



Fundamentals of
Corporate Finance

FIFTH EDITION

Jonathan
Berk

STANFORD UNIVERSITY

Peter
DeMarzo

STANFORD UNIVERSITY

Jarrad
Harford

UNIVERSITY OF WASHINGTON



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*To Natasha and Hannah for all the joy you
bring to my life. —J. B.*

*To Kai, Pono, Koa, and Kai for all the love
and laughter. —P. D.*

*To Katrina, Evan, and Cole for your love and
support. —J. H.*



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About the Authors



Jonathan Berk, Peter DeMarzo, and Jarrad Harford

Jonathan Berk is the A.P. Giannini Professor of Finance at the Graduate School of Business, Stanford University and is a Research Associate at the National Bureau of Economic Research. Before coming to Stanford, he was the Sylvan Coleman Professor of Finance at Haas School of Business at the University of California, Berkeley. Prior to earning his Ph.D., he worked as an Associate at Goldman Sachs (where his education in finance really began).

Professor Berk's research interests in finance include corporate valuation, capital structure, mutual funds, asset pricing, experimental economics, and labor economics. His work has won a number of research awards including the Stephen A. Ross Prize in Financial Economics, TIAA-CREF Paul A. Samuelson Award, the Smith Breeden Prize, Best Paper of the Year in *The Review of Financial Studies*,

and the FAME Research Prize. His paper, "A Critique of Size-Related Anomalies," was selected as one of the two best papers ever published in *The Review of Financial Studies*. In recognition of his influence on the practice of finance he has received the Bernstein-Fabozzi/Jacobs Levy Award, the Graham and Dodd Award of Excellence, and the Roger F. Murray Prize. He served two terms as an Associate Editor of the *Journal of Finance*, and a term as a director of the American Finance Association, the Western Finance Association, and academic director of the Financial Management Association. He is a Fellow of the Financial Management Association and a member of the advisory board of the *Journal of Portfolio Management*.

Born in Johannesburg, South Africa, Professor Berk has two daughters, and is an avid skier and biker.

Peter DeMarzo is the Staehelin Family Professor of Finance at the Graduate School of Business, Stanford University and Faculty Director of the Stanford LEAD program. He is past President and Fellow of the American Finance Association and a Research Associate at the National Bureau of Economic Research. He teaches MBA and Ph.D. courses in Corporate Finance and Financial Modeling. In addition to his experience at the Stanford Graduate School of Business, Professor DeMarzo has taught at the Haas School of Business and the Kellogg Graduate School of Management, and he was a National Fellow at the Hoover Institution.

Professor DeMarzo received the Sloan Teaching Excellence Award at Stanford and the Earl F. Cheit Outstanding Teaching Award at U.C. Berkeley. Professor DeMarzo has served as an Associate Editor for *The Review of Financial Studies*, *Financial Management*, and the *B.E. Journals in Economic Analysis and Policy*, as well as President of the Western Finance Association. Professor DeMarzo's research is in the area of corporate finance, asset securitization, and contracting, as well as market structure and regulation. His recent work has examined issues of the optimal design of contracts and securities,

leverage dynamics and the role of bank capital regulation, and the influence of information asymmetries on stock prices and corporate investment. He has also received numerous awards including the Western Finance Association Corporate Finance Best-Paper Award, the Charles River Associates Best-Paper Award, and the Barclays Global Investors/Michael Brennan Best-Paper of the Year Award from *The Review of Financial Studies*.

Professor DeMarzo was born in Whitestone, New York, and is married with three boys. He and his family enjoy hiking, biking, and skiing.

Jarrad Harford is the Paul Pigott - PACCAR Professor of Finance at the University of Washington's Foster School of Business. Prior to Washington, Professor Harford taught at the University of Oregon. He received his PhD in Finance with a minor in Organizations and Markets from the University of Rochester. Professor Harford has taught the core undergraduate finance course, Business Finance, for over twenty years, as well as an elective in Mergers and Acquisitions, and "Finance for Non-financial Executives" in the executive education program. He has won numerous awards for his teaching, including the UW Finance Professor of the Year (2010, 2012, 2016), Panhellenic/Interfraternity Council Business Professor of the Year Award (2011, 2013), ISMBA Excellence in Teaching Award (2006), and the Wells Fargo Faculty Award for Undergraduate Teaching (2005). Professor Harford is currently a Managing Editor of the *Journal of Financial and Quantitative Analysis*, and serves as an Associate Editor for the *Journal of Financial Economics*, and the *Journal of Corporate Finance*. His main research interests are understanding the dynamics of merger and acquisition activity as well as the interaction of corporate cash management policy with governance, payout and global tax considerations. Professor Harford was born in Pennsylvania, is married, and has two sons. He and his family enjoy traveling, hiking, and skiing.

Bridging Theory and Practice

EXAMPLE 7.1 Stock Prices and Returns

PROBLEM

Suppose you expect Longs Drug Stores to pay an annual dividend of \$0.56 per share in the coming year and to trade for \$45.50 per share at the end of the year. If investments with equivalent risk to Longs' stock have an expected return of 6.80%, what is the most you would pay today for Longs' stock? What dividend yield and capital gain rate would you expect at this price?

SOLUTION

PLAN

We can use Eq. 7.1 to solve for the beginning price we would pay now (P_0) given our expectations about dividends ($Div_1 = \$0.56$) and future price ($P_1 = \45.50) and the return we need to expect to earn to be willing to invest ($r_E = 0.068$). We can then use Eq. 7.2 to calculate the dividend yield and capital gain rate.

EXECUTE

Using Eq. 7.1, we have

$$P_0 = \frac{Div_1 + P_1}{1 + r_E} = \frac{\$0.56 + \$45.50}{1.0680} = \$43.13$$

Referring to Eq. 7.2, we see that at this price, Longs' dividend yield is $Div_1/P_0 = 0.56/43.13 = 1.30\%$. The expected capital gain is $\$45.50 - \$43.13 = \$2.37$ per share, for a capital gain rate of $2.37/43.13 = 5.50\%$.

EVALUATE

At a price of \$43.13, Longs' expected total return is $1.30\% + 5.50\% = 6.80\%$, which is equal to its equity cost of capital (the return being paid by investments with equivalent risk to Longs'). This amount is the most we would be willing to pay for Longs' stock. If we paid more, our expected return would be less than 6.8% and we would rather invest elsewhere.

PERSONAL FINANCE

EXAMPLE 4.5 Retirement Savings Plan Annuity

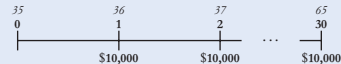
PROBLEM

Ellen is 35 years old and she has decided it is time to plan seriously for her retirement. At the end of each year until she is 65, she will save \$10,000 in a retirement account. If the account earns 10% per year, how much will Ellen have in her account at age 65?

SOLUTION

PLAN

As always, we begin with a timeline. In this case, it is helpful to keep track of both the dates and Ellen's age:



Ellen's savings plan looks like an annuity of \$10,000 per year for 30 years. (*Hint:* It is easy to become confused when you just look at age, rather than at both dates and age. A common error is to think there are only $65 - 36 = 29$ payments. Writing down both dates and age avoids this problem.)

To determine the amount Ellen will have in her account at age 65, we'll need to compute the future value of this annuity.

EXECUTE

$$\begin{aligned} FV &= \$10,000 \times \frac{1}{0.10} (1.10^{30} - 1) \\ &= \$10,000 \times 164.49 \\ &= \$1.645 \text{ million at age 65} \end{aligned}$$

Using a financial calculator or Excel:

	N	I/Y	PV	PMT	FV
Given:	30	10	0	-10,000	
Solve for:					1,644,940
Excel Formula: =FV(RATE,NPER,PMT,PV)=FV(0.10,30,-10000,0)					

EVALUATE

By investing \$10,000 per year for 30 years (a total of \$300,000) and earning interest on those investments, the compounding will allow Ellen to retire with \$1.645 million.

Study Aids with a Practical Focus

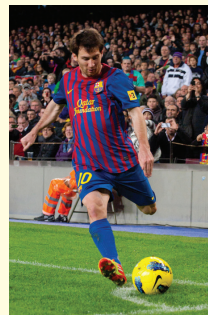
To be successful, students need to master the core concepts and learn to identify and solve problems that today's practitioners face.

- The **Valuation Principle** is presented as the foundation of all financial decision making: The central idea is that a firm should take projects or make investments that increase the *value* of the *firm*. The tools of finance determine the impact of a project or investment on the firm's value by comparing the costs and benefits in equivalent terms. The Valuation Principle is first introduced in Chapter 3, revisited in the part openers, and integrated throughout the text.
- **Guided Problem Solutions (GPS)** are Examples that accompany every important concept using a consistent problem-solving methodology that breaks the solution process into three steps: *Plan*, *Execute*, and *Evaluate*. This approach aids student comprehension, enhances their ability to model the solution process when tackling problems on their own, and demonstrates the importance of interpreting the mathematical solution.
- **Personal Finance GPS** Examples showcase the use of financial analysis in everyday life by setting problems in scenarios, such as purchasing a new car or house and saving for retirement.
- **Common Mistake** boxes alert students to frequently made mistakes stemming from misunderstanding of core concepts and calculations—in the classroom and in the field.

COMMON MISTAKE

Summing Cash Flows Across Time

Once you understand the time value of money, our first rule may seem straightforward. However, it is very common, especially for those who have not studied finance, to violate this rule, simply treating all cash flows as comparable regardless of when they are received. One example is in sports contracts. In 2019, Mike Trout signed a contract extension with the Los Angeles Angels that was repeatedly referred to as a "\$430 million" contract. The \$430 million comes from simply adding up all the payments Trout would receive over the 12 years of the contract—treating dollars received in 12 years the same as dollars received today. The same thing occurred when Lionel Messi signed a contract extension with FC Barcelona in 2017, giving him a "\$320 million" contract through 2021, and in 2011 when Albert Pujols agreed to a "240 million" ten-year contract with the Los Angeles Angels.



Applications That Reflect Real Practice

Global Financial Crisis boxes reflect the reality of the recent financial crisis and sovereign debt crisis, noting lessons learned. Boxes interspersed through the book illustrate and analyze key details.

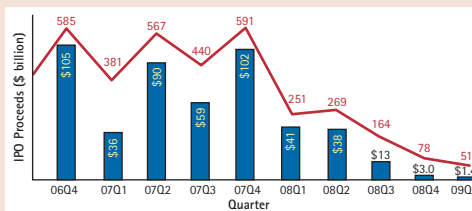
GLOBAL FINANCIAL CRISIS

2008–2009: A Very Cold IPO Market

The drop in IPO issues during the 2008 financial crisis was both global and dramatic. The bar graph shows the total worldwide dollar volume of IPO proceeds in billions of dollars (blue bars) and number of deals (red line) by quarter, from the last quarter of 2006 to the first quarter of 2009. Comparing the fourth quarter of 2007 (a record quarter for IPO issues) to the fourth quarter of 2008, dollar volume dropped a stunning 97% from \$102 billion to just \$3 billion. Things got even worse in the first quarter of

2009 with just \$1.4 billion raised. The market for IPOs essentially dried up altogether.

During the 2008 financial crisis, IPO markets were not the only equity issue markets that saw a collapse in volume. Markets for seasoned equity offerings and leveraged buyouts also collapsed. The extreme market uncertainty at the time created a “flight to quality.” Investors, wary of taking risk, sought to move their capital into risk-free investments like U.S. Treasury securities. The result was a crash in existing equity prices and a greatly reduced supply of new capital to risky asset classes.



Source: Shifting Landscape—Are You Ready? Global IPO Trends report 2009, Ernst & Young.

Practitioner Interviews from notable professionals featured in many chapters highlight leaders in the field and address the effects of the financial crisis.

INTERVIEW WITH

DR. JANET YELLEN

Dr. Janet L. Yellen served as the Chair of the Board of Governors of the Federal Reserve System from 2014 to 2018, and as Vice Chair from 2010 to 2014. Previously she was President and Chief Executive Officer of the Federal Reserve Bank of San Francisco; Chair of the White House Council of Economic Advisers under President Bill Clinton; and business professor at the University of California, Berkeley, Haas School of Business. She is currently Distinguished Fellow in Residence—Economic Studies, at The Brookings Institution’s Hutchins Center on Fiscal and Monetary Policy.



QUESTION: What are the main policy instruments used by central banks to control the economy, and how did they change as a result of the financial crisis?

ANSWER: Before the financial crisis, short-term interest rates were the main tool of monetary policy. The Federal Reserve (The Fed) controlled these rates by adjusting the quantity of bank reserves (cash in the banking system) it made available. By purchasing or selling Treasury securities the Federal Reserve raised or lowered the available quantity of reserves and thereby controlled short-term interest rates.

In the aftermath of the crisis, short-term interest rates remain a prime tool of monetary policy, but they are now set in a different way and the quantity of reserves is an order-of-magnitude larger—peaking at around \$2.5 trillion compared to about \$25 billion precrisis. At the height of the financial crisis (December 2008), the Fed set the interest rate on reserves at 25 basis points, bringing the general level of safe short-term rates down to near zero (its so-called “effective lower bound”), where it remained for seven years. It also began buying long-term Treasury bonds and agency mortgage-backed securities—“unconventional” policies that lowered longer-term interest rates once short rates had reached the effective lower bound. In addition, the Federal Reserve began providing more detailed forward guidance about the likely path of short-term rates. These “unconventional” policies were intended to lower longer-term interest rates once short rates had reached the effective lower bound.

QUESTION: What challenges does the Fed face in the aftermath of the financial crisis?

ANSWER: The Fed faces the challenge of raising interest rates and shrinking the quantity of reserves at an appropriate pace as the economy recovers and no longer needs the level of stimulus required post-crisis. The danger of raising rates too slowly is the risk of the economy overheating and inflation significantly

overshooting the Fed’s 2% target level; raising rates too quickly, on the other hand, could stall economic growth. As of March 2018, the Fed had raised rates six times, bringing the fed funds rate to almost 1.75%. It also began a gradual process of shrinking its massive balance sheet by diminishing its reinvestments of principal.

QUESTION: In the last 10 years we have witnessed a period of very low interest rates. Is this a new norm, or do you think rates will eventually rise to their historic averages?

ANSWER: The evidence suggests, and I concur, that low interest rates may be the “new norm” in developed countries. Short-term interest rates appeared to be falling in the United States and other developed countries even before the financial crisis. Estimates now place the “neutral rate”—the rate consistent with stable growth and low inflation—at a bit under 1% in real terms. Two key factors that influence the level of neutral rates are productivity growth and demographics. Productivity growth in most developed countries has been slow relative to the postwar period; at the same time, populations are aging and labor force growth has slowed. These factors tend to boost a society’s saving rate and reduce investment spending, pushing the level of neutral rates down.

QUESTION: How will the recent tax cuts affect future Fed policy?

ANSWER: Monetary policy is designed to achieve the Fed’s Congressionally mandated goals of maximum or “full” employment and 2% inflation. This means that all factors that affect these dimensions of economic performance will influence Fed policy. Tax cuts serve to boost domestic demand—both consumer and investment spending. Higher investment spending, over time, boosts the economy’s capital stock and its potential output to some extent. Moreover, lower marginal tax rates may boost labor supply. Over the next few years, the demand impact of the spending increases and tax cuts seems likely to dominate any supply effects. With the economy near full employment, the Fed may need to raise interest rates a bit faster as a consequence.

General Interest boxes highlight timely material from current financial events that shed light on business problems and real company practices.

The Credit Crisis and Bond Yields

The financial crisis that engulfed the world’s economies in 2008 originated as a credit crisis that first emerged in August 2007. At that time, problems in the mortgage market had led to the bankruptcy of several large mortgage lenders. The default of these firms, and the downgrading of many of the bonds backed by mortgages these firms had made, caused many investors to reassess the risk of other bonds in their portfolios. As perceptions of risk increased, and investors attempted to move into safer U.S. Treasury securities, the prices of corporate bonds fell and so their credit spreads

rose relative to Treasuries, as shown in Figure 6.7. Panel (a) shows the yield spreads for long-term corporate bonds, where we can see that spreads of even the highest-rated Aaa bonds increased dramatically, from a typical level of 0.5% to over 2% by the fall of 2008. Panel (b) shows a similar pattern for the rate banks had to pay on short-term loans compared to the yields of short-term Treasury bills. This increase in borrowing costs made it more costly for firms to raise the capital needed for new investment, slowing economic growth. The decline in these spreads in early 2009 was viewed by many as an important first step in mitigating the ongoing impact of the financial crisis on the rest of the economy.

Teaching Every Student to Think Finance

notation	
C	cash flow
C_n	cash flow at date n
FV	future value
FV_n	future value on date n
g	growth rate
N	date of the last cash flow in a stream of cash flows
P	initial principal or deposit, or equivalent present value
PV	present value
r	interest rate or rate of return

Simplified Presentation of Mathematics

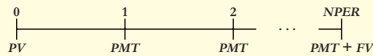
Because one of the hardest parts of learning finance for non-majors is mastering the jargon, math, and non-standardized notation, *Fundamentals of Corporate Finance* systematically uses:

- **Notation Boxes.** Each chapter begins with a Notation box that defines the variables and the acronyms used in the chapter and serves as a “legend” for students’ reference.
- **Numbered and Labeled Equations.** The first time a full equation is given in notation form it is numbered. Key equations are titled and revisited in the summary and in end papers.
- **Timelines.** Introduced in Chapter 3, timelines are emphasized as the important first step in solving every problem that involves cash flows over time.
- **Financial Calculator** instructions, including a box in Chapter 4 on solving for future and present values, and appendices to Chapters 4, 6, and 15 with keystrokes for HP-10bII+ and TI BAII Plus calculators, highlight this problem-solving tool.
- **Spreadsheet Tables.** Select tables are available as Excel® files, enabling students to change inputs and manipulate the underlying calculations.
- **Using Excel** boxes describe Excel techniques and include screenshots to serve as a guide for students using this technology.

Using a Financial Calculator: Solving for Present and Future Values of Cash Flow Streams

So far, we have used formulas to compute present values and future values of cash flow streams. As we discussed at the end of Chapter 3, both financial calculators and spreadsheets have these formulas preprogrammed to quicken the process. In this box, we focus on financial calculators, but spreadsheets such as Excel have very similar shortcut functions.

Financial calculators have a set of functions that perform the calculations that finance professionals do most often. These functions are all based on the following timeline, which among other things can handle most types of loans:

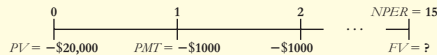


There are a total of five variables: number of periods (N or $NPVER$), present value (PV), cash flow or “payment” (PMT), future value (FV), and the interest rate, denoted I/Y . Each function takes four of these variables as inputs and returns the value of the fifth one that ensures that the sum of the present value of the cash flows is zero.

By setting the recurring payments equal to 0, you could compute present and future values of single cash flows such as we have done above using Eqs. 4.2 and 4.1. In the examples shown in Sections 4.2 through 4.4, we will calculate cash flows using the **(PMT)** button. The best way to learn to use a financial calculator is by practicing. We present one example below. We will also show the calculator buttons for any additional examples in this chapter that can be solved with financial calculator functions. Finally, the appendix to this chapter contains step-by-step instructions for using the two most popular financial calculators.

Example

Suppose you plan to invest \$20,000 in an account paying 8% interest. You will invest an additional \$1000 at the end of each year for 15 years. How much will you have in the account in 15 years? We represent this problem with the following timeline:



To compute the solution, we enter the four variables we know, $N = 15$, $I/Y = 8$, $PV = -20,000$, $PMT = -1,000$, and solve for the one we want to determine: FV . Specifically, for the HP-10bII+ or TI BAII Plus calculators:

1. Enter 15 and press the **(N)** button.
2. Enter 8 and press the **(I/Y)** button (**(I/Y)** for the HP calculator).
3. Enter -20,000 and press the **(PV)** button.
4. Enter -1,000 and press the **(PMT)** button.
5. Press the **(FV)** button (for the Texas Instruments calculator, press **(CPT)** and then **(FV)**).

	N	I/Y	PV	PMT	FV
Given:	15	8	-20,000	-1000	
Solve for:					90,595.50
Excel Formula: =FV(0.08,15,-1000,-20000)					

The calculator then shows a future value of \$90,595.50.

Note that we entered PV and PMT as negative numbers (the amounts we are putting into the bank), and FV is shown as a positive number (the amount we can take out of the bank). It is important to use signs correctly to indicate the direction in which the money is flowing when using the calculator functions. You will see more examples of getting the sign of the cash flows correct throughout the chapter.

Excel has the same functions, but it calls “N” “NPER” and “I/Y,” “RATE.” Also, it is important to note that you enter an interest rate of 8% as “8” in a financial calculator, but as “0.08” in Excel.

TABLE 18.18
Pro Forma Statement of Cash Flows for KMS, 2019–2024

1 Year	2019	2020	2021	2022	2023	2024
2 Statement of Cash Flows (\$000s)						
3 Net Income	8,769	10,162	12,854	15,852	19,184	
4 Depreciation	7,444	7,499	7,549	7,594	7,635	
5 Changes in Working Capital						
6 Accounts Receivable	-2,561	-2,827	-3,144	-3,491	-3,872	
7 Inventory	-2,696	-2,976	-3,309	-3,675	-4,076	
8 Accounts Payable	2,157	2,381	2,647	2,940	3,261	
9 Cash from Operating Activities	13,112	14,239	16,598	19,221	22,132	
10 Capital Expenditures	-25,000	-8,000	-8,000	-8,000	-8,000	
11 Other Investment	—	—	—	—	—	
12 Cash from Investing Activities	-25,000	-8,000	-8,000	-8,000	-8,000	
13 Net Borrowing	20,000	—	—	—	—	
14 Dividends	-5,955	-3,858	-5,951	-8,280	-10,871	
15 Cash from Financing Activities	14,045	-3,858	-5,951	-8,280	-10,871	
16						
17 Change in Cash (9 + 12 + 15)	2,157	2,381	2,647	2,940	3,261	

USING EXCEL

Capital Budgeting Using a Spreadsheet Program

Capital budgeting forecasts and analysis are most easily performed in a spreadsheet program. Here, we highlight a few best practices when developing your own capital budgets.

Create a Project Dashboard

All capital budgeting analyses begin with a set of assumptions regarding future revenues and costs associated with the investment. Centralize these assumptions within your spreadsheet in a project dashboard so they are easy to locate, review, and potentially modify. Here, we show an example for the HomeNet project.

A	B	C	D	E	F	G	H	I
1	HOMENET KEY ASSUMPTIONS		Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
2	Units Sold (000s)		50	50	50	50	50	
3	Sale Price (\$/unit)		260	260	260	260		
4	Cost of Goods (\$/unit)		110	110	110	110		
5	Operating Expenses: Marketing, Support, and Rent		-2800	-2800	-2800	-2800		
6	Capital Expenditures: Lab Equipment		-3500					
7	Depreciation		0%	20%	20%	20%	20%	20%
8	Corporate Tax Rate		20%	20%	20%	20%	20%	20%
9	Receivables (% of Sales)		15%	15%	15%	15%	15%	15%
10	Payables (% of COGS)		15%	15%	15%	15%	15%	15%

Practice Finance to Learn Finance

KEY POINTS AND EQUATIONS	KEY TERMS
<p>4.1 Valuing a Stream of Cash Flows</p> <ul style="list-style-type: none"> The present value of a cash flow stream is: $PV = C_0 + \frac{C_1}{(1+r)} + \frac{C_2}{(1+r)^2} + \dots + \frac{C_N}{(1+r)^N} \quad (4.3)$	stream of cash flows, p. 94
<p>4.2 Perpetuities</p> <ul style="list-style-type: none"> A perpetuity is a stream of equal cash flows C paid every period, forever. The present value of a perpetuity is: $PV(C \text{ in Perpetuity}) = \frac{C}{r} \quad (4.4)$	consol, p. 98 perpetuity, p. 98
<p>4.3 Annuities</p> <ul style="list-style-type: none"> An annuity is a stream of equal cash flows C paid every period for N periods. The present value of an annuity is: $C \times \frac{1}{r} \left(1 - \frac{1}{(1+r)^N} \right) \quad (4.5)$ <ul style="list-style-type: none"> The future value of an annuity at the end of the annuity is: $C \times \frac{1}{r} \left((1+r)^N - 1 \right) \quad (4.6)$	annuity, p. 101

Working problems is the proven way to cement and demonstrate an understanding of finance.

- **Concept Check questions** at the end of each section enable students to test their understanding and target areas in which they need further review.
- **End-of-chapter problems written personally by Jonathan Berk, Peter DeMarzo, and Jarrad Harford** offer instructors the opportunity to assign first-rate materials to students for homework and practice with the confidence that the problems are consistent with the chapter content. Both the problems and solutions, which were also prepared by the authors, have been class-tested and accuracy checked to ensure quality.

End-of-Chapter Materials Reinforce Learning

Testing understanding of central concepts is crucial to learning finance.

- **The Chapter Summary** presents the key points and conclusions from each chapter, provides a list of key terms with page numbers, and indicates online practice opportunities.
- **Data Cases** present in-depth scenarios in a business setting with questions designed to guide students' analysis. Many questions involve the use of Internet resources.
- **Integrative Cases** occur at the end of most parts and present a capstone extended problem for each part with a scenario and data for students to analyze based on that subset of chapters.

DATA CASE

This is your second interview with a prestigious brokerage firm for a job as an equity analyst. You survived the morning interviews with the department manager and the vice president of equity. Everything has gone so well that they want to test your ability as an analyst. You are seated in a room with a computer and a list with the names of two companies—Ford (F) and Microsoft (MSFT). You have 90 minutes to complete the following tasks:

1. Download the annual income statements, balance sheets, and cash flow statements for the last four fiscal years from Morningstar (www.morningstar.com) company's stock symbol and then go to "financials." Copy and paste the financial statements into Excel.
2. Find historical stock prices for each firm from Yahoo Finance (finance.yahoo.com). Enter the stock symbol, click "Historical Prices" in the left column, and enter the proper date range to cover the last day of the month corresponding to the date of each financial statement. Use the closing stock prices (not the adjusted close). To calculate the firm's market capitalization at each date, multiply the number of shares outstanding by the firm's historic stock price. You can find the number of shares by using "Basic" under "Weighted average shares outstanding" at the bottom of the Income Statement.



Preface

Finance professors are united by their commitment to shaping future generations of financial professionals as well as instilling financial awareness and skills in non-majors. Our goal with *Fundamentals of Corporate Finance* is to provide an accessible presentation for both finance and non-finance majors. We know from experience that countless undergraduate students have felt that corporate finance is challenging. It is tempting to make finance *seem* accessible by de-emphasizing the core principles and instead concentrating on the results. In our over 75 years of combined teaching experience, we have found that emphasizing the core concepts in finance—which are clear and intuitive at heart—is what makes the subject matter accessible. What makes the subject challenging is that it is often difficult for a novice to distinguish between these core ideas and other intuitively appealing approaches that, if used in financial decision making, will lead to incorrect decisions.

The 2007–2009 financial crisis was fueled in part by many practitioners' poor decision making when they did not understand—or chose to ignore—the core concepts that underlie finance and the pedagogy in this book. With this point in mind, we present finance as one unified whole based on two simple, powerful ideas: (1) valuation drives decision making—the firm should take projects for which the value of the benefits exceeds the value of the costs, and (2) in a competitive market, market prices (rather than individual preferences) determine values. We combine these two ideas with what we call the *Valuation Principle*, and from it we establish all of the key ideas in corporate finance.

New to This Edition

We have updated all text discussions and figures, tables, data cases, and facts to accurately reflect developments in the field in the last few years. Specific highlights include the following:

- Updates made throughout the text to reflect the Tax Cuts and Jobs Act of 2017. Extensive updates made to Chapter 9 (Fundamentals of Capital Budgeting), Chapter 16 (Capital Structure), and Chapter 23 (International Corporate Finance).
- Added discussion of Finance and Technology (Fintech) in Chapter 1 (Corporate Finance and the Financial Manager).
- Added a new interview with Janet L. Yellen in Chapter 5 (Interest Rates).
- Incorporated new and/or revised features throughout, including Common Mistakes, Global Financial Crisis, Nobel Prize, and General Interest boxes, as well as Examples.
- Extensively revised and updated Data Cases and end-of-chapter problems, once again personally writing and solving each one.
- Updated tables and figures to reflect current data.

Emphasis on Valuation

While the global financial crisis was not a formative experience for many of today's students, financial topics ranging from speculative start-up valuations to sovereign debt crises continue to dominate the news. As a result, today's undergraduate students arrive in the classroom with an interest in finance. We strive to use that natural interest and motivation to overcome their fear of the subject and communicate time-tested core principles. Again, we take what has worked in the classroom and apply it to the text: By providing examples involving familiar companies such as Starbucks and Apple, making consistent use of real-world data, and demonstrating personal finance applications of core concepts, we strive to keep both non-finance and finance majors engaged.

By learning to apply the Valuation Principle, students develop the skills to make the types of comparisons—among loan options, investments, projects, and so on—that turn them into knowledgeable, confident financial consumers and managers. When students see how to apply finance to their personal lives and future careers, they grasp that finance is more than abstract, mathematically based concepts.

Table of Contents Overview

Fundamentals of Corporate Finance offers coverage of the major topical areas for introductory-level undergraduate courses. Our focus is on financial decision making related to the corporation's choice of which investments to make or how to raise the capital required to fund an investment. We designed the book with the need for flexibility and with consideration of time pressures throughout the semester in mind.

Part 1 Introduction

Ch. 1: Corporate Finance and the Financial Manager	Introduces the corporation and its governance; updated to include comparison of traditional trading venues, new electronic exchanges, and how the market for trading stocks is changing
Ch. 2: Introduction to Financial Statement Analysis	Introduces key financial statements; Coverage of financial ratios has been centralized to prepare students to analyze financial statements holistically

Part 2 Interest Rates and Valuing Cash Flows

Ch. 3: Time Value of Money: An Introduction	Introduces the Valuation Principle and time value of money techniques for single-period investments
Ch. 4: Time Value of Money: Valuing Cash Flow Streams	Introduces the mechanics of discounting; Includes examples with non-annual interest rates that provide time value of money applications in a personal loan context
Ch. 5: Interest Rates	Presents how interest rates are quoted and compounding for all frequencies; Discusses key determinants of interest rates and their relation to the cost of capital; New discussion of negative interest rates
Ch. 6: Bonds	Analyzes bond prices and yields; Discusses credit risk and the effect of the financial crisis on credit spreads
Ch. 7: Stock Valuation	Introduces stocks and presents the dividend discount model as an application of the time value of money

Part 3 Valuation and the Firm

Ch. 8: Investment Decision Rules	Introduces the NPV rule as the “golden rule” against which we evaluate other investment decision rules
Ch. 9: Fundamentals of Capital Budgeting	Provides a clear focus on the distinction between earnings and free cash flow, and shows how to build a financial model to assess the NPV of an investment decision; Using Excel boxes demonstrate best-practices and sensitivity analysis
Ch. 10: Stock Valuation: A Second Look	Builds on capital budgeting material by valuing the ownership claim to the firm’s free cash flows and discusses market efficiency and behavioral finance

Part 4 Risk and Return

Ch. 11: Risk and Return in Capital Markets	Establishes the intuition for understanding risk and return; Explains the distinction between diversifiable and systematic risk; New Global Financial Crisis box “Diversification Benefits During Market Crashes”
Ch. 12: Systematic Risk and the Equity Risk Premium	Develops portfolio risk, the CAPM, beta and the Security Market Line
Ch. 13: The Cost of Capital	Calculates and uses the firm’s overall costs of capital with the WACC method; New Common Mistake box “Using a Single Cost of Capital in Multi-Divisional Firms”

Part 5 Long-Term Financing

Ch. 14: Raising Equity Capital	Chapter-long example of Facebook from founding to SEO; Overview of the stages of equity financing, from venture capital to IPO to seasoned equity offerings; Discussion of crowdfunding and direct listings
Ch. 15: Debt Financing	Overview of debt financing, including covenants, convertible bonds and call provisions; Other types of debt; Boxes on “Detroit’s Art Museum at Risk” and “CDOs, Subprime Mortgages, and the Financial Crisis”

Part 6 Capital Structure and Payout Policy

Ch. 16: Capital Structure	Analyzes the tax benefits of leverage, including the debt tax shield; Discusses distress costs and the Tradeoff Theory
Ch. 17: Payout Policy	Considers alternative payout policies including dividends and share repurchases; Analyzes the role of market imperfections in determining the firm’s payout policy

Part 7 Financial Planning and Forecasting

Ch. 18: Financial Modeling and Pro Forma Analysis	Demonstrates careful pro forma modeling of an expansion plan
Ch. 19: Working Capital Management	Introduces the Cash Conversion Cycle and methods for managing working capital
Ch. 20: Short-Term Financial Planning	Develops methods for forecasting and managing short-term cash needs

Part 8 Special Topics

Ch. 21: Option Applications and Corporate Finance	Introduces the concept of financial options, how they are used and exercised
Ch. 22: Mergers and Acquisitions	Considers motives and methods for mergers and acquisitions, including leveraged buyouts
Ch. 23: International Corporate Finance	Analyzes the valuation of projects with foreign currency cash flows with integrated or segregated capital markets

Acknowledgments

With five editions behind us, we are heartened by the book's success and its impact on the profession by shaping future practitioners. As any textbook writer will tell you, achieving this level of success requires a substantial amount of help. First and foremost we thank Donna Battista, whose leadership, talent, and market savvy are imprinted on all aspects of the project and were central to its more than 10 years of success; Adrienne D'Ambrosio, for her efforts and commitment to the success of the book, and for taking on Donna's leadership role for this edition; Denise Clinton, a friend and a leader in fact not just in name, whose experience and knowledge were indispensable in the earliest stages; Rebecca Ferris-Caruso, for her unparalleled expertise in managing the complex writing, reviewing, and editing processes and patience in keeping us on track—it is impossible to imagine writing the first edition without her; Kate Fernandes, for her energy and fresh perspective as our former editor; Emily Biberger, for her enthusiasm and excellent guidance on this edition; Miguel Leonarte, for his central role on MyLab Finance; and Gina Linko for getting the book from draft pages into print. We were blessed to be approached by the best publisher in the business and we are both truly thankful for the indispensable help provided by these and other professionals, including Catherine Cinque, Meredith Gertz, Melissa Honig, Roxanne McCarley, and Carol Melville.

Updating a textbook like ours requires a lot of painstaking work, and there are many who have provided insights and input along the way. We would especially like to call out Jared Stanfield for his important contributions and suggestions throughout. We're also appreciative of Marlene Bellamy's work conducting the lively interviews that provide a critically important perspective, and to the interviewees who graciously provided their time and insights.

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Reviewers

Pankaj Agrawal, *University of Maine*
 Daniel Ahern, *California State University–Chico*
 Paul Asabere, *Temple University*
 Victor Bahhouth, *University of North Carolina–Pembroke*
 Ajeyo Banerjee, *University of Colorado–Denver*
 Michael Bennett, *Curry College*
 Tom Berry, *DePaul University*
 Karan Bhanot, *University of Texas–San Antonio*
 Rafiqul Bhuyan, *California State University–San Bernardino*
 Eugene Bland, *Texas A&M University–Corpus Christi*
 Matej Blasko, *University of Georgia*
 Elizabeth Booth, *Michigan State University*
 Mary Brown, *University of Illinois–Chicago*
 Bill Brunsen, *Eastern New Mexico University*
 David G. Cazier, *Brigham Young University–Provo*
 Leo Chan, *Delaware State University*
 Cindy Chen, *California State University–Long Beach*
 Haiyu Chen, *Youngstown State University*
 James F. Cotter, *Wake Forest University*
 Vicentiu Covrig, *California State University–Northridge*
 Julie Dahlquist, *University of Texas–San Antonio*
 Pieter de Jong, *University of Texas–Arlington*
 Andrea L. DeMaskey, *Villanova University*
 Xiaohui Deng, *California State University–Fresno*
 Michaël Dewally, *Marquette University*
 Prakash Dheeriyaa, *California State University–Dominguez Hills*
 Robert M. Donchez, *University of Colorado Boulder*
 Gang Dong, *Rutgers University*
 Dean Drenk, *Montana State University*
 Robert Dubil, *University of Utah*
 Hsing Fang, *California State University–Los Angeles*
 David O. Fricke, *University of North Carolina–Pembroke*
 Scott Fung, *California State University–East Bay*
 Sharon Garrison, *University of Arizona*
 Rakesh Gupta, *Central Queensland University*
 Joseph D. Haley, *St. Cloud State University*
 Thomas Hall, *Christopher Newport University*
 Karen Hallows, *University of Maryland*
 Karen L. Hamilton, *Georgia Southern University*
 Robert Hanson, *Eastern Michigan University*
 Mahfuzul Haque, *Indiana State University*
 Edward C. Howell, *Northwood University*
 Ping Hsiao, *San Francisco State University*
 Xiaoqing Hu, *University of Illinois at Chicago*
 Pankaj Jain, *University of Memphis*
 Robert James, *Boston College*

Susan Ji, *Baruch College, City University of New York*
 Zi Jia, *University of Arkansas at Little Rock*
 Domingo Joaquin, *Illinois State University*
 Fred R. Kaen, *University of New Hampshire*
 Terrill Keasler, *Appalachian State University*
 Howard Keen, *Temple University*
 Brett A. King, *University of North Alabama*
 Daniel Klein, *Bowling Green State University*
 Gregory Kuhlemeyer, *Carroll University*
 Rose Neng Lai, *University of Macau*
 Keith Lam, *University of Macau*
 Reinhold P. Lamb, *University of North Florida*
 Douglas Lamdin, *University of Maryland–Baltimore County*
 Mark J. Laplante, *University of Georgia*
 Sie Ting Lau, *Nanyang Technological University*
 Richard LeCompte, *Wichita State University*
 Adam Y.C. Lei, *Midwestern State University*
 Qian Li, *Midwestern State University*
 Lubomir Litov, *University of Oklahoma*
 Chang Liu, *Washington State University*
 Wei Liu, *Texas A&M University*
 Hugh Marble III, *University of Vermont*
 James Milanese, *University of North Carolina at Greensboro*
 Sunil K. Mohanty, *University of St. Thomas*
 Ted Moorman, *Northern Illinois University*
 Mike Morgan, *University of Southern Mississippi*
 James Morris, *University of Colorado–Denver*
 Belinda Mucklow, *University of Wisconsin–Madison*
 Rick Nelson, *University of Minnesota*
 Tom C. Nelson, *University of Colorado–Boulder*
 Anthony C. Ng, *Hong Kong Polytechnic University*
 Curtis Nicholls, *Bucknell University*
 Coleen Pantalone, *Northeastern University*
 Daniel Park, *Azusa Pacific University*
 Janet Payne, *Texas State University*
 Jay Peroni, *College of Charleston*
 Lynn Pi, *Hong Kong University of Science and Technology*
 J. Michael Pinegar, *Brigham Young University*
 Natalia Piqueira, *University of Houston*
 Michael Portnoy, *University of Tampa*
 Annette Poulsen, *University of Georgia*
 Eric Powers, *University of South Carolina*
 Rose M. Prasad, *Central Michigan University*
 Shoba Premkumar, *Iowa State University*
 Mark K. Pyles, *College of Charleston*
 Jue Ren, *Texas Christian University*
 A.A.B. Resing, *Hogeschool Van Amsterdam*
 Greg Richey, *California State University, San Bernardino*

Scott Roark, *Boise State University*
 David L. Robbins, *University of New Mexico*
 Rob Ryan, *DePaul University*
 Andrew Samwick, *Dartmouth College*
 Mukunthan Santhanakrishnan, *Southern Methodist University*
 Salil K. Sarkar, *University of Texas–Arlington*
 Oliver Schnusenberg, *University of North Florida*
 Michael Schor, *Ohio University*
 Kenneth Scislaw, *University of Alabama–Huntsville*
 Roger Severns, *Minnesota State University–Mankato*
 Tatyana Sokolyk, *University of Wyoming*
 Andrew C. Spieler, *Hofstra University*
 Steven Stelk, *University of Southern Mississippi*
 Timothy G. Sullivan, *Bentley College*
 Janikan Supanvanij, *St. Cloud State University*
 Hugo Tang, *Purdue University*
 Oranee Tawatnuntachai, *Pennsylvania State University–Harrisburg*
 Robert Terpstra, *University of Macau*
 Thomas Thomson, *University of Texas–San Antonio*
 Olaf J. Thorp, *Babson College*
 Ed Tiryakian, *Duke University*
 Mary Kathleen Towle, *University of New Mexico*
 Emery Trahan, *Northeastern University*
 Joe Ueng, *University of St. Thomas*
 Mo Vaziri, *California State University–San Bernardino*
 Gautam Vora, *University of New Mexico*
 Premal P. Vora, *Pennsylvania State University–Harrisburg*
 Hefei Wang, *University of Illinois–Chicago*
 Gwendolyn Webb, *Baruch College*
 Paul M. Weinstock, *Ohio State University*
 Susan White, *University of Maryland*
 Annie Wong, *Western Connecticut State University*
 Wentao Wu, *Clarkson University*
 Xiaoyan Xu, *San Jose State University*
 Qianqian Yu, *Lehigh University*
 Zhong-gou Zhou, *California State University–Northridge*
 Kermit C. Zieg, Jr., *Florida Institute of Technology*

Focus Group Participants

Anne-Marie Anderson, *Lehigh University*
 Sung Bae, *Bowling Green State University*
 H. Kent Baker, *American University*
 Steven Beach, *Radford University*
 Rafiqul Bhuyan, *California State University–San Bernardino*
 Deanne Butchey, *Florida International University*
 Leo Chan, *Delaware State University*

George Chang, *Grand Valley State University*
 Haiwei Chen, *California State University–San Bernardino*
 Haiyu Chen, *Youngstown State University*
 Massimiliano De Santis, *Dartmouth College*
 Jocelyn Evans, *College of Charleston*
 Kathleen Fuller, *University of Mississippi*
 Xavier Garza Gomez, *University of Houston–Victoria*
 William Gentry, *Williams College*
 Axel Grossmann, *Radford University*
 Pankaj Jain, *University of Memphis*
 Zhenhu Jin, *Valparaiso University*
 Steve Johnson, *University of Northern Iowa*
 Steven Jones, *Samford University*
 Yong-Cheol Kim, *University of Wisconsin–Milwaukee*
 Robert Kiss, *Eastern Michigan University*
 Ann Marie Klingenhagen, *DePaul University*
 Thomas J. Krissek, *Northeastern Illinois University*
 Olivier Maisondieu Laforge, *University of Nebraska–Omaha*
 Douglas Lamdin, *University of Maryland–Baltimore County*
 D. Scott Lee, *Texas A&M University*
 Stanley A. Martin, *University of Colorado–Boulder*
 Jamshid Mehran, *Indiana University, South Bend*
 Sunil Mohanty, *University of St. Thomas*
 Karyn L. Neuhauser, *State University of New York–Plattsburgh*
 Thomas O'Brien, *University of Connecticut*
 Hyuna Park, *Minnesota State University–Mankato*
 G. Michael Phillips, *California State University–Northridge*
 Wendy Pirie, *Valparaiso University*
 Antonio Rodriguez, *Texas A&M International University*
 Camelia S. Rotaru, *St. Edward's University*
 Salil Sarkar, *University of Texas at Arlington*
 Mark Sunderman, *University of Wyoming*
 Chu-Sheng Tai, *Texas Southern University*
 Oranee Tawatnuntachai, *Pennsylvania State University–Harrisburg*
 Benedict Udemgba, *Alcorn State University*
 Rahul Verma, *University of Houston–Downtown*
 Angelo P. Vignola, *Loyola University–Chicago*
 Premal Vora, *Pennsylvania State University–Harrisburg*
 Eric Wehrly, *Seattle University*
 Yan A. Xie, *University of Michigan–Dearborn*
 Fang Zhao, *Siena College*
 Sophie Zong, *California State University–Stanislaus*

Class Testers

Tom Berry, *DePaul University*

Eugene Bland, *Texas A&M University–Corpus Christi*

Charles Blaylock, *Murray State University*

Mary Brown, *University of Illinois–Chicago*

Bill Brunsen, *Eastern New Mexico University*

Sarah Bryant Bower, *Shippensburg University of Pennsylvania*

Alva Wright Butcher, *University of Puget Sound*

David G. Cazier, *Brigham Young University–Provo*

Asim G. Celik, *University of Nevada–Reno*

Michaël Dewally, *Marquette University*

Richard Gaddis, *Oklahoma Wesleyan University*

TeWhan Hahn, *Auburn University–Montgomery*

Matthew Hood, *University of Southern Mississippi*

Zhenhu Jin, *Valparaiso University*

Travis Jones, *Florida Gulf Coast University*

Francis E. Laatsch, *Bowling Green State University*

Diane Lander, *Saint Michael's College*

Vance Lesseig, *Texas State University*

Frances Maloy, *University of Washington*

Jamshid Mehran, *Indiana University–South Bend*

Belinda Mucklow, *University of Wisconsin–Madison*

Kuo-Chung Tseng, *California State University–Fresno*

Kermit C. Zieg, Jr., *Florida Institute of Technology*