competitors.
2. All successful companies sell their products/services at prices that are high enough to cover costs and to compensate owners and creditors for the use of their money and their exposure to risk.

It's easy to talk about satisfying customers and investors, but it's not so easy to accomplish these goals. If it were, then all companies would be successful, and you wouldn't need an MBA!

### 1-1a The Key Attributes of Successful Companies

First, *successful companies have skilled people* at all levels inside the company, including leaders, managers, and a capable workforce.



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

Third, *successful companies have enough funding* to execute their plans and support their operations. Most companies need cash to purchase land, buildings, equipment, and materials. Companies can reinvest a portion of their earnings, but most growing companies also must raise additional funds externally by some combination of selling stock and/or borrowing in the financial markets.

Just as a stool needs all three legs to stand, a successful company must have all three attributes: skilled people, strong external relationships, and sufficient capital.

## WWW

Consult [www.careers-in-finance.com](http://www.careers-in-finance.com) for an excellent site containing information on a variety of business career areas, listings of current jobs, and other reference materials.

## 1-1b The MBA, Finance, and Your Career

To be successful, a company must meet its first main goal: identifying, creating, and delivering highly valued products and services to customers. This requires that it possess all three of the key attributes mentioned above. Therefore, it's not surprising that most of your MBA courses are directly related to these attributes. For example, courses in economics, communication, strategy, organizational behavior, and human resources should prepare you for a leadership role and enable you to manage your company's workforce effectively. Other courses, such as marketing, operations management, and information technology, increase your knowledge of specific disciplines, enabling you to develop the efficient business processes and strong external relationships your company needs. Portions of *this* finance course will address raising the capital your company needs to implement its plans. In short, your MBA courses will give you the skills you need to help a company achieve its first goal: producing goods and services that customers want.

Recall, though, that it's not enough just to have highly valued products and satisfied customers. Successful companies must also meet their second main goal, which is generating enough cash to compensate the investors who provided the necessary capital. To help your company accomplish this second goal, you must be able to evaluate any proposal, whether it relates to marketing, production, strategy, or any other area, and implement only the projects that add value for your investors. For this, you must have expertise in finance, no matter your major. Thus, finance is a critical part of an MBA education, and it will help you throughout your career.

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### SELF - TEST

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*What are the goals of successful companies?*

*What are the three key attributes common to all successful companies?*

*How does expertise in finance help a company become successful?*

## 1-2 The Corporate Life Cycle

Many major corporations, including Apple and Hewlett-Packard, began life in a garage or basement. How is it possible for such companies to grow into the giants we see today? No two companies develop in exactly the same way, but the following sections describe some typical stages in the corporate life cycle.

## Columbus Was Wrong—the World Is Flat! And Hot! And Crowded!



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In his best-selling book *The World Is Flat*, Thomas L. Friedman argues that many of the barriers that long protected businesses and employees from global competition have been broken down by dramatic improvements in communication and transportation technologies. The result is a level playing field that spans the entire world. As we move into the information age, any work that can be digitized will flow to those able to do it at the lowest cost, whether they live in San Jose's Silicon Valley or Bangalore, India. For physical products, supply chains now span the world. For example, raw materials might be extracted in South America, fabricated into electronic components in Asia, and then used in computers assembled in the

United States, with the final product being sold in Europe.

Similar changes are occurring in the financial markets, as capital flows across the globe to those who can best use it. Indeed, China and Hong Kong raised more through initial public offerings in 2011 than both Europe and the United States together.

Unfortunately, a dynamic world can bring runaway growth, which can lead to significant environmental problems and energy shortages. Friedman describes these problems in another bestseller, *Hot, Flat, and Crowded*. In a flat world, the keys to success are knowledge, skills, and a great work ethic. In a flat, hot, and crowded world, these factors must be combined with innovation and creativity to deal with truly global problems.

### 1-2a Starting Up as a Proprietorship

Many companies begin as a **proprietorship**, which is an unincorporated business owned by one individual. Starting a business as a proprietor is easy—one merely begins business operations after obtaining any required city or state business licenses. The proprietorship has three important advantages: (1) it is easily and inexpensively formed, (2) it is subject to few government regulations, and (3) its income is not subject to corporate taxation but is taxed as part of the proprietor's personal income.

However, the proprietorship also has three important limitations: (1) It may be difficult for a proprietorship to obtain the capital needed for growth. (2) The proprietor has unlimited personal liability for the business's debts, which can result in losses that exceed the money invested in the company (creditors may even be able to seize a proprietor's house or other personal property!). (3) The life of a proprietorship is limited to the life of its founder. For these three reasons, sole proprietorships are used primarily for small businesses. In fact, proprietorships account for only about 13% of all sales, based on dollar values, even though about 80% of all companies are proprietorships.

### 1-2b More Than One Owner: A Partnership

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

Regarding liability, the partners potentially can lose all of their personal assets, even assets not invested in the business, because under partnership law, each partner is liable for the business's debts. Therefore, in the event the partnership goes bankrupt, if any partner is unable to meet his or her pro rata liability, then the remaining partners must make good on the unsatisfied claims, drawing on their personal assets to the extent necessary. To avoid this, it is possible to limit the liabilities of some of the partners by establishing a **limited partnership**, wherein certain partners are designated **general partners** and others **limited partners**. In a limited partnership, the limited partners can lose only the amount of their investment in the partnership, while the general partners have unlimited liability. However, the limited partners typically have no control—it rests solely with the general partners—and their returns are likewise limited. Limited partnerships are common in real estate, oil, equipment leasing ventures, and venture capital. However, they are not widely used in general business situations because usually no partner is willing to be the general partner and thus accept the majority of the business's risk, and no partners are willing to be limited partners and give up all control.

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

## 1-2c Many Owners: A Corporation

Most partnerships have difficulty attracting substantial amounts of capital. This is generally not a problem for a slow-growing business, but if a business's products or services really catch on, and if it needs to raise large sums of money to capitalize on its opportunities, then the difficulty in attracting capital becomes a real drawback. Thus, many growth companies, such as Hewlett-Packard and Microsoft, began life as a proprietorship or partnership, and at some point their founders decided to convert to a corporation. On the other hand, some companies, in anticipation of growth, actually begin as corporations. A **corporation** is a legal entity created under state laws, and it is separate and distinct from its owners and managers. This separation gives the corporation three major advantages: (1) *unlimited life*—a corporation can continue after its original owners and managers are deceased; (2) *easy transferability of ownership interest*—ownership interests are divided into shares of stock, which can be transferred far more easily than can proprietorship or partnership interests; and (3) *limited liability*—losses are limited to the actual funds invested.

To illustrate limited liability, suppose you invested \$10,000 in a partnership that then went bankrupt and owed \$1 million. Because the owners are liable for the debts of a partnership, you could be assessed for a share of the company's debt, and you could be held liable for the entire \$1 million if your partners could not pay their shares. On the other hand, if you invested \$10,000 in the stock of a corporation that went bankrupt, your potential loss on the investment would be limited to your \$10,000 investment.<sup>1</sup> Unlimited life, easy transferability of ownership interest, and limited liability make it much easier for corporations than proprietorships or partnerships to raise money in the financial markets and grow into large companies.

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<sup>1</sup>In the case of very small corporations, the limited liability may be fiction because lenders frequently require personal guarantees from the stockholders.

The corporate form offers significant advantages over proprietorships and partnerships, but it also has two disadvantages: (1) Corporate earnings may be subject to double taxation—the earnings of the corporation are taxed at the corporate level, and then earnings paid out as dividends are taxed again as income to the stockholders. (2) Setting up a corporation involves preparing a charter, writing a set of bylaws, and filing the many required state and federal reports, which is more complex and time-consuming than creating a proprietorship or a partnership.

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

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

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

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

## 1-2d Growing and Managing a Corporation

Once a corporation has been established, how does it evolve? When entrepreneurs start a company, they usually provide all the financing from their personal resources, which may include savings, home equity loans, or even credit cards. As the corporation grows, it will need factories, equipment, inventory, and other resources to support its growth. In time, the entrepreneurs usually deplete their own resources and must turn to external financing. Many young companies are too risky for banks, so the founders must sell stock to outsiders, including friends, family, private investors (often called angels), or venture capitalists. If the corporation continues to grow, it may become successful enough to attract lending from banks, or it may even raise additional funds through an **initial public offering (IPO)** by selling stock to the public at large. After an IPO, corporations support their growth by borrowing from banks, issuing debt, or selling additional shares of stock. In short, a corporation's ability to grow depends on its interactions with the financial markets, which we describe in much more detail later in this chapter.

For proprietorships, partnerships, and small corporations, the firm's owners are also its managers. This is usually not true for a large corporation, which means that large firms'

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<sup>2</sup>More than 60% of major U.S. corporations are chartered in Delaware, which has, over the years, provided a favorable legal environment for corporations. It is not necessary for a firm to be headquartered, or even to conduct operations, in its state of incorporation, or even in its country of incorporation.

stockholders, who are its owners, face a serious problem. What is to prevent managers from acting in their own best interests, rather than in the best interests of the stockholder/owners? This is called an **agency problem**, because managers are hired as agents to act on behalf of the owners. Agency problems can be addressed by a company's **corporate governance**, which is the set of rules that control the company's behavior towards its directors, managers, employees, shareholders, creditors, customers, competitors, and community. We will have much more to say about agency problems and corporate governance throughout the book, especially in Chapters 13, 14, and 15.

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#### SELF - TEST

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*What are the key differences between proprietorships, partnerships, and corporations?*

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

## 1-3 The Primary Objective of the Corporation: Value Maximization

Shareholders are the owners of a corporation, and they purchase stocks because they want to earn a good return on their investment without undue risk exposure. In most cases, shareholders elect directors, who then hire managers to run the corporation on a day-to-day basis. Because managers are supposed to be working on behalf of shareholders, they should pursue policies that enhance shareholder value. Consequently, throughout this book we operate on the assumption that management's primary objective should be *stockholder wealth maximization*.

The **market price** is the stock price that we observe in the financial markets. We later explain in detail how stock prices are determined, but for now it is enough to say that a company's market price incorporates the information available to investors. If the market price reflects all *relevant* information, then the observed price is the **intrinsic price**, also called the **fundamental price**.

However, investors rarely have all relevant information. Companies report most major decisions, but they may withhold selected information to prevent competitors from gaining strategic advantages. In addition, managers may take actions that boost bonuses linked to higher current earnings yet actually decrease future cash flows, such as reducing scheduled maintenance. As we show in Chapter 7, short-term focus can reduce the intrinsic price but might actually increase the market price if such actions are difficult for investors to discern immediately. Thus, the market price can deviate from the intrinsic price. In this example, the market price initially would go up relative to the intrinsic price, but it would then fall in the future as the company experienced production problems due to poorly maintained equipment.

Therefore, when we say management's objective should be to maximize stockholder wealth, we really mean it is to *maximize the fundamental price of the firm's common stock*, not just the current market price. Firms do, of course, have other objectives; in particular, the managers who make the actual decisions are interested in their own personal satisfaction, in their employees' welfare, and in the good of their communities and society at large. Still, for the reasons set forth in the following sections, *maximizing intrinsic stock value should be the most important objective for most corporations*.